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People's Democratic Republic of Algeria
A Public Expenditure Review

Assuring High Quality Public Investment

(In Two Volumes) Volume I: Main Report

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Social and Economic Development Group
Middle East and North Africa Region

Document of the World Bank

CURRENCY EQUIVALENTS

Local Currency Unit = Algerian Dinar (DA)
Exchange Rate (72.6 DA per USD)

1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
9.0	18.5	21.8	23.3	35.1	47.7	54.7	57.7	58.7	66.6	75.3	77.2	79.7	77.4	72.1	72.6

FISCAL YEAR

January 1 – December 31

WEIGHT AND MEASURES

Metric System

ACRONYMS AND ABREVIATIONS

AAP	Assessment and Action Plan
ABH	Agences de Basin Hydrographiques (watershed agencies)
ADE	Algérienne des Eaux/National Water Company
AFD	French Development Agency
AGA	Algérienne de Gestion des Autoroutes
AGID	Agence pour l'Irrigation et le Drainage Irrigation and Drainage Agency
ALOS	Average length of stay
ANA	Agence Nationale des Autoroutes
ANBT	Agence Nationale des Barrages et des Grands Transferts (National Agency for Dams and Large Transfers)
ANESRIF	Agence Nationale d'Etudes et de Suivi de la Réalisation des Investissements Ferroviaires
ANRH	Agence Nationale des Ressources Hydrauliques (National Agency for Water Resources)
AP	Autorisation de programme (Program authorization)
ARD	Agriculture and Rural Development
BCG	Bacille Calmette Guérin
BCM	Billions of cubic meters
BEF	Brevet de l'Enseignement Fondamentale (Lower secondary school graduation certificate)
BOO	Build-Own-Operate
BOT	Build-Operate-Transfer
BSM	Budget System Modernization
CASNOS	Caisse Nationale de Sécurité Sociale des Non-Salariés (National Social Security Fund for Non-Wage Earners)
CERPEQ	Centre d'études et de Recherche sur Professions et les Qualifications
CHU	Centre hospitalo-universitaire (university hospital)
CNAS	Caisse Nationale des Assurances Sociales des Travailleurs Salariés (National Social Insurance Fund for Salaried Employees)
CNED	Caisse Nationale d'Equipement pour le Développement
CPI	Consumer price index
CP	Crédits de paiement
CSR	Comprehensive spending review
DA (DZD)	Algerian dinars
DAEP	Direction de l'Alimentation en Eau Potable (Water Supply Department)
DAPE	Direction de l'Assainissement et de la Protection de l'Environnement (Sanitation and Environmental Protection Department)
DEAH	Direction des études et des aménagements hydrauliques
DGB	Direction Générale du Budget
DGDE	Direction Générale du Domaine de l'Etat
DHA	Direction de l'Hydraulique Agricole (Irrigation Department)
DHW	Direction Hydraulique de Wilaya (Regional Water Administration)
DMRE	Direction de la Mobilisation des Ressources en Eau (Department of Water Resources Mobilization)
DPAE	Direction de la Planification et des Etudes Economiques (Department of Planning and Economic Analysis)
DRG	Diagnosis-related group
DSP	Direction de la Santé et de la Population (Health and Population Department)
DTP	Direction des Travaux Publics de Wilaya
EGSA	Etablissement de Gestion des Services Aéroportuaires
EHS	Etablissement hospitalier spécialisé (specialized hospital)
EMA	Entreprise du Métro d'Alger
ENNA	Etablissement National de la Navigation Aérienne
EPA	Etablissement public administratif (public administration agency)
EPE	Entreprise publique economique
EPIC	Etablissement Public à Caractère Industriel et Commercial (state-owned agency with commercial status)
ETU	Entreprise des Transports Urbains (Oran, Constantine, Annaba)

ETUSA	Entreprise des Transports Urbains et Suburbains d'Alger
EU	European Union
FAO	UN Food and Agricultural Organization
FCCL	Local Government Common Fund
FRR	Fonds de Régulation des Recettes
FNGIR	(Hydrocarbon Stabilization Fund)
	Fonds National de Gestion Intégré de la Ressource
GDP	Gross domestic product
GER	Gross enrollment rates
GNFS	Goods and non-factor services
GOA	Government of Algeria
GPI	Grands Périmètres irrigués (Large
GTZ	irrigation schemes)
	German Agency for Technical Cooperation
HIPC	Heavily Indebted Poor Country
IBL	Initial Budget Law
ICAO	International Civil Aviation Organization
ICOR	Incremental Capital/Output ratio
ICT	Information Communication Technologies
IMF (FMI)	International Monetary Fund
IMR	Infant mortality rate
INSP	Institut National de Santé Publique (National Public Health Institute)
IWRM	Integrated Water Resources Management
LFC	Loi de Finance Complémentaire
LMD	License-Maitrise-Doctorat (Undergraduate-Masters-Doctorate)
LPA	Lease Project Approval
LSI	Large-Scale Irrigation
MAO	Mostaganem-Arzew-Oran
MATE	Ministry of Environment and Urban Management/Ministère de l'amenagement du territoire et de l'Environment
MCM	Millions of cubic meters
MDG	Millennium Development Goal
MDT	Ministère des Transports
MEFP	Ministère de la Formation et de l'Enseignement Professionnelle (Ministry of Vocational and Technical Training)
MEN	Ministère de l'Education Nationale
MESRS	Ministère de l'Enseignement Supérieure et de la Recherche Scientifique et de la Recherche Scientifique
MLA	Monitoring of learning achievement
MMR	Maternal mortality ratio
MoF	Ministry of Finance
MOHPHR	Ministry of Health, Population, and Hospital Reform
MOL	Ministry of Labor
MOT	Ministry of Transport
MPW	Ministry of Public Works
MRE	Ministère des Ressources en Eau (Ministry of Water Resources)
MSB	Projet de Modernisation des Systèmes Budgétaire
MTEF	Medium-Term Expenditure Framework
MTP	Ministère des Travaux Publics
N.E.C	National Executive Committee
NHGDP	Nonhydrocarbon GDP
NHA	National health accounts
OECD	Organization for Economic Co-operation and Development
O&M	Operation and maintenance
ONA	Office National de l'Assainissement (National Agency for Sanitation)
ONID	Office National de l'Irrigation et du Drainage (Small and medium irrigation schemes)
ONM	Office National de la Météorologie
ONOU	Office Nationale des Œuvres Universitaires
ONS	Office Nationale des Statistiques de l'Algérie
OPEC	Organization of the Petroleum Exporting countries
OPI	Office des Périmètres Irrigués
PCD	Programme Communal de Développement (local development program)
PCSC	Programme Complémentaire de Soutien à la Croissance (2005-2009)
PDSRE	Perspective Décennale pour les Ressources en Eau
PER	Public Expenditure Review
PISA	Programme for International Student Achievement
PMH	Petite et Moyenne Hydraulique
PNE	Plan National de l'Eau (water master plan)
PPP	Public-Private Partnership
PSP	Private Sector Participation
PSRE	Programme de Soutien à la Relance Economique (2001-2004)
RH	Région Hydraulique
ROSC	Report on the Observance of Standards and Codes
SANRAL	South African National Road Agency
SEF	Sector Expenditure Framework
SITC	Standard International Trade Classification
SNMG	Salaire national minimum garanti (National guaranteed minimum wage)
SNTF	Société Nationale des Transports Ferroviaires
SOE	State-owned enterprise
SONATRACH	Entreprise Nationale de Recherche d'Exploration et de Commercialisation des Hydrocarbures
SSA	Sub-Saharan Africa
STA	Special Treasury Accounts
TEU	Twenty-foot equivalent unit
TIMSS	Third International Mathematics and Science Survey
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	The United Nations Food program Agency
UNICEF	The United Nations Children's Fund
USTHB	Université des Sciences et de la Technologie Houari Boumediene
VET	Vocational education and training
WDI	World Development Indicators
WEO	World Economic Outlook
WHO	World Health Organization
WITS	World Integrated Trade Solution
WRM	Water resources management
WRR	Water requirement ratio
WSS	Water supply and sanitation
WTO	World Trade Organization
WUA	Water user association
WWTP	Waste water treatment plant

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PEOPLE'S DEMOCRATIC REPUBLIC OF ALGERIA

PUBLIC EXPENDITURE REVIEW

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This Report is dedicated to the memory of M. Larbi Boumaza, former Budget General Director, who passed away just before reaching its conclusion. His continuos support, knowledge, encouragement and humour deeply inspired our work."

—The Bank PER Team

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The main report, Volume I, was prepared by José R. López-Cálix (Task Team Leader) who also wrote Chapters 1 and 4. He benefited from contributions from Gabriel Sensenbrenner and Erik de Vrijer (IMF), and Ingrid Ivins who did Chapter 2 on fiscal trends and sustainability. Salvatore Schiavo-Campo, Daniel Tommasi and Mouloud Mokrane did chapter 3 on public investment. Matthieu Loussier with contributions from Michel Bellier, Abdelghani Inal and Karim Budin did chapter 5 on transport and public works. Nabil Chaherli, with contributions from Maya Khelladi did chapter 6 on water. Sajitha Bashir, Hafedh Zaafrane and Elies Ouibrahim did chapter 7 on education. Axel Rahola with contributions from Nicole Klingen and Vincent Houdry and Rebekka Grun did chapter 8 on health. Yves Duvivier, Mustapha Nabli, Theodore Ahlers, Miria Pigato, Khalid El Massnaoui and Nawal Merabet provided priceless guidance through all the process (all World Bank). Sheldon Annis edited the English version of both volumes. Volume II has the annexes (several contributors) and statistical appendix (prepared by Ingrid Ivins with contributions from Soumia Driouch and Nabil El Asri).

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EXECUTIVE SUMMARY

In general terms, a PER is a study that looks for improving public investment efficiency. Throughout PER work, we aim setting up new motivations in all national actors involved in public investment. We are conscious that the outcomes of this review are just the starting point of a new process that will become regular practice into our customs.

—Minister of Finance Mourad Medelci,
Opening words at the PER seminar held in Algiers, July 2006

Algeria is a large exporter of hydrocarbons, with about two-thirds of its receipts accruing to the budget. Algeria has the eighth largest proven gas reserves in the world. Oil prices, at US$20 per barrel in 2000, surpassed US$40 in 2004 and then US$50 in 2005. With prices staying high, growth averaged about 5 percent. Inflation remained below 3 percent. The country is experiencing record-high current account balances and international reserves.

As a result of the oil windfall, the fiscal stance has improved. The central government budget balance went from an overall deficit of 2 percent of GDP in 1999 to a surplus of 14 percent in 2005. Budget revenues increased from 30 percent of GDP in 1999 to 41 percent in 2005. At the same time, expenditures declined, from 31 percent of GDP in 1999 to 27 percent in 2005.

Authorities have made use of the enlarged fiscal space to make advanced payments on external debt and to finance a massive public investment program (known as PCSC[1]) to expand public services and to deal with a backlog of infrastructure rehabilitation. Thanks to advanced repayments, Algeria is now a net creditor nation to the rest of the world, with an external debt-to-GDP ratio calculated at 17 percent in 2005, compared with a high of 80 percent of GDP in 1994. With the incorporation of its predecessor pipeline (PSRE[2]) and inclusion of new programs, the initial PCSC allocation has grown to roughly US$114 billion projected for 2005–09. This represents above 115 percent of 2005 GDP. Algeria's public investment ratio is above 10 percent of GDP and will keep high in the next three years. This level is among the highest in the world, dramatic especially when compared with the average of less than 4 percent of GDP in OECD countries, less than 5 percent of GDP in Latin America, and less than 8 percent of GDP in Asian countries.

The PCSC can contribute to consolidate and improve key social outcomes. Algeria has achieved significant successes in universalizing primary education and increasing access to other levels of education. Geographic access to health facilities is at 98 percent, and the entire population has financial coverage for at least public-sector health-care services. Indeed, with the exception of maternal mortality, all Millennium Development Goals (MDGs) are likely to be met by 2015.

Yet, Algeria is now at a crossroads. As the massive PCSC unfolds, the country faces a fundamental challenge: Will the moment of opportunity be harnessed to sustain long-term economic and employment growth and continuous social development,—or will it be squandered through inefficiency, waste, and

[1] *Programme Complémentaire de Soutien à la Croissance*.
[2] *Programme de Soutien à la Relance Economique*.

corruption? Per the Government's request, and following an intensive dialogue with the Authorities during multiple missions, the objectives of this PER are to assist the government in the following:

- Evaluate fiscal sustainability in light of the country's fiscal push that PCSC represents.
- Set high technical standards for public investment management.
- Draw lessons from the on-going budget modernization reform in order to support the overall implementation, monitoring and evaluation of projects.
- Support the process leading to a medium-term expenditure framework.
- Improve the efficiency and cost-benefit of investments in four key sectors, transport and public works, water, education, and health.

This report is not a traditional PER. On the one hand, the sectoral chapters cover multiple topics that go well beyond the basic review of public expenditure patterns, thus enriching the analysis. On the other hand, the presence of important data shortcomings, in terms of data quality and availability, limits its traditional coverage. Thus, it does *not* deal with the distributional impact of public spending, the role of civil service in the efficiency of public services, and the evaluation of strategic options for the use of hydrocarbon resources. The World Bank was unable to obtain the 2000 household survey database that would have allowed it to make incidence analysis on the distributional impact of public spending. So, findings concerning the equity impact of the PCSC are few (albeit provocative) and they are contained in the sectoral chapters of the report. On civil service, data are particularly scarce, requiring a dedicated effort beyond the scope of this exercise. Finally, although alternative uses of hydrocarbon revenues are mentioned in the sections devoted fiscal sustainability, the PER strictly limits itself to the overall objectives agreed with the Algerian authorities.

A. Key Messages

Algeria has applied a prudent budget formulation, while managing its exceptional oil resources well. Despite high oil prices, the Government has adhered to a conservative practice: The budget reference oil price has been of US$19 per barrel, although average oil prices were in fact above US$45 per barrel in 2004 and 2005. Excess oil revenues are feeding the hydrocarbon stabilization fund—the Fond des Régulation des Recettes (FRR). Sound management of hydrocarbon revenues has also been strengthened by setting rules that prevent the FFR from financing the nonhydrocarbon budget deficit directly. Despite its success in building reserves, the budget reference oil price should be revised toward more realistic levels and the FRR is reaching a limit in its financing capacity of advanced debt repayment and should be converted into a savings and financing account fully integrated into the budget.[3]

As currently budgeted, full execution of the PCSC is fiscally sustainable in the medium term and its expected inflationary impact is low. Under the assumption that Algeria continues prudent monetary and debt management policies, and even under the extreme assumption that oil prices return to their reference level of US$19 per barrel, Algeria could implement the PCSC while maintaining a sustainable fiscal framework. That is because the exceptional hydrocarbon revenues of recent years have enlarged the fiscal space for public investment. Yet in the forthcoming period of budgetary expansion, it is crucial that Algeria hold firm with a prudent fiscal stance. The current record-high oil prices could return to lower levels. And to avoid serious medium-term fiscal risks, Algeria also needs to optimize permanent increases in current expenditure derived from PCSC investments.

[3] Important progress occurred at the closing of the PER. On the one hand, in the 2007 draft Budget Law Authorities announced the implicit price of the oil barrel (US$49) needed to obtain enough hydrocarbon revenues to fill the non-hydrocarbon fiscal deficit. On the other hand, in the 2006 Complementary Budget Law, the rules of the FRR were amended to allow direct financing of the nonhydrocarbon fiscal deficit by the FRR.

The massive volume of public investment has the potential to produce a major macroeconomic and social impact in the near future. The magnitude will be particularly high for 2006–09 for three reasons. First, an extraordinarily high rate of investment has now been approved for the PCSC. Second, abundant resources from the predecessor program (the PSRE) and new programs have been merged into the original PCSC. Third, substantial resources have been transferred to the regions (wilayas) since PSRE implementation, with these deconcentrated entities showing higher execution ratios than some centralized entities, but having dramatic problems in their capacity to monitor and control outlays. However, given the high albeit declining unemployment rate in Algeria, concerns of significant inflationary impacts from investment expansion are not justified.

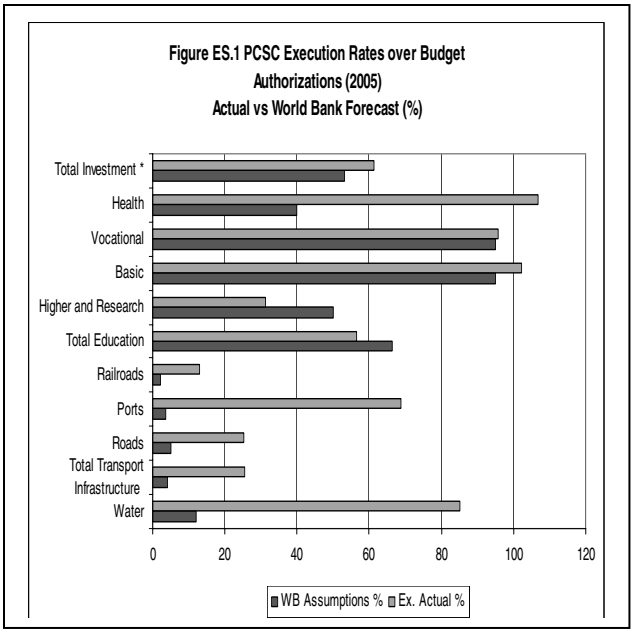
Large front loaded budget authorizations (preceding appropriations) also increase the risk of forced acceleration in the execution of some large-scale projects. Political pressure to speed execution is real in line ministries. Yet non-adherence to minimum standards—in cost-benefit analysis, social returns, and project profiles—could have severe consequences in wasted resources, duplication of activities, and procurement failures.

Large front loaded budget authorizations (preceding appropriations) also increase the risk of forced acceleration in the execution of some large-scale projects. Political pressure to speed execution is real in line ministries. Yet non-adherence to minimum standards—in cost-benefit analysis, social returns, and project profiles—could have severe consequences in wasted resources, duplication of activities, and procurement failures.

Projections of investment execution ratios show that frontloaded budget authorizations will provide little help in expanding actual absorptive capacity abruptly and, at best, produce a moderate rising trend in overall project execution capacity over the next three years. Three complementary Bank estimates of the projected ratios of investment execution/authorization (two "bottom-up" and one "top-down" estimate) converge at an average of approximately 70 percent for 2005–07. This is above the 65 percent average during 2003–04. While a moderate positive trend is both normal and desirable, the authorities need to refrain from the temptation to over-commit appropriated budget resources.

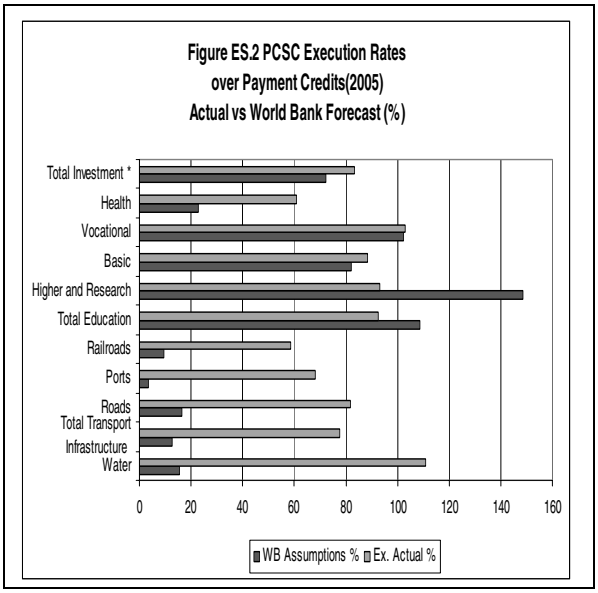
PCSC execution rates in 2005 confirm small improvements in overall project execution capacity, and mixed outcomes per sector. Two complementary investment execution ratios are considered, one with respect to budget authorizations and another with respect to payment credits (budget appropriations). While the former ratio reflects absorption capacity with respect to announced, still non allocated resources; the latter reflects absorption capacity with respect to allocated resources in the annual budget law.

- Figures for investment budget execution ratios with respect to 2005 budget authorizations show that water, health and total transport infrastructure (especially ports and to a lower extent roads) execution rates were well above Bank staff forecasts, whereas those for education (except for basic) were on (vocational training) or below (higher education) Bank staff projections (Figure ES.1). Those for railroads show moderate



improvements in their execution rates. Overall, the total investment execution ratio was a moderate 61 percent, slightly above the 53 percent projected by Bank staff..

- Figures for investment budget execution ratios with respect to 2005 payment credits of the Supplementary budget law also show moderate improvements in overall execution capacity. The total investment execution ratio reached 83 percent and was also slightly above the 72 percent projected by Bank staff. Similar trends to those depicted above are found for individual sectors: excepting higher education, all sectors improved their execution ratios moderately, and in some case multiplied several times those of Bank staff's projections (Figure ES.2).



Therefore, this PER calls, <u>at the macro level,</u> for gradual implementation of the PCSC in order to match moderate improvements in institutional absorption capacity, and ultimately achieve PCSC goals. This implies a slowdown in the amount of budgetary authorizations (*autorisations de programme*) and appropriations (*credits de paiement*) allocated to resource-swamped entities from 2007 onward. For their part, Authorities seem to have implemented diverse measures. On the budget authorizations side, the full envelope has been committed. Indeed, at the outset of PER work in October 2005, the Bank was informed that approximately three-fourths of the total initial amount for the PCSC had already been authorized, and that this information had been transmitted to the sectoral ministries and wilayas. The remaining 25 percent was authorized and communicated in early 2006. On the budget appropriations side, however, payment credits allocated to the PCSC in the 2006 supplementary and 2007 initial budget laws are exactly the same amount, thus implicitly recognizing a ceiling implementation capacity. Finally, measures taken during Government-Walis meetings in June 25th 2006 and December 9th 2006 concerning local investment should contribute to make procurement procedures more flexible and to accelerate the rates of project execution. In any case, there is no doubt that abundant resources have contributed to bigger investment envelopes in key implementing ministries, in some cases multiplying several times.

In addition, implementation of such a big public investment program entails major challenges at the project level. There are justified concerns that substantial resources may be misallocated and wasted, instead of fueling growth. As past Bank analysis of the PSRE revealed, Algeria's public investment system has several shortcomings. First, project costs are high. Second, the technical preparation of implementation staff and the quality of projects is generally weak and uneven, with projects bearing little relationship to strategic sectoral objectives. Third, many weaknesses originate from the urgency that accompanies project preparation at this scale—not least, the myriad of specific demands that projects are supposed to address and the overlapping responsibilities among multiple authorities and participating parties (25 ministerial commissions and 48 wilaya commissions in the case of PSRE). Thus, institutional and governance issues are central in limiting success.

Therefore, <u>at the micro level</u>, analytical and policy efforts must mainly be focused on <u>the central issues of the efficiency and cost-benefit of government investment</u>. In this direction, this report also

suggests Algeria must pay close attention to the sectoral consistency and quality of projects selected under the PCSC**.** There is not only a need for a longer timeframe for programs and projects implementation, but for a gradual improvement in project preparation and execution capacity.

This PER recommends working on three institutional reform pillars. Success of the PCSC will ultimately depend on an equally ambitious effort to reform the institutional framework for public investment (see section B below for complete details). These three pillars are:

a) **The restructuring of the national public investment system**. An overhauled public investment system should move away from a "project by project"approach to a multiyear sectoral programming approach whereby projects are selected on the basis of sound sector strategies. In addition, investment projects (other than major, see below) must meet minimum standards and sound costing. Otherwise, they should not be approved.
b) **The new role of the CNED** (*Caisse Nationale d'Equipement pour le Développement*). In support of the new national public investment system, CNED should play a critical role in making sure that sectoral priorities and minimum technical standards are respected for major projects.
c) **The modernization of budgetary management**. Algeria does poorly in international rankings of budgetary management. A vigorous process of reform is ongoing, as important failures are yet to be addressed, some of them indirectly related to support PCSC implementation. Authorities not only recognize this, but are expecting to reach key milestones in the next years—a new budgetary reclassification, a new Organic budget law, a medium-term expenditure framework, a performance-based budgeting and an IT-based budget system.

In addition, severe shortcomings affecting the quality of sectoral investment must be addressed. Outcomes in the four sectors analyzed in this PER, transport and public works, water, education, and health, have all progressed, yet public investment in these sectors must address similar problems. While coverage of roads and social services has generally been extended, problems remain across sectors—uneven coverage in rural areas; low efficiency and quality of services; virtually no maintenance; absence of updated and comprehensive sectoral strategies (with the exception of education and more recently health); incomplete regulatory frameworks (with the exceptions of education and water); and highly fragmented (especially in health and water) or weak (especially in education and transport) institutional frameworks.

Finally, public–private partnership (PPPs) are proving to be particularly useful for managing investment and operating expenditures in infrastructure projects. Various PPP models are possible; and several are already being applied in practice in the water sector (for example, "build-operate-transfer" [BOT] and management contracts) and in the transport sector (for example, an airport management contract and a BOT concession for ports). However, a common regulatory framework is missing, coordination is seriously lacking among the oversight ministries, the risk of possibly incompatible models is real, the human resources to provide assessment capacity is very limited across ministries, and the essential monitoring capacity is weak.

This PER recommends that opportunities for (PPPs) and other forms of private participation should be cautiously considered when appraising investment projects. Projects implemented under PPP agreements should be consistent with the sectoral strategy and the medium-term plans; and the fiscal and governance risks of PPP agreements should be very carefully considered. In addition, these projects should not be programmed separately from other public investment projects. And, as private financing of infrastructure tends to be more expensive than direct public borrowing, PPPs should be justified when the efficiency gains derived from private involvement outweight the higher financing costs. Given the technical complexities of PPPs, Algeria may want to start with PPPs for projects that pose only limited fiscal risks, while improving the capacity to evaluate, select and monitor public investment projects. It is

finally important to have in place a proper legal framework to ensure adequate risk transfer to the private partner, and the risk management tools to measure and disclose fiscal costs related to PPPs.

B. Setting High Standards for Public Investment Management

The efficiency of public investment

Public investment expenditure in Algeria is substantial—about 10 percent of GDP average over 2000–04, compared with about 7.5 percent in neighbouring countries. A significant increase of public investment is projected for the five years of PCSC implementation. As a ratio to non-hydrocarbon GDP, if all resources authorized to the PCSC were executed, nonhydrocarbon public investment would almost double from 16.5 percent in 2004 to a peak of over 30 percent in 2007, then decreasing to 16 percent in 2009. However, most likely their execution would be greatly hindered by the present absorption capacity constraints. ***Implication for reform****:* Institutional bottlenecks are the key issues that need to be addressed.

The impact of public investment on the economy depends on its efficiency, i.e. its capacity to produce a unit of output using the lowest combination of inputs. From a Keynesian perspective, any increase in aggregate demand—whether from consumption, exports, or investment—can elicit an increase in actual GDP, which will continue so long as investment keeps expanding. However, whereas all investment positively affects potential GDP, its impact as a source of real growth depends on its efficiency. In addition, quality also requires cost-benefit analysis that allow to optimize the use of resources. Therefore, concern is justified that substantial investment resources could be misallocated and wasted rather than channelled to sustainable growth. ***Implication for reform:*** Attention must be focused on the *efficiency* of public investment. And, for its part, cost-benefit analysis at the project level examined in the context of sectoral investment.

Evidence shows that public investment efficiency in Algeria has been relatively lower than its neighbours in recent years, though at least not deteriorating. There is no empirical evidence to suggest that the investment expansion after 1999 has led to greater overall inefficiency. To the contrary, the incremental capital-output ratio (ICOR) that measures efficiency declined somewhat relative to the 1990s. This suggests an improvement (i.e. a lower ICOR means increased efficiency). It mainly resulted from a safer security environment and the halting of several wasteful dam projects. In the water, railways and airport sectors, however, resources have been misallocated in oversized investment projects. Over-investment adds pressure to current expenditures as well as reduces financing to maintain capital assets. ***Implication for reform***: Large projects, especially in water, railways and airport sectors, should be well appraised, monitored and evaluated by CNED.

The overall record of budget public investment execution has generally been acceptable for many years in Algeria. In the late 1990s, actual investment expenditure was close to that which was budgeted. However, there was substantial intersectoral variation (tourism and telecom showed the lowest execution rates, with other sectors spending more than their original budget). The average investment execution rate reached 107 percent in 1998–2001. Then, this rate slowed down to 92 percent in 2002–04. Under the significant expansion of resources programmed for 2005-07, the average investment execution rate is likely to further decline to less than 90 percent. For instance, in 2005, such overall rate was 74 percent. The implementation capacity of approved investment cannot keep pace with the pace of available resources. Attempts to execute beyond reasonable absorption capacity will only result in more waste of resources, as has been demonstrated in the past by the severe execution problems of large projects. ***Implications for reform*****:** The government should definitely stretch the implementation time of the investment program (the budgetary appropriations – *credits de payment* (CPs)), and set a more realistic timeframe. At the same time, concrete measures should be taken to improve investment programming and execution *(maîtrise d'ouvrage)* capacity.

Pillar 1. The restructuring of the national public investment system

Taking stock of experience with *past* public investments is a necessary pre-requirement for sound execution of the future public investments. A thorough review of the present project pipeline, moving from low- to high-performing projects within the same ministry is a necessary first step. ***Implication for reform*:** A first priority is an annual review should be undertaken of the accumulated stock of large capital assets and of the major projects under implementation, resulting in appropriate reallocations from under-performing to better performing projects, while improving project execution.

Second, the key challenges of the restructuring of the national public investment system, in sequential order, are improvements in: sectoral strategies, project preparation, execution, monitoring and evaluation. Hence, sound, agreed-upon, and up-to-date sector strategies should be in place. In most sectors, these strategies have not been reviewed systematically in Algeria for some time. ***Implication for reform:*** Each ministry should review its sectoral strategie and confirm it, or propose a time bound work program to formulate, complete, or update it, in consultation with the Ministry of Finance.

A third priority is to face the lack of compliance with the regulations, although the legal framework governing public investment project preparation needs some revision. Program and project preparation are governed by the provisions of Decree 98-227 of July 1998. However, in practice, many projects are not grounded in economic analysis; studies of investment alternatives are rarely undertaken; violation of tendering rules is frequent, and other infractions occur. As a result, the coherence between capital and recurrent budgeting is still inadequate. the cost of investment projects is generally higher than it should be, implementation takes longer, and economic impact is lower. Unless the government takes robust action immediately, these problems will jeopardize PCSC implementation during 2005–09. ***Implications for reform***: Complementary action is needed from three directions—enforcing public sanctions for noncompliance with budget regulations, strengthening the capacity of line ministries in project preparation, which implies permanent capacity-building efforts, and broadening participation by experts outside the central administration in project appraisal.

A fourth priority implies new procedural improvements in several areas of investment budgeting, especially in project execution and monitoring. The appropriations allotment process causes serious delays, which in effect compresses budget implementation from 12 to 8 months. The correct rule whereby only projects that are ready for implementation are to be included in the budget is routinely violated. There is excessive discretion for line ministries to transfer funds from one project to another; and for the executive branch to transfer program authorizations between sectors. Project execution capacity is weak. Project monitoring is partial, and physical monitoring is inadequate. Finally, there is no systematic follow-up on investment program outcomes, and no candid and relevant, ex post project evaluations. ***Implications for reform:***

- A temporary central database for PCSC projects should be created at the MoF. This is urgent. Waiting for the fully modernized IT system (which will integrate all budget subsystems) to be up and running in 2009 is simply too late for the responsibility it takes to handle the sizable sums involved.
- Each ministry and wilaya should submit investment execution reports twice yearly. These reports should constitute key inputs for the central database and for budgetary reallocations.
- Pilot monitoring indicators, in agreement with sectoral strategies, should be designed for key sectors (see below).
- Small evaluation teams should be created at line ministries, with coordination across sectors by the Ministry of Finance.

Pillar 2: The new role of the CNED

The CNED was created to help address the weaknesses in "major" project preparation and execution described above. Created on June 5, 2004, CNED is governed by a board chaired by the minister of finance and comprising four other ministers. Management is entrusted to a director-general with the autonomy and responsibility appropriate to a professionally run enterprise. The government has decided to focus CNED on its essential functions—(i) provide a prior opinion on the general economic viability of major projects ideas *before* detailed studies and other formal preparatory steps are launched; (ii) confirm that the procedures are respected in form and substance, with confirmation required before a project can be included in the investment budget; (iii) follow up the execution of major projects; (iv) lead the preparation of manuals, guides, and procedures for the concerned staff in the line ministries; and (v) initiate evaluations of major projects and programs as well as build evaluation capacity within line ministries.

The scope of CNED authority is limited to "major projects." These are defined by quantitative and qualitative criteria, as noted earlier. The quantitative criterion of the project (or program) is its total cost, including both the initial investment and estimated future recurrent costs, with a uniform threshold as well as higher thresholds set sector by sector. The qualitative criteria can include the special innovative nature of certain projects or programs, or unusual risks that the project entails. ***Implications for reform:***

- CNED operations should be managed and overseen by the government. Its existence is essentially justified during a phase of transition from a system without effective quality controls to a system where such effective controls exist and are exercised primarily where they belong—in the line ministries themselves.
- CNED should have a light structure. "Light" here implies short lines of command, a small team of highly competent staff, and an operational mode that commissions and carefully supervises studies and reviews by external consultants.
- CNED should ascertain the consistency of the proposed project with the sector strategy. If appropriate strategy is lacking, incomplete, or out-of-date, CNED may comment to the extent that such factors could impede the preparation of economically sound projects. Stimulus and guidance should be provided by CNED.
- CNED should not replace key responsibilities of line ministries in their project cycle. For instance, ex post evaluation must be carried out by the responsible line ministry with guidance and oversight from the Ministry of Finance, and training from CNED.
- CNED should be held accountable. External audit of the financial transactions of CNED itself should be ensured by the Court of Accounts. Professional ethics, integrity, and resource use would be monitored by the General State Inspectorate.

Pillar 3: The modernization of budgetary management

Several failures in the budget process and institutional bottlenecks lead to poor execution of investment programs. These include: (a) inaccurate assumptions on the formulation of initial budgets; (b) sizable midyear reallocations; (c) off-budget activities, especially from tax earmarking, special accounts, and significant contingent liabilities are not subject to monitoring; (d) incrementalism, whereby current and, to some extent, capital budget allocations are decided mostly as inertial semiautomatic adjustments to the previous year's allocation, turning budgeting into a formulaic exercise; (e) a very long (3-months) complementary period to close the fiscal accounts at the end of the budget cycle; (f) the multiplicity of special treasury accounts that offset the latter

issue; (g) the absence of result-orientation in the budget, reflected in the lack of physical and financial indicators and, more generally; (h) the absence of a medium term expenditure perspective. ***Implications for reform****:* Each of these weaknesses needs to be addressed in integrated and coherent manner.

The ongoing budget system modernization addresses some of the above issues. ***Implication for reform:*** Key milestones affecting investment budgeting should be strongly supported and timely achieved:

- Completion of the new budgetary economic classification by end-2006, with implementation in 2007.
- Preparation of a global medium-term expenditure framework (MTEF) for 2008, with pilot sectoral MTEFs for several ministries introduced in 2007.
- Preparation of a new document setting standards for investment projects, including a new CNED investment project approval procedure for major projects by end-2006.
- Introduction of indicators to monitor performance in pilot ministries in 2007, and their generalization in 2008.
- Introduction of an IT-based expenditure management by end-2009.
- Submission to Parliament of a new draft Organic Budget Law in 2006.

C. Improving the Efficiency of Sectoral Investment

While the last section highlighted general systemic issues, the present one focuses on specific sectoral ones. In response to the government's request, four key sectors were chosen as the focus of the PER: transport and public works, water, education and health. The ensuing assessment not only confirms previous general findings, but illustrates a number of additional challenges and opportunities in each sector.

Transport and public works

Substantial investments have built up a sizeable infrastructure stock over the years, but lack of maintenance is generalized. Algeria has 107,000 kilometers of roads, of which 72 percent are paved, 4,940 kilometers of railway lines, 10 commercial ports, and 33 airports. Algeria compares rather well with other countries of the region in network density. Still, capacity bottlenecks constrain ports, roads, and urban transport, impeding economic growth. In addition, economic return has not always guided decision-making in transport. This has led to investments of low economic viability in the short term, including some railway lines and airports, where acceptable levels of present traffic have failed to materialize, however, the Review admits that the economic profitability in the medium term may improve and that non-economic reasons may justify such investments. Meanwhile, competitiveness of the port sector has suffered from insufficient investment in more productive terminals and equipment, in particular for container handling. Significant aging of the assets occurs because of the lack of timely maintenance.

The efficiency of the Algerian transport sector stills lags behind regional benchmarks in several areas. This is true in particular in the railway sector, where infrastructure, rolling stock and staff productivity indicators are two to three times lower than in other countries of the region. In ports, ship turnaround times and cargo dwell times could still be significantly reduced to decrease transport costs in logistics chains. Urban transport services also fall short in meeting the needs of the population and the requirements of the economy: in Algiers, a 2004 Transport Household Survey revealed 80 percent of the population as dissatisfied with the quality of transport services.

Compared with international standards, Algerian expenditure in the transport sector has been adequate in recent years. Unlike countries with significant private sector participation, transport in Algeria is fully financed by the government budget allocated to the Ministry of Transport and the Ministry of Public Works. The sector is mostly operated by state-owned enterprises.[4] Investments ranged between 10 percent and 16 percent of total public investment during 1992–2004. They averaged 1 percent of GDP during 1992–2000. With the PSRE, investments rose to 1.4 percent of GDP in 2001–04. As a benchmark, World Bank research estimates annual investment needs in roads and railways in the MENA region at 1.2 percent of GDP over the period 2005–10.

Investment policy has been significantly geared toward new infrastructure rather than maintenance. The lack of timely maintenance has led to the aging of assets, especially on the road network, of which only 39 percent was reported to be in good condition as of 2003. Assets now require costly rehabilitation and modernization. In particular, road maintenance budgets averaged less than 0.2 percent of GDP over the past 15 years. This is significantly less than the 0.5 to 1.0 percent of GDP usually found in other countries.

While the state-owned enterprises for ports and airports are self-sufficient in their overall operations, other sectors still rely heavily on government subsidies. This is the case of the national railway company (SNTF), the Algiers bus company (ETUSA), and Air Algérie. They still create a significant burden on public finance by requiring recurrent subsidies and chronic bailouts, averaging 0.2 percent of GDP over 2000–05. Subsidization mechanisms to those state-owned enterprises do not allow a clear distinction between due compensations for public service obligations and taxpayer support to inefficiencies.

The PCSC will correctly address the backlog of infrastructure development, rehabilitation and modernization. Major priority projects such as the East-West expressway, the Algiers beltways, the Algiers metro, and tramways in major cities will be completed. Also railways will be rehabilitated.

To optimize the PCSC impact, two policy objectives should be to (a) rationalize sector investment policies, so as to assure infrastructure sustainability and an adequate rate of return in new projects; and (b) improve the allocative and technical efficiency of new sector investment. ***Implications for reforms:***

- Pay greater attention to adequate infrastructure maintenance with resources in line with international benchmarks for each subsector. This includes wilaya roads and communal roads that have chronically fallen in disarray.
- Enforce CNED's central role in guiding investment decisions over major projects in the transport sector.
- Carefully review planned major railway projects with a thorough economic analysis, endorsed by previous CNED approval. The economic role of railways should be assessed in light of the comparative advantage of roads for several market segments (excepting the Touggourt-Hassi Messaoud railway project, which has adequate traffic projections).
- Design a project for a world class container terminal serving the hintherland of Algiers.
- Focus the government on its core policymaking role with an updated multimodal master plan. This involves strategic reorientation and planning of large transport infrastructure projects, while ensuring their economic rationale and proper coordination among sector entities.

[4] Road transport is an exception where private operators have a significant market share — 93 percent of capacity in interurban passenger services, 97 percent of capacity in freight transport and 97 percent in urban transport in Algiers in 2004.

- Set up dedicated regulatory entities at an arm's length from government policy making functions in the ports and airports sectors, so as to introduce regulatory arrangements ensuring that markets for transport services are functioning well.
- Develop markets for transport services, including:
  - The introduction of performance contracts of state-owned enterprises with the government, opening them to market competition and to commercially minded management based on reference costs.
  - Separated commercial activities from public authorities in order to avoid inefficiencies and conflicts of interests, especially in ports and airports.
  - Fostered competition between modes (for example, between rail and road services), within modes (for example, among air carriers), and for the market by tendering competitive concessions and management contracts.
  - A mobilized private sector to benefit from its technical and management expertise. Policies to mobilize nongovernmental finance and implement cost recovery where economically justified should be revised. This includes a Road Fund; an Urban Transport Fund; port and airport tariff adjustments, following tariff benchmarking studies; and revenues from pilot concessions.

Water

Algeria is well on its way to meeting the Millennium Development Goals in water and sanitation of reducing by half the number of people without sustainable access to improved drinking water and basic sanitation by 2015. To do so, the Government has moved on two fronts: It has modernized the legislation framework for water management and made key institutional changes. This has allowed introducing water basin agencies, private participation through concessions, water pricing adjustments, and a reorganization of its water *Entreprises Publiques Economiques* (EPICs). Most recently, it has sought new public-private partnership arrangements in service delivery for urban water supply—for example, Algiers with the French operator Suez, but also in Oran, Constantine, and Annaba; and it has embarked on a major program of surface water mobilization (to reach 67 dams by 2009) and desalinization (12 stations) to fill the scarcity gap. Second, it has devoted an increasingly high level of resources to water investments. During 2001–06, public spending focused mostly on surface infrastructure to meet the need for potable and industrial water and, only in second instance on meeting the needs of agriculture. As a result, from 1995 to 2004 the largest share of spending was on water mobilization infrastructures (primarily dams) and water supply, followed by sanitation and irrigation. Finally, municipality water services were set in place in 2005, and their management transfer should be completed in 2007.

Despite its successes, investments to mobilize additional supplies of potable water, industrial water, and irrigation have failed to match the growing demand. Recent droughts have exposed the vulnerability of large-scale irrigation systems and the pressure on groundwater resources. At the same time, new demands are emerging for major investment in wastewater treatment to counter the continuing threat that untreated sewage poses for health and long-term sustainability of the country's water resources. The PCSC represents the opportunity to address these issues through a substantial acceleration in overall public spending. However, the Government is targeting the additional resources almost exclusively on *more* infrastructure—in particular, costly storage, irrigation expansion, and wastewater treatment. New projects include 5 large dams, 8 transfer systems, 6 irrigation expansions, and 350 hill-dam projects. Thus, the PCSC is taking a business-as-usual approach, somehow inadequate for addressing the multiple challenges and threats that are faced in the water sector.

Several issues require careful consideration by the Government. As a result of weak appraisal of large water projects, these continue to face severe difficulties in terms of financial sustainability and

delays of implementation. End users of rural water continue to experience interrupted service. Monitoring and evaluation of project performance is limited. Operations and maintenance expenditures (O&M) are alarmingly low—in fact, close to zero. And despite the large resources devoted to the sector, little is spent on truly public goods—for example, regulatory and institutional reforms for both resource and service needs, wastewater collection and drainage, and incentives for water conservation in irrigation. Unresolved "governance" issues include limited institutional accountability, lack of transparency, and little participation by users.

Tackling these issues and optimizing PCSC impact requires three objectives: (a) improve strategic planning and coordination in for the sector; (b) apply policies supporting performance-based water management and conservation; and (c) rationalize public expenditure in the sector, while improving project design and management. This will yield a more balanced expansion of water-related public spending and ultimately better outcomes. ***Implications for reform:***

- Complete a comprehensive sector strategy that integrates projects addressing long-term hydroelectric development, irrigation and environment water needs. The new strategy should prioritize urban water carefully, ensure that cities have incentives to conserve water during dry years, and develop an incentive-based approach to water sector reform as an alternative to the current quantitative rationing mode. The strategy should be based on the 2005 Water Law.
- Complement the sector strategy with an integrated water resource management plan (IWRM), providing for a comprehensive investment planning and budgeting, as well as coordinated management of water, land and related resources across the entire sector. This involves updating and expanding the existing PNE, currently limited to center-east regions.
- In the meantime, slowdown investment in dams and large irrigation projects until a sound review of on-going investments and design of the future pipeline in the sector have been completed.
- Shift intrasectoral budget allocations from the supply mobilization and system-expansion infrastructure programs toward management, productivity, and governance-related programs.
- Make a full inventory of water assets and prepare their management plan.
- Rehabilitate and maintain existing irrigation schemes, favoring pressurized systems suitable for high-efficiency irrigation, such as drips.
- Consider new forms of irrigation management transfers, including but not limited to build-operate-transfer, concessions, and "affermage."
- Introduce a contractual and performance-based system with ONID subsidies, making them explicit. This involves making explicit equilibrium subsidies to large scale irrigation, and tariff compensation subsidies to cover the differential between the cost of water production and tariffs charged to users.

Education

Algeria has achieved significant successes in universalizing primary education and increasing access to other levels of education. Nevertheless, participation rates in upper secondary and higher education are low in comparison with countries of comparable income, and they are far behind the middle-income countries in Asia and Latin America. The education system show poor internal and external efficiency indicators. It is estimated that the inefficiencies associated with high dropout and repetition rates by themselves increase the cost of producing a graduate by 30 percent. At the lower and upper secondary levels, the cost is more than twice that in an efficient system.

The education sector has benefited from a comprehensive, well focused reform; but elements of the strategy need further elaboration. The reform was adopted in 2002 and started to be implemented in 2003. It rightly focuses on raising quality at all levels while broadening access and improving completion rates at the post-primary level. However, further elaboration is needed in the strategy for upgrading quality in primary education, which currently focuses mainly on upgrading teacher qualifications, but has limited effects in classroom instruction. The strategy for vocational education needs to be more flexible and responsive to the labor market. The strategy for higher education needs to address broader issues of quality improvement, governance, and financing rather than its present overemphasis on access. The size of the budget allocation for education is average by international standards; however, new needs might require additional budget, and its internal allocations could be much improved. And indeed, there is potential for significant savings from a partial reform of education expenditures, especially in tertiary education, and with greater targeting toward low-income students. About half of social spending in tertiary education is now accounted for by expenditure on student accommodation, food, and scholarships.

Maintenance is not regularly undertaken by communes, resulting in more frequent and expensive expenditures on rehabilitation. Most schools have basic furniture and equipment, but a significant proportion lack essential teaching-learning resources for science, mathematics, and information technology (IT). Differences in student achievement across schools are *not* explained by basic teaching-learning resources such as class size, teachers' qualifications, or training. In short, the challenge is to shift greater expenditure to quality enhancing materials and cost effective maintenance.

The institutional framework that manages expenditures in education is weak. The existing system has devolved considerable planning and implementation responsibility to wilayas, not incentives to improve their efficiency or monitor their performance. The effectiveness of tertiary education is limited because universities lack autonomy in curricular, financial, and management matters.

To tackle these shortcomings and optimize the impact of the PCSC three policy objectives are (a) improve the quality and performance of the education system; (b) update and review the sectoral strategy; (c) shift budgetary resources accordingly; and (d) promote cost-benefit analysis in school construction, and equity in service provision and in financial assistance.

The overriding priority should be to enhance quality in and performance of school education. This central objective is already contained in the *Carte Scolaire* (Annex Y). This involves improvement in (a) the internal efficiency of school education by reducing repetition and dropout rates, especially high for boys, (b) transition rates between different cycles; and (c) student learning. ***Implications for reform:***

- changing pedagogical practices, including teachers and students evaluation;
- upgrading curricula;
- diversifying educational materials;
- developing a framework for sustained teacher professional development, while evaluating the cost-benefit of current pedagogical training; and
- monitoring school and pupil performance outcomes. Algeria's proposed participation in the next international survey of student achievement will provide the opportunity to match itself against other countries and create capacity for national assessment.

A second priority regards to a review of the sectoral strategy, as goals (and their corresponding implications and tradeoffs) need to be laid out for increasing access at <u>each and all</u> levels, along with policies for facilitating students's entry in the labor market. ***Implications for reform:***

- Enrollment projections. Assess the realism of policy targets and the instruments for realizing them—calculating the physical requirements for additional schools, teachers, and other resources at each level.
- Higher education. Reconsider the pace of university expansion and evaluate alternative strategies to increase access through institutional and programmatic diversification, as well as greater use of imports of educational services to ease capacity constraints in the medium-term.
- Vocational education and training. Clarify the objectives for meeting the needs for skilled labor and its relationship with general secondary education. Then, redesign programs accordingly.

A third and fourth priorities are an ensuing shift in sectoral education expenditure levels and composition, and greater cost-benefit and equity in construction, in service provision and in financial assistance to students from poorer families. ***Implications for reform:***

- Gradually increase education sector allocations over the medium term, but rebalanced across regions to meet the objectives of the strategy for increased access and quality.
- Increase allocations to lower secondary and upper secondary education (over current PCSC allocations) for building new schools and hiring teachers.
- Reduce the share of social expenditures in higher-education public spending to release resources for improving instruction. Set higher per student expenditure allocations for instructional inputs.
- Review technical standards and norms for school construction to reduce unit construction costs and associated recurrent expenses for operation and maintenance.
- Design and implement a new human resource policy for the sector (in line with a civil service reform).
- Devolve financial management autonomy (and tougher accountability standards) to education institutions. Assess the actual usage rates and pupil needs of student boarding and canteen facilities, and outsource services where possible.
- Introduce cost-sharing measures in universities to enable sustainable financing of increased access, and prioritize the reform of governance structures, while creating a financial environment to actively reward innovation. In wilayas, develop performance monitoring and create incentives for realizing efficiencies.
- Address inequalities in school expenditures across wilayas and communes by reallocating teachers and providing additional funds to poorer communities. Review with a view to reduce costs and better target, free accommodation, scholarships, and other social services in higher education to students from poorer families and regions.
- Make targeted use of higher education imports through use of specialized faculty or foreign study scholarship programs in specialized areas of priority need to ease capacity constraints.

Health

The Algerian health system has strengths. Geographic access to health facilities is at 98 percent, and the entire population has financial coverage for at least public-sector health-care services. As a result, health indicators have improved dramatically over past decades. Life expectancy increased from 53.5 years in 1970 to 71 years in 2003, higher than other lower middle-income countries. The infant mortality rate decreased from 94 per 1,000 children in 1980 to 33 in 2004.

The efficiency, quality, and equity of the health care system could be improved. Occupancy rates are very low. The various levels of health care are not used properly. Primary and secondary care facilities are underutilized because many people turn directly to university or specialized hospitals. This situation generates additional costs, as the high nosocomial infection rate and constant breakdowns in medical equipment strongly suggests less-than-optimal quality of services. There is large room for improvement in equity. Despite a dense and highly structured network, physical access in rural areas is hampered by lack of equipment, drugs, and medical staff. In addition, because of the insufficient quality of public providers, the private sector is growing rapidly. Since most costs for private providers are covered out of pocket, this becomes a major source of inequity.

Important reform measures have also been adopted. Several efforts are being implemented on (a) reorganizing the organigramme of the central administration; (b) introducing management change in 4 hospitals; (c) developing a new information system (intranet) between the ministry and the health establishments; and (d) opening hospital activities to private operators under the framework of private sector integration to a new national health system.

However, the absence of a comprehensive health sector strategy until very recently, institutional fragmentation, and inadequate resources are the major reasons explaining the system's inefficiencies. Until October 2006, there was no global strategy for the sector that would guide the activity of all players. Institutional problems include excessive compartmentalization of central government services, the lack of strong local players in the health sector, and insufficient autonomy of health institutions. Finally, inadequate resources are devoted to running the system at the central level, in the wilayas and in hospitals, both in terms of information systems and qualified personnel.

The system also confronts significant financial challenges. At 4.3 percent of GDP in 2002, the overall level of expenditure devoted to health is relatively low in comparison with countries at similar income level. However, over the short and medium term, Algeria will face sharply higher health spending needs for several reasons—the demographic and epidemiologic transitions, the use of new technologies and costly new drugs, the potential increase of health professional salaries in the public sector, and the ongoing revision of the 1987 rates used by the social security system to reimburse private medical treatment. Financial constraints will be reinforced by the fact that the Algerian health system is still deeply influenced by the doctrine of free care, which explains why nearly all curative and preventive care possible is provided in the public sector in exchange for a very modest contribution. Because tax evasion is widespread, the amount of available resources is limited.

The delay in moving to contractual relationships between the Social Security and the Ministry of Health for the financing of public health facilities damages the financing of health care. Both the state budget and the social security system behave as "blind buyers" of health care, and there is no real separation between care-payer and care-supplier, which might encourage health institutions to improve the efficiency and quality of their services.

To enhance the efficiency of public health expenditure, and optimize PCSC impact, Algeria has two objectives: Strengthening planning and management capacity, improving the institutional framework, while simultaneously investing more resources and rationalizing their use. ***Implications for reforms:***

- Start-up work toward the implementation of the recently adopted comprehensive sector strategy to guide the activity of all players and justify a deserved increase in health sector allocations over the medium term. A concerted approach to sectoral reform, led by the highest authorities, to prepare this strategy would be preferred since consensus among all the principal players in the system is needed.

- Improve the institutional framework. This would require work on four pillars: (a) reinforce coordination mechanism among the principal ministries involved in the health sector; (b) reorganize the central structure of the health ministry to promote greater policy consistency; (c) set up regional health agencies; and (d) provide greater autonomy to hospital managers.
- Reinforce planning and IT-supported management capacities at the MOH. At the central level, strengthen human resources needed for planning, execution, monitoring and evaluation of projects (IT technicians, statisticians, actuaries, health economists), and develop modern information systems.
- Shift intrasectoral budget allocations toward reinforcing the primary and secondary levels. Promote savings through a "gatekeeper" system and cost-sharing with the private sector.
- Reform the financing health system on three fronts:
    - Better control over expenditures and the implementation of measures against social evasion. In the case of outpatient care, revise the 1987 rates that are used to establish contractual relations with the health professions; make "strategic" use of the contracting device; and examine cost-control mechanisms for paying service providers.
    - A new pharmaceuticals policy. This includes: promoting generic drugs; reviewing how drug prices are set, linking them to their therapeutic value-added; equipping the sickness funds with information systems to analyze expenditure structures and trends to control prescriptions; and in hospitals, training managers on new procurement regulations to purchase drugs at the best-possible price. And
    - Establishment of a benefits package and an increased household financial contribution.
- Set up an agency for the accreditation of health establishments, and permanent evaluation of their activity and quality of care.
- Implement a contractual relationship between the Social Security and the Ministry of Health. To overcome the current deadlock, undertake a quick and targeted audit, analyzing all the essential points involved in such a reform.

D. Conclusion

This report highlights the complex challenges as Algerian authorities implement their sizable investment program. The proposed public expenditure reform agenda requires correct prioritization and sequencing, beginning with the measures that will have a short-term impact in 2007. At the same time, a ground work must be set that will sustain medium- (up to 2009) and long-term (beyond 2009) efforts. The government should send clear signals that it intends to define new rules of the game for the selection, preparation, and management of public projects, reinforcing messages of commitment, better governance, transparency, and quality of spending. Mere public promises of more resources would be meaningless because of limits on absorption capacity. Not only the design, but also the implementation of this strategy must be consistent across line ministries. The process must be transparent, open and participatory. The reform agenda summarized in the attached matrix represents the Bank's comprehensive independent assessment of what will be needed for full success of the PCSC in the context of budgetary management improvement and Algeria's long-term development prospects.

Algeria PER—Matrix of Priority Policies and Actions

Policy Objective	Short Term (up to end-2007)	Medium Term (up to 2009)	Long term (beyond 2009)
Fiscal sustainability.	Maintain a sound fiscal stance and a prudent wage policy in line with productivity gains. Consider modifying the reference oil price in the annual budget law. Consider using fiscal space (through tax rate reductions) to stimulate growth in non-hydrocarbon activities. Keep tight control on the growth in current expenditure (linked to the PCSC program). Complete advanced repayment program of external debt.	Maintain a sound fiscal stance and a prudent wage policy in line with productivity gains. Convert the FRR into a savings and financing account that is fully integrated into the budget with transparency. Keep tight control on the growth in current expenditure (linked to the PCSC program). Continue with a sound debt management policy.	Maintain a sound fiscal stance and a prudent wage policy in line with productivity gains. Reduce growth in current expenditure to medium term sustainable levels (linked to phase out of the PCSC program). Continue with a sound debt management policy
Pillar 1. A restructured and more efficient national public investment system.	Set the investment program for 2007 (i.e approval of *crédits de paiement*) over realistic amounts. Take early measures to improve project preparation, planning, monitoring and execution, including: • Institutional strengthening of ministries and tight enforcement of regulations in project preparation. • A thorough review and set up of a central database for all PCSC projects at MoF. Publication of a list of unsuccessful public projects eliminated. • Introduction of performance indicators per project and an annual report of PCSC execution.	Stretch the budgetary appropriations (credits de paiement) of the PCSC over a realistic timeframe beyond 2009. Take medium-term measures to improve investment preparation, planning, monitoring and executions, including: • Continue institutional strengthening of ministries and tight enforcement of regulations in project preparation. • Ongoing publication of the list of unsuccessful public projects elimninated. • Introduction of twice yearly reports of PCSC project execution.	Complete the PCSC investment program. Enforce public sanctions for noncompliance with project norms. Develop a full inventory of public assets.
Pillar 2. Efficient management of major projects by CNED.	Develop a full inventory of ongoing major projects. Preparation by CNED of a manual with standards for major investment projects. Develop training by CNED on major projects preparation. Introduction of an annual report on major projects monitored by CNED.	Amendment of CNED law, strengthening and clarifying its role. Generalized training by CNED in project preparation and procurement practices. Introduction of a bi-annual report on major projects monitored by CNED.	
Pillar 3. Modern budget management.	Meet the scheduled outcomes of the budget system modernization reform, including: • Abudgetary economic reclassification by end-2006. • Sectoral MTEFs in 5 key ministries applied in 2007. • Performance-based indicators in 5 key ministries in 2007. • A new Budget Organic Law submitted to Parliament by end-2006. Develop other budget modernization actions: • Introducing new regulations on special treasury accounts, eliminating those that do not comply with reporting requirements. • Assessing the audit, control, and procurement systems for ex post evaluation of PCSC projects.	Continue with the remaining scheduled agenda of the budget system modernization reform, including: • A global MTEF in 2008 and sectoral MTEFs in other ministries applied in 2009. • Generalized performance-based budgeting in other ministries in 2008. Issuance of first performance auditing reports by pilot ministries. • Design and pilot implementation of an IT-based budget management system in 2009. Carry out other actions to achieve: • Improved budget forecasts with a macromodel. • Proper registry of al off-budget activities. • Reduced timeframe for closing of end-year accounts from 3 months to 1 month.	Complete the scheduled agenda of the budget system modernization reform, including: • Rolling global and sectoral MTEF in all ministries. • Performance-based auditing annual reports by all ministries. • Full implementation of an IT-based budget management system. • Submission of annual reports to Parliament on budget execution. • Creation of a Fiscal Observatory.
New opportunities for sound PPP arrangements.	Consider an advisory role by CNED in designing methodology and examining PPP agreements. Integrate PPP agreements in sectoral strategies.	Revise the legislation governing PPPs. Quantify the fiscal and governance risks attached to existing PPPs.	Continue taking PPP agreements in account in sectoral strategies.

Policy Objective	Short Term (up to end-2007)	Medium Term (up to 2009)	Long term (beyond 2009)
Transport and Public Works			
Rationalizing transport investment policy.	Update the multimodal transport master plan. Review planned major railway projects with a thorough analysis, endorsed by a previous CNED approval before their start up.	Prioritize preservation of assets and removal of bottlenecks to achieve: • Apply maintenance standards on the entire transport network (1% of GDP). • Design a project for a world-class container terminal in Algiers. • Airport investments for maintenance and rehabilitation only. Strict application of economic viability criteria in investment decisions, as assessed by CNED. Mobilize non-government finance and extend cost recovery. This may include: • A Road fund. • An Urban transport fund. • Adjusted port and airport tariffs. • Revenues from pilot concessions.	Continue the development of the urban and rural transport infrastructure, in line with the priorities and programs set up in the multimodal master plan.
Improving the allocative and technical efficiency of new transport investments.	Implement key institutional reforms in ports, civil aviation, and urban transport. • *Ports.* (a) create a maritime and port authority to ensure regulation and oversight of the sectors; (b) split existing port enterprises into local autonomous port authorities and port operating companies (the landlord port management model). • *Civil aviation.* (a) establish a civil aviation regulation and oversight authority; (b) split current airport agencies geographically into autonomous airport platforms. • *Urban transport.* Establish an urban transport authority in Algiers. Redefine financial relations between the government and state-owned enterprises through the use of performance-based contracts that are based on reference costs.	Introduce clear competition norms and criteria: • *Between modes.* Includes rail, road, and air transport, both in their passenger and freight transport markets. • *Within modes.* Includes port services and domestic air transport services. • *Among private actors.* For concessions and management contracts. Increase involvement of the private sector (including companies of international reputation) in transport services. This includes domestic air transport, port, airport, and operation of the metro, tramway and suburban railway. Separate commercial activities from public authorities in order to avoid conflict of interest, especially in ports and airports.	
Water			
Improve planning and coordination in the water sector.	Prepare and implement comprehensive subsector strategies for water supply and sanitation, irrigation, and environment needs. It should promote an incentive-based approach to water reform. Support it with an integrated water resource management plan (PNE update and expansion). Prepare regulations to implement the January 2005 Water Law.	Consolidate subsector strategies into a national water development and management strategy. Develop monitoring indicators and start applying benchmarking and O&M performance audits of operators.	Full implementation of a national water development and management strategy.
Introducing policies supporting performance-based water management.	Establish and make explicit a system that uses contracts and is based on performance. Rehabilitate existing irrigation schemes favoring pressurized systems.	Consider new irrigation management transfers in line with the Investment Code and including Build-Operate-Transfers, concessions, and "affermage."	Streamline irrigation management transfers in line with an assessment completed.

Policy Objective	Short Term (up to end-2007)	Medium Term (up to 2009)	Long term (beyond 2009)
Rationalize public expenditure in the sector, while improving project design and managements.	Slow down new investments in dams and large irrigation projects until a sound review of ongoing investments and future pipeline has been completed. Shift budget resources from supply mobilization and system expansion infrastructure toward programs improving management, and governance.	Make a full inventory of water assets and prepare an asset management plan (AMP). Use the AMP to set realistic funding requirements for O&M and to prioritize needs.	
Education			
Improving quality and performance of primary and secondary education.	Introduce teachers and student evaluation mechanisms to improve student flow and progression. Develop a central database for tracking repetition, dropout, and transition rates between cycles in all schools, and create a system of monitoring and periodic assessment of student learning.	Change of pedagogical practices through: • An upgraded curriculum. • Greater variety of teaching materials. • Improved teaching-learning conditions and introduction of a teacher professional development program. • Increased allocations for non-salary inputs.	Consolidation of the introduction of new pedagogical practices.
Updating the sectoral strategy by further elaborations on (i) the implications of education goals for increased access at each level, and (ii) matching higher education performance and quality improvements to the labor market.	*Enrollment projections.* Revise the policy targets (schools, teachers, etc.) and the instruments for achieving them. *Higher education.* Revise the pace of expansion of universities and assess options to increase access through program diversification. *Vocational training*. Clarify goals in relation to skilled labor needs and the relationship to secondary education. Re-design vocational programs accordingly.	*Higher education*. Identify reforms in governance, institutional management, and financing to make universities more responsive to economic conditions and labor market needs.	Implementation of reforms in governance, institutional management, and financing to make universities more responsive to economic conditions and labor market needs.
Modifying public expenditure levels and composition and promote cost-efficiency in school construction services	Increase allocations to lower secondary and upper secondary education (beyond the PCSC levels) to build schools and hire teachers. Identify maintenance needs for the primary and secondary schools and gradually provide the needed budgets. Address inequalities in school educational expenditures across wilayas and communes, by improving the allocation to teachers and providing more funds to poorer communes. Set new norms for higher per student expenditure on instructional inputs.	Increase the allocation to the education sector, but rebalanced across regions. Assess progress in the maintenance program for primary and secondary schools. Design and implement a new human resource management policy for the sector. Target free accommodation (coupled with cost-sharing mechanisms), scholarships, and social benefits in higher education to students from poorer families/regions. Review technical standards to bring down unit costs of schools construction and related current costs of O&M. Assess the utilization rates and needs of student boarding and canteen facilities, outsourcing services where feasible.	Preserve increased allocation to the education sector. Continue the maintenance program for schools. Devolve financial management autonomy (and tougher accountability standards) to educational institutions. Introduce cost-sharing measures in universities to enable sustained financing of increased access. Make targeted use of higher education imports of specialized faculty under new salary conditions or foreign study scholarship programs.
Health			
Strengthening the planning and management capacity of the health system.	Complete ongoing work toward a sound implementation of the adopted sector strategy. Reinforce planning and IT supported management capacities at the Health Ministry.	Continue strengthening the human resources of the Health Ministry to improve management of the system. Design a modern inter-linked information systems at all levels. Improve training for system managers.	Develop accreditation and evaluation mechanisms for public and private hospitals. Install new information systems at all levels.

Policy Objective	Short Term (up to end-2007)	Medium Term (up to 2009)	Long term (beyond 2009)
Improving the institutional framework for the health sector.	Reorganize the central structure of the Health Ministry to promote greater policy consistency and coordination, set up regional health agencies, and provide greater autonomy to hospital managers.	Establish a new status for hospitals, giving them greater autonomy and training managers in new management techniques.	Establish regional health agencies.
Rationalizing health tpublic expenditure, containing pharmaceutical costs, and reforming the financing system.	Shift intrasectoral budget allocations toward primary and secondary levels. Develop a new pharmaceuticals policy (generic drugs, review of the drug price-setting mechanisms, drugs management by hospitals). Introduce service contracts between the social security system and hospitals (preparatory audit in 2006-2007).	Develop a gatekeeper system in the public sector to prevent patients from turning directly to general hospitals or the university hospitals. Design and introduction of a benefits package policy. Revise the 1987 rates that are used to establish contractual relations with the health professions, and users' contribution to health expenditure in the public sector. Introduce a program to combat social evasion.	Assessment of the benefits package policy and its impact, and of users' contribution to the system. Assessment of the program to combat social evasion.

CHAPTER 1: INTRODUCTION

An official diagnostic realized over twenty-seven projects in 2003 revealed that each project on average required six reevaluations, suffered delays equivalent to six years and five months and is completed over ten years and two months…

—Interministerial Commission for Improving Public Finance, MoF, 2006a

Algeria is at a crossroads. An un-precedent oil windfall is giving the country a unique opportunity to realize long-awaited investments in social and basic infrastructure. The PCSC is a massive public investment program, and it entails many risks. First, this chapter describes the PCSC content. Second, it refers to its precedent public investment program, the PSRE, and extracts a few critical lessons from its implementation, so as realizing how significant risks are. Third, it simulates implementation scenarios, assessing the absorption capacity that can be realistically expected from the Authorities.

A. OVERVIEW OF PCSC

1.1 **Algeria finds itself at a crossroads.** The fiscal space generated by a prolonged oil windfall has enabled the country to embark on a massive public investment program for 2005–09—Le *Programme Complémentaire de Support a la Croissance Economique*, known as PCSC. With incorporation of the previous pipeline, budget supplements, and inclusion of new programs for the South and the Haut Plateau regions, PCSC's initial allocation of DA 4,203 billion (roughly US$55 billion) has more than doubled to no less than DA 8,705 billion (roughly US$114 billion) (Table 1.1).[5]

1.2 **From any angle of observation, the vast size of PCSC has no precedent in recent Algerian history and is due to an exceptional oil windfall**. In the early 1980s, oil prices were close to US$40 per barrel, but they plunged below US$18 per barrel in the mid-1980s and 1990s (excepting 1990 and 1991). In 2000, however, oil prices again surged to more than US$20 per barrel. And they have stayed high, surpassing the US$40 per barrel benchmark in 2004 and then US$50 per barrel in 2005. The original PCSC (US$55 billion) is alone equivalent to 57 percent of the 2005 GDP (see Volume II, Table A.3.10). A public investment ratio above 10 percent of GDP for several years, as projected under the PCSC, has not been seen in Algeria since the 1980s. This level of investment is among highest in the world and especially dramatic when it is compared with the average of less than 4 percent of GDP in OECD.

[5] The precise total of the PCSC investment program has been a bit murky. This is due to the continuous change in the mix of (a) the PCSC original resources (DA 4,203 billion) with (b) its supplementary funds approved (DA1,191 billion); (c) the complementary resources transferred as *dotations* to special treasury accounts (DA 1,140 billion); (d) the remaining resources of the previous investment program (DA 1,071 billion); (e) the program for the development of the Southern region (DA 432 billion); and (f) the special program for the development of the Hauts Plateaux region (DA 668 billion). In all, the late June 2006 estimate of the total cost of the PCSC is about DA 8,705 billion (approximately US$114 billion). For consistency, this PER has based most of its analysis on the original figures provided to the Bank mission by Algerian officials in October, 2005 (Table A.3.10), and several updates provided until June 2006.

Table 1.1 PCSC Authorizations and Initial Budget Payment Credits 2004-09 (in billions of DA)

	PSRE	Initial PCSC	South Plan	*Haut Plateaux*	*Dotations* to Special Accounts	Total PCSC	Initial Budget Payment Credits
2004	1,071					1,071	
2005		1,273			227	1,500	862
2006		3,341	250	277	304	4,172	1,979
2007		260	182	391	244	1,077	2,238
2008		260			205	465	2,299
2009		260			160	420	1,327
Total	**1,071**	**5,394**	**432**	**668**	**1,140**	**8,705**	**8,705**

Source: MoF

1.3 **The government has high expectations.** It wants the PCSC to address the country's most pressing needs to modernize and expand public services and to deal with a backlog of social and basic infrastructure rehabilitation. The PCSC will also have important consequences for the improvement of the population's standard of living, and the development of human resources and basic infrastructure, and growth. The government is well aware that increased public investment can in principle be managed within fiscally sustainable budget envelopes in the medium term (chapter 2), but also, that it comes with risks.

1.4 **An investment program of such magnitude poses enormous challenges**. For starters, it raises serious questions concerning the sustainability of present fiscal trends as well as the quality of expenditures. More specifically, it raises challenges in how to design sound sectoral strategies; how to program future trends in capital versus recurrent expenditure; how to implement adequate project management and budget execution, including monitoring and evaluation; and how to improve the efficiency and cost-benefit of projects in general. Will the public investment program be successful in sustaining growth and faster development—or merely provide opportunities for waste and corruption? Many other issues also need to be considered—for example, the institutional framework, preventing duplication of responsibility among agencies, coordinating efforts inside the government, and building the capacity of the private sector to complete concessions and otherwise participate.

1.5 **The PCSC provides a unique opportunity to build a new framework for public expenditure management.** Taking advantage of the current macroeconomic and fiscal opportunity, the country could institutionalize high-quality public expenditure that would contribute social benefit far into the future. This Public Expenditure Review (PER) is an exercise to help the Government toward that end. The objectives of this PER are to assist the government in the following:

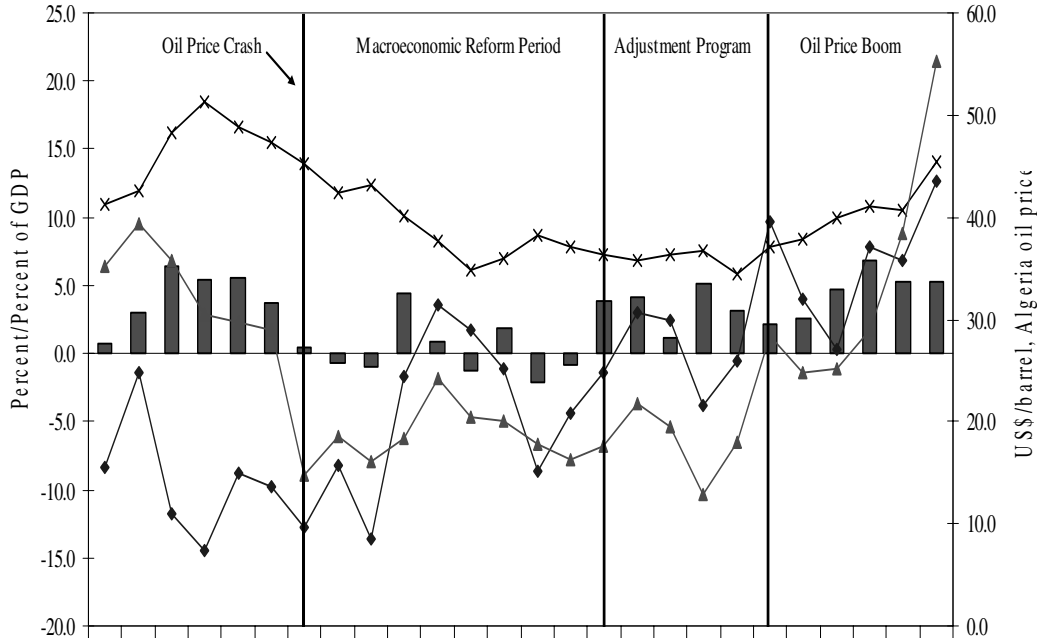
- Evaluate fiscal sustainability in light of the country's fiscal push that PCSC represents.
- Set high technical standards for public investment management.
- Draw lessons from the on-going budget modernization reform in order to support the overall implementation, monitoring, and evaluation of projects.

- Support the preparation of a medium-term expenditure framework and improve the efficiency and cost-benefit of investments in four key sectors, transport and public works, water, education, and health.

The social and economic context preceding the PCSC

1.6 **The oil price crash of 1986 had a devastating impact on economic and social conditions.** This lasted for nearly a decade (Figure 1.1). Instead of proceeding to a gradual adjustment in the wake of the dramatic erosion of export revenues, the government continued expansionary fiscal and monetary policies. The result was high inflation, extensive borrowing abroad, and intensifying import restrictions. In the early 1990s, public investment was cut significantly, to a trough of 6.2 percent in 1991. This did not prevent another surge in fiscal deficits, which peaked at -8.3 percent of GDP in 1993. Between 1986 and 1994, Algeria's average annual growth rate was barely greater than zero (0.2 percent). This translated into negative per capita rates and a significant increase in poverty.

Figure 1.1 Algeria: Oil Price, Growth, Public Investment, and the Fiscal Balance



	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05
GDP growth, LHS	0.8	3.0	6.4	5.4	5.6	3.7	0.4	-0.7	-1.0	4.4	0.8	-1.2	1.8	-2.1	-0.9	3.8	4.1	1.1	5.1	3.2	2.2	2.6	4.7	6.9	5.2	5.3
Fiscal Balance	-8.4	-1.3	-11.	-14.	-8.8	-9.7	-12.	-8.2	-13.	-1.7	3.6	1.7	-1.2	-8.6	-4.4	-1.4	2.9	2.4	-3.8	-0.5	9.7	4.0	0.2	7.8	6.9	12.6
Public Investment	11.0	12.0	16.2	18.4	16.7	15.5	13.9	11.8	12.4	10.0	8.2	6.2	6.9	8.7	7.9	7.3	6.8	7.3	7.5	5.8	7.8	8.4	10.0	10.8	10.5	14.1
Algeria Oil Price, RHS	35.1	39.5	35.9	30.5	29.7	29.0	14.8	18.5	16.1	18.5	24.3	20.4	20.1	17.8	16.3	17.6	21.7	19.5	12.9	17.9	28.5	24.8	25.2	29.0	38.5	55.3

Source : Bank Staff estimates. Data for 2005 are projections.

1.7 **In 1994, the authorities put an adjustment program in place**. The program aimed to correct fiscal imbalances with prudent monetary and fiscal policies, reprogramming of external debt, and introduction of structural reforms. These included trade liberalization, a two-step devaluation of the Algerian dinar (in total 70 percent) between April and September 1994; a managed float regime in 1995 supported by an interbank foreign exchange market; and the restructuring of public enterprises (Koranchelian 2005).

1.8 **The adjustment program achieved significant success in price stability, but with dramatic social impact.** Macroeconomic performance did indeed improve. Between 1994 and 2000, inflation fell from 29 to 0.3 percent; the fiscal deficit went from -4.4 percent of GDP to a surplus of 7.8 percent of GDP; the spread between the parallel market and official exchange rates fell by about 100 percent; and growth recovered to a modest rate of 3.2 percent. Yet the unavoidable closing of more than 900 nonviable public enterprises slashed the public labor force by 320,000 (about 40 percent)—a significant social cost. Unemployment increased from 24 percent in 1994 to 30 percent in 2000. In addition, the wage bill declined by half between 1989 and 2000 (World Bank 2003b). Economic stability was painfully regained, but with high social cost; and even so, growth remained anemic and unemployment was aggravated.[6] With this context of urgency in 2001, social and political pressure led to the first public investment program, the PSRE.

B. LESSONS LEARNED FROM THE PSRE—THE PREDECESSOR OF PCSC

1.9 **Compared with the PCSC, the PSRE was a modest investment program**. Originally, DA 525 million (US$7 billion) was to be disbursed in 2001–04. PSRE had three main objectives: (a) poverty reduction; (b) employment creation; and (c) regional equilibrium preservation and rural spaces reinvigoration (World Bank 2004d). Operationally, PSRE relied on centralized sectoral projects, also executed through de-concentrated ministerial entities and community development agencies receiving transfers. Large labor-intensive public projects predominated in the final selection. Neither monitoring indicators nor results were adopted, except for a vague reference to an employment creation target of 850,000.

1.10 **In 2004, a World Bank study provided a midcourse evaluation of the PSRE (World Bank 2004d).** Its main conclusions were as follows:

- PSRE will have a modest impact on growth (1 percent annual increase on average).
- Employment creation under PSRE projects will be temporary—850,000 as direct effect (170,000 on average) and 664,000 as indirect employment generation.
- Imports (especially related to transport and public works projects) will grow faster than exports, reducing the current account surplus by 1 percent of GDP during 2001-05.
- Projects had little reference to strategic sectoral objectives, their quality was weak and the technical preparation of staff implementing them was uneven in general.
- Poor implementation also originated from the urgency that accompanied project preparation, the myriad of specific demands it was supposed to respond, and the multiplicity of actors (25 ministerial and 48 wilaya commissions).
- Cost-benefit analysis shows that selected PSRE projects were extremely expensive.

1.11 **The present PER neither does not constitute an evaluation of the PSRE, nor does it attempt to confirm whether or not the Bank's 2004 macroeconomic projections were met**. These tasks are neither practical nor accurate. They are impractical for two reasons—because, first, there is no centralized database to permit detailed financial and physical monitoring of projects receiving resources; and second, while programming the PCSC, authorities decided to merge ongoing and pending PSRE projects into the PCSC pipeline. As a result, the second pipeline absorbed many of the PSRE on-going projects. They are inaccurate because whether or not the macroeconomic projections were "right," they did not take into account the extraordinary

[6] In 2000, real per capita GDP was equivalent to the rate in 1980.

oil windfall of 2004 and 2005. In any event, in regard to the first three conclusions, the three salient facts stand out. First, between 2001 and 2005 exceptionally high hydrocarbon exports converted growth into rates that went significantly above original projections (see Chapter 2). Second, the open unemployment rate (as a percent of the labor force) dropped from 27.3 percent to 15.3 percent, thus confirming significant job creation expected.[7] Third, the current account did not decrease by 1 percent, as projected; but became a surplus of 8.4 percent of GDP.

1.12 **Remaining three latter conclusions from the midcourse evaluation of the PSRE are more directly relevant to the present PER.** These refer to the limited strategic sectoral content of the selected projects, the low quality of projects and overlapping implementation agencies, and weaknesses in cost analysis. They are discussed briefly below.

Limited strategic sectoral content

1.13 **Perhaps the most astonishing feature of the PCSC presentation is its absence of any explicit objectives**. Unlike the PSRE, the original document describing the PCSC is simply a list of intended projects grouped by "programs," which are accompanied by specific budget allocations (MoF 2005a,b).[8] A disaggregated presentation later elaborated by the authorities modifies the original amounts. It regroups programs and introduces several physical benchmarks (see Annex A1). Nevertheless, no explicit objectives are introduced.

1.14 **An interesting example comes from projects in the education sector.** Their lack of strategic focus, which leads to severe misallocations and gaps in programmed resources. On the one hand, the PCSC proposes to expand school units assigned to secondary education, yet the rate of utilization—just 35 percent—reveals high underutilization of existing capacity. On the other hand, an additional 30,000 teachers with doctoral degrees would be required if the enrollment in tertiary education were to double, as implied by the PCSC construction program, and the current student-teacher ratio is maintained. In reality, it takes many years to produce highly qualified university teachers. Doubling of the number of qualified teachers is likely to present a considerable bottleneck to near-term expansion in higher education unless (a) teacher qualifications are lowered (which would affect quality), (b) the student-teacher ratio is allowed to rise (which would also affect quality), or (c) foreign teachers are recruited (the most likely outcome). Hence, tertiary education faces a tradeoff—further deterioration in quality or a significant increase in current spending in order to hire the additional professors.

1.15 **In order to extract the implicit intersectoral priorities within the PCSC for 2005-07, it is highly relevant to compare them with those contained in the PSRE.** Figure 1.2a and Figure 1.2b introduce the composition of both programs and leads to the following broad conclusions.

- Every sector has benefited from the significant increase in the magnitude of absolute resources. Between the original PCSC and PSRE pipelines, the ratio of authorized resources is more than 7 times higher, and this ratio is still increasing with the latest budgetary supplements.
- The latter observation is particularly true in regard to the education and health sectors. A minimum decrease of 12 and 2 percent happens in their authorized PCSC resources.

[7] The latest figure needs to be carefully scrutinized because it is based on a household survey conducted once a year in September, beginning in 2004. Since 2004, the number of people working at home and with temporary jobs has sharply increased.

[8] The term "program" used in the PCSC document is not equivalent to the concept of "program" employed by the standard functional budget classification. For a more detailed discussion, see Chapter 4.

But in absolute terms, their resources increased by 7 times (education) and 5 times (health).

- Basic economic infrastructure—public works and roads—are the main beneficiaries of PCSC resources: Their share doubles and reaches more than half of total resources.
- Water (proxied by agriculture and hydraulic) programs are the big loser of the PCSC distribution. Its share halves from 25 to 13 percent due to severe sector shortcomings.

Figure 1.2a The PSRE 2001-04

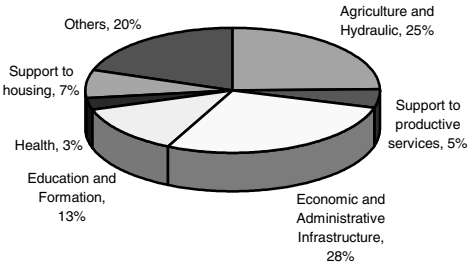
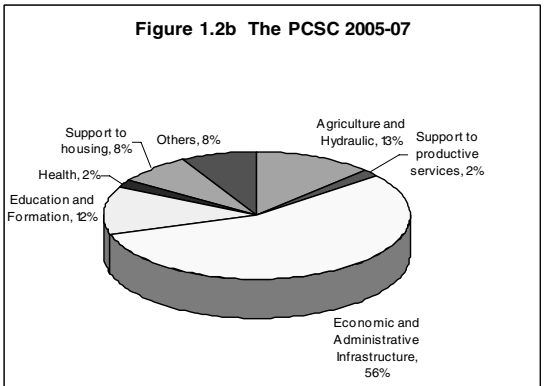


Figure 1.2b The PCSC 2005-07



Source: Bank staff estimates base on MoF data

Low quality in project design and poor implementation

1.16. **As discussed in several chapters of this report, extremely poor quality of projects and severe institutional shortcomings largely explain poor project implementation**. Addressing these shortcomings is critical. Countries such as Algeria may generate future pressure for continuous current spending, poor project outcomes, and a loss of fiscal space in the medium term if they are too quick to finance badly designed large public investment programs (IMF/World Bank 2006). There is also an increased risk of waste and corruption. Several examples of sectoral shortcomings are briefly discussed below.

1.17. **Dams and transfer projects in the water sector provide an extreme example of the poor quality of projects and of severe institutional shortcomings**. An old report by the Ministry of Water Resources (MRE) summarizes the status of 41 of the largest water projects. The outcomes are dramatically self-explanatory (Table A.5.1). As of the end of 2004,

- Slightly less than half of them (18) were more than a decade old.
- Significant underbudgeting is the rule rather than the exception. More than half (18 out of 32) already had costs of more than double their original budget (and counting!).
- As measured by the share of spent resources, the level of project advancement varies considerably; but in general, it is very low.
- Delays and cost overruns are caused by several factors, including weaknesses in the technical studies (if there were technical studies in the first place) and limited execution capacity (and according to authorities specially poor maîtrise d'ouvrage) of government agencies and the contractors. In a few cases with significant import components, change in exchange rates may also have contributed to cost overruns.

Poor cost analysis

1.18. **The health sector illustrates consequences of project implementation in the absence of cost considerations**. Hospitals typically have very high rates of out-of-service equipment—in 2003, 24 percent of all sonographs, 34 percent of endoscopes, and 23 percent of incinerators (see Chapter 8). In general, broken machines are replaced rather than repaired. There are two main reasons. First, maintenance is simply not a priority, and its budget share within operating costs is extremely low (3 percent). Second and more important, there is no effective procurement policy, not many technicians, and few consulting firms specialized in bidding for hospital services and projects. As a result, bidding processes are seldom meaningful, and purchases are made with little actual consideration for budget constraints.

1.19. **The transport sector also provides examples to illustrate poor cost analysis.** Over 2000–04, cost revaluations accounted, on average, for 15 percent of the initial appropriations,[9] as much as 30 percent in several projects (see Table A.4.6).[10] Project extensions (and costs) need to be forecasted far more accurately, and of course, kept under better control. For that to happen, project design must be sound and realistic in the first place. While it may be possible to badly execute a well-designed, well-costed project, it is *not* possible to well execute a badly designed, well-costed project.

1.20. **Deconcentrated investments replicate and magnify the acute implementation issues found at the central level.** Annex V provides a dramatic account of parallel problems reportedly found in 7 of the 23 wilayas receiving PSRE funds in the Southern region in 2002 and 2003. The list of major issues is endless: money spent on roads and electricity improvements in the communes of Ouled Slimane, Zerzour and Ben S'rorur, whose projects never initiated; money disbursed for a stadium in Sid M'Hamed that still remains to be seen and for a road, whose restoration "only lasted one day"; money provided to the commune of Bir El Fodha for an urban development program financing rehabilitation of a road of eight to ten kilometers "whose pavement only lasted one week"; and money given to seven rural communes for water projects that financed "exorbitants sums in pools never filled with water."

C. SIMULATING PCSC IMPLEMENTATION SCENARIOS

1.21. **The shortcomings identified in the previous section underscore a simple truth: more resources may help to accelerate execution, but they are not the answer to enhance quality.** To the contrary, the predominance of the existing "project approach" over "the sector strategic approach"—combined with strong political pressures to implement projects through already-stretched institutions—pose major risks. Especially in some large-scale projects, there is a real danger in accelerating execution without adherence to minimum standards. Inevitably, the unavoidable consequences will be failure to adhere to basic procurement guidelines, duplication of activities, and wasted resources. The question is how fast execution ratios may increase?

1.22. **Estimating execution ratios with respect to budget authorizations (commitments), we performed three simulation scenarios on the implementation of the PCSC over 2005-07.**[11] By mid-2005, authorities had approved 75 percent of PCSC resources for 2005–07. Annex

[9] According to data from the Ministry of Finance, cost revaluations were 21 percent in 2000; 16 percent in 2001; 12 percent in 2002 and 2003; and 19 percent in 2004.

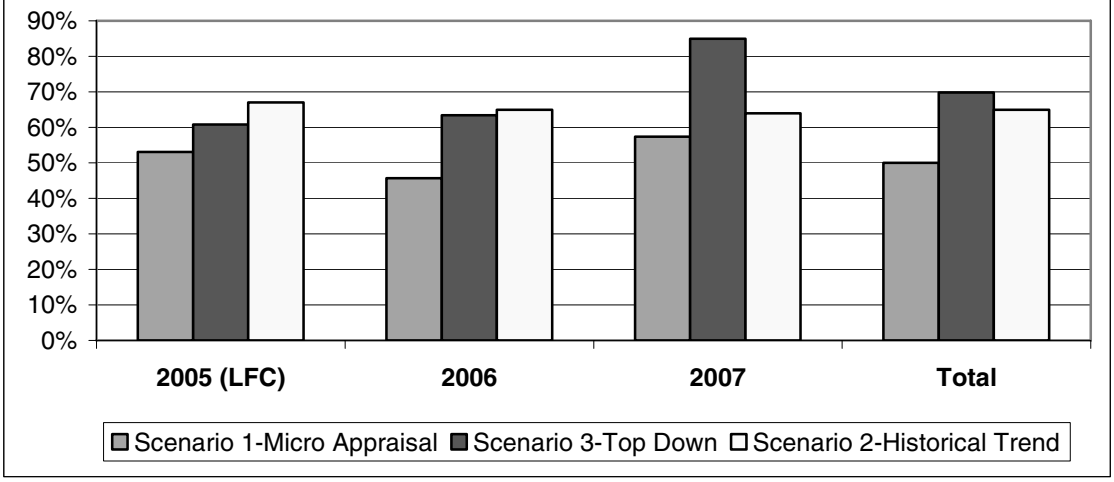
[10] Some delays (implying cost revaluations) may well be necessary and unavoidable; but they far exceed a "reasonable" range in many cases.

[11] The ratios presented here are executed/authorized budget outlays. Instead, the executed/approved (*credits de paiements*) ratios are higher. The conversion between both ratios is straightforward (see Chapter 3, para 3.20). Data for 2005 payment credits are taken from Table A.3.11.

A describes in detail the three simulations prepared by World Bank staff. Summarized results are on Figure 1.3.

- The first one is based on a project-by-project—micro appraisal—bottom-up approach. It was prepared by each World Bank sector specialist based on several interviews and experience working in each sector. It makes a projection following detailed analysis of execution assumptions by project corresponding to each sector.
- The second one is based on historical averages (2002-04) per sector in another bottom-up approach. It makes a projection following disaggregated sectoral execution rates according to their historical execution rates during 2002–04.
- The third one is based on a top-down approach, using past aggregate investment execution rates from the fiscal accounts. It projects aggregate execution rates by discounting unspent net balances at the Treasury special accounts from executed investment expenditure. They are based on information and conversations with national authorities.

Figure 1.3 PCSC-Execution Scenarios (%)



Source: Bank staff estimates based on Ministry of Finance data.

1.23 **With respect to budget authorizations expenditure commitments, simulation scenarios of the implementation of the PCSC suggests a mild trend toward rising execution ratios over 2005–07, albeit less than 70 percent on average.** As a point of reference, Algeria had an average 65 percent execution ratio during PSRE implementation in 2003–04. The analysis also reveals similarities and discrepancies among the three scenarios.

- For 2005, the execution ratios based on historical averages are much higher (67 percent) than the other two, which vary inside the 53 (micro appraisal) to 61 (top down) percent range. Availability of 2005 preliminary information on actual investment execution shows that scenario one was actually closer to 2005 actual execution, estimated at 54 percent.
- For 2006, there is a more significant discrepancy among the three scenarios, as the projected execution ratio lies inside the wide 46 to 65 percent range.

- For 2007, the execution ratios project a much narrower range—from 50 percent, according to scenario one, to 85 percent, according to scenario 3. The ratio based on historical averages remains essentially constant.
- An important caveat to these findings is that these scenarios were prepared before the actual budgetary increases to the original PCSC envelope, which should not essentially modify these results, but make the trend toward higher execution ratios smoother.

1.24 **Common sense strongly suggests that national authorities should adopt a more realistic stance in the appropriation of resources.** If possible, approval of payment credits from 2007 should follow a midcourse progress evaluation assessing progress achieved during 2005 and 2006.[12] Under the present circumstances, excessive resources would aggravate resource-swamping and deteriorate execution ratios. In addition, authorities should resist committing or allocating resources to investment projects that do not meet minimum technical standards. Ultimately, a higher rate of execution (and absorption capacity) does not depend on the availability of resources, which are otherwise abundant, but on addressing the specific shortcomings discussed in this review.

1.25 The measures taken during Government-Walis meetings at the end of 2006 should contribute to the:

- Strengthening of the administrative and technical definition of responsabilities for all institutions and public organizations.
- Strengthening of technical implementation capacities.
- Flexibilization of public procurement norms, as regards deconcentrated investments (raised minimum ceiling required for approval from 6 million DA to 8 million DA), limitations to constitute a submission guarantee for bidding proposals, restoration of procurement commissions in public entities, and raising of the amount of funds required for the intervention of the National Procurement Commission from 250 million DA to 400 million DA.

[12] Authorities reportedly completed the authorization of the last 25 percent share in the 2006 Finance Complementary Budget Law and the resources addressing the two regions in the 2007 Budget Law. Therefore, budget authorizations can not be deferred anymore.

CHAPTER 2: OVERALL FISCAL TRENDS AND CHALLENGES

Algeria's fiscal stance is strengthening. On the one hand, oil prices and hydrocarbon revenues are flying high. On the other hand, the authorities are using the enlarged fiscal space to advocate (and practice) a sound debt management strategy, coupled with a selective expansion of public investment in key basic and social infrastructure sectors. This chapter deals, first, with the macroeconomic background. Second, it estimates the volatility of fiscal variables. Third, it identifies the fiscal trends. Fourth, it assesses the key features of oil resources management. The final section assesses the fiscal sustainability of the PCSC.

A. MACROECONOMIC BACKGROUND

2.1 **Algeria is a large exporter of hydrocarbons, with about two-thirds of hydrocarbon export receipts accruing to the budget**. Algeria has the eighth largest proven gas reserves in the world. It exported 97 percent of its natural gas to Europe in 2005, meeting 24 percent of Europe's natural gas demand in that year. Two new gas pipelines are being built, bringing the total number of pipelines to four by 2010. Algeria plans to increase natural gas exports from 64 billion cubic meters in 2005 to 100 billion cubic meters by 2015. Algeria's exports of crude oil are expected to peak around 2010 at 1.1 million barrels (bbl) per day, from 1.0 million bbl per day in 2005. Algeria can reasonably assume continuing significant budgetary revenue from hydrocarbon exports into the future, particularly because the large reserves of natural gas are being developed.

2.2 **Algeria's most recent economic growth can be broadly classified into three distinct periods (Table 2.1)**.

- *A recession, 1990–95, featuring negative GDP per capita rates*. In the early 1990s, reforms stalled and recession hit hard, leading to increased civil unrest. Algeria's growth rates were mediocre, mainly because of unfavorable external shocks. The macro-economic situation deteriorated, poverty increased, and the Algerian authorities had no choice but to adopt a new and comprehensive stabilization program in 1994. The stabilization program combined fiscal adjustment measures, a devaluation of the Algerian dinar, and the rescheduling of external debt.
- *Recovery, 1996–2000, with*

Table 2.1. Algeria Real Sector

(Real growth rates in %, period averages)			
	1990–95	**1996–2000**	**2001–05**
GDP growth	**0.4**	**3.1**	**4.9**
Agriculture	2.7	3.9	7.3
Industry	0.0	3.9	3.7
o/w: Construction	-1.8	3.2	6.3
Hydrocarbon sector	1.2	5.5	4.0
Manufacturing	-1.7	-0.8	-1.0
Services	0.9	2.2	5.4
Domestic Absorption[/a]	**-1.0**	**1.0**	**6.7**
Total consumption	0.4	1.2	4.1
Fixed investment	-2.3	2.8	8.9
Exports	1.2	5.5	4.1
Imports	-3.6	-0.6	11.0
Memo items:			
GDP per capita	-1.9	1.6	3.4
Inflation (CPI)	25.6	6.5	2.7

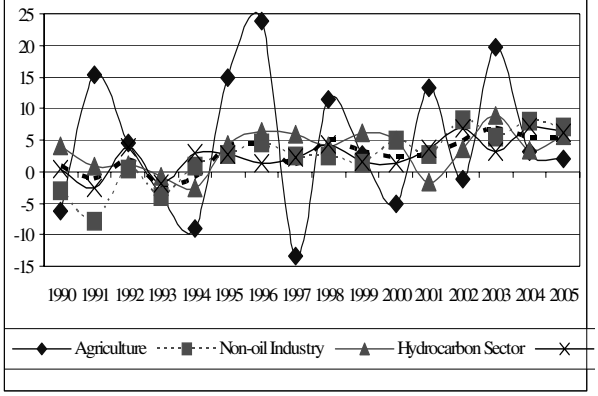
Source: National Statistics Agency (ONS)
[a/] Domestic absorption = Total Investment + Total Consumption

positive, but modest GDP growth averaging 3.1 percent. Reforms started to bear fruit by the mid 1990s. Prudent monetary and fiscal policy brought a significant reduction of inflation to single digits. External debt decreased from 80 percent of GDP in 1995 to 46 percent of GDP in 2000. The overall fiscal balance also improved over the same period, from a slight deficit of –1 percent of GDP to a surplus of 10 percent of GDP. However, the nonhydrocarbon fiscal balance deteriorated from 26 percent of nonhydrocarbon GDP to –33 percent of nonhydrocarbon GDP.

- *A growth acceleration period, 2001–05, with high growth rates mainly associated with the oil price boom.* In this period, the Algerian economy took off. Growth rates averaged 5 percent. Average inflation rates remained below 3 percent. The oil windfall helped other sectors reach high growth rates—construction, telecommunication, and other services. As a result, GDP per capita was above 3 percent, which should have contributed to lower poverty rates.

2.3 **GDP growth rates remain closely linked to those of the hydrocarbon sector, but agriculture is the most volatile sector (Figure 2.1)**. Severe droughts explain the significant trough in agricultural rates in 1990, 1994, 1997, and 2000. Volatility in the agricultural sector growth declined in the 2000s, which may be due to the agriculture investment component of the PSRE.

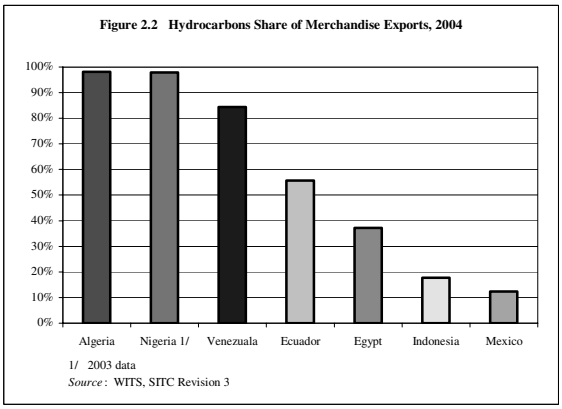
Figure 2.1 Algeria: Real GDP Growth (%change)



Source: ONS

2.4 **In the 2000s, the external balances benefited from a prolonged oil windfall.** Merchandise exports are at an all time high, and hydrocarbon exports make up almost all of merchandise exports—98 percent, very high by international standards (Figure 2.2). As a result, the country is experiencing record-high current account balances and international reserve levels. Import demand has also picked up, driven by exceptionally high investment rates associated with the PSRE. Since its creation in 2000, authorities have also used windfall proceeds, housed in an Hydrocarbon Stabilization Fund (*Fonds de Régulation des Recettes*, known as FRR) for two purposes: (i) to make advanced payments on external debt principal; and (ii) to finance any fiscal deficit arising from an oil price that falls below the budget law reference price.[13] As a result of the public debt advanced repayments, Algeria is now a net creditor nation to the rest of the world, with an external debt-to-GDP ratio calculated at 17 percent in 2005, compared with an average 61 percent of GDP in 1990-95 (see Table 2.2).

Figure 2.2 Hydrocarbons Share of Merchandise Exports, 2004



1/ 2003 data
Source: WITS, SITC Revision 3

[13] The oil reference price has remained at US$19 per barrel, and is expected to remain at this level over the next 5-year period (2005–09), rendering the financing of a fiscal deficit highly unlikely in a current era of record oil prices. In comparison, the current OPEC reference band is US$22–28 per barrel.

Table 2.2 External and Public Sectors
(Period averages; % of GDP unless noted)

	1990–95	1996-2000	2001	2002	2003	2004	2005[e]
External Sector							
Exports GNFS	24.3	30.2	36.2	35.1	38.3	40.1	47.6
o/w: Hydrocarbon exports as % of merchandise exports	95.7	96.1	97.1	96.8	98.1	97.9	98.5
Imports GNFS	22.4	22.6	21.6	25.4	23.9	25.7	23.5
Current account balance	0.3	4.8	12.8	7.6	13.0	13.1	21.2
Int.reserves (months of imports)	1.8	7.7	18.2	19.1	24.3	23.7	28.1
External debt (% of GDP)	61.2	60.6	40.9	40.1	34.7	25.9	16.8
Central Government (% of GDP)							
Total Revenue (including grants)	29.7	32.1	35.4	35.3	37.0	36.2	41.1
o/w: Hydrocarbon revenue	17.6	20.8	23.5	22.2	25.6	25.6	31.4
o/w: % of current revenue	59.2	64.2	67.2	62.9	69.4	70.9	76.5
o/w: Non-hydrocarbon revenue	12.1	11.3	11.8	13.1	11.4	10.5	9.7
o/w: Tax revenue	11.4	10.5	9.3	10.6	10.0	9.5	8.6
o/w: Income Tax	1.7	1.2	1.1	1.2	1.2	1.3	..
VAT	5.2	4.9	4.2	4.9	4.5	4.5	4.2
Customs	2.7	2.6	2.4	2.8	2.7	2.3	1.9
Total (re)current expenditure	22.1	22.5	22.6	24.1	21.3	20.3	17.2
o/w: wages and salaries	9.2	8.3	7.6	7.6	7.6	7.3	6.5
Total capital expenditure	7.5	7.0	8.4	10.0	10.8	10.5	9.7
Overall balance	-1.7	2.1	4.0	0.2	7.8	6.9	14.2
Memo items:							
Nonhydrocarbon balance/NH-GDP	-25.3	-27.3	-29.5	-32.5	-27.7	-30.2	-31.1
Algeria oil price	19.4	20.1	24.8	25.2	29.0	38.5	54.6
M2 growth (%)	17.3	21.1	22.2	17.4	15.6	11.5	10.8
Unemployment rate (%)	23.1	28.2	27.3	25.9	23.7	17.7	15.3

Source: IMF; Algerian Authorities. Data for 2005 are estimates.

2.5 **Prudent monetary policy has limited credit expansion during the oil windfall.** The central bank regularly intervenes in the money market in order to manage inflation and exchange rates. Sterilization of excess liquidity, because of Sonatrach's (the government oil company) large deposits in the banking system, has contributed to limiting the expansion of credit to the economy. The current exchange rate regime—managed float with no preannounced path—has contributed to keep the REER in the range of equilibrium levels (the REER was considered to be in equilibrium at end-2003 (IMF 2005b).[14] Administrative controls, however, have contributed to the development of a parallel exchange rate market with a variable and declining spread. Monetary expansion slowed down in the last five-year period, as measured by a declining M2 growth rate from 22 percent in 2001 to 11 percent in 2005.

2.6 **Growth acceleration in the 2000s, also stimulated by the PSRE, has contributed to a reduction in the unemployment[15] and poverty rates, though its results may not be sustainable over the longer term.**

- While still high, the unemployment rate has been reduced dramatically in the past decade. Much of this reduction is because of higher public spending rates resulting from the

[14] IMF Country Reports 2004 (No.05/50) and 2005 (No.06/93) can be found in *http://www.imf.org/external/country/DZA/index.htm.*

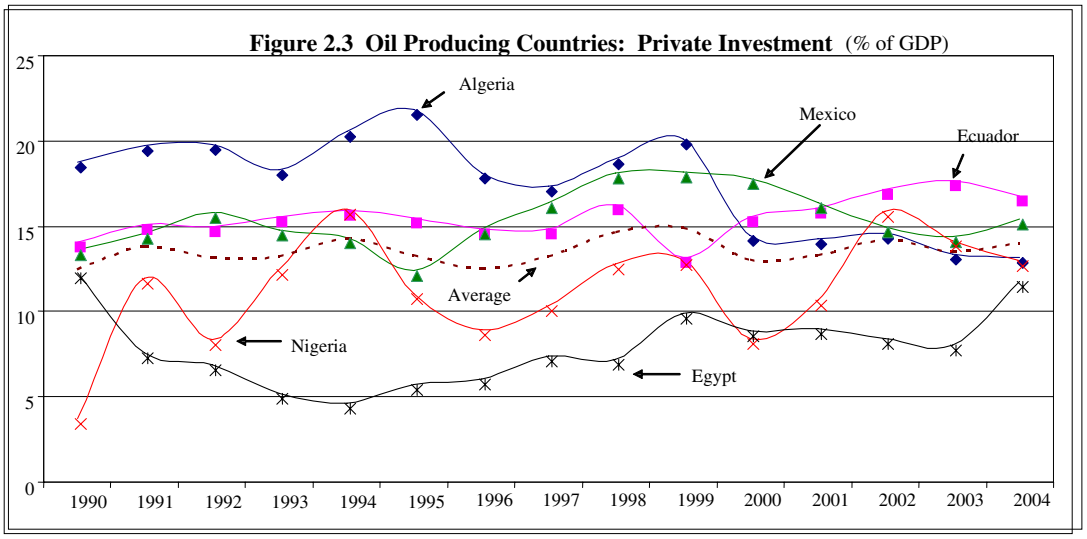
[15] Official unemployment figures suffer from measurement problems however, including variable sampling and methods, changing questionnaire contents, as well as nonperiodic and discontinuous surveys.

PSRE execution. As a result, many new jobs may be temporary and located in the agriculture, a sector with low productivity that represents less than 10 percent of GDP. Youth unemployment remains high, estimated at around 30 percent. The informal economy also provides employment to a significant share of the labor force.[16]

- Official poverty rates have decreased since recovery began in 1995. Private consumption per capita growth has picked up in recent years, averaging 4 percent over the 2001–05, compared with a stagnation or even negative growth rates in the early 1990s. This implies a possible reduction in poverty levels.[17]
- Overall, while unemployment and poverty levels have decreased and the security situation has greatly improved in the past 5 years, social tensions persist related to infrastructure shortcomings that affect employment, water shortages in some cities, a housing crisis, and civil unrest in the Kabylie and Southern regions. As oil prices are expected to remain high for a few years, the Algerian population expects further improvements to its standards of living and to the provisioning of basic services.

2.7 **Despite progress in structural change, reform in key sectors remains limited.** Algeria has one of the least diversified economies among middle income and oil-producer countries. The contribution of the private sector to GDP remains low and has declined since 1995. This is contrary to the increasing trend in most other oil producer-countries, which reflects the private sector's declining role as a main driver of growth in Algeria (Figure 2.3).

Figure 2.3 Oil Producing Countries: Private Investment (% of GDP)



Source: WDI
Note: Average is unweighted.

2.8 **Important reforms have taken place**. Trade liberalization measures have taken place. The Association Agreement with the EU was ratified and became effective in 2005. It provides for a gradual reduction over 12 years of import duties on industrial products. Active debt management is leading to a gradual clearance of public debts with Paris Club creditors. Some public and private partnerships in the water and transport sectors are developing. The education sector is developing a reform agenda (see

[16] The Algerian think-tank, CNES (National Economic and Social Council), estimated in 2003 that informal jobs represent 17 percent of total employment, and up to 22 percent if the agriculture sector is excluded.
[17] The most recent official poverty rate was reported at 12 percent in 2000, slightly down from 14 percent in 1995. But an unofficial estimate issued by the United Nations Country Program reports the poverty rate at 6.8 percent in 2004.

Chapter 7). A budget modernization process has already been launched (see Chapter 4). However, the reform agenda lags in areas such as accession to the WTO, privatization of public enterprises, financial sector modernization, and areas of governance such as tax administration and judicial reform. Unfortunately, the current oil price boom somewhat masks the real need for urgent economic reforms.

2.9 **Algeria's new hydrocarbons law contributes to further liberalization in the sector.** However, it was subject to amendments in 2006 that restore Sonatrach's majority stake in all contracts with international companies. The bill pressures Sonatrach to respond to competitive pressures and contributes to transforming it into a streamlined and more efficient organization.

B. THE VOLATILITY OF FISCAL VARIABLES

2.10 **The high dependence on oil brings high volatility to fiscal variables, especially revenues.** Macroeconomic volatility reflects the effect of external shocks hitting the economy. Terms of trade fluctuations appear to be a major force behind fiscal volatility (World Bank 2000), and this is particularly true with oil prices for Algeria. Non-hydrocarbon GDP has been less volatile than total GDP. More important, most revenue variables are more volatile than expenditure variables (Table 2.3). This is so because oil price disturbances have an immediate impact on public revenues: Total and hydrocarbon revenue have been more volatile than total public expenditures. Furthermore, current and capital expenditures exhibit lower volatility than GDP, which is an unexpected finding as more variation in capital expenditure, particularly during a long adjustment period, would have been a more conventional result. Predictable, however, is the lowest volatility found in wages and salaries (1.0), which already indicates their inertial character.

Table 2.3 Volatility of Fiscal Variables, 1990–2005 (in percent of GDP unless noted)

	Mean	Standard Deviation
Total revenue	32.7	4.1
Hydrocarbon	21.1	4.9
Nonhydrocarbon	11.6	1.2
Tax revenue	10.5	1.2
o/w VAT	4.9	0.7
Total expenditure	30.6	2.8
Current expenditure	21.9	2.2
Interest	2.8	1.0
Wages and salaries	8.3	1.0
Capital expenditure	8.1	1.5
Net lending	0.6	1.5
Primary balance	4.8	5.5
Budget balance	2.7	4.9
NH balance / NH GDP	-27.5	4.3
Domestic financing	-2.8	5.0
External financing	0.7	3.4
GDP (real growth)	2.7	2.6
Non-hydrocarbon GDP (real growth)	2.3	3.1

Source: Bank staff calculations.
Note: NH=Non-hydrocarbon balance = NH revenues/NH GDP.

2.11 **Bivariate correlation analysis shows a significant association between practically all fiscal variables and per capita growth.**[18] Simple correlations reported in Table 2.4 present findings that are consistent with previous literature on the relationship between fiscal variables and growth (Gupta et al.

[18] Per-capita growth is a more conventional measure used in empirical analysis assessing the effects of fiscal policy on growth, as this controls for bias introduced by population growth rates.

2005). For example, budget surpluses (and primary balances), and revenues (especially hydrocarbon) are positively associated to per capita growth (and most of them statistically significant). In a similar vein, financing needs, either domestic or external, and the Non-hydrocarbon balance are negatively associated to per capita growth.

Table 2.4 Bivariate Correlations, 1990–2005

(Variables expressed as percent of GDP, unless otherwise specified)		
	Per capita real GDP growth	
Total revenue	0.46	*
Hydrocarbon revenue	0.47	*
Nonhydrocarbon revenue	-0.19	
Tax revenue	-0.35	
o/w VAT	-0.24	
Total expenditures	-0.32	
Current expenditures	-0.27	
Interest	-0.04	
Wages and salaries	-0.62	***
Capital expenditures	0.40	
Net lending	-0.64	***
Primary balance	0.49	**
Budget balance	0.41	
Non-oil balance / NH GDP	-0.07	
Domestic financing	-0.36	
External financing	-0.37	

Source: World Bank calculations
* Significant at 10%; ** significant at 5%; ***significant at 1%.
Note: Bilateral correlations using annual data from 1990–2005.

2.12 Even more important, bivariate correlation analysis confirms the procyclical character of capital expenditures and the importance for Algeria to preserve the Hydrocarbon Stabilization Fund created in 2000 (see Box 2.1 below). The composition of public expenditure matters for growth: higher capital outlays are associated with higher growth, while lower current expenditure is associated with more favorable economic conditions. An IMF country report also finds that government capital spending induces an increase in real nonhydrocarbon GDP, while current expenditures do not (IMF 2005b). For its part, correlation analysis reveals the negative correlation of wages and salaries with growth, which is also indicative of their inertial trends[19].

[19] Correlation coefficients are formally tested using the Spearman rank correlation formula to avoid the effect of outliers. The Spearman rank correlation coefficient can be used to give an R-estimate, and is a measure of monotone association that is used when the distribution of the data make Pearson's correlation coefficient undesirable or misleading. The Spearman rank correlation coefficient is defined as:

$$r' \equiv 1 - 6\sum \frac{d^2}{N(N^2-1)}$$

where d is the difference in statistical rank of corresponding variables, and is an approximation to the exact correlation:

$$r \equiv \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}}$$

coefficient computed from the original data. Because it uses ranks, the Spearman rank correlation coefficient is much easier to compute. (Source: Weisstein, Eric W. 2002. "Spearman Rank Correlation Coefficient." From *MathWorld* - a Wolfram Web Resource: http://mathworld.wolfram.com/SpearmanRankCorrelationCoefficient.html.).

C. FISCAL TRENDS

2.13 **The recent increase in world hydrocarbon prices has transformed Algeria's fiscal situation.** The overall budget balance for the central government went from a deficit of 2 percent of GDP in 1999 to a surplus of 14 percent in 2005. Budget revenues increased from 30 percent of GDP in 1999 to 41 percent in 2005. Expenditures declined from 31 percent of GDP in 1999 to 27 percent in 2005, as current expenditures were contained and a sizable public investment program was launched.

2.14 **The share of hydrocarbon budgetary revenue and the share of capital spending in the budget of the central government have increased appreciably.** The share of hydrocarbon revenue in total budget revenue increased from 60 percent in 1999 to 76 percent in 2005. During this period, the share of capital expenditures in total expenditure increased from 26 percent to 36 percent, reflecting spending of the higher hydrocarbon revenue on much needed public investment. The PSRE, which supplemented the capital budget from 2001 to 2004, amounted to US$7 billion (about 13 percent of 2001 GDP).

2.15 **An increasingly used measure for assessing the fiscal stance in hydrocarbon exporting countries is the nonhydrocarbon primary deficit in relation to nonhydrocarbon GDP**. In hydrocarbon-exporting countries, government revenue increases sharply during hydrocarbon price booms. As a result, fiscal positions may improve, even when expenditures rise in an unsustainable fashion. A better indicator of the fiscal stance is the nonhydrocarbon primary deficit in relation to nonhydrocarbon GDP, as it delinks expenditures from hydrocarbon revenues. In the case of Algeria, the nonhydrocarbon primary deficit of the central government widened from 22.5 percent of nonhydrocarbon GDP (NHGDP) in 1999 to 29 percent of NHGDP in 2005, reflecting the impact of the PSRE and the first year of the PCSC.

2.16 **However, Algeria's large external current account surpluses imply that a significant part of the hydrocarbon GDP that accrued during the recent period of higher hydrocarbon prices has been saved**. The current account balance, which was negative until 1999, increased to a surplus of 21 percent of GDP in 2005. In 2003–05, the improvement in Algeria's current account balance represented 82 percent of the additional hydrocarbon GDP of that period.

2.17 **The saving/spending decisions of the government have contributed importantly to national savings**. In Algeria, as in several other hydrocarbon exporting countries of the region, government spending policies only partly followed the strong growth in hydrocarbon revenue that resulted from higher world prices since 2003.

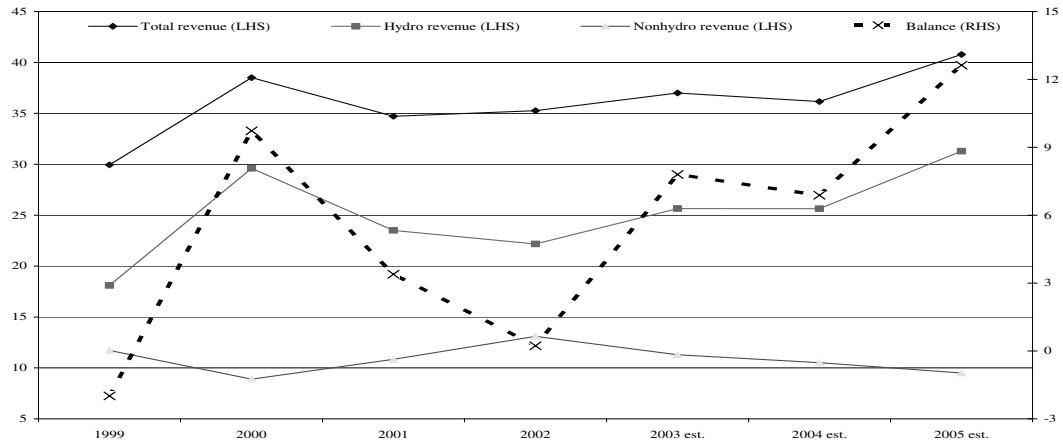
2.18 **Government savings in 2003-04 has been to some extent a reaction to high spending during the initial years of the PSRE**. The overall fiscal balance increased from a deficit of 2 percent of GDP in 1999 to a surplus of almost 10 percent of GDP in 2000. Spending under the PSRE led to the disappearance of the surplus by 2002, as the increase in spending coincided with declines in hydrocarbon revenue in 2001–02. The overall fiscal surplus increased to 14 percent in 2005 as capital expenditures were broadly contained in 2003–05.

Fiscal revenue

2.19 **Hydrocarbon budget revenue has been volatile, representing 18 percent of GDP (29 percent of nonhydrocarbon GDP-NHGDP) in 1999 and 31 percent of GDP (57 percent of NHGDP) in 2005, with a standard deviation of 10.5 (Figure 2.4 and Table 2.2).** In terms of NHGDP, Nonhydrocarbon revenue increased from 16 percent in 1999 to 19 percent in 2002. It then declined to 17.5 percent in 2005, mainly as a result of lower tariffs on imports and a fall in VAT

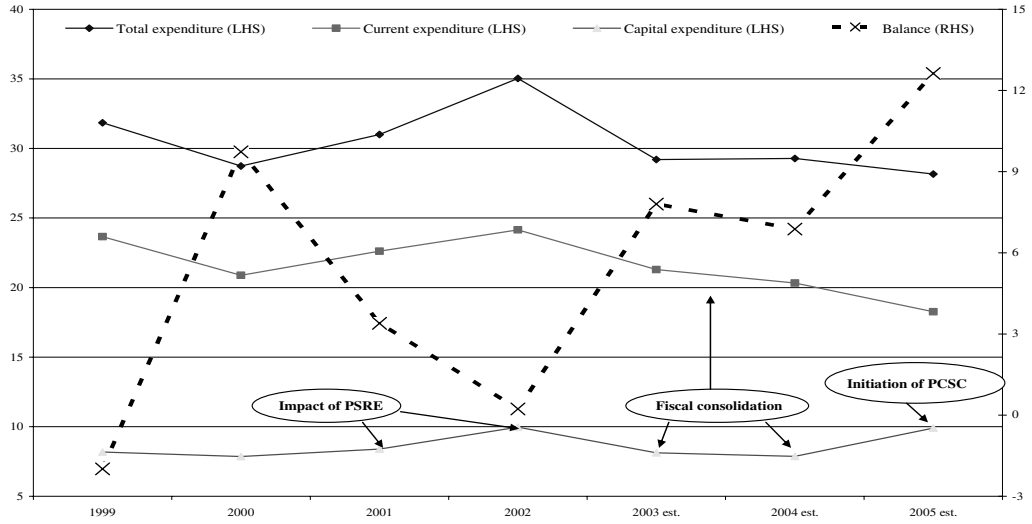
revenue. The standard deviation of this ratio was 1.5 in 1999–2005. The tax component of nonhydrocarbon revenue has stayed fairly stable at about 10 percent of GDP (15 percent of NHGDP) in 1999–2005.

Figure 2.4. Algeria: Composition of Budgetary Revenue, 1999-2005
(In percent of GDP)



Sources: Algerian authorities; and IMF calculations and projections.

Figure 2.5. Algeria: Composition of Total Expenditure, 1999-2005
(In percent of GDP)

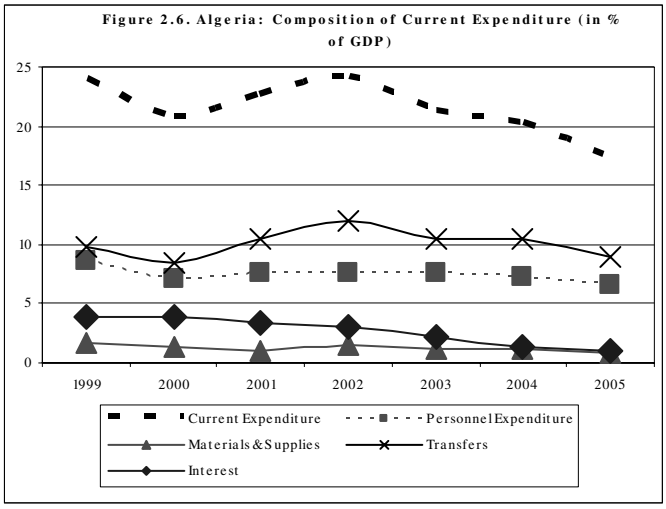


Sources: Algerian authorities; and IMF calculations and projections.

Public expenditure

2.20 **Since 2002, current expenditures have declined to below 24 percent of GDP (35 percent of NHGDP)** (Figure 2.5). The decline in current expenditures reflected mostly a drop in interest payments as public debt declined from 89.5 percent of GDP in 1999 to 28.5 percent in 2005. Further decomposition of current expenditure shows revealing trends.

2.21 **Algeria spends a relatively average and declining share in wages, a very significant one in transfers, and too little on goods and services (Figure 2.6).** On the one hand, the government bill fell from 8.6 percent of GDP in 1999 to 6.5 percent of GDP in 2005, much lower than the average of MENA countries around 10.5 percent of GDP and close to levels seen in comparator transition economies in Eastern Europe, Central Asia that turn around 7 percent (World Bank 2006). Personnel expenditure declined slightly partly because employment in the central government increased only by 1.3 percent on average per year and partly because of wage moderation. On the other hand, there is a marked contrast between the high and steady share allocated to (social) transfers—which averaged 10.4 percent in 2000-04—and the very low and declining share allocated to materials and supplies, which fell from 3.9 percent of GDP in 1999 to 1 percent of GDP in 2005. Such ratio is markedly below those of comparator countries and MENA, which are well above 5 percent of GDP. The big size of transfers adds rigidity to Algeria's budget.



Source : Bank staff calculations

2.22 **Capital expenditures increased in stepwise fashion from 7 percent of GDP in 1999 to 10 percent of GDP in 2005 (Figure 2.5)**. They increased from 11.5 percent of NHGDP in 1999 to almost 15 percent in 2002 as a result of the higher public investment under the 2001–04 PSRE. There followed a pause, with the ratio declining to 13 percent of NHGDP in 2003–04. As the 2005–09 PCSC got under way, capital expenditures increased to 18 percent of NHGDP in 2005. The PCSC envisages the continuation of relatively large outlays on public infrastructure projects, housing, and the social sectors.

2.23 **However, effective capital spending has been below budget allocations**. The execution rate of capital expenditures was 74 percent in 2005 (see Executive Summary). Allocated amounts for public investment that are unspent at the end of a fiscal year may be available for spending in subsequent fiscal years by means of multiyear special treasury accounts tied to specific projects (see chapter 4).

D. HYDROCARBON RESOURCES MANAGEMENT

2.24 **Algeria's Hydrocarbon Stabilization Fund (FRR) is allowed to cover budget deficits indirectly by charging public debt amortization to the FRR retroactively.** However, this source of financing is reaching its limits (Box 2.1). The large financing needs that arise from the PCSC dwarf past public debt amortization payments that the FRR could still reimburse. If the rules of the FRR are left unchanged, the government would need to borrow in order to cover the deficit. A situation could arise over the medium term in which public debt grows concomitantly with FRR deposits.

Box 2.1 Algeria's Hydrocarbon Stabilization Fund

Algeria's Hydrocarbon Stabilization Fund ("Fonds de régulation des recettes"—FRR) was established in 2000 with the aim of self-insuring government expenditures against fluctuations in hydrocarbon revenue. The FRR is a subaccount of the Treasury account at the central bank that accumulates part of the hydrocarbon revenue. The authorities would be able to draw down FRR deposits to absorb an adverse revenue shock before new borrowing or discretionary fiscal adjustment would need to occur. FRR deposits represented 19 percent of NHGDP at end-2005, suggesting that the initial aim of the FRR has been partially achieved.

The FRR operates under rules that were established when hydrocarbon prices were low. The rules of the fund provide that hydrocarbon revenue above the equivalent of US$19 per barrel of crude oil goes to the fund. FRR resources can be used to amortize public debt as well as for general budget financing when the price of crude oil drops below US$19 per barrel. The price rule is easy to understand as long as actual prices are not too different from US$19/bbl. However, the average price of crude oil was US$54.6 per barrel in 2005.

Budgets that were passed under the FRR price rule showed deficits. The budgeted fiscal deficits have grown from almost nothing in 2000, the first year of the FRR, to an estimated 16.5 percent of NHGDP in 2005, implying that the hydrocarbon revenue effectively spent was higher than the equivalent of US$19 per barrel of crude oil. Public debt amortization that occurred in prior fiscal years has been charged to the FRR, thus financing the budget deficit under the FRR price rule.

Oil Stabilization Fund
(billions of DA)

	2000	2001	2002	2003	2004	2005
Oil Stabilization Fund	232	249	276	568	722	1,843
Accumulation	453	124	27	449	623	1,369
Utilization	221	107	0	156	470	248

Source: IMF Article IV Staff Report (2005b)

2.25 **Changing the rules of the FRR requires a long-term framework for deciding each year on the appropriate level of spending of hydrocarbon revenue**. One possibility could assume a goal of preserving the level of hydrocarbon wealth per capita that existed in a base year. This implies a "sustainable path" for the spending of hydrocarbon revenue. The framework has been applied to Algeria in 2004, with 2003 as the base year. A 2005 update included new levels of proven reserves, projections for export volumes, projections for prices of hydrocarbons, and projections for real NHGDP growth (IMF 2005b, Country Report, footnote 2).

2.26 **This long-term framework would calculate the part of hydrocarbon revenue that the government should save each year in order to maintain hydrocarbon wealth per capita**. Income from hydrocarbon wealth comprises income from financial wealth accumulated by the government and its share of receipts from selling hydrocarbons currently produced. The part of this income that the government could spend would be equivalent to the sustainable nonhydrocarbon primary deficit.

E. FISCAL SUSTAINABILITY UNDER THE PCSC

2.27 **The level of government spending in the 2005 and the 2006 budgets has been appropriate under this long-term framework**. The estimated paths of the actual nonhydrocarbon primary deficits under the respective budgets and reasonable assumptions converge to a sustainable path over the medium term (Box 2.2).[20] The framework shows that the large outlays under the PCSC for 2005–09 are made possible by the increase in hydrocarbon prices from 2004-05.

[20] The execution rate of the PCSC (over budget allocations initially approved) is assumed to be 85 percent in 2006 and 2007, 90 percent in 2008 and 95 percent in 2009. In addition, the main components of current expenditures were projected as follows: wages and salaries: 2006 level = 2005 level + wage drift (2%) + wage increase (10%); goods and services: 2006 level = 2005

Box 2.2 Government Spending of Hydrocarbon Revenue: a Fiscal Sustainability Analysis

The appropriate level of government spending of hydrocarbon revenue can be derived from a long-term fiscal sustainability framework that preserves hydrocarbon wealth per capita over the long term. The framework is based on the U.S. Geological Survey estimates of probable reserves. It assumes that these will be exhausted by 2050 according to a projected production profile. Other assumptions are: population growth of 1.5 percent per year; real NHGDP growth of 4 percent per year from 2010–50; a 5 percent real interest rate; a gradual decline of oil prices to a long-term level of US$30 per barrel in 2015–50; and a ratio of 3.8 dollars per thousand cubic meters of gas to 1 dollar of per barrel of oil. All prices are expressed in 2003 dollars.

In this framework, government spending of hydrocarbon wealth requires limiting the nonhydrocarbon primary deficit to 26 percent of NHGDP by 2010. The ratio progressively declines in the outer years of the simulation (due to GDP growth). Income from financial wealth entirely finances the deficit that prevails after 2050.

Algeria: Sustainable Nonhydrocarbon Primary Deficit, 2005–2010
(In percent of nonhydrocarbon GDP)

	2005	2006	2007	2008	2009	2010
Sustainable path based on Summer 2005 WEO	-32.1	-30.8	-29.5	-28.3	-27.2	-26.1
Projections for actual deficit under 2006 budget	-31.6	-36.4	-33.4	-29.6	-27.3	-26.7
Memo: WEO crude oil prices (US$/bbl)	*55.3*	*61.7*	*60.0*	*58.0*	*57.3*	*56.5*

2.28 **Updates of the framework should be conducted each year, before setting the main parameters for the new budget**. The authorities would also need to continue developing a multiyear budget that delivers reasonably grounded projections of nonhydrocarbon primary deficits over the medium term, and also sets medium term sectoral priorities. The sustainability of the fiscal stance will rely on the convergence of actual deficits to the sustainable path.

2.29 **To avoid bottlenecks in financing sustainable levels of government spending, the FRR should be converted into a savings/financing account fully integrated into the budget**. The credits to the account would be the totality of hydrocarbon revenue plus the financial income of the accumulated savings. The debits to the account would be the financing of the sustainable nonhydrocarbon primary deficit. The account would also be integrated into the broader asset-liability management plan of the government.

2.30 **The proposed long-term framework for the fiscal management of hydrocarbon resources and the implied changes to the FRR still require choices to be made on the most effective use of the fiscal space generated by the portion of hydrocarbon revenue that can be spent each year**. The fiscal space generated by the oil windfall is abundant (see Annex X). Potential uses include higher public spending, lower taxes or public sector debt reduction. Choices among these alternatives require careful evaluations of the tradeoffs involved. In regards to the higher public spending option, Algeria could direct these resources at increasing its public physical capital, building its human capital, and supporting economic reforms in banking or privatization.

level*increase in wages and salaries + broadly estimated impact of PCSC on goods and services; transfers: 2006 level = 2005 level (1+2006 inflation) + broadly estimated impact of PCSC on other transfers.

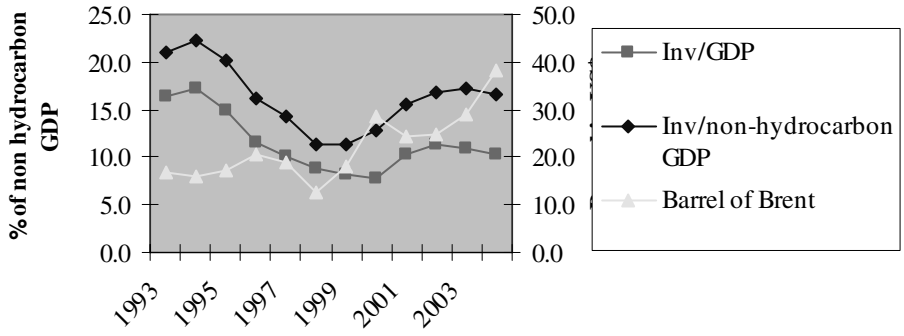
CHAPTER 3: SETTING HIGH STANDARDS FOR PUBLIC INVESTMENT

This chapter reviews the trend of public investment in Algeria and its probable impact on economic growth. Then, it offers a thorough diagnosis as well as recommendations to set high standards in the procedures of investment programming, project preparation, monitoring, and evaluation—including the role of the National Center of Infrastructure for Development (CNED). Detailed recommendations are included in relevant sections.

A. PUBLIC INVESTMENT DURING THE PAST DECADE

3.1 **The investment budget of the Algerian government is sizable.**[21] It accounted for about 10 percent of GDP for 2000–04. This compares with 7.3 percent of GDP for Morocco for 2000–04 and 7.5 percent for Tunisia for 2001–03 (IMF 2004c, 2005a,b). Actual government investment expenditure reached a high of 16 percent of GDP in 1993 and declined to a low of about 8 percent by the end of the 1990s. In 2001, public investment picked up, and it has ranged between 10 and 11 percent of GDP since. The ratio of investment budget expenditures to non-hydrocarbon GDP (for simplicity sometimes called "non-oil" GDP hereafter) followed the same trend (Figure 3.1).[22]

Figure 3.1 Actual Investment Budget Expenditures and GDP



Source: Ministry of Finance; World Bank and IMF staff estimates. Data for 2005 are projections.
Note: Investment data include both the investment projects and the capital operations components. In the 1993-97 years, it also includes transfers to public enterprises that were later reclassified. This explains its discrepancies with other series included in this report for the same variable.

[21] The Algerian investment budget (*budget d'équipement*) includes two main components: (i) the investment component *(investissement)* and the capital operations component (*operations en capital*). The capital operations component includes both nongovernment capital expenditures, such as capital transfers to public enterprises, and government capital expenditures such as the special reconstruction program. To avoid confusion with the entire investment budget, its "investment component" will be referred to in this chapter as the "investment project component."

[22] These figures slightly overstate actual capital spending because the "investment budget" includes certain expenditures for maintenance and for financing the initial years of project operation, as well as some current subsidies and financial transactions included in the "capital operations" component of the investment budget.

3.2 **In the coming five-year period, 2005–09, expenditures are expected to expand significantly.** Government investments are projected to exceed DA 5,500 billion (about 80 percent of 2005 GDP). This includes authorized financing of the costs of the original PCSC (about DA 4,700 billion) as well as residual costs of the PSRE projects launched before 2005 (about DA 800–1,000 billion).[23] According to the 2006 budget[24] (Table 3.1), government investment expenditure would, first, rise from 16.5 percent of non-hydrocarbon GDP in 2004 to 30.3 percent in 2006, and decrease subsequently to 15.5 percent in 2009—lower than in 2001–03. In practice, however, actual execution is likely to be different. First, even if all the projects of the PCSC were committed as authorized, their execution will probably be smoothed over the next 4 to 5 years instead of the bell-shaped curve in the 2006 budgetary documents. Second, as explained elsewhere, the execution rate of the PCSC over 2006–09 is virtually certain to be lower than 100 percent, taking into account delays in implementation.

The link to economic activity and growth

3.3 **It may be helpful to review recent developments through the prism of elementary Keynesian cyclical theory**. The actual impact of government investment on the Algerian economy has been closely assessed in the past as well as recently (World Bank 2004d). The key distinction is between *actual* and *potential* production. Only an increase in the economy's potential—that is, has a structural component in its productive *capacity*—can properly be considered "economic growth" and therefore should be distinguished from increased production within the economy's overall production possibilities. In short, if actual GDP is not too close to potential GDP, *any* increase in aggregate demand—whether from government consumption or investment, from private consumption, or through the external trade balance—can be expected to elicit a short–term increase in actual GDP. The size of this increase depends on the marginal propensity to spend. GDP will continue to increase so long as aggregate demand keeps increasing. This assumes that actual GDP remains below its potential level. If not, the demand pressure will be translated into higher inflation rather than greater production.[25] In this context, investment—whether from government or from private entities—affects actual production similarly to any other component of aggregate demand. However, as formation of new capital, *only* investment spending *also* has potential impact on GDP—and is thus a source of real growth in the economy's productive capacity. The size of the growth impact will depend on the efficiency of investment and the timing of the impact on the length of the gestation period.

3.4 **The twin role of public investment elucidates two logical extremes**. At one extreme, its impact on production will be maximum and permanent if investment spending is of very short gestation and *all* of the investment is maximally efficient. At the other extreme, its impact on GDP will be limited to only the impact on actual production through aggregate demand if *all* investment spending is misallocated, misappropriated, or misused; and if so, GDP will return to earlier levels when investment spending drops off. For a country like Algeria, the actual situation is invariably somewhere between the extremes. Investment efficiency of zero is unrealistic. There will be *some* impact on production capacity growth, even if the Keynesian impact of investment on GDP through aggregate demand cannot be entirely disentangled from its structural impact on production capacity.

[23] Rough estimates from staff of the Ministry of Finance. For the "investment project component" of the investment budget, a comparison of totals of commitment appropriations and expenditures over 1998–2004 confirms this estimate (the unspent commitment appropriations exceeding 1,000 billion dinars).

[24] *Rapport de présentation de la loi de finances pour 2006*, October 8, 2005, pp. 31–4. Data for 2004 and 2005 are from the supplementary finance laws.

[25] However, in an open economy framework, demand pressures may not necessarily lead to inflation. For instance, the strong growth of imports since 2000 may be one reason for continued low inflation in Algeria. Other factors would be the minimal pass-through of world energy prices, the continued wage moderation and the under-execution of the investment budget.

Table 3.1 Executed Investment Budget: Share of Non-hydrocarbon GDP (Percent of nonhydrocarbon GDP)

Sectors	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
	Actual expenditures												Budget (1)				
Industry	0,6	0,5	0,4	0,3	0,4	0,4	0,4	0,3	0,3	0,3	0,2	0,0	0,0	0,0			
Agriculture - Water	1,6	1,4	1,3	1,3	1,5	1,7	1,6	1,7	2,1	3,4	2,5	2,6	3,3	2,5			
Productive services	0,0	0,1	0,1	0,1	0,1	0,1	0,2	0,1	0,2	0,3	0,4	0,3	0,6	0,9			
Infrastructure (econ. & admin.)	2,5	2,2	1,9	1,9	2,1	2,1	2,2	2,6	3,0	3,1	3,1	2,7	6,0	7,0			
Education - Formation	1,6	1,5	1,3	1,3	1,5	1,5	1,5	1,6	1,9	1,9	1,8	1,7	2,2	2,7			
Social and culture sectors	0,5	0,6	0,5	0,4	0,4	0,4	0,4	0,5	0,6	0,9	1,0	0,8	1,3	1,3			
Housing	0,5	0,6	0,3	0,5	0,5	2,4	2,6	2,8	2,9	3,0	2,3	1,8	1,9	2,9			
Not elsewhere classified (n.e.c)E.(	2,1	2,4	2,3	2,4	2,5	0,8	0,8	0,9	0,8	0,8	0,8	1,0	3,2	4,5			
Local dev. Plans (PCD)	2,1	1,6	1,3	1,1	1,0	0,9	1,0	1,2	1,4	1,4	1,3	0,7	0,9	1,0			
Investment projects component	**11,5**	**10,9**	**9,6**	**9,4**	**10,0**	**10,5**	**10,6**	**11,7**	**13,2**	**15,0**	**13,4**	**11,6**	**19,4**	**22,9**			
Capital operations (2)	9,5	11,4	10,6	6,9	4,2	0,9	0,7	1,2	2,3	1,8	3,8	4,9	6,4	7,4			
Total	**20,9**	**22,3**	**20,2**	**16,3**	**14,2**	**11,4**	**11,3**	**12,8**	**15,5**	**16,8**	**17,3**	**16,5**	**25,8**	**30,3**	**23,1**	**19,3**	**15,5**

(1) Appropriations *(Crédits de paiement -CP); (2) Including subsidies to public enterprises up to 1997, then reclassified in Table 3,2.*

Sources.

Expenditures: 1993-2004 Ministry of Finance (certain data for 2001 are Bank staff estimates)

2005: Loi de Finances complémentaire; 2006: budget bill; 2007-2009 Budget Bill, presentation note

Non-hydrocarbon GDP: 1993-2003: IMF article 4 reports, 2006.

Non-hydrocarbon GDP 2004-09 Ministry of Finance, 2005: Loi de Finances complémentaire and budget bill presentation note.

3.5 **Previous World Bank projections on the impact of the PSRE on growth may have been overly conservative**. According to the World Bank (2004d), "the PSRE will have a positive though modest impact on the level and rate of growth of GDP by raising the rate of growth by almost 1 percent on average during 2001–05. At the end of such expenditures, GDP will progressively return to the reference level, thus creating a very marked growth cycle." In fact, annual growth during 2001–04 was more than 2 percent greater than the average of previous years, instead of 1 percent as forecast. This might suggest that predictions would have been true only under the unrealistic extreme assumption—that the PSRE investment expenditure did not constitute a major net addition to the productive capital stock of the economy.[26]

Some estimates of the aggregate efficiency of investment

3.6 **Aside from a bottom-up project-by-project analysis, indirect evidence on the aggregate efficiency of investment may be gleaned from GDP and investment data**. Table 3.2 shows the overall and sectoral growth rates for hydrocarbon and non-hydrocarbon GDP, as well as the government investment and nongovernment investment for 1995–2005.[27]

Table 3.2 Investment and GDP, 1995–2004 (in percent and DA billions)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005 (est.)
GDP Growth (%)											
Agriculture	15.0	23.9	-13.5	11.4	2.7	-5.0	13.2	-1.3	19.7	3.1	-1.6
Construction	2.7	4.5	2.5	2.4	1.4	5.1	2.8	8.2	5.7	7.7	7.0
Manufacturing	-1.4	-8.7	-3.8	8.4	1.6	-1.3	-1.0	-1.1	-3.5	-1.3	1.8
Services–Public	3.5	3.0	3.0	2.5	2.5	2.0	2.0	3.0	4.5	4.0	4.1
Services–Private	3.3	3.0	2.4	5.4	3.2	3.1	3.8	5.3	4.2	7.7	6.5
Non-hydroc. growth rate	3.5	3.1	-1.3	5.7	1.7	0.8	5.0	5.2	5.9	6.2	4.6
Hydrocarbon growth rate	4.4	6.3	6.0	4.0	6.1	4.9	-1.6	3.7	8.8	3.3	6.6
Growth rate	3.8	1.1	1.1	5.1	3.2	2.2	2.6	4.7	6.9	5.2	5.3
GDP & investment (DA)											
Fixed investment[a]	580	639	638	729	790	853	966	1,111	1,265	1,477	1,851
Hydrocarbon	153	189	197	203	169	213	342	433	453	524	600
Non-hydrocarbon	427	450	441	526	621	640	624	678	812	953	1,251
Government [b]	145	174	202	212	187	322	357	453	570	646	1,048
Non-government	435	465	436	517	603	531	609	658	695	831	803
GDP	1,991	2,570	2,780	2,831	3,238	4,124	4,261	4,546	5,264	6,127	7,412
Non-hydrocarbon GDP	1,487	1,792	1,908	2,157	2,311	2,464	2,817	3,069	3,391	3,808	4,103
Hydrocarbon	504	778	872	674	927	1,660	1,444	1,477	1,873	2,319	3,309
Ratios (%)											
Investment/GDP	29.1	24.9	22.9	25.8	24.4	20.6	22.7	24.4	24.0	24.1	25.0
Non-hydroc. inv/ NH GDP	28.7	25.1	23.1	24.4	26.9	26.0	22.2	22.1	23.9	25.6	30.5
Hydroc. invt/hydroc. GDP	30.3	24.3	22.6	30.1	18.2	12.8	23.7	29.3	24.2	22.9	19.4
Govt invt/GDP	7.3	6.8	7.3	7.5	5.8	7.8	8.4	10.0	10.8	10.5	14.1
Nongovt invt/GDP	21.8	18.1	15.6	18.3	18.6	13.8	15.3	14.4	13.2	13.6	10.9

Sources: Ministry of Finance, Bank staff estimates.

[a] Fixed investment here does not include change in stocks, and thus differs from the data on gross domestic capital formation used elsewhere.

[b] Excluding the government capital transfers to public enterprises (included in the "capital operations component" of the investment budget).

[26] In the current situation of high unemployment and production below potential, investment expansion did not have to be accompanied by monetary tightening in order to avoid inflationary pressures. By its very nature, inflation is also contained by price controls on certain basic food items.

[27] Changes in stocks are excluded from the data on gross domestic capital formation. Government investment does not include investment by public enterprises, which presumably are undertaken autonomously and for commercial or market-related reasons.

- **There is a much greater annual variability of investment in the hydrocarbon sector.** Bank estimates find a 0.44 coefficient of variation, compared with a 0.27 coefficient for non-hydrocarbon investment. There is also a greater variability of government investment (0.53 coefficient) compared with nongovernment investment (0.18 coefficient). This indicates that private investment outside the hydrocarbon sector has been very stable during the past decade. However, government investment too was stable during the 1990s. The greater annual variability over the period as a whole is only a statistical reflection of the rapid expansion of government investment after 2000 (with a very low 0.11 coefficient of variation during the 1990s).
- **The variability of annual growth rates is seen to stem largely from agriculture and manufacturing, and to a lesser extent from construction**. Private services growth is more stable and public services are growing at a steady annual rate, clustering around 2.5–3.5 percent. Ups and downs in agricultural production are fairly typical in most countries. Less typical are wide swings in manufacturing production, which have important implications for unemployment. The overall decline in manufacturing by over 10 percent between 1995 and 2005 is consistent with the Dutch disease hypothesis of loss in domestic competitiveness associated with abundance of natural resource exports followed by real exchange rate appreciation; but empirical evidence rather shows that Algeria's real effective exchange rate has been close to its equilibrium level since the mid-1990s (IMF 2005b).

3.7 **What of investment efficiency?** Assuming an invariant structure of the economy and static technology, neoclassical models usually point to capital accumulation as the sole source of economic growth in the medium term. They estimate the Incremental Capital/Output Ratio (ICOR) as a measure of aggregate investment efficiency. Other things being equal, a lower ICOR implies greater efficiency of investment. However, "other things" are never equal, especially in developing countries. Also, national output is affected by many other factors, including technical change and social instability, and as mentioned above, by aggregate demand. In other words, the ICOR is a highly imperfect indicator, which at best can only point toward certain hypotheses. Nevertheless, data from the past decade should be briefly considered.

3.8 **Bank estimates assume for simplicity that the growth impact of investment begins with a one-year lag, and define annual ICOR as investment during year *t* divided by growth in year *t+1***. Defined as such, the ICOR for the entire economy falls from an average of 9.5 for the first four years, 1996 through 1999, to an average of 4.7 for the latter four years, 2001 to 2004. Surprisingly, the developments in the hydrocarbon and non-hydrocarbon sectors are virtually identical, with the non-hydrocarbon ICOR averaging 9.1 for the earlier period and 4.9 for the recent years.[28] This partly reflects an acceleration of GDP annual growth to an average of 5.6 percent in 2002–04 from the average of 2.7 percent during the previous seven years.

3.9 **ICORs above 7 in the 1990s are unacceptably high when compared with ICORs in "good practice" countries**. Reasons for Algeria may include the separation of the operating budget preparation from that of the investment budget; the inadequacy of economic appraisal of projects; the absence of systematic review of the costs and benefits of major projects during their execution; and the lack of candid evaluation of results upon project completion. Moreover, political considerations affect investment choices—for example, the goal of uniform distribution of investment resources throughout the country. Combined with the relatively plentiful budgetary resources from the hydrocarbon sector, these considerations lead to a certain disregard for opportunity cost and complacency concerning tradeoffs. There

[28] Using the alternative assumption that the impact on growth lags five years behind investment—as would be the case for a very large project of very long gestation—the ICOR for the entire period is just above 6, a more encouraging number. In such a case, however, five years worth of opportunity cost of the capital invested would need to be added to the cost–benefit calculation. Details on ICOR estimates herein included are available from the authors upon request.

is much room to improve public investment efficiency in Algeria; and indeed, the remainder of this report focuses on how to do that.

3.10 **In regard to government investment, the decline in the ICOR from the late 1990s to the early 2000s could be attributed to better government investment as well as to other factors**. At least three other related reasons could explain such a decline. None of these necessarily implies an improvement in the procedures and practices of the government's investment choices and execution.

- The improved security environment of recent years may have lessened an important source of uncertainty in economic activity. During the 1990s, it was difficult to induce higher-level maintenance personnel to visit installations outside the main urban areas. Maintenance was deferred, leading to underutilization of capacity. With the restoration of security, capacity utilization returned to higher levels.
- The delayed, spread-out GDP impact of investments in long-gestation projects, such as dams and roads, may be responsible for the acceleration of non-hudrocarbon GDP annual growth in recent years.
- Last but not least, the decline in the ICOR coincided with the drop-off in the number of very large new infrastructure projects, primarily dams. These are widely known to have been wasteful because of misallocation, weak execution, and funding problems.

3.11 **In addition, the evidence of improvement in the efficiency of government investment in recent years is weak and largely speculative**. ICOR decline may well be a statistical illusion attributable to factors other than better investment projects and execution. Thus, projected sizable increases in government investment are not exempt from severe constraints in execution and administrative capacity. To the contrary, as explained in the section on investment execution below, evidence suggests that this is already happening.

The sectoral composition of investment expenditure

3.12 **Public investment varied markedly between 1999 and 2004,** combining the "capital operations" and "investment project" components of the budget**.** As shown in Table 3.3, on average capital operations accounted for about 29 percent and investment projects accounted for 71 percent of public investment. Local government development plans *(Plans communaux de développement,* known as PCDs) accounted for only about 12 percent of total actual investment expenditures, with 88 percent absorbed by centrally managed and deconcentrated projects. Among sectors, infrastructure accounted for about 16 percent (22 percent of the investment projects component); agriculture and water for 12 percent (16 percent of the investment projects component); education for 11 percent (14 percent of the investment projects component); and housing for 9 percent (12 percent of the investment projects component).[29]

3.13 **The only recent major shift in the sectoral composition has been a significant increase in the share of housing.** It increased from less than 4 percent of investment expenditure in 1997 to 21 percent in 1998. This was not just a blip. Housing construction remained high during the subsequent years to accommodate faster in-migration to urban areas, among other reasons. In future years, a major shift is planned from agriculture and water to other infrastructure, and notably to the road subsector. The budgetary appropriations for the agriculture and water sectors are expected to account for 12.5 percent of the public investment budget in 2005, well below almost 16 percent of investment expenditures in 2004. Conversely, budgetary appropriations for other infrastructure account for about 23 percent in the 2005 public investment budget, well above 16.3 percent of total actual investment expenditures in 2004. These shifts will be reinforced in the future, because nearly half of the PCSC and the 2005 and 2006 program authorizations are

[29] As mentioned earlier, these figures do not take into account sector expenditures classified in "capital operations" and "not elsewhere classified."

Table 3.3 Government Investment Expenditures by Sector

Total investment expenditures (%)	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
	Actual expenditures															Budget (1)	
Industry	6.9	5.3	3.5	2.9	2.0	2.1	1.9	2.5	3.5	3.2	2.3	1.7	1.5	1.0	0.0	0.0	0.0
Agriculture - Water	13.4	10.9	7.0	7.5	6.2	6.7	8.2	10.5	15.0	14.4	13.5	13.8	20.4	14.7	15.8	12.6	8.4
Productive services	0.3	0.1	0.2	0.1	0.3	0.6	0.6	0.6	1.3	1.4	0.6	1.0	1.7	2.2	1.6	2.5	3.1
Infrastructure (Econ. & admin.)	22.7	17.7	10.9	12.2	9.8	9.5	11.6	14.9	18.7	19.9	20.0	19.5	18.7	18.0	16.3	23.3	23.2
Education - Formation	12.0	8.9	7.1	7.7	6.8	6.6	8.2	10.5	13.5	13.2	12.2	12.3	11.1	10.6	10.0	8.7	8.8
Social and culture sectors	3.4	2.4	2.2	2.2	2.7	2.6	2.7	2.6	3.6	3.5	3.9	3.8	5.5	5.6	5.0	4.9	4.4
Housing	0.3	0.2	0.1	2.2	2.7	1.6	3.0	3.6	21.1	22.8	21.8	18.9	17.6	13.2	10.7	7.2	9.7
N.E.C.	16.7	10.9	8.4	9.9	10.9	11.5	14.6	17.7	7.3	6.8	7.1	5.2	4.5	4.8	6.3	12.5	14.8
Local devel. plans (PCD)	14.6	12.3	9.2	10.1	7.3	6.5	7.0	7.4	8.3	8.7	9.7	8.8	8.2	7.6	4.5	3.6	3.2
Short-Term Investment	**90.4**	**68.9**	**48.5**	**54.8**	**48.7**	**47.7**	**57.7**	**70.3**	**92.2**	**93.9**	**91.0**	**85.0**	**89.2**	**77.7**	**70.2**	**75.3**	**75.6**
Capital operations	9.6	31.1	51.5	45.2	51.3	52.3	42.3	29.7	7.8	6.1	9.0	15.0	10.8	22.3	29.8	24.7	17.7
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(1) Appropriations *(Crédits de paiement -CP)*

Source. Ministry of Finance. The year 1998 includes the reclassification of a few budgetary line items, which explains the major shifts observed.

allocated to the infrastructure sector, while about 11 percent of the PCSC go to agriculture and water. Water allocations are underestimated by the fact that seawater desalination projects, financed through PPP agreements, are off budget (see Chapter 4 on the importance of the budget expenditures).

Investment execution

3.14 **Overall execution rates are reasonable**. The execution rate of the investment budget is defined as the ratio of actual expenditure at the end of the fiscal year to the initial budgeted appropriation. The optimum pattern of execution occurs when an aggregate execution rate of 100 percent results from actual expenditures equal to budgetary appropriations for each project, thus producing a 100 percent execution rate for each sector as well. Instead, if an apparently satisfactory aggregate execution rate of close to 100 percent results from a combination of diverse rates of implementation of projects—some absorbing much more, and some much less than the budgeted amount—the latter reflects design or execution problems, as well as a general concern for the integrity of the budget process (Chapter 4). In this case, it is advisable to look not only at the overall execution rate but also at its distribution among sectors and projects. In general, wide swings in investment execution rates are a cause for concern. They indicate either that appropriations were insufficiently thought through the budget process, that opaque changes are occurring in sectoral implementation, or both.

3.15 **During 1998–2004, the aggregate execution rate of the investment budget was close to 100 percent** (Table 3.4). This satisfactory result, however, masks substantial variation among sectors. For example, the so-called "productive services" sector (tourism, post and telecommunications) had the lowest budget execution rate throughout the period—on average about 67 percent, raising the obvious question of why the budgetary appropriations were not adjusted to reflect this record of consistent underspending. In the education and social sectors, the budget has been executed at about 90 percent, though with substantial year-to-year variation. A similar variation has occurred in water and in agriculture. In infrastructure, actual expenditures are at about the same as the initial appropriations; but again, this is only on average—the sector showed significant overspending in 1998–2001, followed by underspending since that period.

Table 3.4 Initial Investment Budget Execution Rate (1998-2004)

Actual expenditures/initial budget (%)	1998	1999	2000	2001	2002	2003	2004	Period average
Industry	126.8	94.5	89.9	122.0	92.1	70.3		99.3
Agriculture - Water	103.5	90.3	98.9	105.8	135.8	88.7	114.6	105.4
Productive services	77.6	84.4	52.4	81.0	55.4	56.1	61.6	66.9
Infrastructure (Econ. & admin.)	110.9	112.3	110.7	100.9	91.8	89.6	77.0	99.0
Education - Formation	106.1	93.1	92.9	95.5	85.0	84.1	73.5	90.0
Social and culture sectors	86.8	89.5	122.4	86.9	106.7	83.1	72.4	92.5
Housing	164.7	95.2	117.1	94.9	96.9	81.5	87.8	105.4
N.E.C.	120.7	92.5	104.7	98.1	90.5	97.5	103.2	101.0
Local devel. Plans (PCD)	116.3	95.7	154.7	115.2	111.1	110.5	78.3	111.7
Short-term Investment	**117.4**	**96.6**	**109.2**	**99.9**	**100.4**	**87.0**	**85.5**	**99.4**
Capital operations	152.9	71.7	117.6	141.1	85.4	118.7	86.9	110.6
Total	**119.6**	**94.6**	**109.9**	**104.5**	**98.6**	**92.5**	**85.9**	**100.8**

Sources: Ministry of Finance, Bank staff estimates.
Budget execution: Ministry of Finance
Initial Finance Law: Journal Officiel

3.16 **A supplementary budget is generally adopted by midyear. In addition, the executive in Algeria is empowered to make transfers within the total investment budget appropriated by the**

legislature. Supplementary budgets normally provide for increased expenditure; and during 2002–04, the total budgetary appropriation did remain within the limits of the initial budget (Table 3.5). Based on the "final supplementary budget" (supplementary budget after transfers between programs and projects), the budget execution rates were 91 percent in 2002 and 85 percent in 2003—compared with 99 percent and 92 percent on the basis of the initial budget. Those rates reveal that actual budget execution did not meet the revised expectations.

3.17 **Over time, the investment execution rate has declined**. It fell from 107 percent on average in 1998–2001 to 92 percent in 2002–04. In 2004, the execution rate of the initial 2004 budget in the infrastructure sector was only 77 percent, and 73 percent in education and other social sectors. The decline was mainly caused by the increased investment budget, which nearly doubled in local currency terms from 2000 to 2004. This decline in execution rate is virtually certain to be even more pronounced in the future, because the investment budget is programmed to again double from 2004 to 2006. The 2004 budget (executed at 86 percent) amounted to DA 720 billion, compared with DA 1,058 billion for 2005 (supplementary finance law) and DA 1,348 billion for 2006 (budget bill).

Table 3.5 Investment Budget, 2002–2004 (in percentage of initial appropriations)

Comparison of initial budgetary appropriations, revised appropriations and actual expenditures

	2002				2003				2004		
	Initial (1)	Supp (2)	Final (3)	Exe. (4)	Initial (1)	Supp (2)	Final (3)	Exe. (4)	Initial (1)	Final (3)	Exe. (4)
Industry	100	100	102	92	100	100	105	70			
Agriculture-Water	100	109	129	136	100	100	97	89	100	100	115
Production services	100	101	102	55	100	100	94	56	100	113	62
Infrastructure (Econo. & adm.)	100	103	107	92	100	101	103	90	100	91	77
Education-formation	100	101	102	85	100	100	97	84	100	102	74
Social and culture sectors	100	105	129	107	100	100	101	83	100	115	72
Housing	100	110	108	97	100	100	101	81	100	105	88
N.e.c.	100	100	92	91	100	100	101	98	100	103	103
Local dev. Plans (PCD)	100	100	114	111	100	100	117	110	100	103	78
S-t Investment	100	105	111	100	100	100	101	87	100	101	86
Capital operations	100	128	86	85	100	151	146	119	100	98	87
Total	100	108	108	99	100	109	109	92	100	100	86

(1) Initial Finance Law

(2) Supplementary Finance Law *(Loi de Finances Complémentaire)*

(3) Final appropriations after transfers/virements

(4) Budget execution

Source: Ministry of Finance

3.18 **A major conclusion emerges.** The capacity of ministries and agencies to complete good studies, launch new projects, and execute a much larger expenditure will increase—but less rapidly than necessary to accommodate such a large increase in budgeted investment. Hence, the government should not try to push for faster implementation regardless of capacity realities. To the contrary, attempts to do so would only result in waste and abuse of resources. Implementation of the investment program should instead be stretched over a more realistic timeframe, not to reduce the overall volume of investment but to allow expenditures on selected programs and projects to achieve maximum efficiency and results.

Execution problems for individual projects

3.19 **Very high budget overruns occurred at the level of individual projects**. Chapter 1 already showed a few key project implementation issues across several sectors examined in this PER. Annex B also provides detailed sector investment issues. Table A.4.6 shows transport sector projects took completion from 2 to 13.5 years longer than initially planned. For five of these projects, implementation took 10 years longer than expected. Delays are costly. A comparison of estimated and actual costs for road projects (Table A.4.7 shows budget cost overruns in some cases of 500 to 600 percent. Table 3.6 illustrates this by comparing planned and actual implementation in a sample of road projects. Generally, implementation of road projects started on schedule but then progressed more slowly than planned.

3.20 **Several operational problems persist**. This remains the case even though many problems identified in the 1994 study on institutional modernization of the infrastructure sector have been addressed—including simplification of excessive and unnecessary controls, granting more flexibility to project managers and introducing some competitiveness in contracting. Take, for example, the following.

- Complaints are still common over the "inadequacy of program authorization" for too many projects. This was already brought out in a field survey conducted in 1994. Poor project selection and the spreading out of funds among too many projects weaken project implementation. However, this inadequacy must be viewed in strict relation with the appropriateness of the project design and the initial realism of its budget. In short, it appears that the sector was generally sufficiently funded, but this of course does not mean that no projects or subsectors encountered funding problems.
- During the contract phase, meeting deadlines is crucial. For this to happen, timelines must be reasonable, and the executing entity must be capable of meeting them. During the execution phase, delays in payments often led to implementation difficulties. Here, too, a vicious cycle becomes self-reinforcing—payment schedules can only be respected if the original funding plans were realistic in the first place and if the executing entity sticks to the established schedule.
- The comparison of program authorizations (*autorisations de programme*, referred to as APs) with budgetary appropriations (*crédits de paiement*, referred to as budgetary appropriations) shows that shortage of resources is not likely to be an issue during the implementation of the PCSC. Comparing program authorizations with budgetary appropriations is not straightforward, because program authorizations authorize multiyear projects with no time limit; while budgetary appropriations are annual. Over time, however, a certain balance between program authorizations and budgetary appropriations is required to ensure smooth implementation of the projects. Table 3.7 compares the cumulative total of program authorizations since 1998.[30] The program authorization totals are higher than the budgetary appropriation totals, which is normal in periods of investment budget growth. However, the gap is comparatively high in the agriculture (and water) sector—because more time has taken to implement projects such as dams. In that sector over 2000–03, total annual budgetary appropriations accounted for about half of the annual program authorizations.[31]
- In 2005 and 2006, the gaps between budgetary appropriations and program authorizations widened despite significant increases in appropriations. The difference between cumulative program authorizations and budgetary appropriations beginning in 1998 will equal 2.5

[30] The alternative of using 2000 as the base year would be in keeping with the start of the investment expansion program. However, that would not work because too few years are included. The year 1998 is used as the base only because it is the first year in which the APs were implemented under the Algerian finance law.

[31] These were 57 percent in 2000, 49 percent in 2001, 47 percent in 2002, and 55 percent in 2003. Source: *Lois des Finance Supplementaires*.

years of the budgetary appropriations for 2006, a high level compared with previous years. In the infrastructure sector, this difference will account for 4.6 years of the 2006 appropriation. Again, the response should not be to accelerate spending to match the artificially higher authorizations but to more deliberately time future program authorizations to prevent them from outrunning capacity—or worse, from generating pressure to compromise project quality, take shortcuts in procurement, or spend prematurely.

Table 3.6 Completion Delays in Road Projects

Project	Progress status	Initial versus actual		Initial planning					Revised planning				
		Increased Implement. Length ((8)-(5))/(5)	Delay in starting the project (6)-(3)	Starting date (3)		Completion date (4)		Length (5)= (4)-(3)	Starting date (6)		Completion date (7)		Length (8)= (7)-(6)
				trim	year	trim	year		trim	year	trim	year	
	%	%	years					years					years
Motorway East-West section Beni Mered	98.0	140.9	0.50	4	1989	2	1995	5.50	2	1990	3	2003	13.25
Motorway East-West section El Afroun	90.0	185.7	1.00	3	1992	1	1996	3.50	3	1993	3	2003	10.00
Motorway East-West section El Afroun (structure)	100.0	250.0	1.25	4	1991	4	1994	3.00	1	1993	3	2003	10.50
Motorway East-West Bouira bypass lot roads	97.0	100.0	0.00	3	1992	3	1997	5.00	3	1992	3	2002	10.00
Motorway East-West Bouira bypass lot 1-3/2nd	100.0	110.5	0.00	3	1992	2	1997	4.75	3	1992	3	2002	10.00
Motorway East-West Bouira bypass lot 2/1st	100.0	227.3	3.50	1	1990	4	1992	2.75	3	1993	3	2002	9.00
Road El Affroun-Houceinia	8.0	0.0	0.00	2	2003	2	2006	3.00	2	2003	2	2006	3.00
Road Bouira El Adjiba	20.0	225.0	-0.50	4	2003	4	2004	1.00	2	2003	3	2006	3.25
Square Addis Abeba	98.0	14.3	1.00	2	2001	1	2003	1.75	2	2002	2	2004	2.00
Crossroads Chevalley	1.0	-33.3	2.50	2	2001	2	2004	3.00	4	2003	4	2005	2.00
Lahadaria-RN5	82.0	170.0	0.50	2	1996	4	1998	2.50	4	1996	3	2003	6.75
Lahadaria-RN5 2nd tranche	85.0	270.0	-2.00	2	1996	4	1998	2.50	2	1994	3	2003	9.25
Lahadaria-RN5 2nd tranche structure	83.0	280.0	-2.25	2	1996	4	1998	2.50	1	1994	3	2003	9.50
Lahadaria-RN5 2nd tranche tunnels	20.0	14.3	0.25	2	2000	4	2003	3.50	3	2000	3	2004	4.00

Source: Ministère des Travaux Publics

When information on the trimester of completion was not available, it has been estimated that the third trimester was the trimester of completion

3.21 **In sum, a growing gap between authorizations and actual spending may erode the credibility of the program authorizations and to the extent that it does, the credibility of the government itself**. In addition to slowing down expenditure commitments, it would be advisable to review the current investment portfolio as recommended in the following section.

Table 3.7 Comparison of Program Authorizations and Budgetary Appropriations
(Cumulative totals from 1998)

Dinars billion

	2003	2004	2005	2006
Agriculture				
a) Total AP 1998-year t	675.8	807.5	970.8	1,200.4
b) Total CP 1998-year t	385.4	470.5	603.0	715.9
c) Difference a) minus b)	290.4	337.0	367.8	484.5
d) CP year t	94.2	85.1	132.5	112.9
e) Comparison c/d %	308.3	395.9	277.6	429.1
Infrastructure				
a) Total AP 1998-year t	665.4	783.2	1,460.9	2,627.0
b) Total CP 1998-year t	485.1	616.5	860.4	1,173.2
c) Difference a) minus b)	180.3	166.7	600.5	1,453.8
d) CP year t	115.2	131.4	243.9	312.8
e) Comparison c/d %	156.5	126.8	246.2	464.8
Education-Vocational training				
a) Total AP 1998-year t	348.0	425.8	575.6	816.7
b) Total CP 1998-year t	318.0	402.1	493.0	611.8
c) Difference a) minus b)	30.0	23.7	82.6	204.9
d) CP year t	71.6	84.1	90.9	118.8
e) Comparison c/d %	41.8	28.1	90.9	172.5
Total investment (capital operations excluded)				
a) Total AP 1998-year t	2,848.6	3,411.2	4,835.2	7,056.1
b) Total CP 1998-year t	2,218.8	2,726.9	3,516.3	4,536.0
c) Difference a) minus b)	629.8	684.3	1,318.9	2,520.1
d) CP year t	508.6	508.1	789.4	1,019.7
e) Comparison c/d %	123.8	134.7	167.1	247.1

AP: Program authorization *(autorisation de programme)*
CP: Appropriation *(crédits de paiement)*
Source: Lois de finances complémentaires-Journal officiel

B. LOOKING TO THE FUTURE: IMPROVING THE INSTITUTIONAL AND PROCEDURAL FRAMEWORK

3.22 **Taking stock of *past* experience with public investments is necessary for sound execution of the vast program that the government wishes to execute in 2005–09.** This regards two topics, the existing stock of public assets, and the ongoing projects pipeline. Annex W details the steps required to do an inventory of existing issues.

- If the contribution from the new investment program is accompanied by more efficient utilization of existing capital stock, the reduction in the incremental capital-output ratio would further enhance growth and employment in the new program. Conversely, continued expenditure on obsolete or underutilized assets will degrade the efficiency of the new program. In addition, the low weight of the operations and maintenance expenditure (O&M) in the government's budget suggests the need to increase and better allocate this expenditure.
- Despite anecdotal evidence, there is no clear diagnosis of the main problems in project execution—their nature, specific capacity limitations, the reasons for delays—let alone what to do about them. Some much-delayed projects may have lost their original rationale. Others may need to be redesigned in response to changed circumstances. In each of these cases, the project's ex post rate of return would likely be lower than the ex ante rate that justified approval in the first place, and so is the expected efficiency of Algeria's ongoing investment expenditure.

3.23 **A particular useful concept is the definition of a "major project".** It is important not only for the review of the existing pipeline recommended here but also to define the scope of the activities of CNED (paragraph 3.37). The most obvious criterion is project cost. A quantitative cost threshold should comprise both a minimum threshold applicable to all projects/programs as well as higher thresholds

defined for each subsector. When cost is at issue, it is crucial to take not only the initial investment into account, but also the recurrent costs to be expected over the economic life of the project. Therefore, reliable procedures to realistically estimate recurrent costs and to oversee their application in practice are also necessary to identify "major" projects.[32] In addition to cost, however, certain programs or projects can have substantial significance for the national economy even if the corresponding investment is not particularly large. Several other criteria need to be considered.

- Concerning the registration of the on-going major projects, with the aim of taking charge of the inflation affecting the costs of behind schedule projects (or badly formulated), it would be advisable to ask for an annual evaluation when the additional cost exceeds a certain level of the estimated initial value (e.g 10%).
- Procedurally, it is important to define "major projects" on a sector basis because project size and other important factors differ so greatly among sectors. Consultation is necessary between the Ministry of Finance and particular line ministries, which once again underlines the importance of interministerial cooperation.
- It is essential to not limit the focus to projects. "Programs" of complementary activities addressed to the same objective can have a substantial economic and social impact, and they can present serious problems as well.
- The definition of "major project" has a qualitative as well as a quantitative aspect. Albeit as exceptions, certain "small" projects can include innovative features. They may also pose environmental risks, require social considerations, or offer potential for corruption that merit special status as a "major" projects. Judgment calls are needed based on specifics. So who decides on what is a "major" project is therefore critical.
- A judgment call is also needed to protect line ministries from avoiding scrutiny by unbundling very large projects into component parts. Not only does this expedient defeat the logic of the review, but also it compromises the economic and technical integrity of the project itself. In this respect, the Ministry of Finance should decide whether unbundling for this purpose appears to have taken place, benefiting from the advice of CNED.

3.24 **An effective public investment system requires the following interrelated tasks in sequence**.

a) Formulate overall and sectoral strategies.
b) Strengthen project preparation, appraisal, and screening.
c) Foster investment programming and project execution.
d) Introduce monitoring and evaluation with results that feed back into the investment programming cycle.

3.25 **It is essential to sequence decisionmaking and design systematic linkages between project preparation and budget preparation.** The objective is to ensure that government policies drive expenditure programs; programs in turn fit the financial constraints and drive projects; and results are used to improve the policies and the formulation of the next program. Iteration is necessary, especially between formulation of the overall investment program and preparation of individual projects, to make sure that the program includes only sound projects, and conversely, that each project is properly

[32] As an illustration, if the cost threshold for the definition of a "major project" is set at DA10 billion, a transport project with an investment cost of DA 9.1 billion, an economic life of 20 years, and annual recurrent costs estimated at DA 50 million would be considered a major project. Nevertheless, so would a rural health program with an investment cost of DA 1.1 billion, an economic life of 20 years, and annual recurrent costs estimated at DA 450 million—because the overall discounted cost is the same DA 10 billion for both.

managed and funded.

Formulating overall and sectoral strategies

3.26 **Investment programming must be grounded on sound, up-to-date sectoral strategies**. Formulating investment programs and selecting individual projects must be set within a broad framework beyond individual project analysis. No matter how well designed and technically sound, a project is "bad" by definition if it is inconsistent with the overall development strategy and the strategy for the sector. Note here that sector strategies are not synonymous with *ministry* strategies. However, close coordination among the ministries within in a sector is essential to avoid duplication, inefficiencies, and negative externalities (especially on the environment) while taking advantage of potential external economies.

3.27 **The World Bank analysis of the PSRE pointed out that certain "projects did not seem to have followed from sectoral development strategic plans"** (World Bank 2004d). Some progress has been made since then; but improvements are still needed—in particular, updating certain partly obsolete strategies and reinforcing interministerial coordination.

3.28 **Each ministry should now be required to take a fresh look at its strategic documents and plans.** Most sectoral strategies have not been reviewed systematically in many years. The ministries should provide confirmation where a comprehensive up-to-date, agreed-upon strategy is in place, explicitly seeking concurrence from the Council of Ministers and subsequently disseminating the strategy. Where a strategy is not in place or calls for updating, the ministry should formulate a time-bound work program to prepare, update, and finalize its strategy, presenting the program for feedback to the Ministry of Finance. Once again, even where a sound up-to-date strategy exists, a coherent *sector* strategy means that it must mesh with the strategies of other ministries in the same sector. The Ministry of Finance should provide the guidance, facilitation, oversight, and coordination for this process. The short-term end point should be a set of comprehensive up-to-date date strategies in place for each sector, preferably by the end of 2006. These must be consistent with the government's overall economic, social, and development policy. It should be endorsed at the highest political levels and appropriately disseminated within the administration and to the public. In the medium term, such strategies should be integrated in the medium-term expenditure framework under preparation (Chapter 4).

3.29 **Sound sector strategies and strengthened intrasectoral coordination should become prerequisites for project approval and budget allocations**. However, the budget process should itself be designed to encourage line ministries to develop a strategic approach in line with government policy. It would make little sense to push ministries to develop sound strategies unless these strategies are taken into account appropriately during budget preparation. Conversely, ministries have a weak claim on budgetary resources if they cannot demonstrate convincingly their link to an approved sector strategy. In the interest of all concerned and the Algerian economy, making this reciprocal linkage operational should be a key objective of future reform measures. A similar argument applies to project approval.

Strengthening project preparation

3.30 **The current situation.** Line ministries are responsible for project preparation. This includes identifying projects that fit government strategy, undertaking prefeasibility and feasibility studies, pre-selecting projects, and formulating design. Project preparation is governed by Executive Decree No. 98–227 of July 13, 1998. According to Article 6, projects proposed for funding under the investment budget must be sufficiently "mature" for implementation to begin during the same year. For centrally managed projects, such maturation has five requirements: (i) a feasibility study, (ii) intended project

implementation modalities, (iii) evidence (not assertion) that the project is economically and socially appropriate, (iv) estimates of the forward impact of the project on the recurrent budget, and (v) estimates of foreign exchange costs and financing modalities. In addition, Article 9 stipulates that the technical documentation of a "mature" project must include: (i) a statement of its rationale, (ii) a technical form on physical data, financial data, and implementation schedule, (iii) feasibility and impact studies, (iv) an implementation strategy, (v) arrangements for intersectoral coordination, as appropriate, (vi) an appraisal report comparing different project variants, (vii) the results of the tendering process, (viii) estimates of foreign exchange costs and financing modalities. These requirements are demanding but appropriate. They help ensure that state investment resources will be used in the most efficient and developmentally effective way. Moreover, the provisions in the decree were partly in response to the loose project preparation practices of earlier years. Thus, they respond to actual Algerian experience.

3.31 **The Ministry of Finance and the line ministries recognize that current practice seldom follows the formal rules.** In view of the large size of the 2005–09 PCSC, the difficulties experienced in the past (as illustrated above in Table 3.6 and Table 3.7) will only worsen if robust measures are not enacted to enforce the project preparation rules. Several problems need to be taken into account.

- Many project decisions are not grounded on socioeconomic analyses. Indeed, economic analyses are generally not prepared other than for projects financed by international institutions.
- Studies on project alternatives are rarely undertaken.
- The rule to provide the results of the tendering process is frequently ignored.
- Recourse to consulting firms is common for carrying out technical studies on large projects, but weaknesses in these studies have led to many costs increases during implementation and predictable requests for supplementary contracts.
- Procedures are inadequate to ensure the quality of technical studies.
- Neither the line ministries nor the Ministry of Finance has sufficient technical capacity to vet the quality of such studies.

3.32 **"Design-and–build contracts" can reduce the time to implement projects, but they carry the risk of increased project costs and corruption.** To improve implementation of the PCSC, a restricted tender for design-and-build contracts was launched in November 2005 for the East–West Motorway project (927 kilometers in three lots, accounting for about 12 percent of PCSC total funds). Contracts of this sort require very close supervision. Delegation does *not* mean abdication of responsibility, and effective contracting demands adequate negotiating and monitoring capacity of the line ministry as well as close oversight by central entities. Where the ministry lacks such capacity, it should contract an independent entity to act in its behalf. In any event, the project preparation difficulties outlined above can only be solved by resolute action to improve respect for the rules and develop capacity to observe them. The new CNED (see paragraphs 3.37-3.43 below) can make a major contribution to improving project selection, preparation, and execution; but the longer-term solution lies in strengthening both the capacity and the accountability of the line ministries concerned.

3.33 **Enforcing the rules.** A fundamental legal principle is that an unenforced law is no law at all. Many reasons explain why rules might be loosely enforced, but political will at the highest level is a key prerequisite in any country. However, if this is to be accomplished in Algeria, the provisions of Decree 98–227 need to be systematically enforced. Amendments to the decree are also required—first, to accommodate the role of CNED. However, now that the decree is many years old, the moment may be opportune to review in the decree in its entirety, making sure that it corresponds to good practice in sufficient detail and making those changes suggested by the review.

3.34 **Actions to enforce the investment regulations should be developed in two complementary directions**. First, the capacity of line ministries should be strengthened in project preparation. Second, appropriate, public sanctions should be put in place for noncompliance.

- Capacity building should include seminars, manuals, and guidance in general norms as well as specific guidance for each sector. These will strengthen capacity in project preparation. Particularly in infrastructure, water and agriculture, line ministries should be properly staffed to commission, supervise, and review project economic studies. A review of their staff capabilities in this area therefore needs to be carried out. Where capacity gaps are found, a program to fill them should be elaborated. As noted below, the CNED will develop the project preparation and execution manuals based on international experience as well as specific circumstances in Algeria. A general section will be applicable to all projects, and detailed sections will be applicable to circumstances in specific ministries. Based on those manuals among other things, the CNED would also formulate a training program for the staff directly concerned staff in line ministries. It will also provide guidance on demand for project preparation and appraisal, as has been done in several OECD countries and some developing countries (Box 3.1).

Box 3.1 Economic Analysis of Projects: Uses and Country Illustrations

Economic analysis

- Supports decisionmaking by comparing variants of the project and defining procedures to organize the available information.
- *But:* cannot replace good judgement and political factors.

Aspects of cost-benefit analysis

- Definition and delimitation of the project.
- Identification of quantitative and qualitative results.
- Quantification of monetary and other costs and benefits.
- Calculation of discounted costs and benefits.
- Sensitivity analysis of the merits of different variants.

Country illustrations

- United Kingdom. The Treasury (Ministry of Finance) has issued a guidance "green book" to all central government departments on economic appraisal of all new programs, supplemented by departmental guidance to fit individual needs.
- European Commission. The framework directive 2000/60/EC) in water policy stipulates, among other things, that European Union member countries must carry out an economic analysis of water use beginning in 2004.
- United States. From 1997, a *Capital Programming Guide* has been issued by the Office of Management and Budget (OMB).
- France. Economic analysis is required in domestic transport by the Loi d'orientation des Transports Intérieurs, enacted in 1982.
- Peru. There is an excellent, easy-to-read guide (*Guía de Orientación,* PRODES, Ministry of Economy and Finance), which includes both general and detailed sections, as recommended here.

Source: Bank Staff

- Some sanctions should be introduced to ensure compliance with regulations and prevent dysfunctional administrative behavior. In a similar vein, efficiency in project preparation and management should be rewarded. Therefore, individual accountability for observance of the rules on each different stage of project preparation should be clearly assigned within each ministry. To be effective, incentive frameworks must be relevant to the administrative culture of the specific country, and it is thus not desirable to advance specific recommendations here on rewards and penalties for rule compliance in Algeria. Experience shows, however, that incentives do not have to be monetary, nor do they have to be particularly severe in order to improve performance. Nonmaterial penalties (for example, peer disapproval) and rewards (for example, public recognition through "excellence

awards") have proven fairly effective in public institutions, particularly when they include a mix of individual and team awards. Experience also shows that the magnitude of the reward and the severity of the penalty are generally less important than their swiftness and predictability.

3.35 **Evidence abounds on the effectiveness of introducing clear links between rule compliance and consequences.** Dysfunctional administrative behavior always occurs if not penalized; and efficiency in project preparation and management will not take its place unless rewarded in some fashion in Algeria, this has been recently confirmed, for example, by the experience of the Direction Generale du Domaine de l'Etat (DGDE). After several years of lack of response by DGDE to provide information on sector assets in compliance with legal requirements, further financing of operations and maintenance was withheld on assets for which the responsible ministry had not provided requisite information. Within a few months, the information was supplied. As a result, DGDE is now close to completing its inventory of assets in the "private domain" of the state.

3.36 **Quality assurance and project approval.** Project approval procedures could be further strengthened to assure the viability of very large projects and the quality of studies. For "major projects" (defined below) and projects with special economic or social significance, a special validation procedure should be introduced and closely coordinated with the budgetary reform supported by the Budget Systems Modernization (BSM) project. There are precedents for such special validation. Some OECD countries have set up a two-step procedure for approval of large projects, either by the Ministry of Finance or by an interministerial committee. In the Australian state of New South Wales, large projects must be approved by the ministry of finance in two steps ("in principle" and "final approval"), with final approval requiring submission of "comprehensive financial models (accompanied by a Certification of Independent Audit ensuring the methodology, assumptions, and calculations) and sensitivity analysis identifying profit and loss, cash flow, and balance sheet impacts."[33] Box 3.2 summarizes a similar procedure in Canada. In Algeria, the *Caisse Nationale d'Equipément pour le Développement* (CNED) is expected to play a major role, as discussed in the following section.

Box 3.2 Approval Procedure for Investment Projects in Canada

Projects from CAN$ 1 to 60 million (depending on the sector and the nature of the project) must be approved by the cabinet committee responsible for expenditure and personnel management—that is, the Treasury Board (supported by the Treasury Secretariat).

A two-stage approval is limited to specific phases of the project that have been appropriately defined and costed. First, Preliminary Project Approval (PPA) allows all or part of the project to be defined. To support a proposal for PPA, departments must demonstrate a requirement directly related to the achievement of program goals and responsibilities. They must show that the proposed project is the best way to meet that requirement. Second, when the project is fully defined, the responsible ministry requests Effective Project Approval (EPA) in order to fund and implement the project. The EPA also establishes the cost and other critical dimensions of the project baseline. Detailed requirements are specified for submitting a project for both PPA and EPA.

An exception to the two-stage process are those that mainly involve leasing. These require a Lease Project Approval (LPA) before bids can be solicited. The LPA effectively combines the PPA and EPA into a single approval process.

Source: Project Management and Other Policies Guidance, Treasury Board of Canada Secretariat (http://www.tbs-sct.gc.ca/pm-gp/category-categorie.asp?Language=EN&site=PMD&id=081).

[33] "Guidelines for Assessment of Projects of State Significance," New South Wales Treasury, July 2002.

The special role of the CNED

3.37 **The *CNED* was created to help address the weaknesses in project preparation and execution described above.** It is an autonomous public enterprise of industrial or commercial nature created by Decree 04–162 of June 5, 2004. CNED is governed by a board chaired by the minister of finance and comprising four other ministers in addition to the minister directly concerned with the issue under discussion, as well as individuals selected for their competence and credibility. Management is entrusted to a director-general with the autonomy and responsibility appropriate to a professionally run enterprise. The decree envisages several roles for CNED.

However, in the context of the central need to support the efficient implementation of the 2005–09 investment program, the government has decided to focus CNED on essential functions—technical oversight of the preparation, execution, and evaluation of major projects, and guidance and facilitation of capacity-building in the line ministries.[34]

3.38 **CNED was launched in September 2005 with the appointment of a director-general who requested World Bank advice in November 2005 on institutional, organizational, technical, and financial issues**. The Bank agreed to do so in the context of its earlier dialogue and understanding of the role of CNED under a small reimbursable technical assistance (RTA). By March 2006, the first advisory outputs were provided. These included design of the organizational structure and staffing, which was approved by the CNED board in February and is described below. The CNED began its activities in June 2006 with the review of three major ongoing projects and expects to be fully operational before the end of 2007.[35]

3.39 **CNED will have wide-ranging technical responsibility.** This includes technical missions to (i) provide a prior opinion on the general economic viability of major projects ideas *before* detailed studies and other formal preparatory steps are launched; (ii) confirm that the procedures of Decree 98–227 are respected in form and substance, with confirmation required before a project can be included in the investment budget; (iii) follow up the execution of major projects; (iv) lead the preparation of manuals, guides, and procedures for the concerned staff in the line ministries; and (v) initiate evaluations of major projects and programs as well as build evaluation capacity within line ministries.

3.40 **In its review of project preparation, CNED is expected to ascertain the consistency of the proposed project with the sector strategy**. If appropriate strategy is lacking, incomplete, or out-of-date, CNED may comment to the extent that such factors could impede the preparation of economically sound projects. However, as a technical body, CNED has no authority to review the sectoral strategies themselves, let alone to contribute to their reformulation. The formulation of sector strategies is the core responsibility of the concerned ministries in consultation with each other and the Ministry of Finance, and they must be approved at the highest levels of government.

3.41 **The scope of CNED authority is limited to "major projects" so it cannot be the only institution responsible for public spendings improvements.** Very briefly, these are defined by quantitative and qualitative criteria, as noted earlier. The quantitative criterion of the project (or program) is its total cost, including both the initial investment and estimated future recurrent costs, with a uniform threshold as well as higher thresholds set sector by sector. The qualitative criteria can include

[34] This focus was also important to avoid the ambiguities and difficulties of earlier attempts to improve project preparation through the Algerian Development Bank and the more recent CNED. In particular, CNED would have no role in the direct management of projects, nor in financing projects. In time, its functions might extend to facilitation and surveillance of PPP initiatives.

[35] The Bank assistance through the RTA could be complemented by assistance from the French Development Agency (AFD), primarily in the domains of training design and delivery, and possibly in informatics and documentation.

the special innovative nature of certain projects or programs, or unusual risks that the project entails. Because application of the qualitative criteria sometimes requires judgment calls beyond the domain of CNED, the scope of its operations essentially covers all major projects that reach the total cost threshold as well as any other projects or programs for which the Minister of Finance specifically requests review by CNED. However, at the local level CNED must, for example, let some local institutions act such as the territorial divisions in charge of planned investments (DPAT), which conceive strategic sector plans.

3.42 **CNED should have a light structure**. "Light" here implies short lines of command, a small team of highly competent staff, and an operational mode that commissions and carefully supervises studies and reviews by external consultants.

- Organization. Under its director-general, one CNED office for administration should support three functional offices headed by directors, respectively, for methodology;[36] review of major project preparation; and monitoring of major project execution. A small cell for evaluation could eventually become a full-fledged office.[37]
- Staffing. About 35-40 professionals and a small support staff. Professionals would include a small number of task leaders (*charges d'etudes*) trained in economics, preferably with some engineering background and the personal qualities and professional flexibility to move from one task to another across sectors. There would also be a group of specialists in a pool from which they contribute as required. By contrast, the monitoring of project execution would require technical specialists in each sector.
- Accountability. External audit of the financial transactions of CNED itself would be ensured by the Court of Accounts. Professional ethics, integrity, and resource use would be monitored by the General State Inspectorate. These arrangements would apply to CNED as they would to any public enterprise. However, in this case a special "review of reviewers" would be provided in the form of periodic substantive audits of the technical quality of CNED activities by an independent, external entity.

3.43 **CNED operations should be managed and overseen by the government.** They are part of the much broader challenge of improving the efficiency of public investment in the medium term and in sustainable ways. Thus, even though CNED is expected to be active for a number of years, its existence is essentially justified during a phase of transition from a system without effective quality controls to a system where such effective controls exist and are exercised primarily where they belong—in the line ministries themselves.

Moving to investment programming

3.44 **The investment budget.** The investment budget consists of two components. First, there is the "investment" component, which includes investment projects. Second, there is the "capital operations" component, which includes capital expenditures that are often made from special Treasury accounts (*comptes d'affectation spéciale*). In the 2006 budget, the "investment" component accounts for 76 percent of the investment budget and the "capital operations" component accounts for 24 percent.

[36] It is envisaged that delivery of the actual training will be supported by the AFD. Under this scenario, the methodology office of CNED would not directly formulate or carry out training activities, but would provide manuals and other guidance upon which the training would be based, and it would help to oversee the results.

[37] The alternative of a sector-based (institutional) structure was considered but rejected as inferior to a functional structure for several reasons.

3.45 **Investment projects are classified into three types**.

- The centralized sector investment programs (*programmes sectoriels centralisés,* referred to as PSCs) are managed centrally by line ministries or public agencies with financial autonomy.
- The deconcentrated investment programs (*programmes sectoriels déconcentrés*, referred to as PSDs) are managed at the wilaya level, but they are under the concurrent responsibility of the line ministry concerned.
- The local development plans (*plans communaux de development*, referred to as PCDs) are implemented by local governments upon delegation of the walis. In 2005, they accounted for only about 12 percent of the total investment component.

3.46 **The budget includes both budgetary appropriations (*credits de paiement*, referred to as CPs) and program appropriations (*autorisations de programme*, referred to as APs)**. These appropriations are voted by sector (Annex C on the annual finance law). The APs set the monetary ceiling within which authorizing officers *(ordonnateurs)* are allowed to commit expenditures. It has no time limit;[38] while the CPs allocate payments during the fiscal year up to the cumulative ceiling set by the corresponding program. Because a CP is the legal instrument to authorize contracts, it should be made only for projects that can be launched or continued during that year. In practice, however, CPs often cover projects that cannot be immediately launched because they are yet not fully designed. APs are understood more as a planning tool than as a financial management mechanism, as shown by the high number (and amount) of program authorizations in the budget 2006. This makes difficult to keep commitments under control. It would be simpler and more transparent to stick to the logic and principles of the system, withholding APs until projects were fully designed and final decisions made to launch the project within that year.[39]

3.47 **A list of projects covered by APs is annexed to the decision through which the Ministry of Finance allocates the CPs**. Within individual ministries and subject to Ministry of Finance approval, CPs allocated to one project can be transferred to another provided that the initial physical project design is not affected. Moreover, the government can issue an executive decree to transfer program authorizations between sectors without parliamentary approval, provided that the absolute limit on investment expenditure is not exceeded. Accordingly, the executive branch of government in Algeria has a much higher degree of discretionary power than in OECD countries, where transfers between budget appropriation (or programs) above a certain percentage of the initial appropriation must be submitted for legislative approval. Obviously, this practice distorts the programming process and may be equivalent to modifying the original decisions. Indeed, under the present system Parliament really has no incentive to engage in dialogue on major investment choices because it knows it will have no role in overseeing their implementation. While historical reasons account for this state of affairs, the current practice is not necessarily consistent with principles of good governance and budgetary integrity. The issue should be revisited when setting up the new budget classification under the ongoing Budget Systems Modernization project. Management flexibility is needed during budget execution, but this flexibility should not violate policy choices made during budget preparation.

3.48 **Budget duality.** The Algerian budget is formally unified, but it is dual in practice. There is still excessive compartmentalization between the preparation of the recurrent and the capital budget, which is

[38] Article 6 of Law No. 90–21 *(Loi relative à la comptabilité publique).*

[39] In budget documents, investment expenditures are classified into nine economic "sectors," with capital expenditures classified under specific items. For purposes of budget administration, the investment expenditures of each sector are classified into "chapters" according to their purpose (for example, Chapter 731 for hospitals). These in turn are subdivided into "articles" (for example, radiology equipment). At present, the recurrent expenditure classification differs from the investment expenditure classification system. More details are included in Chapter 4.

not conducive for efficient resource allocation (see Chapter 4). The departments of the former Ministry of Planning that were responsible for the investment budget were officially taken over in 1998 by the General Budget Department (*Direction Générale du Budget*, known as DGB) of the Ministry of Finance. In the budget documents, recurrent and investment expenditures of each ministry are presented together, under the same headings. However, divisions of the General Budget Department dealing with the investment projects are separated from divisions dealing with the recurrent budget. Within line ministries, coordination between the departments responsible for the recurrent budget and the departments responsible for investment programming is often ad hoc and thus inadequate.

3.49 **The current budget classification makes analyzing the level of investment difficult.** The investment budget includes recurrent expenditures for the first years of new projects' operations. It also includes recurrent expenditure items for maintenance. While understandable, these practices complicate assessment of the true level of public investment; and to that extent, they distort the overall fiscal and macroeconomic picture. Reforming budget classification and improving coordination between recurrent and capital budgeting should render these practices unnecessary.

3.50 **A number of measures have been implemented or are being undertaken to mitigate the effects of this budgeting duality**. A new organization chart of the Ministry of Finance has been prepared and is to be implemented in 2006. The General Budget Department has been reorganized by sectors dealing with both the recurrent and the capital component of the budget. Thus, recurrent and capital expenditures will be classified by the same principles and grouped by ministry and program. It should also be noted that unifying the budgeting processes does not mean confusing recurrent and capital expenditure. As explained in the case of the United Kingdom, "Since the 1998 Comprehensive Spending Review, departments have been given separate resource (recurrent and capital) budgets. This is consistent with the fiscal rules and prevents the tendency to cut capital expenditure, the benefits of which may only be seen in the medium or long term, to fund recurrent pressures"[40] (UK Department of Treasury 2006).

3.51 **Investment budget preparation.** When a large project is considered to be mature (that is, ready for implementation), the decision to launch is made within the normal budget process (in investment nomenclature, this is called "registration of the project"). Line ministries must send their budget requests to the Ministry of Finance by the end of May. These requests are reviewed by the Ministry of Finance and then discussed in meetings between the ministry and the line agencies (or the line ministries and wilayas). Once the annual finance law is enacted, the Ministry of Finance issues decisions to allocate CPs for each ministry and each wilaya (for program authorizations, this decision includes publication in an annex of the physical parameters of the projects or group of projects, their costs, and the implementation schedule—as generally defined during budget preparation). In turn, line ministries notify their subordinate units of decisions on individual projects.

- This allocation process can be time-consuming, causing delays that in effect reduce the time available for budget implementation from twelve to eight months.41 Thus, project costs and implementation schedules are not necessarily reliable, nor have they always been systematically reviewed. The situation concerning sectoral policies is even less satisfactory. These are rarely reviewed at all during the process of investment budget preparation.
- There is no accountability whatsoever concerning investment execution by deconcentrated programs and municipal programs. Funds are simply allocated with discretion by the wali to individual projects and municipalities. Reports on investment execution by deconcentrated programs are not known. A pilot study on a sample basis could be conducted to assess results and identify ownership and accountability issues.

[40] Comprehensive Spending Reviews (CSRs) are medium-term expenditure frameworks in the United Kingdom.
[41] "Rapport sur les options". Version 02.01. ADETEF-Sema Belgium. 2005.

- There is no examination of the interaction between investment efficiency and land-use planning. A decision on where to locate a project can be as important as the decision on what project to undertake (Helfgott and Schiavo-Campo 1969). This statement is especially pertinent in Algeria, considering the country's vast size, complex demographic, and the past neglect of the interaction between investment choices and land-use planning.

3.52 **The ongoing budgetary reform is heading in the right direction.** . Chapter 4 depicts the main components of reforming budgeting procedures. Strengthening procedures of capital budgeting is a key component of the budget reform that is being led by the Ministry of Finance. Its key issues are next. Several recommendations follow.

- The procedure for framing budget preparation and investment programming is not yet designed. It should consist of preparing sectoral medium-term expenditure framework, aggregated by sector or ministry.
- The links between the medium-term investment plan, the CPs, and the existing system of APs needs to be specified. Preparing forward expenditure programs should not lead to abandonment of the system of APs. If realistic, APs are a valuable tool for managing the investment budget and controlling and monitoring multiyear projects.
- The respective role of the different multiyear programming instruments should be clearly defined. Roles could possibly be assigned as follows.
    1. Long-term investment plans would have the status of a technical annex to the strategy of the ministry. This annex would be updated regularly.
    2. The medium-term expenditure framework (MTEF) would include aggregate fiscal targets and expenditure projections by sector or line ministry (see chapter 4).
    3. The rolling, three-year MTEF and its investment technical annex would be included in the annual budget documents.

3.53 **In general, when appraising investment projects, opportunities for public–private partnership (PPPs) or other forms of private participation should be systematically considered** (See also Annex U). Several principles apply:

- These projects should not be programmed separately from other public investment projects.
- Any activity involving public moneys must be examined and programmed on an integrated basis. They must be consistent with overall government and sectoral policies.
- Projects implemented under PPP agreements should be taken into account in the sectoral strategy and the long-term investment plans.
- The fiscal and governance risks attached to PPP agreements should be very carefully assessed.

3.54 **Improving project execution**. Line ministries are responsible for project choice and ownership *(maîtrise d'ouvrage)*, but they delegate the responsibility for execution (*maitrise d'oeuvre)* to autonomous entities or, in some cases, to the walis. Project management is often undertaken by the execution entity, under the supervision of the ministry concerned. In Algeria, these entities are either "public administrative agencies" (*etablissements public à caractère administrative*, known as EPAs) or "public agencies of industrial or commercial nature" (*etablissements public à caractère industriel ou commercial*, known as EPICs). These public administrative agencies enjoy a higher degree of autonomy than the public agencies of industrial or commercial nature. They are not subject to the usual rules for government expenditure and personnel management, although certain limits apply to salaries. In theory, EPICs are mainly financed from their own revenues, but this principle is not systematically enforced.

3.55 **A clear separation between the functions of project ownership and management is generally recommended**. However, international experience shows that increased autonomy to executive entities must go hand in hand with strengthening reporting requirements, accountability, and oversight of management. Thus, several OECD countries created quasi-autonomous agencies in the late 1980s and 1990s, or granted increased degree of autonomy to existing public establishments with the aim of improving efficiency and effectiveness in public service delivery. This has indeed generated efficiency gains, as well as some serious concerns over lack of accountability and corruption (Box 3.3). The basic principle is that which is generally accepted—greater autonomy and stronger accountability must always go hand in hand.

Box 3.3 Some Concerns in OECD Countries over Quasi-autonomous Agencies

OECD countries have set up executive agencies with different degrees of autonomy to improve the efficiency and effectiveness of entities with specialized functions. There are several variants—differentiated governance structures, which allow specialization of functions and better focus on citizen's needs; managerial autonomy; and a differentiated control environment, which helps the entity escape some cumbersome administrative and financial rules. "Hidden" reasons include responses to a particular political circumstances and efforts to circumvent civil service compensation rules.

Specific concerns have arisen with these organizational forms. For example, an accountable top governance structure is difficult to ensure. Relaxed financial and personnel rules have occasionally resulted in loose financial and management controls and inequity across the civil service. There is often little receptivity to changes in mission and budget allocation.

Better governance of executive agencies depends on several conditions. The roles and functions must be clear among the board, the chief executive, and the minister. The nomination process, levels of remuneration, and professional qualifications for chief executives and other personnel must be justifiable and transparent. Reporting requirements must be strong—for example, business plans and annual reports that include a review of activities, performance against targets, commercial activity, and future strategy.

Source. Adapted from OECD, Distributed Public Governance, 2002.

3.56 **A number of other measures have recently been implemented to facilitate investment budget implementation and address delays in project execution**. Thus, a procedure to carry over unspent budgetary appropriations at the end of the fiscal year, up to certain limits, has been introduced. Upon Ministry of Finance authorization, spending units would transfers unused budgetary appropriation to a special account. However, while canceling all unused appropriations at the end of the fiscal year would be excessively rigid for investment projects, one should carefully assess whether this carryover procedure could create difficulties in expenditure monitoring, mask poor project management by transferring unspent funds to the special accounts, reduce fiscal transparency, or carry corruption risks.

3.57 **Monitoring and evaluation.** In Algeria, monitoring is limited to financial follow-up by the Ministry of Finance. Technical (or physical) monitoring by the executing entities is unknown or poor at best (see para 3.59). The results of projects and programs are not regularly followed up. There is no systematic ex post evaluation comparing what was intended with what was achieved, let alone the efficiency or cost-benefit with which it happened.[42] With the expansion of public investment, the time has come to introduce regular evaluation the results.

[42] *Efficiency* relates to the unit cost of project outputs. *Effectiveness* relates to the broader impact of the outputs on the economic and social objective of the project or program.

3.58 **New procedures are needed especially in project monitoring, execution and evaluation.** Execution agencies undertake poor technical monitoring, as data have several shortcomings, reports are not widely disseminated, and systems to process reports are outdated. Several changes are called for.

- Design of procedures to monitor physical implementation of PCSC projects and identify problems in a timely manner. Given severe data and information system shortcomings, basic performance indicators should be designed for pilot programs while comprehensive monitoring and reporting system are developed, including a full-fledged set of standards and targets.
- It is essential that performance indicators be few, clear, and directly relevant. There is a strong temptation to be avoided—to overload the performance monitoring system with a multiplicity of diverse indicators that produce extensive reporting and red tape with little positive relationship to actual results. Experience also shows that *how* and *by whom* indicators are defined is at least as important as *which* indicators are used.
- Incentives to produce reports are needed. It is recommended that the carryover of PCSC unused budgetary appropriation be made only after execution reports are published.
- Each ministry and wilaya should timely prepare a semiannual investment execution report, including:
  - Comprehensive financial data consolidating all investment expenditures from the budget, special accounts, or other accounts.
  - Physical monitoring of sizeable projects that identify problems and corrective actions. Certainly CNED and, possibly, the Planning Commissariat recently put under MEF *tutelle,* have a concurrent major role in this respect.
  - Data on investment projects implemented under PPP agreements.
- Although CNED role is limited to "major projects," the agency can also provide the line ministries with leadership in evaluation in general. Ex post evaluation must be carried out by the line ministry responsible, with guidance and oversight from the Ministry of Finance. CNED could facilitate training to build capacity within the line ministries.
- Finally, ex post evaluation is a waste of time if results are not fed back into the budget process. To this end, it is recommended that a brainstorming group be established to identify the Algeria-specific modalities for a systematic dialogue on results.

3.59 **External support should be provided to the Algerian government to develop a systematic monitoring and evaluation system.** Among other things, this could include: (a) Participation by international experts in defining relevant performance indicators and monitoring procedures; (b) assistance in formulating a training program, both general and "a la carte," for the government officials who are to implement this agenda; (c) support for pilot evaluation studies in cooperation with the monitoring and evaluation office of an OECD country; and (d) support for the formulation of detailed procedures for the evaluation of investment projects in several sectors.

CHAPTER 4: MODERNIZING BUDGETARY MANAGEMENT

The major pillars of the on-going budgetary reform are: the budgetary reclassification that will allow program management and performance-based budgeting, the new reporting that enhances transparency and control vis-a-vis Congress, and the medium-term expenditure framework.

—Inter-Ministerial Commission for Improving Public Finance-MoF, March 2006a

This chapter argues that revamping of the national investment system will not be fully achieved unless authorities successfully tackle the multiple and severe institutional shortcomings surrounding the budget process. It overviews the main features of the budget system. Given its weaknesses, when compared to international standards, reiterates that effective implementation of the PCSC will not work without parallel and urgent budgetary institutional reforms. Furthermore, it answers legitimate questions as to whether current budgetary practice supports fiscal discipline, or threaten its sustainability in the medium term. Do current practices facilitate adequate inter- and intra-sectoral allocation of resources, or cause resources to be distributed with little prioritization? Are resources implemented with efficiency, or exposed to waste and corruption either at the central or deconcentrated public entities?

A. OVERVIEW OF BUDGETARY MANAGEMENT

4.1 **This chapter compares budgetary management in Algeria against international standards, highlights the country's ongoing reform efforts and presents new findings**. Chapter 1 introduced the PCSC and its risks. Chapter 2 assessed the country's capacity to maintain discipline in overall fiscal balances, despite the oil windfall since the early 2000s. Chapter 3 described how a public investment system may allocate PCSC resources to priority and cost-effective projects. In turn, this chapter addresses the budgetary practices needed for steady implementation of the PCSC. In doing so, it completes the review of the three levels of public expenditure management (PEM) shown in Table 4.1.

Table 4.1 Basic Elements of Public Expenditure Management: The "Three- Level Analysis"

Aggregated fiscal discipline	Budget totals should be the result of explicit, enforced decisions, not merely accommodation for inertial trends and spending demands. Aggregate ceilings on totals should be set before individual budget decisions are made, and these levels should be sustainable over the medium term.
Allocation to strategic priorities	Budget allocations should be based on government sectoral priorities and on effectiveness of public programs. The budget system should shift resources from lesser to higher priorities and from less to more effective programs.
Operational efficiency	Line agencies should produce goods and services at costs that achieve ongoing efficiency gains and are competitive with market prices.

Source: Schick (1998).

4.2 **Poor performance of investment expenditure in Algeria is closely linked to PEM shortcomings.** Recent reviews of international experience show that poor PEM performance creates serious obstacles to government investment objectives in many countries (Judge and Klugman 2003). Algeria is no exception. Failures in its budget process and institutional bottlenecks have consistently led to poor execution in investment programs. Shortcomings result in poor programming, overbudgeting, and long delays in project implementation. Important failures include a disconnect between budget planning and sectoral priorities; a lack of effective interventions resulting from budget fragmentation through separation between capital and recurrent budgets; potentially sizable contingent liabilities, significant variations between capital budgets approved and executed; and extended delays and surcharges in the implementation of projects, which reflects weak execution capacity among line agencies. These shortcomings are explored in greater detail in this chapter.

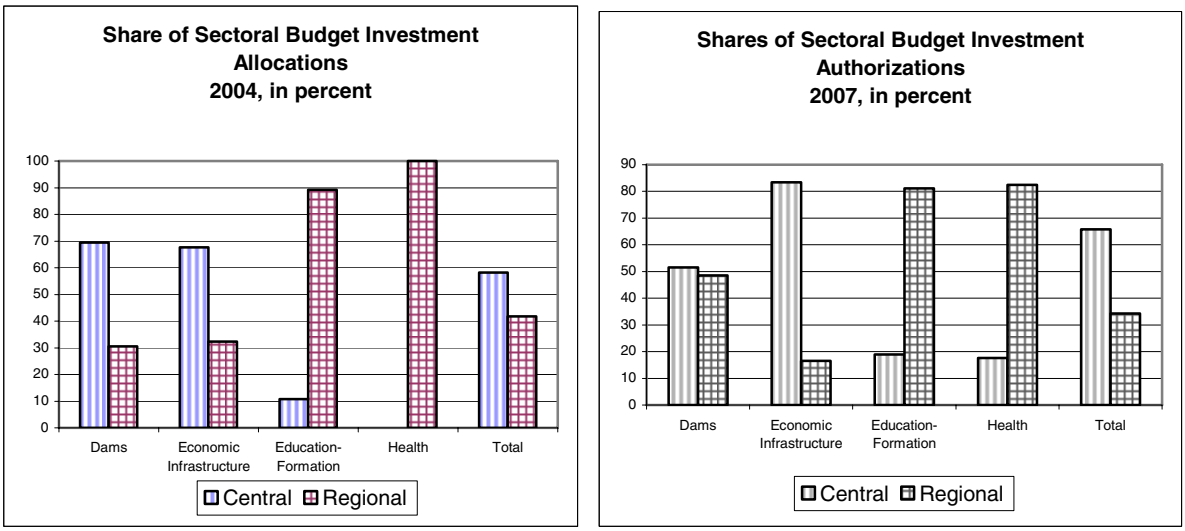
4.3 **To effectively implement the PCSC, solid parallel progress is required in ongoing reform of budgetary management.** Modern budgetary management includes a standard budget classification, sound aggregate fiscal ceilings, properly defined inter- and intra-sectoral priorities, and quantitative (both intermediate and final) indicators that make use of modern technology to monitor service delivery performance. Algeria is already working on all these fronts. A new budget reclassification, according to IMF public finance standards, is expected to be validated by the end of 2006. Sector priorities and key program indicators are being defined in agreement with 4 line ministries (health, education, public works and finance). The same pilot ministries have been selected for introducing a medium-term budgeting framework (MTEF). Passage of a modern IT-supported budget system is expected in 2009. A modern IT-based budget will also allow transparent information access for implementation of all PCSC projects, as well as proper monitoring and results-oriented budgeting in the future. Finally, as the ongoing budgetary reforms gain ground, a rolling three-year MTEF would also align expenditure inputs with expected sector outcomes. Hence, no delays are required in the upgrading of Algeria's budget and financial management procedures for sound implementation of the PCSC.

B. THE BUDGETARY PROCESS AND ITS RECENT PERFORMANCE

4.4 PCSC implementation takes place in a framework in which deconcentrated bodies (*wilayas*, that is, regions) have become more important for some sectoral budget execution. Overall, the PCSC should raise the share of centralized budget investment execution (Figure 4.1). While the central government directly executed about 60 percent of total investments in 2004, that share is expected to rise to about 66 percent of total investments under PCSC budget authorizations. This overall trend reflects a sizable increase that the central government is expected to make in the execution of economic infrastructure—from 68 to 84 percent of total PCSC investments. However, it masks the ongoing fiscal deconcentration in the health, education, and water sectors. Wilayas executed 100 percent of total health investment in 2004, and their share will remain above 80 percent in 2007. Their share in education was more than 90 percent in 2004 and will remain above 80 percent in 2007[43]. Finally, wilayas will increase their share in dam projects from 30 to 50 percent during this period. Given this trend, the health, education, and water sectors should pay particularly close attention to budget monitoring, execution, and evaluation at the wilaya level. Toward that end, a section of this chapter is devoted to the budget management of wilayas and of municipalities.

[43] Projected investment in hospitals and universities will remain centralized, which explains the small projected increase in centralized budget execution, but their sums are too small and de-concentrated investments prevail for both sectors.

Figure 4.1. Central and De-concentrated Budget Investment Authorizations of PCSC Expenditures, 2004-2007



Source: Ministry of Finance, Bank staff calculations.

4.5 **Algeria has taken important steps toward a sound overall PEM**. Fiscal management is defined by a relatively clear legal and administrative framework, which is contained in the Budget Framework Law No. 84–17 (IMF 2005a). Exceptional hydrocarbon revenues enlarge Algeria's space for financing public investment programs without affecting medium-term fiscal sustainability (IMF 2005b, 2005c). Algeria has also been prudent in its budget formulation. Despite high oil prices, it has adhered to a conservative price estimate of US$19 per barrel, though average prices were above US$38 per barrel in 2004 and 2005. Surplus hydrocarbon revenues are feeding the Hydrocarbon Stabilization Fund—the *Fond des Régulation des Recettes* (FRR). However, sound management of hydrocarbon revenues was supported by rules in which the stabilization fund could only be used to repay public debt,[44] until this was amended by the Budget Complementary Law of 2006, which now allows for direct financing of the budget deficit (see section D on Chapter 2). The government has also developed an excel-based central registry database for all special Treasury accounts. Thus, the budgetary process is also modernizing (see Annex C and below).

4.6 **Despite these efforts, Algeria's budgetary management as assessed by international standards reveals significant shortcomings.** Initial efforts in many areas are fragile. Since the late 1990s, the IMF and the World Bank have jointly developed a survey tool called an Assessment and Action Plan (AAP) to evaluate budgetary management practices worldwide (World Bank 2003e), but Algeria did not have one so far. Hence, for the first time, this survey applies a series of 16 indicators covering the various stages of budget management, including seven on formulation, four on execution, two on reporting, two on auditing, and one on public procurement. The survey was originally designed to help heavily indebted poor countries (HIPCs) identify key budget management areas in which poverty-reduction expenditures could be better executed and tracked. Indeed, this assessment served as a condition for eligibility for upcoming debt relief that would increase the availability of funding for poverty reduction. Likewise, Algeria is also experiencing an increase in revenues associated with its new oil pipeline

[44] Under the former rules, to finance the nonhydrocarbon budget deficits, the government has to issue new debt and use the FRR to repay this debt when falling due. The FRR could finance fiscal deficits, though only when the price of oil was below US$19 per barrel.

and a significant increase in resources to finance PCSC investment. Applying this survey to Algeria sets a baseline and highlights areas for improved budget management.

4.7 **The AAP survey shows that Algeria meets only 5 of the 16 global benchmarks.** The IMF and World Bank consider that a country's budgetary management system requires substantial upgrading if fewer than 7 of the benchmarks are met. As shown in Table 4.2, Algeria's performance is particularly dismal across the different budget stages of formulation, execution, reporting, and procurement.

- Formulation. Algeria uses an outdated classification system. In addition, coverage of general government activities is insufficient; and there is no medium-term expenditure framework. An important caveat in regard to one of the three satisfactory items—the overall ratio between the executed and approved budget—is that the execution performance by sector widely varies, which reduces budget reliability as a guide to resource allocation by sector.
- Execution. Slowness in execution does not reflect cash rationing but the cumbersome procedures that prevent rapid closing of the end-year period to close the budget (known as the *Journée Complémentaire*) and the opening of the new fiscal year, which delays the initial allocation of resources by more than three months. While Treasury timely knows how much budgetary resources are transferred to the *Comptes Spéciaux du Trésor* (known as STA in English), these funds are not fully disbursed immediately; rather, they are partly kept in deposit because they are not necessarily executed by these institutions. Hence, Treasury is artificially short of funds and must raise money to finance the nonhydrocarbon budget deficit. In the meantime, there are undisbursed funds lying in the special accounts.
- Reporting. The lack of prompt and virtual (in real time) consolidation of the budget once executed, as well as shortfalls in auditing, contribute strongly to low scores. Despite ongoing efforts to modernize, the budget is managed on multiple and separated databases. This leads to a disconnect among the various institutional database systems and problems in consolidating reliable data in the central database at the budget office. Neither internal nor external fiscal accounts are effectively audited; and there is high-level political interference in auditing followup. This prevents substantive cases from being presented, or sanctions from being applied.
- Procurement. The scope of the investments to be made and the considerable increase in the number of contracts to be awarded and managed in the context of the PCSC call for strengthening of entities and improvement of the procurement and contract management system, with a view to enhancing its efficiency and transparency and ensuring the execution of investments under sound conditions from the standpoint of cost-benefit, particularly in the case of major projects.

Table 4.2. Ratings of Algeria's performance against international benchmarks for budgetary management and the reasons for its ratings

International Benchmarks (AAP)		PER Rating[/b]	Rationale for Algeria's PER Rating
Formulation			
1 (A).	Fiscal reporting matches the IMF definition of general government sector with coverage (by value) of at least 95 percent, whether or not funded through the budget.	C	A C rating is granted if fiscal reporting includes central government operations exclusively. Thus, it excludes coverage of the rest of general government budgets—especially subnational, regional or local, government budgets, and public enterprises. Ex ante transfers to subnational governments are available, but ex post reporting is not available and does not include off-budget activities.
2 (A).	**Off-budget fiscal activities: Government activities are funded through extrabudgetary resources, but these funds represent less than 3 percent of total spending.**	**A**	On the sources side, there is no comprehensive and reliable list and information estimating extrabudgetary resources, but at first sight they do not seem significant. Identified extrabudgetary resources are mainly the 20 percent earmarked VAT revenues to local governments (i.e. *recettes affectées*) equivalent to about 1 percent of GDP in 2005, and own-generated resources collected by special treasury accounts,social programs and the road fund. Authorities claim that amounts involved in these items are rather small. On the destination side, no inventory of tax expenditures, contingent liabilities, or off-budget activities is included in the budget documents presented to Parliament.
3 (B).	**The level and composition of the budget outturn is quite close to the original budget appropriations (a B is granted for deviations between 5 and 15 percent) for at least two years.***	**A**	During 2001–04, aggregate deviations represented an average 3 percent of underbudgeting in recurrent budgeting and below 5 percent in capital budgeting (which justifies the A rating). Although there was no dominant pattern of under- or overexecution in those years, investment budgets among some sectors widely varied.
4 (A).	**Budget reports include timely data on external financing flows—loans or grants—ex-ante and ex-post.***	**A**	Ex-ante forecasts and ex-posts reports of loans and grants disbursements are available. A minor issue is that ex-post grant reports are neither timely nor complete. Budget registration of grants obtained during the fiscal year has delays and no clear procedural guidelines, but their share of the budget has been negligible since 2002.
5 (B).	Budget expenditure is classified on an administrative, economic, and detailed functional and programmatic basis.	C	Algeria's economic classification does not fully conform to international standards (ROSC 2005), which corresponds to a C rating. Separate budgets for recurrent and capital budgets coexist, and their classification system does not match. There are no functional or programmatic classifications.
6 (A).	Identification of poverty-reducing expenditure is clear, through a virtual or an actual poverty fund.	B	A B rating is granted if poverty-reducing spending is somehow tagged through a list of transfers to social programs. However, these are just broad transfers with no special tracking mechanism for monitoring or verifying their execution on pro-poor outlay at the level of the line agencies, the wilayas, or local governments in charge of those programs. This adds to budget fragmentation and the lack of a functional and programmatic classification as major obstacles to identifying pro-poor spending.
7 (A).	Multi-year sectoral expenditure projections are integrated into the budget formulation cycle as indicative ceilings.	B	There is no formal medium-term expenditure framework (MTEF) endorsed by the Cabinet. However, steps toward a MTEF have been adopted and the Ministry of Finance produces three-year aggregate forecasts, and approves sector multi-year investment authorizations, which justifies the B rating. These are purely informational. They are not integrated into the budget formulation cycle yet. The absence of functional and program classification prevents the adoption of inter- and intra-sectoral disaggregated benchmarks.
Execution			
8 (A).	**No stock of payment arrears (or very few), with little accumulation of arrears over the previous year.***	**A**	Algeria has no arrears from past years. The oil windfall has provided ample fiscal space to finance its investment programs. It has also advanced external debt repayment. Instead, two minor issues are the current practice of supplementary budgeting by mid-year (with sizable resources involved) and of increased resources allocated to special Treasury accounts, which are not executed during the fiscal year and thus de facto break the principle of an annual budgetary cycle.

9 (A).	Internal control system is effective.	B	Internal financial audits exist, which justifies the B rating, but their coverage is partial and are weak in their breadth, depth, and frequency. The country uses an ex-ante visa mechanism that essentially consists of checking documents. However, it does not monitor overall performance of outlays to verify that underlying contracting and financing mechanisms are operating properly. Reports of fraud cases are rare.
10 (B).	Public expenditure tracking surveys (PETS) of funds are piloted to supplement weak internal control as a second best.	C	No PETS have been piloted or implemented. In addition, the fiscal reporting system is not well equipped to monitor expenditure, which explains the C rating. No supplementary mechanism, such as PETS, exists to complement internal audit shortcoming. No special studies are done on the resources reaching the final users or service providers in PCSC projects or social programs.
11 (A).	**Satisfactory reconciliation of banking and fiscal accounts is undertaken monthly.**	**A**	Reconciliations of banking accounts are facilitated by the fact that all Treasury operations are recorded in a single master account at the Bank of Algeria that provides balances on a daily basis, which justifies the A rating. However, there are regular discrepancies between reporting of expenditure execution by Treasury (cash basis *decaissement)* and Budget (ordonnancement-basis).
Reporting			
12 (B).	Internal budget execution reports are received within two to four weeks of the relevant period.	C	Whether annual, quarterly, or monthly. reports on budget execution are irregular and very incomplete, which explains the C rating. Delays in institutional audit reports from spending units may continue for much more than 3 months. Reports from decentralized execution units are nonexistent.
13 (A).	Good quality classification of poverty-reducing spending is reflected in regular in-year budget reports.	C	Because there are severely fragmented, mismatched, and outdated budgetary classifications, reporting on poverty reducing expenditure is nonexistent and a C rating is guaranteed.
14 (A).	Routine transactions are entered into the main accounting system within two months of the end of the fiscal year.	B	Centralized monthly statements are entered within six weeks of the end of the year (IMF 2005a), which explains the B rating. Deconcentrated monthly statements by wilaya treasurers can take much longer. The complementary period for closing the annual budget, known as *Journée Complémentaire,* has taken no less than three months on average during the past three years.
15 (B).	An audited record of the financial outturn should be presented to the legislature within 6 to 12 months of the end of the fiscal year.	C	The Constitution empowers the National Audit Court to oversee the finances of the central and local governments, as well as state services ex post. However, the exercise of this right has not been exercised since 1997. External audits are done ad hoc. The annual report for 2003 took longer than a year to be prepared and is still not published. The annual report for 2004 has not yet been issued. In addition, audited records of decentralized execution units are nonexistent. All this justifies a C rating.[45]
Procurement			
16 (A).	The public procurement system promotes efficiency and effectiveness in the use of public resources through clear rules that promote competition, transparency, and value for money.	C	The procurement system has unclear and inadequate rules and weak enforcement studies (*cahiers des charges*) are insufficient; external expertise is rare; and present procedures do not favor competition (MoF, 2006) which prompts a C rating. There have been numerous cases of suspected corruption in public procurement contracts, but little follow-up.
	The number of benchmarks met (i.e., the number of A ratings)	5	

Source: ROSC and CFAA, and WB staff survey.
Notes: [a/] Single asterisk(*) and **boldface** means that the benchmark was met.
[b/] The ratings are as follows: A = Good. B = Fair. C = Poor.

4.8 **In the same vein, Algeria's global rankings in budgetary management are below those of an average HIPC country.** Table 4.3 shows that Algeria fares better than average on only three indicators. It is similar on six other indicators. It fares worse on the remaining seven indicators. This would place Algeria in Group C among HIPC countries with the less-advanced budget management systems. Twenty-one of 25 Group C countries are located in sub-Saharan

[45] A detailed analysis of Algerian control procedures is long due and not done here. For a recent official review, see MoF 2006.

Africa. However, if Algeria continues to make solid efforts in its ongoing budgetary reforms, its gap with the more advanced HIPC countries would diminish in the next three years. Its present budgetary reforms are far from exhaustive or needing only to accelerate. They also need to focus on other fundamental issues, as discussed below. A comparison with HIPCs process of budgetary reforms also illustrates the areas of ongoing budgetary performance that are proving relatively easier to reforms (Table 4.3).

C. BUDGET MANAGEMENT REVIEW IN THE CENTRAL GOVERNMENT

4.9 **Algeria could do much better than its poor present performance by focusing on selected aspects of its budget management.** The previous section provides valuable insights and benchmarking. This section highlights key budget management shortcomings that specifically affect investment execution.

Table 4.3 Ranking of Algeria's PEM in Relation to HIPC Indicators

Indicador[/a]	Algeria (2004)	HIPCs Mode (2005/04)	Detailed HIPCs Distribution (25 countries, 2005/04 in %)		
			A[/b]	B[/b]	C[/b]
Formulation					
1. Good coverage of general government	C	B	32	56	12
2. Full reporting of extrabudgetary sources	A**	A	52	36	12
3. Reliable budget as programming tool**	A*	C	0	40	60
4. Registered data on external financing**	A*	B	16	80	4
5. Sound classification of transactions	C	B	20	64	16
6. Tagging of poverty reducing spending	B	A	56	24	20
7. Integration multiyear & annual budget*	B**	B	28	52	20
Execution					
8. Timely reporting of payment arrears**	A*	C	36	20	44
9. Good quality of internal control system*	B**	B	4	92	4
10. Regular spending tracking surveys done	C	B	4	52	44
11. Proper reconciliation of accounts	A**	A	48	20	32
Reporting					
12. Timely budget reporting**	C**	C	16	36	48
13. Regular reporting of pro-poor spending	C	B	28	48	24
14. Timely accounts recording and closure	B	A	56	20	24
15. Timely audited accounts*	C**	C	0	28	72
Procurement					
16. Efficient and effective procurement	C	B	0	72	28

Source: World Bank and IMF (2005) and responses from Algerian authorities to World Bank/IMF survey.

Notes: [a/] Meaning of asterisks in this column:
No asterisk means a worst performance by Algeria.
One asterisk (*) means a better performance by Algeria
Two asterisks (**) means a similar performance by Algeria.
[b/] Ratings as follows: A = Good; B = Fair; C = Poor.

Budget formulation

4.10 **Several technical and institutional weaknesses seriously inhibit effective budget management for Algeria.** These include: (a) inaccurate assumptions on the formulation of the initial budget; (b) sizable midyear reallocations; (c) no quantification of some off-budget

activities and, especially, contingent liabilities; (d) incrementalism, whereby recurrent and, to some extent, capital budget allocations are decided mostly as inertial semiautomatic adjustments to the previous year's allocation, turning budgeting into a formulaic exercise; (e) a very long *Journée Complementaire* to close the fiscal accounts at the end of the budget cycle; (f) the multiplicity of special treasury accounts to bypass the annual budgetary cycle; (g) good overall performance, but with minor variations in the sectoral execution of the capital budget (see Chapter 3); (h) the absence of a results-oriented budget, reflected in the lack of physical and financial indicators and, more generally; (i) absence of a MTEF (See below).

4.11 **Lack of fiscal rules and significant under- and overestimated budget assumptions prevail.** Clear fiscal targets are not set, with the exception of the ceiling on central bank advances. In addition, there is no detailed analysis of expenditure programs or projects, nor their medium-term sustainability. The budget does not analyze the sensitivity of the estimates to change in economic variables such as the price per barrel of oil (IMF 2005a). Unrealistic macroeconomic assumptions affect the budget process. No sophisticated macroeconomic or fiscal modeling is employed for the design of tax and fiscal scenarios. Assumptions serve only as rough guide. The government does, however, publish a detailed description of its set of macroeconomic assumptions (the so-called *cadrage*). In practice, deviations on the projected GDP growth rate (below 5 percent) have been lower than those of the inflation rate (above 50 percent) during the past two years (Table 4.4). Deviations on fiscal variables have also been increasing by significant amounts. On the *revenue side*, while the underestimation of tax revenues has been below a reasonable 10 percent, underestimation of hydrocarbon revenues has been high oscillating between 38 and 55 percent. The latter underestimation, however, mainly reflects the official decision to maintain US$19/barrel as the budget reference price. On the *expenditure side*, the underestimation of recurrent expenditure has remained below an acceptable 10 percent, but the overestimation of capital expenditure shows a marked increase from 11 percent in 2004 to 44 percent in 2005 (with respect to the Complementary Budget that is approved by mid-year).

Table 4.4 Budget Law: Initial and Complementary--Assumptions and Actual Values

	2004		2005		
	Initial	**Actual**	**Initial**	**Comple-mentary**	**Actual**
GDP growth (%)	5.1	5.2	5.2	5.4	5.3
Inflation year end (%)	2	2.0	3	3.5	1.7
Hydrocarbon revenues (MMDA)	862	1571	899	899	2,353
Tax revenue (MMDA)	532	580	597	n.a.	644
Current Expenditure (MMDA)	1,200	1,245	1,200	1,255	1,292
Capital Expenditure (MMDA)	720	646	750	1,048	730
Fiscal deficit (–) (as % of GDP)	7.9	6.9	6	12.7	14.2
Crude oil price (US$/barrel)	19.0	38.5	19.0	19.0	54.6
Hydrocarbon exports (billions US$)	16	31.6	17.8	17.8	45.6

Source: MoF Budget Laws 2004 and 2005, and IMF.

4.12 **The practice of introducing supplementary budgeting by mid year is extended and significant—not in the number but in the size of supplementary resources.** In 2004, resources added as supplementary budget were marginal; however, in 2005 they represented an 18 percent increase over the original budget for recurrent and capital spending (Table 4.4). Supplementary budgeting, as a common practice, diminishes the importance of the initial budget approved by Congress, raises expectations among ministries for supplementary funds to be

obtained by midyear, and readjusts public spending, sometimes in a significant way for some entities by mid-year.[46] Supplementary budgeting has another important implication: it modifies budget priorities while shifting resources within expenditure items. Certainly, in most cases there should be a reasonable justification for doing it. However, the large size of the 2005 budget increase suggests that the introduction of a contingency reserve might be a plausible solution within reasonable limits. Besides, even if supplementary budgets are approved, ministries have limited absorptive capacity for executing their additional capital budgets, which happened in 2005.

4.13 **A problem in budget formulation is the presence of offbudget resources (mainly earmarked revenues—*recettes affectées*) and, especially non-duly quantified contingent liabilities.** Earmarking of VAT revenues to subnational governments is not necessarily a bad practice because doing so guarantees a steady flow of resources. However, it promotes budget fragmentation, which weakens the government's capacity to prioritize policies and expenditures.

- There are many fiscal and parafiscal taxes earmarked to STAs and non-quantified—for example, the tax on overweight trucks (the so-called essieu for road maintenance), and environmental taxes applied to pollutant hospitals and industries.
- Other off-budget or contingent liabilities might be sizable. No quantifiable estimates exist on tax expenditure, implicit subsidies and guarantees, and quasi-fiscal activities by public banks. Moreover, several government entities—including Sonelgaz, Banque Algérienne de Développement, Algérie Telecom, and others—are carrying nonperforming loans or claims that could total over US$1 billion, or 1.2 percent of GDP in 2004 (IMF 2005a).
- As part of hydrocarbon revenues, Sonatrach's resources are exceptionally well tracked and part of it flow to the FRR; however, this is far from the case with other Algerian public enterprises.47 Resources for the FRR are defined in two steps: First, about 2/3rd of hydrocarbon export proceeds of Sonatrach and other foreign companies flow to the budget; and second, of this flow, until mid-2006, any amount above the US$19 reference price had to flown to the FRR.

4.14 **The budget process is archaic and fragmented because, in practice, Algeria has two budgets.** The operating budget is classified as administrative and financial in nature; while the capital budget is classified by sector and subsector. In practical terms, this division prevents proper joint programming for operating and capital expenditures (see Chapter 3). Furthermore, the absence of operational or programmatic classification impedes the linkage of resources with specific sectoral policy objectives.

4.15 **Budget programming is inertial, but not for lack of fiscal space.** Budget inertia can be substantial and be caused by budget rigidity. However, this is not the case in Algeria. In 2005, about two-thirds of the total budget expenditure was rigid, comprised of 23 percent for wages and Mudjahidins' pensions, 15 percent for debt service, and 27 percent for transfers. By international standards, a budget rigidity ratio at this level is considered low.[48] This leaves Algeria with

[46] Sometimes, the impact of supplementary financing can even go beyond merely budget increases and reallocations. The introduction of the 2005 LFC represented a shift from a moderate to a more expansive stance in expenditure policies.

[47] Jeune Afrique (No.2373. July 2-8, 2006) indicates that 221 public enterprises have already been privatized and about 950 remain to be done so.

[48] "High" budget rigidity ratios are considered to be those above 80 percent, which are typical for most Latin American and HIPC countries.

significant flexible components of its budget, especially for goods and services and capital expenditures. Hence, budget inertia rather originates in traditional budgetary practices. Budget programming is inertial when its allocation to line items for year n+1 is incremental by a constant growth rate (often inflation) in relation to its allocation for year n. Take for example the report introducing the 2004 budget law. The operating expenditures for 2005 and 2006 were calculated by projecting a two percent raise per year (IMF 2004a). According to government authorities, the agreed upon increase for most recurrent expenditure was 3 percent in 2005. Budget inertia is also often applied to capital expenditures, frequently to ongoing projects. However, in recent years, the Ministry of Finance MoF authorities have reexamined individual allocations to PSRE projects under way or to incoming PCSC projects. There are three serious limitations in attempting to break budget inertia. First, reprogramming of budget reallocations for projects in year n+1 takes place without an accurate idea of their degree of physical and financial execution in year n. Second, the initial budget guidelines issued around April of year n have no predetermined ceilings by institution, sector, or projects. This requires the budget office director to engage in protracted negotiations during June and July. Third, budget programming becomes totally irrelevant in the case where project execution is deconcentrated, leaving the central government with no means to control the execution that is determined by the regional authorities (walis) at the wilayas.

4.16 **The absence of a well-designed Medium-Term Expenditure Framework (MTEF) is a major shortcoming at the core of the government's investment strategy.** A MTEF is a key instrument with which the government can articulate its strategic spending priorities within a sustainable fiscal resources envelope. A METF has three objectives: improved macroeconomic performance, especially fiscal discipline; better inter- and intra-sectoral resource allocation; and more efficient use of public resources. Complementary objectives include greater budgetary predictability for line ministries; increased political accountability for public expenditure outcomes through more legitimate decisionmaking; and greater credibility of budgetary decision making through enforcement of political constraints that were conveyed ex ante.

4.17 **The lack of a MTEF reveals the absence of a strategic framework that allows expenditures to be driven by policy priorities and disciplined by budget realities.** A MTEF combines a top-down sustainable fiscal resources envelope with bottom-up efficient and cost-saving allocations of the available resources, and in the context of a multiyear budgetary programming. The top-down resource envelope—often known as the "ceiling expenditure"—is frequently determined by a macroeconomic model that projects fiscal ceilings and estimates target revenues and expenditure for the next (commonly, three) years. As such, it requires a predefinition of national priorities. The bottom-up approach—often called the "floor minimum spending"—summarizes the sectors' review of their main program and project priorities, with an eye to optimizing their minimum allocations. While the top-down approach is jointly determined by the fiscal and central bank authorities, countries such as Brazil and Uganda have developed a bottom-up MTEF approach in a participatory way by including subnational governments and civil society in the definition of key programs and projects. As shown in Box 4.1, a MTEF essentially covers six stages. The most frequent variant of this approach begins with piloting in selected ministries, as Algeria is now doing. Success in the pilot is necessary for medium-term programming to gain broader credibility.

Box 4.1 The Six Stages of a Comprehensive Medium-Term Expenditure Framework

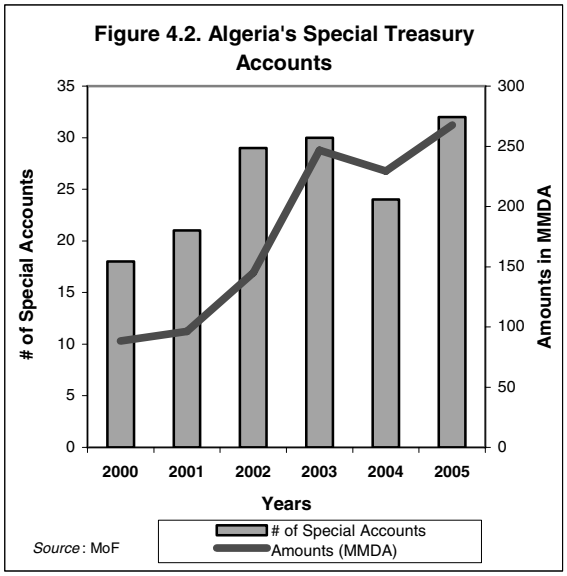
1. *Development of a macroeconomic fiscal framework.* A macroeconomic model that incorporates projections of revenue and expenditures in the medium term (multiyear).
2. D*evelopment of sector programs.* Agreement on sector objectives, outputs, and activities review, development of programs and subprograms, and preliminary cost estimation.
3. Development of sector expenditure frameworks (SEFs). Analysis of intra- and inter-sector trade-offs.
4. *Definition of sector resource allocations*. Setting annual and medium-term budget ceilings.
5. P*reparation of sector budgets.* Selection of annual and medium-term key programs (with floor amounts) in sectors, thus matching specific intra-sector priorities with global budget ceilings.
6. *Final political approval.* Presentation of budget estimates to cabinet and Parliament for approval.

Source: World Bank, 1998b

Budget execution and monitoring

4.18 **The *Journée Supplementaire* that closes the budget each year currently exceeds three months (and to close the month, more than ten days).** Thus, the actual execution process of the fiscal year only begins more than three months after January 1. In addition, the late renegotiation of budget annex documents containing specific allocations also blocks the availability of appropriations at the start of the fiscal year. The fact that authorizing officers do not order new appropriations while the *Journée Supplementaire* is open creates artificially severe cash-flow problems, which affect the execution cycle. Instead of solving the problem at its origin, authorities have countered this by creating another distortion—significant expansion of the special Treasury accounts.

4.18 **In practice, STAs are used to circumvent the prohibition on carrying the budget law forward with annual appropriations beyond the budget cycle.** This explains why the number of instances and the volume of resources channeled in this way is rising. STAs are established by a budget law and have well-defined regulations. There are six kinds of STAs—for (a) trading state services, (b) earmarked funds, (c) the funding of advances from treasury, (d) loans, (e) transactions with foreign governments or loans, and (e) participations and obligations. Regulations require that transactions on such accounts (with the exception for those trading state services) be managed as general budget operations. They are to be capped up to a maximum overdraft, and they must be annexed to the draft budget law with a detailed report on how they operate. Nevertheless, these regulations have not been implemented. So there is little



transparency over the operations of STAs. Parliament is not appraised of the total projected or actual expenditures and receipts on these accounts (IMF 2004a). STAs have also been used as a mean to prevent artificial cash shortages during the initial months of the budget year. Not surprisingly, in 2005 the government decided to bring a significant amount of PCSC approved resources under the management of special accounts. As a result, STAs are a rapidly rising trend. Between 2000 and 2005, their number almost doubled from 18 to 32, while the amount of transfers from the budget has tripled from DA88 billion to DA268 billion (Figure 4.2).[49] Authorities are aware of this development and have significantly improved data quality and collection on STA operations, thus allowing a better tracking of their operations.

4.19 **The state is probably paying implicit premiums to suppliers in compensation for its cash management shortcomings.** The state has a reputation as a poor payer. Operations are recorded on a modified cash basis that allows certain items awaiting payment to be taken into account (IMF 2005a). The precise time for payment is not tracked.[50] Apart from irregularity (for example, in salaries), the ministries have pointed to delays in settlement of obligations in ways that typically portray the state as a deadbeat in the eyes of suppliers. This might lead to overbilling for services provided. Often, the poor performance of the banking system is used as justification, where delays in "compensation" for bank transfers (*virements*) are approximately two months on average (MoF 2005).

4.20 **The reliability of the recurrent budget is good, though reallocations imply "winners" and "losers".** In examining four years of recurrent expenditures in actuality versus as initially budgeted, several noteworthy points emerge (Table 4.5). First, the reliability of the budget has been very good—actual total expenditures accounted for 103 percent of budgeted expenditures. Second, there is no clear pattern of over- or underspending, neither at the institutional level nor by time period. Third, there is considerable persistence in the over- and underspending by individual sectors. Sectors with overspending greater than 15 percent are: the services of the chief of the government, communal charges, labor and social security, and the president's office. Those with significant under-spending are typically fishing, IT and posts, relations with the parliament, and energy and mines. For its part, the previous chapter examined the reliability of *investment expenditures*, in which a global execution rate of 95 percent was considered to be acceptable between 2001 and 2004, albeit with wider variations among sectors (see Chapter 3 for a detailed account).

[49] The actual number of STAs is higher. Indeed, MoF 2006 identifies a total number of 64 STAs for 2005, while acknowledging that 22 of existing STAs do not follow an accounting framework that is consistent with the law.
[50] Expenditures are recorded on a payment order basis, not on a basis of disbursement.

Table 4.5 Budget Execution of Institutional Spending, Central Government, 2001-04 [a/]					
Sector entitites	**2001**	**2002**	**2003**	**2004**	**Average 2001-04**
President's office	1.2	1.2	1.1	1.1	1.17
Services of the government chief	1.9	2.7	0.7	1.1	1.61
National defense	1.0	1.0	1.0	1.0	1.01
Justice	1.0	1.0	0.9	1.0	0.95
Interior, local governments	1.0	1.0	0.9	1.0	0.97
Foreign affairs	1.10	1.16	1.13	1.05	1.11
Finance	0.87	0.88	0.90	0.87	0.88
Water resources	0.97	1.16	1.02	1.09	1.06
Small and medium enterprise and artisans	0.88	0.98	1.02	0.81	0.92
Energy and mines	0.81	0.79	0.73	0.80	0.78
Education	0.99	1.00	0.98	1.12	1.02
Communication and culture	1.07	1.52	1.04	1.41	1.26
Superior education and scientific research	1.00	1.00	0.94	1.04	0.99
Youths and sports	0.99	1.05	1.02	1.21	1.07
Commerce	0.85	0.84	0.81	0.89	0.85
Information technology and postal services	0.84	0.84	0.84	0.43	0.74
Professional education	0.99	0.99	1.01	1.02	1.00
Religious affairs	0.96	0.94	0.98	1.10	0.99
Housing and urbanism	0.97	0.93	1.00	1.01	0.98
Industry	0.88	0.95	0.92	0.97	0.93
Labor and social security	1.00	1.00	1.00	1.76	1.19
Employment and National Solidarity	0.92	1.03	0.99	1.10	1.01
Moudjahidine	0.77	0.94	0.92	1.16	0.95
Agriculture and rural development	1.11	1.29	0.99	1.06	1.11
Relations with Parliament	0.72	0.76	0.82	0.68	0.74
Health, population, and hospital reform	1.04	1.05	1.02	1.04	1.04
Public works	0.97	0.96	1.02	1.13	1.02
Territorial distribution and environment	0.83	0.78	0.87	0.96	0.86
Tourism	0.85	1.09	0.78	0.88	0.90
Transports	1.00	0.99	1.03	1.06	1.02
Fishing and *Halieutiques* resources	0.87	0.64	0.65	0.77	0.73
Subtotal	0.96	1.00	0.97	1.07	1.00
Communal charges [b/]	1.72	0.91	1.32	0.90	1.21
Total	1.09	0.99	1.02	1.03	1.03

Source: Ministry of Finance.

Notes: Shaded areas reflect over- or under spending above 15 percent.

[a/] Ratio of executed/initially approved (planned) budget per year.

[b/] Includes "participation and investment promotion."

4.21 **The lack of performance indicators and tracking of expenditure objectives reveals the absence of a results-oriented budgetary framework.** Monitoring budget execution is a slow process and is restricted to verification of appropriations, the proper observance of procedures, and the regularity of documents (with a purchase order and financial oversight approval for expenditures). The budget format is extremely simple. It contains neither fiscal ratios, nor physical or financial indicators. Lack of a MTEF, which would tie expenditure priorities to government policies, also prevents the government from allocating resources in line with its long-term goals. It is therefore virtually impossible to consider budget tradeoffs that are grounded in clearly articulated policies and alternative cost proposals. Similarly, compliance in the input of resources (as allocated among and within sectors) cannot be monitored against corresponding output indicators.

4.22 **Poor monitoring and reporting leads to limited budget transparency.** Until late 2006, Algeria had not yet participated in any rigorous comparative study of budgetary management. It therefore has not been officially ranked in terms of its global budgetary practices.[51] It would be very positive if Algeria were to participate in the official OECD/World Bank rankings. It has worldwide coverage and incorporates more detailed issues of budget formulation, execution, accounting control, monitoring, documentation and performance management, fiscal relations among levels of government, and special issues.[52]

D. BUDGET MANAGEMENT BY WILAYAS AND MUNICIPAL GOVERNMENTS

4.23 **Limited autonomy because of financing constraints stands out as a shortcoming of budget formulation bysubnational governments.** This is largely related to the particularities of the management of intergovernmental transfers in Algeria. Wilayas and municipalities are legal entities with their own budgets. They are administered by elected assemblies. The budget law formally defines a revenue-sharing arrangement that mandates the following: (a) the share of tax revenues that they are to directly receive, which is 20 percent of VAT revenues; (b) the amount of budgetary transfers from the Local Government Common Fund (FCCL), financed by taxes and budgetary appropriation;[53] (c) their expenditure responsibilities; and (d) the mechanisms through which the government approves and oversees their budgets. As seen, exceptional subsidies lead to extensive central government intervention in the preparation of municipal budgets and to absorption of debts that municipalities owe to certain public enterprises. It would be unsurprising to find that subnational governments, so heavily dependent on transfers, then become cash-strapped and less able to manage their budget execution.

4.24 **Budget formulation at the local level replicates deficiencies found at the central level.** Oversight of the municipalities' budgets is exercised by the walis, the government's representative at the wilaya level. The walis are also in charge of executing the wilaya budget. Few wilayas and municipalities have a strategic plan. The emphasis in budget management is on

[51] In fact, Algeria barely answered two of the seven sections of the 2003 OECD questionnaire. To date, it has not responded to the 2006 ongoing update exercise (OECD and World Bank, 2003). However, Algeria is participating in the 2006 International Budget Project, whose data and survey collection is private. Results are expected to be published soon.

[52] However, in 2006, Algeria did participate in the private-led International Budget Project, which initially covered 25 countries when launched in 2004, and actually covered 59 countries in 2006. It focuses on several aspects of transparency, including citizenship participation, legislature attributes, oversights of the budget cycle, internal and external controls, accountability, public debt, and quality and timeliness of data. See www.openbudgetindex.org.

[53] The FCCL is intended to compensate for the eventual reduction in local government tax revenue while ensuring equalization according to established criteria. It disburses subsidies to assist municipalities running deficits—about 1,200 out of 1,541 in 2004 (IMF, 2005a).

recording rather than reporting or planning. Basically, they tend to view budget formulation as another necessary evil imposed by the central government, at best a rote inertial exercise.

- Wilayas and municipalities formulate their budgets in isolation from national strategic directives. There is no legal requirement to do otherwise.[54] But if such a requirement were to exist, subnational governments would be hard-pressed to implement it, because of the general lack of definition of national objectives. There are some exceptions. Because the central institutions have not formulated national objectives, some wilayas and municipalities do communicate among themselves and have built consensus on local common goals (see Chapter 7 for examples in the education sector).
- For subnational governments, there is no framework for fiscal discipline. The level of annual transfer, which itself is discretionary and problematic, is the only formal budget constraint affecting wilayas and municipalities. There are no constraints on the level of indebtedness nor on obtaining grants. Thus, subnational governments often incur arrears with public utility companies. International experience shows that this practice often leads to unsustainable local debt. Available information did not permit assessment of the level of indebtedness of local governments to the public banking system.
- Budget formulation is short term. The budget process is not used to improve allocative efficiency nor match public services with citizen priorities. The lack of multiyear budgeting is also typical of subnational governments. Moreover, participatory budgeting is nonexistent. Only a few municipalities regularly engage communities on short-term budget issues.
- Future expenditures are projected based on past levels, and efficiency considerations are absent. Subnational governments replicate inertial budgeting practices of central management. No incentives are given to local politicians to find creative solutions in terms of costing exercises to improve their budget efficiency.

4.25 **There is no information on whether budget execution is affected by regular arrears in transfers, not only on a yearly but on a monthly basis.** Revenue-sharing transfers in Algeria are made on an irregular basis. In any given month, there might be several payments, a single payment, or none at all. Consequently, the flow of transfer payments is volatile. This volatility of transfers undermines the ability of municipalities and wilayas to cover the cost of regularly used services. It also impedes efficient delivery of local services in the water, sewerage, and road sectors, and leads to interruptions in service provision.

4.26 **Budget control and monitoring in subnational governments is weak and cumbersome. Neither municipalities nor wilayas conduct internal audits regularly.** In addition, the Ministry of Interior does not externally monitor the wilayas, and the walis do not monitor municipalities. The *Cour des Comptes* does not initiate administrative sanctions although they formally hold the power to do so. Local citizens and users possess even less monitoring capacity and budgetary oversight.

4.27 **Reporting on subnational budgets and debt is very poor. Local government taxation is not reported in publicly accessible documents.** The MoF does not require reports on executed municipal and provincial budgets. If requested, local administrations send incomplete information. Although there are no official data on reporting, MoF officials indicate that barely a minority of municipalities and wilayas send their executed budget back to MoF, and when they do so, they often do it late.

[54] The Budget Organic Law makes no reference to such a requirement. Wilayas report to the Ministry of Interior, not to the Ministry of Finance.

E. RECOMMENDATIONS

4.28 **The performance of PEM needs improvement at every stage—formulation, execution, monitoring, control, procurement, and evaluation.** Fortunately, Algeria is already in the process of implementing a multiyear action plan to modernize its budgetary system (*Projet de modernisation des systèmes budgetaires—MSB*). The MSB refers mainly to the central level, though there are some extensions to the subnational level as well. This section outlines the main measures to be taken, while including those under the ongoing action plan. It also takes into account recommendations from the 2005 IMF Report on the Observance of Standards and Codes (ROSC). Broadly speaking, the short-term priority should be to keep the ongoing budgetary modernization process on track based on the existing non-yet fully computerized system. While also upgrading the regulatory framework, the government is attempting to develop sector strategies to guide multiyear sector budget allocations and program prioritization and benchmarking.

4.29 **Interesting lessons can be learned from four years of implementing similar budget modernization actions plans by HIPCs, which were examined by World Bank and IMF (2005).** The easiest area for significant improvement appears to be budget reporting, especially in tracking poverty spending (Indicator 13), timely recording and closure of transactions by end of year (Indicator 14), and timeliness of audited information (Indicator 15). In contrast, no country has met the procurement benchmark. Budget formulation, execution, and control show uneven performances. More significant improvements in budget formulation are seen in the coverage of the budget (Indicator 1), the budget reclassification on a functional or programmatic basis (Indicator 5), and the integration of multiyear expenditure projections in the budget cycle (Indicator 7). More rapid improvements in budget execution are seen in the routine reconciliation of fiscal and banking records (Indicator 11). Identification of these areas promises to be a valuable input for defining the sequence of possible actions in the future.

4.30 **Another valuable input is contained in the ROSC recommendations for transparent budget management in Algeria.** The main recommendations are shown in Box 4.2.

4.31 **In the short term, there is a logical linkage among, first, ongoing work aimed at modernizing budget preparation and expenditure classification; second, improving the expenditure channel; and third, computerizing budget management.** The set of actions aimed at modernizing budget preparation and expenditure classification will help to (a) reorganize the budget by program; (b) facilitate presentation of the budget in a variety of forms, including economic, administrative, financial, operational, and programmatic; (c) define better the sectoral objectives of each program; and (d) identify a small set of performance-based budget-tracking indicators. The set of actions aimed at improving the expenditure channel will help to streamline expenditure execution and oversight procedures, while monitoring expenditure when necessary. Both set of actions are related to a computerized budget management system that will integrate budget and accounts management systems virtually, thus facilitating detailed tracking of expenses.

BOX 4.2 MAIN RECOMMENDATIONS OF THE ALGERIA IMF–ROSC TRANSPARENCY MODULE

In December 2004, an IMF Report on the Observance of Standards and Codes (ROSC) evaluated Algeria's fiscal transparency practices in light of the *IMF Code of Good Practices on Transparency in Monetary and Financial Policies* (IMF 2005a).

The ROSC found that Algeria is carrying out reforms that have helped to clarify the roles that stakeholders play in the public sector as well as to elucidate how government authorities can operate in the economy. However, major progress is needed to attain a satisfactory level of transparency in the fiscal sector. Major issues include: (a) significant quasi-fiscal operations of banks and public enterprises, not accurately assessed; (b) fiscal data that refer for the most part to the central government; (c) a legal framework governing budget preparation and execution, with much room for improvement in government accounting, budgeting, and compliance; and (d) very little information made available to Parliament and the general public regarding budget options and the state of government finance.

The ROSC recommended four key measures:

1. Information provided to Parliament and the public must be improved by overhauling budget documents and broadly disseminating fiscal data that is much easier to understand. Information proposed for inclusion: special accounts for earmarked funds; temporary liquidity operations, projections for repayment of principal of debt, primary and non-oil balances, tax expenditures, and detailed accounts of financial assets, government guarantees, and implicit subsidies.
2. A new organic budget law should be approved regulating financial legislation. This would replace quasi-fiscal activities of public sector entities with a system of direct fiscal subsidy. It would also reform local government finance.
3. Fiscal management should be strengthened, first and foremost by modernizing the budget classification system, the accounting framework, and fiscal audits.
4. The number of special accounts should be reduced.

4.32 **Under the timeframe of the ongoing budgetary modernization process, several outputs should be complete by the end of 2007.** These include: (a) a new budget economic classification; which integrates recurrent and capital budgets, as well as reorganizes programs structure in pilot ministries; (b) several updated sectoral strategies supporting the preparation of the 2008 budget; and (c) new regular reports on the monitoring of PCSC projects. Change has to be gradual, taking into account the time normally required for preparation and implementation of a new IT system, the integrated accounting and budget execution system cannot be expected to be jointly operational before 2009. The budget should nevertheless be executed and tracked based on the new classification before that date. In this regard, the main recommendations are:

- **Complete the new budgetary economic classification by the end of 2006 as top priority.** . The new classification will be in line with the IMF's *Government Finance Manual.*
- **Revamp the budget documents through new regulations**. These should (a) introduce the new economic classification and integrate recurrent and capital outlays; and (b) reorganize the program structure, first in pilot ministries, and then to the rest of the central government. Pilot ministries expected to have completed the new program structure by end-2006 are Health, Higher Education, Public Worls and Finance.
- **Submit to Parliament the new Budget Organic Law by end-2006**. Its present draft aims to restructure the budget presentation; separate, reduce and better regulate the Special Treasury accounts; specify and expand the annexes of the budget law; provide more transparency to offbudget resources; introduce new procedures for approving budgetary supplements in case of contingencies; and introduce new regulations for local governments's finance. The new law should also introduce

important legal specifications—for example, a unique budgetary classification, updated definitions of revenues and expenditures, a common definition for capital spending and investment (actually different; see Chapter 3), and standard tables to be included as annexes in the annual Budget law (MoF, 2006b).

- **Publish the first annual report on 2006 PCSC project execution in 2007**. From 2008 onwards, such report could be produced twice a year.

4.33 **In the medium term, Algeria needs to accelerate its move into a MTEF**. On the positive side, Algeria's fiscal space represents a distinct advantage for developing a MTEF. However, international experience has amply demonstrated that malpractices in public expenditure management can undercut the full benefits of using available fiscal space to finance a MTEF. In any case, improving budget formulation in a multiyear fashion would prove extremely valuable to the PCSC, though it should not be viewed as a panacea for the multitude of PEM problems that otherwise exist. As important as it may be, a MTEF should not distract attention away from other shortcomings. More fundamentally, Algeria needs to address and resolve several other critical issues:

- **Complete, in this order, the restructuring of budget programmes and the definition of performance indicators for pilot ministries; while starting to collect data more systematically on medium term results**. This should help align budgeted allocations (inputs) with MTEF sectoral outcomes. To do this, consult with spending units on informed, ex-ante costing exercises for selected goals.
- **Deepen the strategic sectoral content of budget negotiations between line agencies and the MoF**. "Deepening" implies more technical discussions on tradeoffs, decisions based on the merits of particular cases, and far less use of budgetary decisionmaking through inertial allocations. This process has already started in the pilot ministries, while defining their performance indicators, based on their budgets-programmes.
- **Gradually integrate more pilot ministries into the MTEF**. These pilot ministries are preparing sector expenditure frameworks, including strategy, objectives, key programs and costs, and performance indicators. By end 2006, five pilot ministries were initially selected—Finance, Higher Education, Public Works, Transports and Health, and their program structure had to be completed. In 2007, a global MTEF, setting global allocations (and performance indicators) by sector over a three-year period is planned. This global MTEF should be introduced in the 2008 Budget Law.
- **Set a clear schedule between the multiannual and annual budgeting processes during each year's budget formulation cycle**. Successful MTEF countries complete a first draft by April, which is then used as a guideline to help line ministries in preparing their annual budgets.

4.34 **The MTEF should be seen as a complement to—not as a substitute for—basic budgetary reform.** By preceding the formulation of the initial guidelines of the annual budgets (issued by the end of March or early April), the MTEF can gradually achieve more significant impact at the budget formulation stage. It can start by defining ceilings on the major aggregate fiscal variables and on key sectoral spending. It could then be piloted in those ministries where predictability of funding and transparent outturns would warrant good monitoring. These necessary building blocks should first be in place before attempting to move forward to more advanced stages of an MTEF.

4.35 **This chapter derives several other medium term recommendations.** These include:

- **Building a macroeconomic model to improve budget projections (*cadrage*).**
- **Gradually reducing the period for the annual *Journée Complémentaire* from 3 months to 1 month**, and *pari-passu* approving the *credits de paiement* from the beginning of the fiscal year.
- **Reduce the actual number of STAs and strictly enforce regulations on regular reporting**.
- **Developing a registry of all offbudget activities and contingent liabilities**.
- **Strengthen internal and external audit procedures**. The first step is to verify compliance with required procedures. Internal and external controls should benefit from the development of indicators to measure performance.
- **Complete the computerized integrated financial management system by 2009**. In the meantime, and as a transitory solution, the ministry has been testing a software so-called SIGBUD, in the preparation of budgets-programme. Complete parametrisation and validation of this software is urgent.

4.36 **Regarding procurement, a thorough review should be done of the public procurement codes and procedures.** This involves taking into account the recommendations made by the World Bank as part of a procurement review (World Bank 2002d), and the following actions taken, among others:

- **Permanent provision of procurement training and development courses to the relevant staff at all levels**.
- **Use of quantitative ex-post-qualification criteria that are clear, verifiable, and commensurate with the scope of the contract and time period for execution, so as to replace the current grading system**. This would facilitate elimination of unqualified bidders and subsequent selection of the lowest cost bid that meets the basic requirements, in the case of contracts for works and supplies.
- **Setting of standard specifications and standard bid evaluation documents (similar to those established by Sonatrach)**. This also applies to guidelines and implementation circulars. Technical specifications and close monitoring and oversight of all contracts should be stepped up in order to enhance the quality of works and services. This would most likely help staff prepare documents better and more expeditiously, and would facilitate review and oversight activities.
- **Preliminary pre-selection of enterprises when studies are being finalized or specifications prepared for major projects**. This would ensure the participation of a greater number of qualified enterprises and save time in the shopping process. Pre-selection should take place on the basis of quantifiable technical criteria that are clear and transparent, based on the work to be done or supplies to be provided.

4.37 **Regarding budget management in wilayas and municipal governments, it is essential to revert to sound processes. Critical recommendations are to:**

- **Design a strong regulatory and institutional framework that clearly assigns expenditure responsibilities in line with the administrative capacity of subnational governments**. This framework should consider establishing incentives for the transfer of resources in exchange for new expenditure responsibilities (for

example, using standard per student criteria as a basis for making budget assignments to education).

- **Once defined, convey national priorities that induce municipalities to align their budgets.**
- **Condition actual delivery of transfers on the timely, reliable, standardized budget reporting by wilayas and municipal governments**. This could be part of the new Organic Budget Law.
- **Promote responsible subnational borrowing**. This involves further legislation under which the central government might intervene in wilayas and local governments that incur unsustainable debts. The new Organic Budget Law should specify the main elements of reprogrammed debts and exclude the possibility of bailout at the subnational level.
- **In the medium term, budgetary transparency should be institutionalized at all levels of government.** This includes subnational governments; and civil society participation should be encouraged.[55] This could include eventually a Fiscal Observatory, playing a better-informed and more effective watchdog and advocacy.
- **The future monitoring/evaluation system at various levels (wilayas, ministries, entities) should be established**. Its implementation should also permit assessment of the effectiveness of procurement and contract management, and the adoption of transparent corrective measures.

[55] The Civic Anti-Corruption Commission was established in 1999. It was established as an independent entity not controlled by the executive. Its president is elected by civil society organizations every four years under the supervision of the Superior Electoral Tribunal. It is 95 percent financed by public funds, with the remaining 5 percent from international donors.

CHAPTER 5: FILLING THE GAP IN TRANSPORT AND PUBLIC WORKS INFRASTRUCTURE

This chapter starts by assessing the performance of the transport sector[56] with respect to the stock of infrastructure and its allocative and technical efficiency in terms of regional benchmarks. The second section describes the institutional arrangements in the sector, with shared responsibilities among the Ministry of Transport, the Ministry of Public Works, and state-owned enterprises. It reviews the status of sectors strategies as reflected through the subsector master plans. The third section analyzes public expenditure in the sector, focusing on the impacts of investment policy on the stock of infrastructure and on current expenditures. The fourth section quantifies the fiscal position of state-owned enterprises. Recommendations are proposed in final section. The analysis is complemented with a diagnostic of each subsector—railways, roads, ports, and civil aviation. These are contained in the annexes D, E, F and G.

A. PERFORMANCE OF THE TRANSPORT AND PUBLIC WORKS SECTOR

5.1 **In infrastructure stock, Algeria compares favorably with other countries in the region; however, some capacity bottlenecks are still constraining sector response to social and economic needs.** Substantial investments have built up significant transport infrastructure, reflected by favorable network density indicators (Table 5.1). Algeria has 107,000 kilometers of roads (of which 72 percent are paved), 4,940 kilometers of railway lines, 10 commercial ports spread along the coast, 11 international airports, and 22 national airports. The railway infrastructure is by and large under utilized at less than 1 million traffic units per kilometer (Figure 5.1). So are many airports, three-fourths of which record less than 10 aircraft movements daily. Certain bottlenecks have persisted—for example, the road linking major cities of the northern region is chronically congested. The planned 1,260 kilometer-long East–West Motorway *should* address that issue, but barely 125 kilometers are in operation and only 169 kilometers are under construction. Population growth and urbanization are challenging urban transport infrastructure, especially in Algiers, where construction started on the first metro line in 1982 but is not expected to open until 2008.

5.2 **Transports and public works strongly suffered the security crisis of the 1990s.** During this decade, Algeria went through an episode of acute violence and terrorism, originating from extreme fundamentalist groups. The security crisis had a significant impact over both sectors through three mechanisms: (a) the choice of modes, (b) the lack of maintenance on several regions of the country most affected by the conflict; and (c) the direct losses incurred in infrastructure, and specifically in the railroad sector.

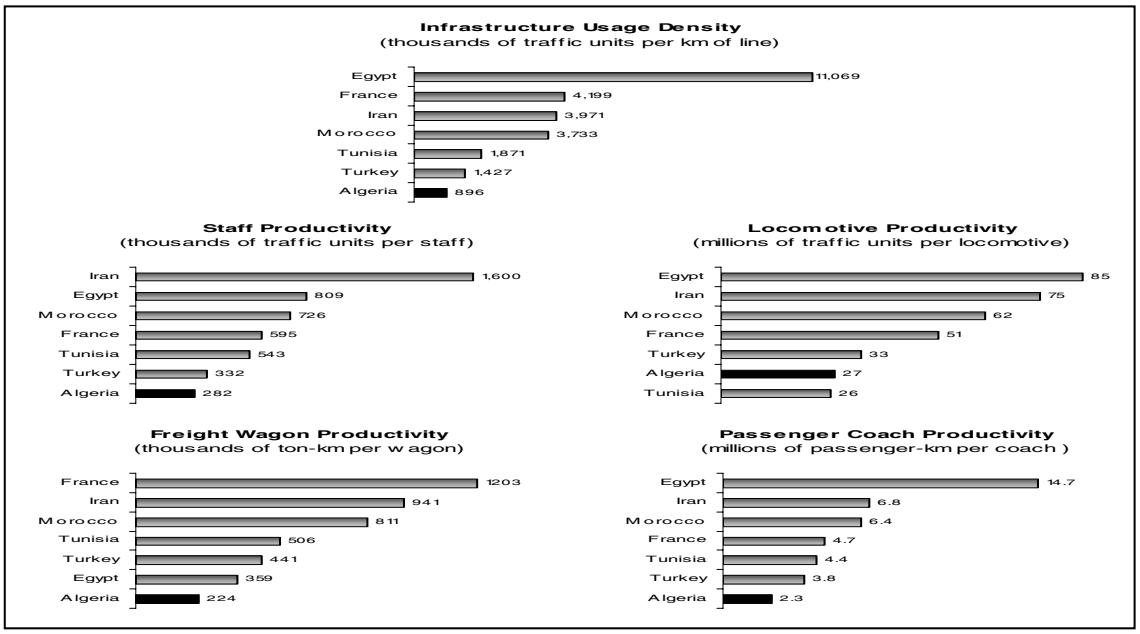
[56] Any reference to the transport sector includes activities under the Ministry of Transport (maritime transport and ports, civil aviation and airports, railways, urban transport, and road transport) and those under the Ministry of Public Works (road sector, and infrastructure investments in airports and ports).

Table 5.1 Roads and Railways Infrastructure Stock Condition and Utilization: A Regional Comparison

	Roads			Railways	
	Network Density (km/1,000 inhab.)	Paved Roads	Good/Fair Condition	Network Density (km/1,000 inhab.)	Traffic Density (1,000 traffic units/km)
Algeria	**3.3**	**72%**	**39% / 35%**	**0.15**	**896**
Tunisia	1.9	66%	-	2.15	1,871
Morocco	1.9	56%	47% / 18%	0.06	3,733
Egypt	0.9	78%	52% / 20%	0.07	11,069
Turkey	0.9	93%	33% / 19%	0.12	1,799

Source : World Bank staff estimates

Figure 5.1 Productivity of Algerian Railways: a Regional Comparison



Source: International Union of Railways, 2003 statistics (except for Egypt, 2004)

5.3 **The lack of maintenance and delays in technological change are aging assets, thus limiting productivity of the sector.** Only 39 percent of the road network was reported in good condition in 2003. The lack of timely maintenance has particularly damaged rural roads, of which 70 percent are in fair or poor condition. The stock of operating railways is aging and needs renewal. SNTF, the state-owned railway enterprise, indicated a locomotive availability rate of 53 percent in 2004. In ports, technologically outdated facilities prevent port operations from meeting standards of best practice. The Algiers container terminal does not exceed 7 moves per crane per hour, compared with modern terminals equipped with gantry cranes that score 15 to 45 moves per crane per hour. Meanwhile, the Algiers' area has a pressing need for a world-class container terminal to accommodate its growing traffic. In airports, the Ministry of Public Works reports that the average runway has reached 15 years without proper maintenance, exceeding the internationally accepted safety standard of a 10-year lifetime.

5.4 **An uneven performance of transport services hinder growth and productivity of other economic sectors.** The quality, timeliness, and costs of transport services have a direct impact on the productivity of the economy, for they lay at the core of logistics chains. On the one hand, great improvements have been made in cargo handling by port enterprises, with average ship turnaround times at Algerian ports falling from 5.5 days in 2003 to 3.2 days in 2004 (as reported by the Ministry of Transport). Waiting times for container ships at Algerian ports also score well, averaging 6 hours in 2004, while African and European waiting times average 48 and 2 hours respectively.[57] On the other hand, cargo dwell times in Algerian ports because of delays at customs averaged 12 days (compared to 3 days in Morocco), and went up to 44 days in 2001, as reported by the Investment Climate Assessment (World Bank 2006a). Technical efficiency is low in the railway sector, where infrastructure, staff, locomotive, freight wagon, and passenger productivity indicators score two to three times lower than those of Tunisia and Morocco (Figure 5.1). Such inefficiencies significantly increase the costs of goods and services. Similarly, some bottlenecks in ports and localized road congestion in urban areas also threaten the productivity of the economy.

5.5 **Public transport services partly meet the needs of the population.** In Algiers, a 2004 Transport Household Survey by the Ministry of Transport revealed 80 percent of the population as dissatisfied with the quality of transport services. Individual urban trips consume an average of 80 minutes each day. Such information confirms is the need and room for improving the quality of public transport supply in Algier. Similarly, the state-owned railway enterprise, SNTF, has been unable to provide passengers with reliable services and schedules in recent years. As a result, railway passenger traffic decreased by 17 percent from 2000 to 2004 (Ministère des Transports 2005). Similarly, domestic passenger air traffic was 45 percent lower in 2004 than in 2002, with the state-owned monopoly, Air Algérie, unable to fill the supply gap that it inherited from the disarray of Khalifa Airways, the private company[58] that had control of 52 percent of domestic traffic in 2002.

B. INSTITUTIONAL FRAMEWORK AND SECTOR STRATEGY

Institutional framework

5.6 **The provision of transport infrastructure and services is divided between the Ministry of Transport and the Ministry of Public Works.** The Ministry of Transport is responsible for policy orientation, planning, regulation, and supervision of activities aimed at transportation of goods and passengers by land (roads or rail), by sea, and by air. In addition, the ministry is responsible for the planning, design, construction and maintenance of railway infrastructure. The Ministry of Public Works is responsible for planning, design, construction and maintenance of roads,[59] ports, and airport infrastructure. Table 5.2 provides an overview of the distribution of roles in transport for each subsector of the central government, government agencies and state-owned enterprises, local authorities, and the private sector.

[57] Figures on container ship waiting times as reported by the Ministère des Transports (2005). It should be noted that these times seem optimistic compared to users' perceptions (World Bank 2006a).
[58] Khalifa Airways was established in 1999 and disappeared in 2003.
[59] The responsibility of the Ministry of Public Works with respect to roads is limited to motorways and national roads. Wilaya and communal roads are the responsibility of the wilayas and communes respectively, though construction and maintenance is executed by the Ministry of Public Works.

Table 5.2 Distribution of Roles in Transport Infrastructure Provision and Services

Subsector	Central government	Government Agencies and State-Owned Enterprises		Local authorities	Private sector
		EPICs[a]	EPEs[b]		
Roads *Infrastructure* *Services*	MTP/DTP—Construction and maintenance of national roads	ANA—Construction of motorways AGA—operation and maintenance of motorways		Wilayas & communes—construction and maintenance of wilaya & communal roads	 Private bus operators
Railways *Infrastructure* *Services*		ANESRIF SNTF			
Ports *Infrastructure* *Superstructure & services*	MTP/DTP—Construction and maintenance of quays, jetties, etc.		Port enterprises		
Maritime transport			Maritime transport enterprises		Private maritime companies
Air Transport Infrastructure *Infrastructure* *Superstructure & services*	MTP/DTP—Construction and maintenance of airfields & runways	EGSA—Terminal construction and airports operation ENNA—Air navigation			
Air Transport		ONM—Meteorology	Air Algérie		Private companies—Charter & corporate services; international market)
Urban Transport *Infrastructure* *Services*		 ETUSA—Bus operations ETU Oran, Constantine, Annaba	EMA—Construction of the metro and tramways		 Private bus operators

Source : Bank staff elaboration

Notes: [a/] EPIC refers to Etablissement Public à Caractère Industriel et Commercial

[b/] EPE refers to Entreprise Publique Economique. EPEs are meant to be privatized ultimately

5.7 **Private sector involvement has been limited to a few transport services to date.** Major amendments to the legal and regulatory framework to foster private participation in infrastructure and services have been made since the late 1980s. Law 88–17 on land transportation introduced deregulation in road services. Law 98–06 on civil aviation partly liberalized air transport services and paved the way for concessions in airports. Similarly, Law 98–05 on maritime transport adopted the Landlord Port model.[60] Despite recent government efforts to implement the intended underlying reforms, no infrastructure concession has materialized in the transport sector[61]. The concession that was envisaged in 2002 of the Algiers airport aborted when no credible proposal was received. Similarly, the concession of the East–West Motorway did not generate market interest. Hence, both projects ended up financed on the government's budget. Only a few transport services are currently operated by the private sector, thanks to the new deregulations. These primarily concern intercity and urban road transport, where private operators have gained increasing market shares over public operators. In 2004, the private sector detained 97 and 93 percent of the public road freight and passenger capacities respectively. Private bus operators in Algiers have four times more capacity than that of ETUSA, the state-owned operator. In 2004, the private sector accounted for 30 percent of the international air transportation market and a 93 percent market share of the non-oil maritime transportation market.

5.8 **Institutional reforms are underway at the Ministry of Transport to achieve cost-effective transportation services.** The ministry has prepared a forward-looking "roadmap" that paves the way for institutional reforms in each subsector. An overview of the principles at the core of these reforms is provided in Box 5.1. The reforms have three strategic axes.

- Restructure the market of transport services with a view to introduce competition and increase private sector involvement.
- Focus the Ministry of Transport on its core roles.
- Create a space for regulation and establishing regulatory arrangements, notably in the maritime transport and port sector, and in civil aviation and airports.

The Sector strategy: Status of master plans

5.9 **Master plans dating back to the 1970s and 1980s still guide current investments in the transport sector.** Recently, efforts have been made at the Ministry of Transport and the Ministry of Public Works to review and update master plans for ports, airports, and roads (see status in Table 5.3). A 1992 multimodal National Transport Study sets out detailed investment programs for the sector. However, the prevailing master plan for railways, which underpins the 1992 study, dates back to the 1970s. It was conceptualized around an ambitious industrial model that does not exist, including heavy industries justifying the use of railways. PCSC projects in the rail sector focuses mainly on rehabilitation and modernization of the network. The development of new railways receives only 14 percent of the rail envelope. In absolute terms, however, investments in new railways are more than twice that of the 2000–04 period. In the road sector, construction of the East–West Motorway, which was planned in the 1980s, represents 57 percent of the 2005–09 investment program. The Algiers metro project also dates back to the early 1980s. Overall, delays in implementation have resulted in past master plans being carried forward without proper updating.

[60] The "landlord model" is an approach that leaves regulatory, planning, and land-use functions vested with public entities while service delivery is competitive among commercial entities. See Box 5.1

[61] To date, the only example of private financing in transport infrastructure is a joint venture for the development of a container terminal in the port of Bejaia. The Singaporean company Portek owns 49 percent of the shares (the current legal and regulatory framework does not allow a foreign firm to own more than 49 percent of the shares).

5.10 **A comprehensive planning of transport developments is hindered by the multiple shortcomings in the institutional setup.** Transport policy falls solely under the Ministry of Transport. Planning falls under the Ministry of Transport with respect to railways, and it falls to the Ministry of Public Works with respect to roads.[62] A coordination committee between ministries was established in 1997; however, complementarities between transport modes fall short. For example, as reported by the Ministry of Public Works (MPW), the Road Master Plan for 2005–25—which was initiated in 2002 and is currently under discussion—does not take into account to date the massive investment programs in railways over 2005–09. Too often, unresolved overlap prevails. In the ports and airports sectors, the Ministry of Public Works is preparing infrastructure master plans, while the Ministry of Transport (MT)is simultaneously preparing development plans (Table 5.3). More generally, incentives for rationale planning seem to be weak in the MPW/MT coordination network. On the one hand, state-owned enterprises (SOEs) operating the facilities under the supervision of the Ministry of Transport need resources for both maintenance and new development of infrastructure. On the other hand, the Ministry of Public Works has to execute the government's budget in this area. All in all, improved institutional coordination would certainly improve planning across the sector.

Box 5.1 Core Principles of the Institutional Reforms Contained in the Roadmap

Restructuring the market of transport services and introducing competition and privatization
Commercial activities should be transferred away from the state. To the extent possible, competition should be introduced among operators of commercial activities, as along with some degree of privatization. In the port sector, the "landlord model" should be implemented. Air transport should be increasingly open to competition and private sector participation, and the private sector should also be brought into the management of airports. Commercial activities in railways should be competitive without state interference. Public sector obligations should be differentiated and compensated through subsidies under a contract with the state. Management of the railway company should be drastically improved. Urban transport authorities should be established, first, in Algiers; and then in the main cities. These authorities should be made responsible for the planning, financing, and coordination of urban transport. The private sector should be progressively involved in the provision port services, airport services, and the operation of the Algiers metro system and tramway.

Aligning the Ministry of Transport according to its core roles
The Ministry of Transport should focus on its core responsibilities of policymaking and planning, and on those functions that necessitate public control, such as infrastructure development and policies on public domain. The whole planning organization needs to be reorganized in a decentralized context—taking into account the economic return of investments, prioritizing the maintenance and preservation of assets, and fostering better coordination among transportation modes.

Creating a space for regulation and establishing regulatory arrangements
Autonomous and independent regulation entities should be created to oversee the provision of transport services, especially when private operators are involved.

Source: World Bank (2005a).

[62] The executive decree of 1989 laying down the missions and attributions of the Ministry of Transport says that: "In terms of planning, the Ministry of Transport is in charge of […] proposing, in relationship with relevant authorities, the railway infrastructure master plans; and participating, with relevant authorities, in the preparation of the design and feasibility studies of port, airport, and road infrastructure master plans; and the preparation of short, medium, and long-term plans."

Table 5.3 Status of Transport Master Plans and Budgets Allocated to Corresponding New Infrastructure Developments under PCSC

Subsector	Master plan	Commanded by	Status of master plan preparation	*Planned PCSC investments*
Multimodal	National Transport Study	MoT	Achieved, 1992	N/A
Railways	Railways Master Plan	MoT/SNTF	Achieved, 1970s	US$1.2 billion
Roads	Roads Master Plan for 2005-2025	MPW	Draft under discussion (initiated, 2002)	US$5.3 billion
Motorways	East-West Expressway Master Plan	MPW	Achieved, 1980s	US$1.1 billion
Ports	National Port Development Strategy	MoT	Draft under discussion (initiated, 2004)	US$0.5 billion
Ports	Ports Master Plan	MPW	Under way (initiated, 2006)	US$0.3 billion
Airports	National Airport Strategy	MoT	To be launched	none
Airports	Airports Master Plan	MPW	Underway (initiated, 2005)	none

Source: Ministry of Transport, Ministry of Public Works

C. OVERALL PUBLIC EXPENDITURE PATTERNS

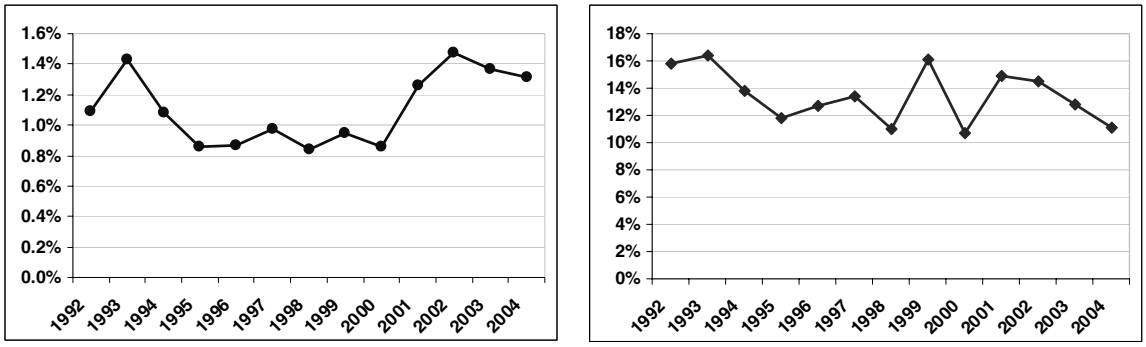
5.11 **Recent public investment in the transport sector has been sizable, but its behavior was procyclical in recent years.** Between 2001 and 2004, public investment in the transport sector in Algeria averaged 1.4 percent of GDP (Figure 5.2a), i.e. 2.1 percent of NHGDP. This compares rather well with the 15 EU countries, which averaged 1.2 percent of GDP in the past decade (Carruthers 2004). The trend of public investment in the transport sector follows a cyclical pattern. Starting from a high of 1.4 percent of GDP in 1994 (i.e. 1.8 percent of NHGDP), public investment in the transport sector averaged less than 1 percent of GDP over 1994-2000 (below 1.4 percent of NHGDP).[63] This latter period of low investment is explained by tight public budgets. Then, since 2001, once fiscal policy recovers an expansionary stance with the PSRE, a marked recovery of public investment in the transport sector follows. Despite this pattern, efforts toward supporting the transport sector have been significant over the years. From 1992 to 2004, the share of budgetary investment allocated to transport infrastructure has remained consistently above 12 percent, except for 1998, 2000, and 2004, as show in Figure 5.2b.

5.12 **As a result, investments in the transport sector expanded with the PSRE, and are projected to increase more under the PCSC.** The PSRE allocated 21.5 percent of a total US$7 billion envelope to large investments in the transport sector over 2001–04 (in addition to previous investment programs underway). This explains the average of 1.4 percent of GDP (or 2.1 percent of NHGDP) during those years. About 42 percent of PCSC vast resources have been allocated to transport and public works, approximately US$27 billion. This level marks a sharp increase with respect to past investments in the sector (Figure 5.3b). In absolute terms, this represents more than 4 percent of the projected average annual GDP for the 2005-09 period (or above 7 percent of

[63] This does not include investments borne by the wilayas and communes in their own road networks (data not available). However, it does include national roads maintenance.

Figure 5.2 Evolution of Public Investment Expenditures in the Transport Sector, 1992–2004

(5.2a — As a Percent of GDP) **(5.2b — As a Percent of Budgetary Investment)**

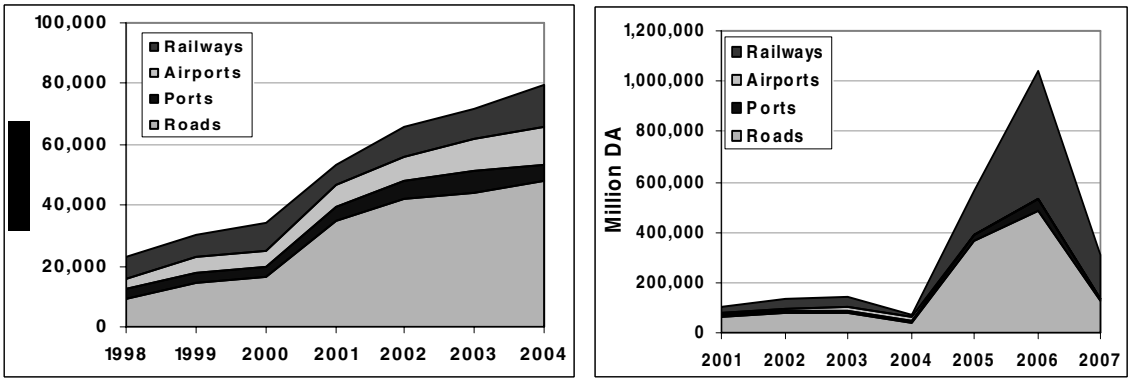


Source : World Bank (1992–95); IMF (1996–97); Ministry of Finance (1998–2004)

NHGDP). As a benchmark, Fay and Yepes (2003) estimate annual investment needs in roads and railways in the Middle East and North Africa Region at 1.2 percent of GDP over the period 2005–10. Under the PCSC, transport projects aim to rehabilitate and restore adequate maintenance on the national road network, complete the construction of the East-West Motorway, rehabilitate and modernize the railways, complete the metro project, and build tramway lines in major cities.

Figure 5.3 Public Investments in the Transport Sector by Mode

(5.3a — Actual Expenditures over 1998–2004) **(5.3b — Program Authorizations for 2001–07)**

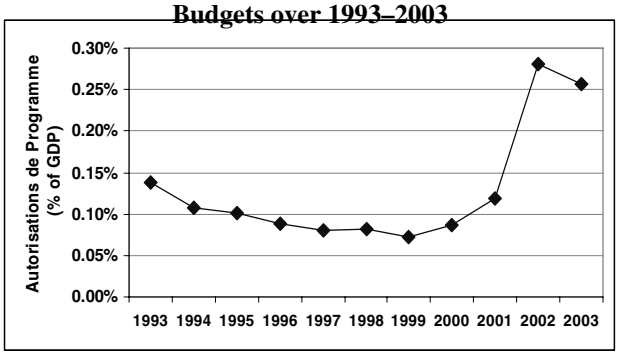


Source: Ministry of Finance

Note: 2005, 2006, and 2007 are estimates provided by the Ministry of Finance, to be executed over 2005–09. They do not include the airports sector, for which details were not available. Railways include the metro and tramways.

5.13 **Nonetheless, the gap in the stock of transport infrastructure has not recovered from the budget constraints during the second half of the 1990s.** At that time, tight budgets translated into lower road maintenance budgets (Figure 5.4).[64] These decreased by 33 percent in real terms between 1993 and 1999, which led to significant degradation of the road network. In 1999, the annual budget needs for adequate road maintenance exceeded the

Figure 5.4 Evolution of Road Maintenance Budgets over 1993–2003



Source: Ministry of Public Works

[64] A road fund was created to isolate road maintenance from national budget cuts in the mid 1990s, but it was never used.

sum of all investments in the transport sector, including roads, railways, ports, and airports (World Bank 1999b).[65] Thus, budget constraints on maintenance were also an issue in the ports and airports sectors, where budgets decreased by 22 percent between 1993 and 1996 in real terms. Similarly, the lack of maintenance of railways infrastructure over the second half of the 1990s led to a significant aging of its assets. Notwithstanding macroeconomic constraints, the downsizing of maintenance budgets also reflected a cost-ineffective policy choice within the sector—faster depreciation of existing assets in exchange of more expensive investments in the future.

5.14 **Priority given to new investment at the expense of timely maintenance has led to a costly need for rehabilitation.** In 2003, 46 percent of national roads, 65 percent of wilaya roads, and 70 percent of communal roads were in poor or fair condition, as reported by the Ministry of Public Works. Lack of regular maintenance now translates to a massive and more expensive need for investment in rehabilitation. The cost is illustrated by the case of the South African National Road Agency (SANRAL). Compared to the costs of a road that has been regularly maintained in its 2004 annual report. SANRAL (2004) shows repair costs that are six times higher when maintenance is deferred for three years and 18 times higher after five years of neglect!

5.15 **Outdated master plans for the rail subsector and insufficient attention to economic evaluation have also resulted in uneconomic investments.** Railway master plans were elaborated in the late 1970s. These included massive investments, based on the ambitious industrial policy of those years. Though these massive plans were eventually abandoned, a few poorly justified projects were still approved.[66] Neither the economic evaluation of projects nor its implementation are properly carried out or sufficiently weighted in the decision-making process. A final example, the Hauts Plateaux rail lines—still indicated as medium-term projects on maps—show very low (if not negative) ex-ante economic rates of return, and little foreseeable traffic.

5.16 **Transport policy is shifting strongly toward investment in rail.** The current investment mix is far from optimal. For the years 1998 to 2004, the distribution of public expenditures in transport was 55 percent for roads, 10 percent for ports, 14 percent for airports, and 20 percent for railways (Figure 5.3a).[67] The 2005–09 PCSC significantly increased the emphasis on rail, raising it to 36 percent of the capital budget for both the Ministry of Transport and the Ministry of Public Works. This does not include 9 percent of the capital budget to be spent on the Algiers metro and tramways. This means that investment in rail would increase to around 2 percent of Algeria's GDP within the next few years (about 3.5 percent of NHGDP). This is extraordinarily high! Not only does it represent about half of all investments in the transport sector, but it is about 20 times beyond the regional benchmark. Fay and Yepes (2003) estimate the annual need for rail investment in the Middle East and North Africa to be about 0.1 percent of GDP for 2005–10. They estimate the need for investment in roads to be about 1.1 percent of GDP. Clearly, the current and projected investments in the rail sector deserve to be examined on economic grounds so as to optimize the allocation of public resources.

5.17 **The future of rail in the Algerian economy urgently needs to be reconsidered.** In the gradual transition toward a market economy, Algeria's railways are in competition with other modes of transport, mainly roads. In most market economies today, rail is not normally competitive with

[65] This World Bank report also recommended that all new developments in roads be stopped in order to reallocate all available funds to maintenance.

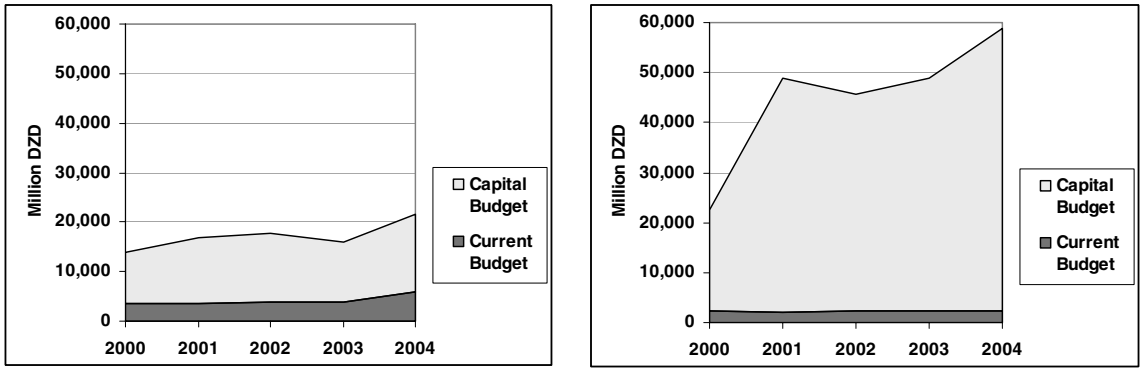
[66] The most striking example was the construction of the Djen Djen port, as well as the Ramdane Djamel–Jijel railway line. Both projects were built to serve a steel complex in Jijel that never materialized. Similarly, the Bordj Bou Areridj–M'Sila railway line, currently under construction, was designed to serve an aluminum electrolysis plant in M'Sila, that has since been abandoned. As illustrated by such examples, the lack of coordination and regular updates in planning lead to misallocations of public resources, thus turning out to be very costly for the Algerian economy.

[67] This amount for railways includes investments in the Algiers metro, but the latter did not exceed 15 percent of the whole railway program in 2002–04.

roads. Rail has become more or a specialized modality operating in those relatively small niches where it can provide adequate services with a cost advantage. Rail has lost considerable market share since the beginning of the 1990s—from 4 percent of passenger service and 16 percent of freight traffic in 1990, it dropped to around 0.5 percent of passenger service and less than 10 percent of freight traffic in 2004 (World Bank 2004b). In the present era, railways do not usually produce growth impact; nor are they development incubators (as they were in the American West of the 19th century when "rail was king" both technically and economically). Under PCSC authorizations for 2005–09, the government would therefore be distorting competition by massively investing in—and then subsidizing—a transport modality that is not just less profitable, but not forward-looking in an economic sense.

5.18 **Public expenditures in the transport sector are capital intensive.** Recurrent expenditure did not exceed 24 percent of total budget (current plus capital) at the Ministry of Transport and 5 percent of total budget at the Ministry of Public Works (Figure 5.5a and Figure 5.5b), thereby reflecting the capital intensity of expenditures in the sector. The low levels of recurrent expenditure are also explained by the fact that railways, ports, and airports are operated as off-budget expenses, and financed by SOEs budgets. This excludes government subsidies to some of those SOEs. In addition, road maintenance and project studies are carried out under investment budgets.

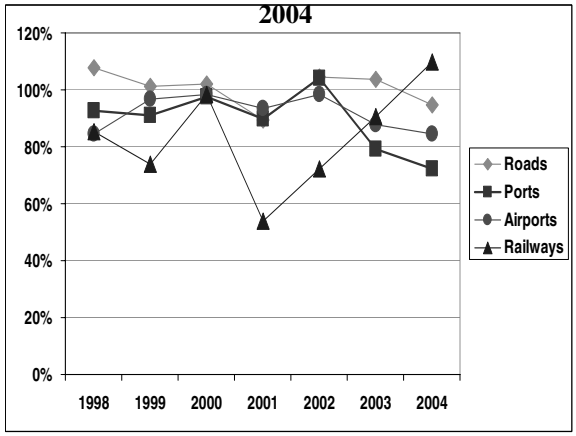
Figure 5.5 Capital and Recurrent Budgets for 2000–04
(5.5a — Ministry of Transport) (5.5b — Ministry of Public Works)



Source: Ministry of Finance, IMF.
Note: The recurrent budget of the MOT includes subsidies to SNTF, but financial restructuring is not accounted for.

5.19 **The large increases in capital outlays under PCSC exceed absorption capacity.** In 1998–2004, the execution rates of capital budgets were high in the transport sector, averaging 93 percent. The breakdown by subsector shows that railways experienced significantly lower execution rates overall. The average annual execution rate for rail was 83 percent, compared with 100 percent, 90 percent, and 92 percent respectively for roads, ports, and airports (Figure 5.6). This reflects satisfactory execution capacities in both ministries and subordinated SOEs. However, capital budgets allocated to both ministries under the PCSC for 2005–09 are, respectively, 2100 percent and 800 percent higher than those allocated for 2000-04 (Table 5.4). Meanwhile, recurrent budgets at the Ministry of Transport (including subsidies to SNTF)

Figure 5.6 Execution Rates of Annual Capital Budgets by Subsector over 1998–2004



Source: Ministry of Public

and the Ministry of Public Works have barely increased, by 17 percent and 19 percent respectively between 2004 and 2006. This lower increase in recurrent budgets suggests that implementation capacity will be insufficient. Both ministries have taken action and recruited external technical assistance for the completion of the East-West Motorway and the management of the railway program.

Table 5.4 Evolution of Capital and Recurrent Budgets, 2000–04 and 2005–09 (million DA)

	Capital Budgets (annual average)		Current Budgets (annual average)	
	2000-04	2005-09	2000-04	2006
Ministry of Public Works	**64.1**	**1447**	**2.3**	**2.8**
Roads	48.9	1389		
Ports	9.2	39.6		
Airports	5.2	18.3		
Ministry of Transport	**24.4**	**188.1**	**4.1**	**6.9**
Railways	19.8	172.3		
Ports	0.0	5.5		
Airports	4.6	2.6		
Road transport services	0.3	7.6		

Source: Ministry of Transport, IMF

Note: Ministry of Transport current budget for 2006 indicated in the table includes subsidies to SNTF.Updated data to: 11-30-2006. There are some discrepancies between these data and those on Volume II tables.

5.20 **Hence, future maintenance and operating budgets will need to be increased.** As a rule of thumb, annual maintenance needs are 2 percent of the replacement cost of the capital stock for rail and road (Fay and Yepes 2003). This is considered a minimum annual average expenditure on maintenance. If it falls below, the network's functionality will be threatened. Applying this estimate to the additional transport capital stock generated by new constructions[68] and rolling stock purchase in roads, railways, and urban transport infrastructure under the PCSC would result in additional annual maintenance needs of around DA 25 billion (~US$350 million) until 2009. This sum is equivalent to about 0.3 percent of 2005 GDP, and represents more than twice the DA 10 billion average annual expenditure allocated by the Ministry of Public Works on road maintenance over 2000–04. These estimates are mildly mitigated by the fact that maintenance costs of the additional transport infrastructure stock will be mainly financed by SOEs—by *Algérienne de Gestion des Autoroutes (AGA)* for the East–West Motorway (through user fees to be determined), by SNTF for railways, and by Entreprise du Métro d'Alger for the metro and tramways. As these are particular cases and SOEs have no record in bearing maintenance costs to date,[69] it is highly likely that new investments in the sector will end up creating significant pressure on future recurrent budgets.

D. FISCAL IMPACT OF STATE-OWNED ENTERPRISES

5.21 **State-owned enterprises in the ports and airports subsectors remain profitable.** In the ports subsector, port enterprises have been posting strong operational profits in recent years, with a consolidated operating income averaging 52 percent of operating revenues over 2002–-04. Each of the 10 port enterprises were operationally profitable during that period, with Algiers, Oran, Arzew, Béjaia, and Skikda accounting for most of the profits. The sole exception was Djen Djen, which posted an

[68] Those exclude rehabilitation and modernization works, which will presumably not generate additional maintenance needs.

[69] AGA was established in 2005 to maintain and operate the East-West Expressway, but corresponding funding mechanisms have yet to be determined. The situation is similar for EMA with respect to metro and tramways operation and maintenance. On another note, SNTF has regularly posted operational deficits in the past, partly as a consequence of overinvestment in the rail network.

operating deficit amounting to 38 percent of operating revenues in 2004.[70] Meanwhile, air transport infrastructure enterprises (*Entreprise de Gestion des Services Aéroportuaires* Alger, Oran and Constantine for airports, *Etablissement National de la Navigation Aérienne* for air navigation, and *Office Nationale de la Météorologie* for meteorology) remained profitable overall. Significant cross-subsidies were included within the sector to cope for the nonprofitability of small airports, according to the Ministry of Transport. Despite profits, those SOEs were nevertheless unable to self-finance their investment programs, which still had to be covered by the government's budget.

5.22 **For their part, SNTF, ETUSA, and Air Algérie represent a heavy burden upon public finances, public companies in which the State intervenes.** In 2000–04, the SNTF[71] and the Algiers urban transport enterprise ETUSA[72] posted operating deficits averaging negative 39 percent and negative 202 percent of their operating revenues (Table 5.5). Operating subsidies from the government to those SOEs added up to around DA 3 billion per year over 2000–04 (that is, DA 2.5 billion for SNTF and 0.5 billion for ETUSA). These accounted for an amount equivalent to 0.12 percent of GDP (Table 5.5)—all in addition to investments financed by the government's capital budget. Government subsidies did not prevent those SOEs from chronically falling into financial disarray and calling for government bailout. SNTF was financially restructured with capital transfers from Treasury amounting to around DA 33 billion in 2005. This sum is sizable—equivalent to 0.5 percent of GDP (or 0.9 percent of NHGDP) . Similarly, ETUSA benefited from debt restructuring in 2003 that involved capital transfers from Treasury of about DA 5 billion (~0.1 percent of GDP). For its part, Air Algérie, whose financial situation has been continuously under stress, was granted a DA 12 billion government subsidy for the renewal of its fleet in 2004; and government subsidies amounting to DA 2.5 billion were budgeted in 2005 to compensate for other financial obligations of the airline (Table 5.6).

Table 5.5 Summary Income Statements of SNTF and ETUSA for 2000-2004 (DA Million)

SNTF	2000	2001	2002	2003	2004	ETUSA	2000	2001	2002	2003	2004
Operating Revenues	4,272	4,359	4,668	4,395	4,320		292	271	256	290	361
Operating Expenses	(6,326)	(6,394)	(6,957)	(6,492)	(4,372)		(655)	(812)	(763)	(1,044)	(1,194)
Operating Income	**(2,055)**	**(2,035)**	**(2,290)**	**(2,096)**	**(53)**		**(363)**	**(541)**	**(506)**	**(754)**	**(833)**
Other Income	647	(3,270)	97	(4,629)	(5,838)		60	(103)	210	(57)	346
Net Income	**(1,407)**	**(5,305)**	**(2,193)**	**(6,726)**	**(5,890)**		**(303)**	**(645)**	**(297)**	**(811)**	**(488)**
Government Subsidies	2,500	2,500	2,500	2,500	2,500		303	645	297	811	488
Net Income after Subsidies	**1,093**	**(2,805)**	**307**	**(4,226)**	**(3,390)**		**0**	**0**	**0**	**0**	**0**

Source: SNTF, ETUSA

5.23 **The rationale for compensating public service obligations is not well defined.** In their charters, SNTF, ETUSA and Air Algérie are entrusted with delivering some public services on the presumption that they will receive financial compensation in return. However, those public services are not always clearly identified and financial compensations may henceforth become arbitrary. For SNTF, government operating and maintenance subsidies have amounted to DA 2.5 billion per year in each of the past five years. Of this amount, DA 0.5 billion was designated as compensation for the public service obligation, independently from the services delivered and without a public service obligation contract. Further in the past, subsidies to the rail operator were simply not transferred on a

[70] At 1.4 million tons in 2004, the throughput at Djen Djen is still low relative to the physical capacity of the port, because it was initially designed to serve as a gateway for a steel complex in Jijel that never materialized. The lack of substitutable demand from the economic hinterland, as well as the noteworthy wave penetration that disturbs cargo handling, have preventing the port from turning a profit so far.

[71] *Société Nationale des Transports Ferroviaires*.

[72] *Entreprise des Transports Urbains et Suburbains d'Alger*.

regular basis. In the case of ETUSA, the government has fully funded the net deficits of the enterprise over the years 2000–04, as shown in Table 5.5. As for Air Algérie, the situation is different to the extent that the DA 2.5 billion in operating subsidies that were granted to the airline in the 2005 budget were based on a public service obligation contract established by a 2004 decree, for which the exact amount of financial compensation should be negotiated with the government based on actual services that are delivered. The overall bottomline is that these mechanisms, though each is very different from the other, have not worked to improve SOEs financial situation. This is apparent from the recent, costly capital transfers to those enterprises. Furthermore, as these compensation mechanisms are not based on reference costs or efficiency target costs for delivering well-identified groups of services, they entail little incentive for greater efficiency. Instead, the government ends up subsidizing inefficiencies in those SOEs. If this issue is not addressed systematically, it threatens to extend to the Algiers metro and tramway lines in major cities. Eventually, significant operating losses will be posted because of the implicit public-service obligations in the future.

Table 5.6 Subsidies to SNTF, ETUSA, and Air Algérie in 2000–05 (in DA billions)

(DA Billion)	2000	2001	2002	2003	2004	2005
SNTF						
Operating subsidies	2.5	2.5	2.5	2.5	2.5	2.5
Financial bail out	-	-	-	-	-	33
ETUSA						
Operating subsidies	0.3	0.6	0.3	0.8	0.5	N/A
Financial bail out	-	-	-	5	-	-
Air Algérie						
Operating Subsidies	N/A	N/A	N/A	-	-	2.5
Fleet renewal program	-	-	-	-	12	-
Total (DA billion)	2.8	3.1	2.8	8.3	15	38
Total (% of GDP)	0.07%	0.07%	0.06%	0.16%	0.25%	0.50%
Total (% of GDP without HC)	0.12%	0.11%	0.09%	0.25%	0.40%	0.90%

Source: SNTF, ETUSA, MF, Ministry of Transport

E. RECOMMENDATIONS

Rationalizing investment policy

5.24 **A primary need is to strengthen the planning function supported by an updated, multimodal transport master plan.** A strengthened and better coordinated planning function would deal with major decisions regarding investments, but:

- An updated master plan is necessary for this to be effective. To not do so would lead to uneconomic investments (paragraph 12). The prevailing master plans are at least 15 years old (except for the road master plan, which is currently under discussion, and for ports and airports which are under preparation), so the need for updating is urgent. This could take the form of a multimodal transport plan, including roads, railways, ports, and airports.
- Updating the 1992 National Transport Study could be an excellent point of departure. Furthermore, as roads and railways essentially cover the same market, their respective master plans should be prepared in parallel. On this basis, the central government could restore planning as one of its core functions in the sector, while investments in operating facilities would increasingly be entrusted to SOEs and to the private sector.

- Planning should involve the Ministry of Public Works and other ministries, but the Ministry of Transport should play a central role in coordination. Box 5.2 suggests some general lines for strengthening multimodal planning.

Box 5.2 The Case for Coordinated Multimodal Planning

Ensuring coordination between roads and railways planning
The planning function should ensure better intermodal coordination. The present split between modes should be replaced by a split between economic markets. Distinguishing between maritime, air, and land transport is relevant to the extent that those three fields are in competition from the users' perspective and correspond to separate market segments. Underlying techniques and their modes of organization may be different. However, there is little ground for separating the planning functions with respect to railways and roads, since they target virtually the same markets.

Ensuring consistency between policymaking, infrastructure planning, and operations
Transport infrastructure planning involves several ministerial departments, including regional planning, public works, and interior. However, it is essential that the Ministry of Transport play a central role because transport is the common denominator. Furthermore, a consistent transport policy cannot be devised if infrastructure is separated from operations. Why build new road, railway, airport infrastructure if operation investments are not scheduled accordingly? How to prepare a master plan that would not be consistent with the forecasts of modal split upon which the Ministry of Transport is basing its policy—or with the traffic forecasts that result from the projected evolution of taxes and user fees, which will have significant impact on traffic volumes?

Sources: World Bank (2005a).

5.25 **Economic viability criteria should strictly guide investment decisions, and the CNED is called upon to play a central role into providing them.** Too little attention has been paid to economic studies that project rates of returns on transport projects. This leads to poor feasibility studies that underplay rates of return in the decision process and, ultimately, uneconomic maintenance of underutilized assets, mostly in railways and airports. The recently established CNED should ensure that, first, large transport infrastructure projects are adequately prepared and, second, only those that meet required criteria of minimum economic return are budgeted (see Chapter 3). The same guiding principles should be applied to the entire portfolio of projects by the Ministry of Transport and the Ministry of Public Works. In particular, the rail lines of the Hauts Plateaux and Djelfa Ouargla date back to the 1970s and are of weak economic viability, in the short term, because of their scant foreseeable traffic. They are good candidates for exclusion from future investment programs. However, the Review admits that the economic profitability in the medium term could improve and that non-economic reasons could justify such investments.

5.26 **In the future, gradual priority should be given to investments on preserving existing assets and removing bottlenecks, though not to exceed 3 to 3.5 percent of GDP.** Assuming that most of the backlog of infrastructure scaling up, upgrading, and rehabilitation will be addressed by the PCSC, capital outlays in the transport sector should concentrate on maintenance. However, they should not exceed 3 to 3.5 percent of GDP (depending on additional capacity required by economic growth[73] from 2009 onwards). This level of investment is fiscally expensive, so cost recovery from user fees and private finance should be aggressively sought. This estimate comes from international experience, which suggests that investment in the transport sector roughly be disaggregated as follows (Carruthers 2004):

[73] Estimates are based on 2 percent for maintenance plus one-fourth of the 4 to 6 percent projected economic growth rate. Those figures include consented investments under the budget, and those consented by SOEs or the private sector.

- 1 percent of GDP for the maintenance of the road network.
- 1 percent of GDP for the maintenance of the rest of the transport network (railways, ports, and airports altogether).
- ¼th of the GDP growth rate (in percent terms) in order to develop new infrastructure to accommodate for economic growth.
- The level of rehabilitation that is needed to bring existing infrastructure to an acceptable condition.

5.27 **More specific medium-term investment needs can be identified for each subsector:**

- ***Roads***. Construction of the East–West Expressway and Algiers beltways programmed under the PCSC are a priority, and the bidding process has concluded successfully, thus splitting works among foreign companies: Chinese and Japanese. Work is contracted to be entirely concluded in January 2010. In addition, scheduled rehabilitation projects should bring the network up to an acceptable level. Henceforth, future investment needs should first focus on adequate maintenance to the whole network, including expressways, national roads, wilaya roads, and communal roads. Particular attention should be paid to the latter two, which have chronically suffered from insufficient maintenance in recent years.
- ***Railways***. Rehabilitation, modernization works, and rolling stock renewal to be undertaken under the PCSC. This should upgrade the network to a satisfactory level, though not everything is a priority. Apart from the network extension between Touggourt and Hassi-Messaoud authorized for the PCSC, there is presently no route not already served by railways where the foreseeable volume of medium-term traffic would economically justify a new line. Investments in railways should therefore substantially decline during the PCSC. For the most part, they should be restricted to required maintenance for those lines that already exist.
- ***Ports***. The PCSC should address short-term maintenance and upgrading needs, including capacity additions in Djen Djen,[74] thus making best use of present assets. However, the PCSC omits a world-class container terminal for the economic hinterland of Algiers. The current container terminal in Algiers can only accommodate a throughput of 500,000 TEU[75] per year (which represents two-thirds of the current national container throughput). Global Insight (2005) forecasts 900,000 to 1,800,000 TEU of annual throughput traffic in the medium-term for the Algiers area economic hinterland.
- ***Air transport infrastructure***. The PCSC includes necessary short-term maintenance and rehabilitation of basic infrastructure (namely runways), and upgrading of airport terminals and air navigation superstructure. As the Algiers new international airport terminal is scheduled for completion by 2007, no needs are identified for more airport developments. Hence, medium-term needs should be assessed based upon an updated national airport strategy, which is to be prepared by the Ministry of Transport.
- ***Urban transport***. The PCSC has adequately focused on budgeting for three main priorities:
  - The Algiers metro extension (DA 77 billion, approximately US$1.1 billion).
  - New tramway lines and extensions in Algiers, Oran, Constantine, and Annaba (DA 89 billion, approximately US$1.2 billion).

[74] The government's intention is to build a breakwater at the port of Djen Djen to reduce wave penetration that currently disturbs cargo handling. In addition, it will provide additional infrastructure for a container terminal under a PPP agreement to make the best out of the present (so far heavily underutilized) basic port infrastructure.
[75] TEU represents a 20-foot equivalent unit.

- Cable construction and rehabilitation, bus purchase, and bus station constructions in major Algerian cities (DA 37 billion, approximately US$0.5 billion).

However, in light of rapidly growing congestion in urban areas and growing economic and social demand, urban transport investment needs are being carefully reassessed.[76] The multimodal master plan should also include assessment of tradeoffs between heavy investments (such as metro and tramway) and soft investments (such as bus rapid transit, and buses in general).

5.28 **Mobilizing nongovernment finance and extending cost recovery is needed.** Increasing attention should be paid to tariffs adjustment in order to gradually ensure cost recovery and to develop nonbudgetary financial mechanisms, such as user fees and private sector finance. Several options are possible.

- ***A Road Fund.***[77] Road users would pay for road use through a tariff separated from the government's general taxes. This could take the form of (a) an annual vehicle license fee, which charges for access to the road network; (b) a levy added to the price of fuel, which charges for use of the road network; or (c) a congestion tax,[78] where applicable. This could be tested by AGA to operate the East-West Expressway.
- ***An Urban Transport Fund.*** This fund would provide complementary financial resources for the maintenance and operation of urban transport infrastructure.[79] The fund would be a special account fed by the central government budget, local government budgets, and fees collected from transport beneficiaries.[80]
- ***Review, and adjust if necessary, port and airport tariffs.*** These must closely reflect the "reference costs"[81] of providing services or financing the assets. Algerian airport taxes are significantly low than those in other Mediterranean countries, even after quality of services are taken into account. The excessively low rate might be justifiable as a public service obligation for domestic passengers, though not for the government to subsidize international passengers.[82] By contrast, users of Algerian ports tend to claim that port tariffs are excessively high compared with other ports in the region. This assertion should be assessed by a port tariff benchmarking study.
- ***Pilot concessions***. These should be encouraged in selected niches. Extensive participation by the private sector in transport infrastructure seems to have been discouraged by the otherwise slowly improving investment climate in Algeria, the hangover of the previously failed attempts of the East-West Expressway and the Algiers airport concessions. However, the successful port terminal concession in Bejaia—now a joint venture with 49 percent of shares owned by the Singaporean operator, Portek[83]—has paved the way for increased private sector participation in port operations and investments. The development of a container terminal at the port of Djen Djen could serve as a good example.

[76] A draft transport and circulation plan for Algiers for 2007, 2010, and 2020 prepared by the Ministry of Transports is currently under discussion.

[77] Other options should be considered to serve the same policy objectives—for example, creating multiyear ring-fenced line items in the national budget

[78] The objectif of this tax is to prevent congestion over some sections of the road netweork. It is standard to use its revenue to finance the road network.

[79] Investments in the development of heavy urban transport infrastructure (metro, tramway, cable, suburban railways) should still be carried out on government's capital budget.

[80] Beneficiaries are different from people who are strictly users, such as drivers. They benefit from the transport system while using it.

[81] Reference costs should be based on efficiency targets.

[82] Main investments in airport terminals are indeed mostly financed on government's budget.

[83] Bejaia Mediterranean Terminal is a container and cereal terminal in which Portek has invested around US$10 million. Operations started in 2005. At present the terminal is handling containers at the rate of 13 moves per crane per hour, about twice that of the container terminal in Algiers.

Increasing the allocative and technical efficiency of transport services

5.29 **Implementing key institutional reforms is critical for enhancing efficiency.** The Ministry of Transport prepared a comprehensive Roadmap in 2005. In particular, it includes the following.

- ***In ports***. A draft law currently under interministerial discussion should (a) create a Maritime and Port Authority to ensure regulation and oversight of the sector, and (b) split existing port enterprises[84] into (i) local autonomous port authorities that will ensure public authority functions according to the landlord port model, and (ii) port operating companies in charge of running commercial activities until regular concessions are tendered progressively.
- ***In civil aviation***. A draft law currently under interministerial discussion should (a) establish a Civil Aviation Regulation and Oversight Authority, and (b) split current airport agencies.[85] Geographically, this will create autonomous airport platforms consisting of one large airport and several small airports. Functionally, it will create local operating airport companies that will run commercial activities under contracts with the airport authorities.
- ***In urban transport***. The 2001 Transport Law established an urban transport perimeter. However, the implementation of intended institutional reforms has lagged. This includes the setting up of urban transport authorities, especially in Algiers, that will be in charge of (a) urban transport planning, (b) defining services and associated tariffs as well as public service obligations, (c) contracting out operations to companies, and (d) administering resources of the urban transport fund that is proposed above.

5.30 **Increasing allocative efficiency can be achieved through enhanced competition.** Fostering dynamic competition in the supply of transport services should warrant a greater alignment of supply with demand, an increased quality of services, and significant cost reductions. This was already demonstrated in Algeria through the granting of second and third licenses in the mobile telephony sector. Competition in the transport sector should be fostered in the following ways.

- ***Between modes***. Rail, road, air transport, and to a lesser extent maritime transport operators should all be able to compete against operators in other modes, both in the passenger and freight transport markets. This requires that operators have decision autonomy on price and services to be supplied, that the tariff policy does not create market distortions, and that public service obligations are clearly identified and compensated.
- ***Within modes***. In urban transport and road transport, competition among operators is already taking place in the case of bus services. Increased competition should be introduced to an extent in port services and airport services, and to a greater degree in domestic air transport services. Adequate regulations should be established at the same time.
- ***Competition for obtaining concession in the market***. This form of competition should be sought for the selection of the operators of the Algiers metro, tramway and suburban railway, and for the operation of port and airport services.

5.31 **Increased private sector involvement in transport services should also bring greater technical efficiency.** Private sector participation should also bring managerial expertise and help to reduce the costs of services of losses of SOEs, with significant impact on current public expenditures

[84] There are currently 10 local port enterprises that ensure both public authority functions and commercial activities.
[85] Airports are currently regrouped geographically under three airport agencies (EGSA Alger, Oran, Constantine), which ensures both public authority functions and commercial activities.

(see below). Meanwhile, public enterprises such as Air Algérie should partner with strategic private investors to bring capital and restore competitiveness.

5.32 **Ensuring the financial sustainability of state-owned enterprises is a decision that can not be postponed.** The current subsidy mechanism to SNTF and ETUSA does not work to the extent that it does not prevent chronic financial disarray and, combined with the moral hazard of an expected government bailout, does not create incentives for improved efficiency. Sustainable financial health and increased efficiency of SNTF and ETUSA requires them to:

- Clearly identify the services services that meet the criteria of public service obligations.
- Estimate the "reference costs" or "target costs" of identified services or groups of services. These will constitute a base to the formula of financial compensation of public service obligations by the government (Box 5.3 has such formula for Tunisia).
- Establish a contract that binds the government—or in the case of ETUSA, the Urban Transport Authority—to financially compensate operators in return for the delivery of defined levels of public services.
- Establish a management contract between the government as a shareholder and the SOE, based on well-defined performance indicators—and then properly enforce this contract.

Similar principles should be applied to structuring the relationship between the government and transport companies operating tramways and bus services in order to meet public service obligations in other cities.

Box 5.3 Compensation by the Tunisian Government of Public Service Obligations for Suburban Passenger Services Operated by the National Railway

The contract for the operation of railway passenger services in the southern suburbs establishes the following:

- The budget finances investments necessary for the operation of services and passenger safety, including the (a) development and layout of passenger stop areas (platforms, stations, parking lots, intermodal stations); (b) construction of fences isolating railway areas; and (c) railway walkover and crossroads.
- The national railway finances investments in infrastructure renewal and layout (tracks, signaling, telecommunications, maintenance facilities) and investments in rolling stock purchase and renewal.
- The government is required to pay a quarterly compensation for public service obligation on the operated services. The amount depends upon the effective transport capacity, revenues, compliance with schedules, and a contractual estimate of the railways cost to provide transport capacity. The formula includes a financial incentive for cost-effective management of operations.

Source: World Bank, draft contract between the Tunisian Government and SNCFT for the operation of railway passenger services in Tunis Southern suburbs under a public service obligation.

CHAPTER 6: UPGRADING WATER INVESTMENT MANAGEMENT

> During the past century, while world population tripled, the use of water increased six fold. The increased use of water has come at high environmental costs: some rivers no longer reach the sea, 50 percent of the world's wetlands have disappeared in the past century, 20 percent of freshwater fish are endangered or extinct, and many of the most important groundwater aquifers are being mined, with water tables already deep and dropping by meters every year, and some damaged permanently by salinization. The World Commission on Water estimates that water use will increase by about 50 percent in the next 30 years. An estimated 4 billion people—one half of the world's population—will live under conditions of severe water stress in 2025, with conditions particularly severe in Africa, the Middle East and South Asia. This gloomy arithmetic of water is mirrored in the gloomy arithmetic of costs. While low cost, often community-based solutions can and should be further exploited, the "easy and cheap" options for mobilizing additional major sources of supply for human needs have mostly been exploited. Many countries are now facing sharply increasing unit costs. Tensions over water rights are increasing at the level of the village, city and basin. Shifting patterns of precipitation and runoff associated with climate change compound this gloomy arithmetic. An inability to predict and manage the quantity and quality of water and the impacts of droughts, floods and climatic variability will impose large costs on many economies in the developing world in the coming decades.
>
> —The World Commission on Water

This chapter focuses almost exclusively on water issues for northern Algeria.[86] It assesses the broad elements and direction of the government's water sector strategy in transition, identifies key problems and issues that Algeria's policymakers and planners need to address, examines public expenditure patterns, and reviews the design of the PCSC program and projects to be implemented. Finally, it suggests ways in which the needs of priority investments can be accommodated within the current fiscal space, along with suggestions for improving the efficiency and effectiveness of public intervention.

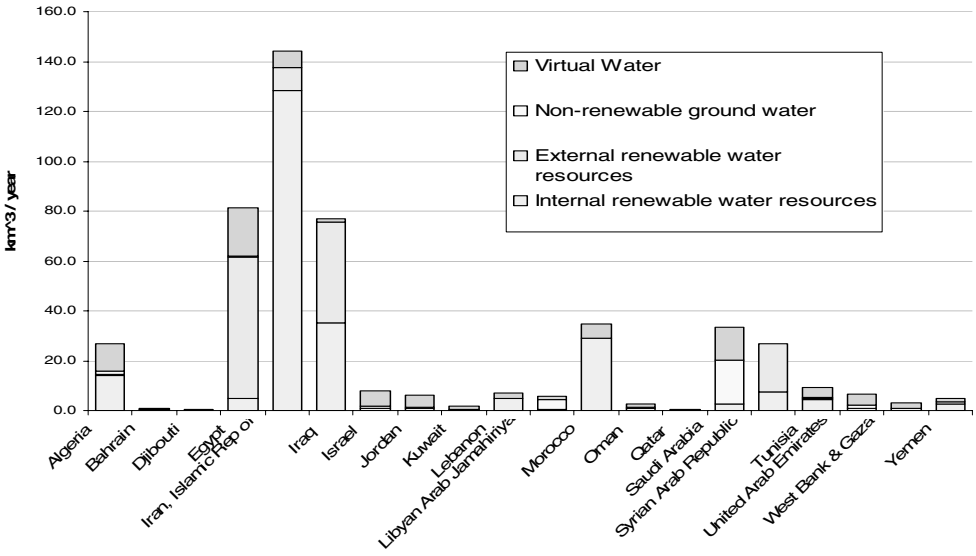
A. INTRODUCTION

6.1 **Algeria faces critical challenges in dealing with one of its most vital natural resources**. Though the arithmetic of water might not seem so bleak in the country context, the situation is nevertheless serious and worrisome. The cause for concern is reported in several strategic assessments on the future of water, including the National Economic and Social Council (2000) and the World Bank (2003c). Algeria is a country with relatively adequate renewable water at the national level, but extreme geographic and year-on-year variations. It depends heavily on nonrenewable groundwater and augments its supplies by seawater desalination. As such, the country must optimize geographic and temporal distribution of water. It must maintain environmental quality and manage aquifer drawdown to not exhaust supplies.

6.2 **Like other MENA countries, Algeria lacks sufficient water to grow its own food, which makes trade a vital activity**. Although agriculture uses 65 percent of the water withdrawn in the country, the available quantity is insufficient to grow all of the country's food, particularly in light of the relatively low adoption of high-efficiency irrigation technology. Algeria is a net importer of water embedded in food. About 40 percent of total water needs are imported in food, a concept known as "virtual water" (Figures 6.1 and 6.2). Basic data on water supply and demand are in Annex H. Algeria water fact sheet is in Annex M.

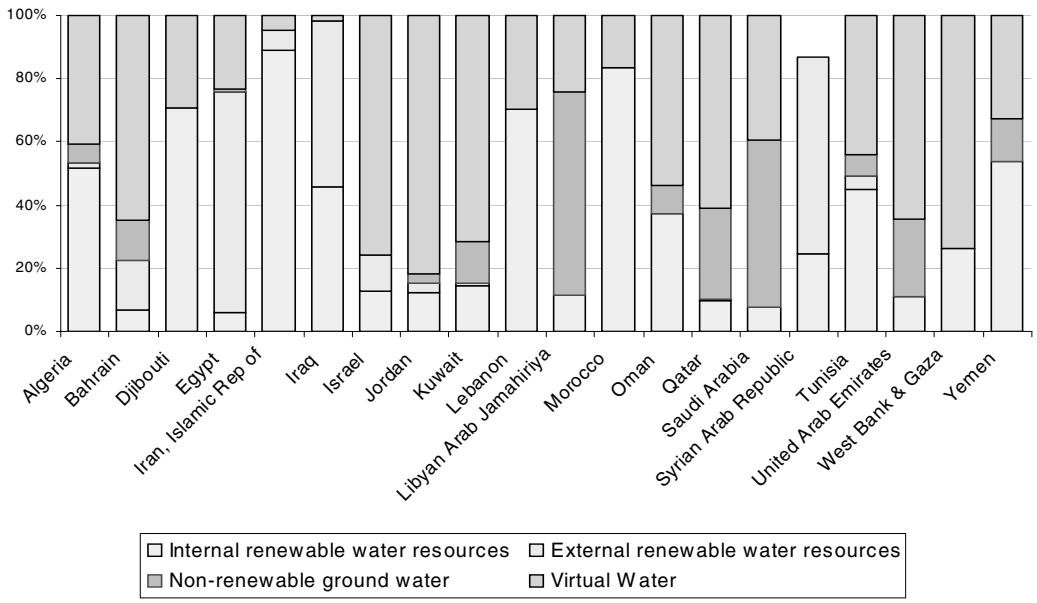
[86] Because of limited information and data, water issues for Southern Algeria are barely touched upon in this chapter.

Figure 6.1 Per Capita Renewable Water Available: Algeria and MENA Region



Source: FAO *Aquastat*. Data on nonrenewable groundwater come from various published sources.
Note: External renewable water resources refer to surface and renewable groundwater that come from other countries, net of that country's consumption. Virtual water refers to water embedded in food that is imported, net of exports.

Figure 6.2 Share of Water Available or Used by Type of Water: Algeria and MENA Region



Source: MENA *Water Development Report*, forthcoming.

6.3 **Past investments in the mobilization of additional water supplies—to secure potable and industrial water needs and to expand irrigated areas—have failed to match the growing demand for water.** Recent droughts have exposed the vulnerability of the large-scale irrigation (LSI) system and the growing pressure on groundwater resources. The droughts have focused

attention on the need for additional storage and new water sources that improve security, increase supply, and provide greater operating flexibility and assurance. At the same time, new demands related to sanitation are emerging. Major investments are needed in wastewater treatment to counter the threat that untreated sewage poses for the long-term sustainability of Algeria's water resources. In short, Algeria needs new investments in water development.

6.4 **A business-as-usual approach—which relies exclusively on more investment in infrastructure, particularly in costly storage, irrigation expansion, and wastewater treatment—is no longer sufficient to address the multiple challenges in the water sector**. In 2005, the government launched the PCSC, which includes a substantial investment program in water resources (dams and transfers) and water supply. This is primarily financing a new project portfolio of 5 large dams,[87] 8 transfer systems,[88] 6 irrigation expansions, and 350 hill-dam projects. In implementation, Algeria faces critical choices on how to prioritize and phase proposed investments so that impact on growth and poverty alleviation is maximized. In any case, it is clear that an approach focused on increasing water supply, as the one applied in the second half of the twentieth century, is not adequate anymore. The key country challenges have changed: reduced availability of water per capita, global climate change, stronger global trade integration, and an Algerian population with a higher level of education and urbanization demanding better quality in service delivery.

6.5 **Three particular elements should be considered in reviewing the public expenditure in the water sector**.

- **Water is a natural resource that is shared by communities**. This implies some familiar issues—the rights of upstream versus downstream users, well-off owners versus larger community rights to ground water, and current generation versus future generations' intertemporal allocations for ground and surface water. All water rights are usufructuary in nature. In the absence of a robust legal framework and well functioning regulatory institutions, water rights might end up being defined by de facto water rights, often at the expense of traditional rights of communities. The relative power of individuals and groups is strengthened by subsidies for agricultural outputs, energy and other inputs, and tariff barriers.
- **Public expenditure in water is often represented by the amount the Algerian government has invested in "trunk" infrastructure such as dams, conveyance systems, and desalination plants, which are all public goods**. Aridity and rainfall variability are used to justify massive public expenditures in hydraulic infrastructure, and the government allocates generated water between competing sectors. With significant demographic changes taking place, choices are politically difficult, such as reallocating between poorly performing irrigated agriculture and burgeoning urban demand, or whether investment in dams and desalination plants should continue with the same priority. In the latter case, Algeria has begun major investments in desalination instead of optimal utilization of the available water in its numerous large reservoirs.

[87] According to the *Programme Centralisé*, the five large dam projects are Boussiaba, Tallizerdane, Kessir, Saf Saf, and Kef Eddir. All are projects in the bidding process (*lancés en appel d'offres*). A familiar problem: In theory, they must be considered "mature"; but in practice, it is not always the case.

[88] The three large transfers of MAO (155 Million of Cubic Meters-MCM per year), Beni Haroun (504 MCM per year) and Algiers-Taksebt (178 MCM per year) are not originally included in the PCSC, which were launched before 2005; so what came originally in the PCSC are several downstream infrastructures. This is in the process of being consolidated under a single PCSC pipeline.

- **Water services provided to farmers, households, and businesses have the nature of private goods; yet for political reasons, full cost recovery has never been contemplated**. With resulting limited cash flow, water companies and irrigation utilities are unable to finance treatment of the pollution loads they are liable for. This places another heavy fiscal burden on the budget.

B. PERFORMANCE OF THE WATER SECTOR

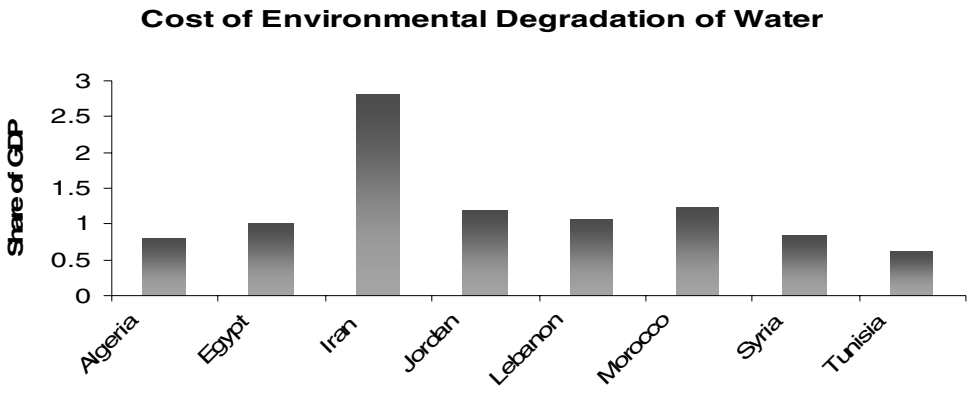
6.6 **The country faces difficulties in reducing gaps in the water sector.** There are three particular challenges, as follows:

- **A scarcity gap for Northwestern Algeria.** The country's northwestern regions face major difficulties meeting needs from local resources. Estimates of groundwater availability (supply) average 2.7 Billions of Cubic Meters (BCM), while extraction (demand) for irrigation and for urban and rural drinking water is estimated at 3 BCM. Helped by subsidies for energy and equipment, farmers have turned to groundwater. Mobilizing additional surface water (potential estimated at 12.3 BCM, with half of it in the eastern part) could be part of the solution. However, past construction of massive "trunk" infrastructure has not been justified by results. Dams have been filling at only 14 percent of total capacity in recent years (El Moujahid, March 2006). Droughts have also pushed water planners and policymakers to shut off the tap for irrigation and reallocate the resource for urban use.
- A service delivery gap. Algeria is caught in the vicious cycle of poor maintenance breeding poor service delivery, leading to unwillingness of users to pay more for the service, thus depriving the operator of resources needed to maintain the system. Operators of large-scale water supply and irrigation have a dismal record in meeting service delivery standards, with access relatively high but quality of service rather low. Despite high level of access to some services (urban water supply and sanitation, and irrigation), rural access to potable water and sanitation is poor, and their cost is lagging behind the share of O&M covered by user fees. The low level of coverage is prompting the government to maintain operators under a life support system of subsidization schemes. Finally, the low pricing of water provides no incentives to conserve or efficiently use the scarce resource.
- A governance gap. The focus of water planners and policymakers is on hardware such as physical systems, rather than on software such as management and institution-building. This leads to a purely "engineering approach" to the planning of infrastructure and the investment portfolio. Institutional issues, including limited accountability, transparency and user participation, are not resolved. This leads to the most serious problem: the lack of coordination among water institutions. The planning and management of water development takes a top-down centralized approach, primarily driven by large investments. Little attention is paid to integrated management and proper maintenance schemes or to the voices of local stakeholders. In addition, the state plays the dual role of regulator and service provider. Service providers are not accountable to users for their performance. Technical criteria do not drive the investment portfolio. There is limited capacity of water administration in handling large investment budgeted amounts, leading to low budget execution and poor accountability in the publicly financed projects. Even more worrisome, a

relaxed budgetary constraint has made the need for reform seem like less of a priority.

6.7 **How much is clean water, access to sanitation, and good hygiene worth?** While the necessary investment costs are relatively well known, the corresponding benefits are harder to quantify. Recent studies (Sarraf 2004) undertaken in the Middle and East and North Africa region have attempted to quantify the benefits, and "costs avoided", by properly managing water resources, providing safe sanitation, and improving hygiene (Figure 6.3). The costs of inadequate water management can be grouped into three categories—first, the cost on health and well being of the population (for example, premature death and illness from waterborne diseases); second, the cost on production (for example, the decline in agricultural productivity from water salinity, or the decline in fish production); and third, the cost on environmental services (for example,

Figure 6.3 Cost of Inadequate Water Management for Health-Related Aspects

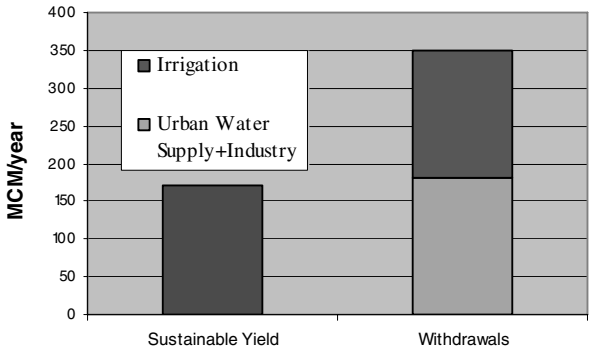


Source: World Bank (2005e) for Iran and Sarraf (2004) for other MENA countries.

reduced recreational value of lakes, wetlands, and coastal zones). Estimates of the costs to Algerian society resulting from inadequate water management for health-related aspects alone are at about 0.7 percent of GDP (MATE 2002).[89]

6.8 **With groundwater over-exploited in many areas, water quality is deteriorating and serious environmental problems related to water are a drain on the economy.** Current extraction level from Mitidja aquifer doubless the sustainable yield (Figure 6.4). Overexploitation of groundwater, such as is happening in the Mitidja Aquifer, results in decreased water levels. Groundwater exploitation constitutes nearly half of total water withdrawal and almost three times the amount from surface water.[90]

Figure 6.4 Goundwater Exploitation in the Mitidja Aquifer



Source: MRE-DEAH (2005a)

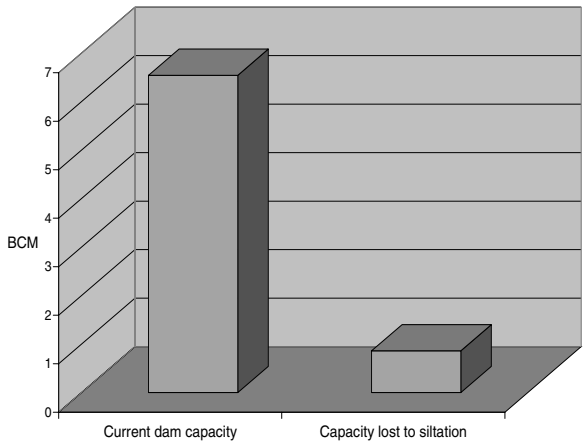
[89] The existence of high degradation costs does not imply that an investment looking to mitigate them is adequate.

[90] MRE IWRM Seminar presentation in Rabat (January 2006) cites total water usage at 6.5 BCM, with groundwater contributing 48 percent (3.15 BCM) and surface water 15.6 percent (1.03 BCM). Most recent data provided by Authorities set the total capacity of surface water movilization contained in 57 dams in operation at 5.7 BCM and in groundwater at 3.4 BCM, for a combined total of 9.1 BCM.

6.9 **Algeria has little water storage capacity, so it must invest in large, new dams that are contentious and costly.** When "oued" flows are as variable as those in the southern Mediterranean environment, storage is necessary so that water supplies can be more closely matched to demands. The United States and Australia have over 5,000 cubic meters of storage capacity per person; China has 2,200 cubic meters; Morocco has 500 cubic meters; and Tunisia has 360 cubic meters. By contrast, Algeria has only 190 cubic meters per person,[91] slightly more than Pakistan with 150 cubic meters. To remedy this situation, Algeria intends to launch an ambitious program of DA 740 billions (US$10.3 billions) to provide about 9 billion cubic meters to users. That will require 80 new dams and transfers to the existing 60 dams (ANBT 2005b).

6.10 **Much water infrastructure is in poor repair or is unusable.** Because of age, faulty initial design, or limited maintenance, much of the mobilization and conveyance infrastructure needs to be rehabilitated. As shown below, several dams (Figure 6.5) and large-scale irrigation schemes (Table 6.1) must now undergo substantial rehabilitation if they are to deliver on their intended purposes. But rehabilitation should not be approved inertially; instead, only those productive investments should be retained in the future pipeline. For instance, an irrigation project can only be justified if its new associated technology truly answers to new market opportunities offered to those who receive the service.

Figure 6.5 Dam Situation in 2004



Source: ANRH (2005).

Table 6.1 Condition of Large-Scale Irrigation Perimeters

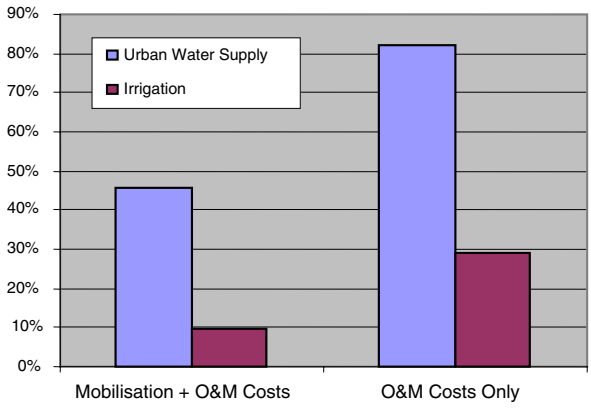
	Oranie	Chleff	Algerois	Constantinois
Old schemes	Habra: Old	Mina: Secondary canals bad	Hamiz: Old	
	Sig: Old	Bas Cheliff: Primary canals rehabilitated; secondary canals in progress	Kso'b: Renovated	
		Haut Cheliff: Renovated		
		Moyen Cheliff: Under renovation		
New schemes	Maghnia: Degraded		Mitidja West: Overexploited by industries (Reagia) that use groundwater without authorization or payment	Bounemmoussa: Moyen
	Ain Skhouna: Old		Arrib's: Functional	Saf Saf: Good/average
			Mchedellah: Good	Guelma: Leaks

Source: World Bank (1998a).

[91] ANBT (2005a).

6.11 **The overall water management system is not financially sustainable.** Three basic questions are relevant to the financing of infrastructure: Who pays? How much? And, how is the money used? In terms of "who," there are many reasons why a substantial portion of the costs in water—especially for public works that provide individual services, such as irrigation water—should be paid by those who receive the service. However, users of canal water in Algeria's large public schemes pay only a small portion of the bill. In terms of "how much," according to the authorities the average cost recovery for urban water (and sanitation) services was above 80 percent following the January 2005 tariff adjustment (Figure 6.6). [92] Between 1984 and 2004, the delivery tab for average large-scale irrigation schemes (about 215 MCM) was roughly DA 27.5 billion, or US$380 million per year.[93] In terms of "how money is used," the first call is to pay bureaucracies, leaving insufficient funds for operations and maintenance. The vicious circle then continues: Service quality declines; users become even less willing to pay. The result? Farmers tend to tap into groundwater that is nonrenewable, as in the case of overexploitation of the Mitidja Aquifer.

Figure 6.6 Share of Water Costs: Recovered by User Fees



Source : MRE 2005a, e and ADE

6.12 **A large share of the Algerian population has now access to improved water and basic sanitation services, but rural coverage continues to lag far behind.** Ninety-two percent of the urban population now has access to improved water sources, and almost everyone in the country has access to improved sanitation (Table 6.2).[94] Official data indicate that about 1,040 communes over 1,541 (about two-thirds) have daily water availability. As in many parts of the world—and in particular, other countries in this region—rural service is lower than urban. According to authorities Algeria has eighty-nine percent coverage of water supply and eighty-five percent coverage of sanitation. Both rates are projected to increase to ninety-six percent and ninety percent in 2009. Thus, nearly 2.5 million people in rural areas lack improved water

[92] Assumptions underlying Figure 6.6: (i) Average mobilization costs of DA 20.5 per cubic meter was obtained by averaging costs for four main systems: Renem, Ain Dalia, Foum El Khanga; Skikda-Azzaba; Hammam Debagh-Koudiat Haricha; Sud SHO-Koudiat Acerdoune (Source: MRE-PNE 2005a); (ii) Average operation and maintenance cost in water supply is DA 25.5 per cubic meter, and average water tariff is DA 21 per cubic meter (Source: ADE); (iii) Average operation and maintenance cost in irrigation is DA 10.3 per cubic meter (based on water actually delivered, not theoretical allocation by project) and average tariff for 12 large-scale schemes is DA 2.98 per cubic meter (Source: MRE-DEAH 2006).

[93] The answer does not include required rehabilitation and maintenance of the assets. It assumes: 10 percent and 46 percent coverage from user fees in irrigation and water supply respectively; and a 2005 actual provision of potable water by ADE (around 860 MCM).

[94] According to *WDI* (2005), access to improved water sources is defined as the percentage of the population with reasonable access to an adequate amount of water from an improved source, such as household connection, public standpipe, borehole, protected well or spring, or rainwater collection. Unimproved water sources include vendors, tanker trucks, and unprotected wells and springs. Reasonable access is defined as the availability of at least 20 liters per person per day from a source within 1 kilometer of the dwelling. Algerian authorities indicate that they had 155 on average in 2005. Access to improved sanitation is defined as the percentage of the population with at least adequate access to disposal facilities that can effectively prevent human, animal, and insect contact with excreta. Improved facilities range from simple but protected pit latrines to flush toilets with a sewerage connection.

services and access to basic sanitation, compared with 1.5 million in urban areas without improved water and 0.19 million without adequate sanitation.

Table 6.2: Percentage of Population with Access to Improved Water and Basic Sanitation, 2004

	Urban water		Rural water		Urban sanitation		Rural sanitation
Bahrain	100	Bahrain	100	Bahrain	100	Bahrain	100
Egypt	100	Kuwait	100	Kuwait	100	Kuwait	100
Kuwait	100	Lebanon	100	Lebanon	100	Qatar	100
Lebanon	100	Qatar	100	Qatar	100	Saudi Arabia	100
Qatar	100	UAE	100	Saudi Arabia	100	UAE	100
UAE	100	Egypt	97	UAE	100	Lebanon	87
Morocco	99	Saudi Arabia	97	Algeria	99	Jordan	85
Iran	98	Jordan	91	Oman	97	Algeria	82
Saudi Arabia	97	Iran	83	Syria	97	Iran	78
Syria	94	Algeria	80	Jordan	94	Tunisia	62
Tunisia	94	Oman	72	Tunisia	90	Oman	61
Algeria	92	Yemen	68	Iran	86	Egypt	56
Jordan	91	Djibouti	67	Egypt	84	Syria	56
Djibouti	82	Syria	64	Morocco	83	Morocco	31
Oman	81	Tunisia	60	Yemen	76	Djibouti	27
Yemen	74	Morocco	56	Djibouti	55	Yemen	14

Source: WDI.

6.13 **Algeria is projected to meet the Millennium Development Goals (MDGs); yet even so, a large number of people will remain without basic water services**. Algeria is likely to meet the target of reducing by half the number of people without sustainable access to improved drinking water and basic sanitation by 2015. Nevertheless, 630,000 people would still remain unserved with basic water supply and 1.68 million would lack access to basic sanitation—94 percent in rural areas.[95]

6.14 **Furthermore, existing water sanitation infrastructure does not always function.** Sanitation facilities are often not able to achieve their designed capacity, and they are often not operational—because the source has dried up, or because water quality has deteriorated beyond the plant's capacity to treat it. Other surveys and field visits confirm that coverage by functioning systems is lower than official estimates suggest, in Algeria as well as in other countries of the region (Table 6.3).

[95] World Bank estimates are made on the basis of data collected for the World Bank (2005e), using an estimated population of 19.23 million in urban areas and 13.15 million in rural areas.

Table 6.3 Official Versus Best Estimates of Service Levels in Rural Areas (%)

Country	Water		Sanitation	
	Official	Best estimate	Official	Best estimate
Algeria	82	80	81	47
Djibouti	100	23	50	6
Egypt	96	82	96	78
Iran	83	58	79	47
Iraq	48	46	n.a.	n.a.
Morocco	56	40	n.a.	n.a.
Tunisia	n.a.	n.a.	62	18
Yemen	68	25	21	20

Source: World Bank (2005e, 2003c); WHO/UNICEF, "Sanitation" (1999).

6.15 **The performance of Algerian water utility companies is low.** Government-owned utility companies do not operate under hard budget constraints. Investment, hiring, salary decisions, and pricing of services are all commonly subject to political interference. Predictably, this leads to poor projects, overstaffing, and unrealistically low tariffs. In turn, the water utilities offer poor service and they defer maintenance. By standards of international good practice—for example, Chile's water utilities—Algerian operational performance is poor (Table 6.4). According to the Algerian authorities, the level of unaccounted-for-water (both physical and commercial losses) is estimated at about 40 percent. The national water utility company (ADE) practices intermittent supply when demand exceeds water available (as it is the case in Oran, dams are almost empty), so ADE has to ration water distribution. When ADE is working to repair a leak, water can be shut down for a certain number of hours, or in parts of some cities, for several days on a fixed schedule.[96] It does so both to repair leaks and to ration water when demand exceeds supply.

Table 6.4 Performance Indicators for Algerian and Comparator Water Utilities

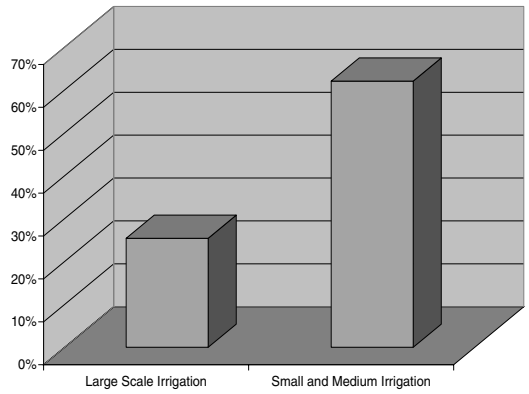
Indicator	Iran	Morocco	Algeria	Tunisia	Chile
Unaccounted-for-water (in percent)	32	33	50	19	33
Employees per thousand water and sewerage accounts	3.5	3	7.9	9.6	1.1
Operating costs over operating revenue (in percent)	90	132	108	116	59

Source: World Bank sector studies.
Note: ADE had 19,765 employees for 2.51 million accounts in 2002. Total costs were DA 9.21 billion, and total revenues were DA 8.58 billion (ADE, "Consolidated Budget," February 2003).

[96] In the city of Oran, water is supplied every other day during drought years. These are more frequent than nondrought years—7 or 8 years of the past decade.

Figure 6.7 Share of Area Irrigated in Area Equipped

6.16 **Algeria does not reap the benefits of irrigation schemes already equipped.** Algeria has about 800,000 hectares of land equipped for irrigation. However, only 53 percent of that area is actually irrigated. There are several reasons—theoretical water entitlements are not respected, infrastructure is degraded, and so forth. In addition, only one quarter of publicly funded, large-scale irrigation are actually irrigated.



Source: Computation using data from ONID and Messahel-Benhafid (2005).

6.17 **According to international standards, Algerian water management can be improved.** Table 6.5, below, shows a composite index of water management for the region.

Table 6.5 Composite Index of Water Management in the MENA Region

	Access to water and sanitation [a]	Urban water utility management [b]	Water requirement ratio [c]	Composite index of water management [d]
Algeria	0.76	0.49	0.368	0.54
Bahrain	1.00	0.77	n.a.	0.89
Djibouti	0.71	0.56	n.a.	0.64
Egypt	0.72	0.5	0.53	0.58
Iran	0.92	0.68	0.32	0.64
Jordan	0.95	0.55	0.38	0.63
Kuwait	1.00	0.62	n.a.	0.81
Lebanon	0.99	0.6.0	0.40	0.67
Morocco	0.8	0.8	0.37	0.66
Oman	0.92	0.65	n.a.	0.79
Qatar	1.00	0.65	n.a.	0.83
Saudi Arabia	0.82	0.72	0.43	0.66
Syria	0.69	0.55	0.45	0.56
Tunisia	0.87	0.83	0.54	0.75
UAE	1.00	0.70	n.a.	0.85
Yemen	0.30	0.64	0.40	0.45

Source: MENA Water Development Report (forthcoming)

Notes:

[a] This is a composite index of access to improved water, access to sanitation, and hours of access to tap water in metropolitan cities with population above a million.

[b] The proportion water billed in relation to the total water supplied is used to measure urban water utility management. The average for utilities in metropolitan cities with population above 1 million.

[c] Water Requirement Ratio (WRR) is the ratio of actual quantity of water *required* for irrigation in the country in a particular year to the actual quantity of water *used* for irrigation.

[d] Composite index is the mean of the three indicators.

C. THE SECTOR STRATEGY

6.18 **Given the performance described in the previous section and the challenges faced, what can Algeria do to make more out of public intervention in the water sector?** International experience varies, ranging from situations where planning is conducted at national, provincial, and local levels to less sophisticated, limited exercises driven by urgency and budget planning constraints. One way or another, statements on vision, mission, objectives, values, strategies, and goals represent elements in future planning. Goals also serve as benchmarks for a historic review of costs and benefits of water mobilization, infrastructure performance of the operators, efficiency of service delivery, coverage, and so forth. In Algeria, the need for a strategic planning framework has been explicitly recognized (CNES 2000).

6.19 **The Ministry of Water Resources (MRE) holds the main responsibility in the provision of water infrastructure and services.** The MRE is responsible for policy orientation, planning, regulation, and supervision of activities. Other agencies are responsible for the planning, design, construction, and maintenance of infrastructure, and water supply and sanitation (WSS) and irrigation services delivery (see Annex K). Usually, municipalities provide WSS services in small towns and rural areas. Table 6.6 provides an overview of the present distribution of roles between the central government, government agencies and local authorities, and the private sector, for each sub-sector. This distribution, however, has suffered several changes in the last decade. Water supply was centralized, decentralized and recentralized several times. The irrigation sector was taken care of by the Ministry of Agriculture before being transferred to the MRE. Continuous institutional changes have limited the accumulation of expertise and the creation of solid institutions.

Table 6.6 Institutional Arrangements in the Water Sector

Subsector	Central government DPAE / Technical department	Government agencies (EPICs)[a]	Local authorities	Private sector
Large infrastructures	DMRE (planning)	ANBT Feasibility studies Implementation Management		
Irrigation				
Infrastructure	DHA (planning, regulation)	ONID (Large-scale irrigation) OPI (GPI management)		PMH
Services				Farmers
Water supply				
Infrastructure	DAEP (planning, regulation)	ADE Feasibility studies Implementation	DHW	
Services		ADE	Municipalities	Private sector in Algiers
Sanitation	DAPE (planning, regulation etc)	ONA	DHW	
Infrastructure				Private sector
Services		ONA	Municipalities	
Watersheds	DEAH (planning, regulation etc)	ABH ANRH (national level, multiple functions)		

[a] Etablissement Public à Caractère Industriel et Commercial (EPIC)
Source : Bank staff elaboration

6.20 **Algeria adopted a Water Law in 2005** (Annexes I and J). This follows the 1996 amendment of the 1983 Water Law, which included the findings of the *Asssises de l'eau* in 1995. These findings mainly referred to poor water and watershed management. The creation of watershed agencies was proposed, though not totally implemented. The 2005 amendments introduced new rules and principles governing the management and conservation of water resources. New regulations on the water law are being drafted.

6.21 **Article 59 of the 2005 Water Law calls for a new water master plan.** The primary objective of the Plan National de L'Eau (PNE) is to establish a basic framework for orderly and integrated planning and implementation of water resources programs and projects. Its goal is to create rational water resources management that is consistent with national development objectives. As required by law, Algeria is now updating its water master plan. As of May 2006, MRE-DEAH has prepared one draft for each of the four hydrologic regions. Each draft has three parts.

- Description of the quantity and quality of water resources, including surface water, groundwater, an alternative resources
- Description of the present and future water demand, broken down by user groups, projected usage, and likely population
- Presentation of technical (physical) and operational water management measures to meet the future demands, taking into account their temporal variations, spatial distributions, as well as social, environmental, and economic considerations.

These drafts quantify resources (that is, water available) and demand (that is, water required) by region and by main water-consuming center. This quantification takes into account time (monthly values according to alternative projections), location, source type (*oueds*, reservoirs and lakes, groundwater), demand types (municipal, industrial, and irrigation), as well as alternative development scenarios.[97]

6.22 **These changes are consistent with a water sector strategy aiming to improve the quality of life through several means.**

- Providing sustainable use and effective protection of water resources, especially groundwater.
- Ensuring food security through water security and by increased production and improved productivity in the agriculture sector.
- Bringing access to safe drinking water and sanitation, guaranteeing people's heath security.
- Supplying the required water to economic sectors.
- Controlling and mitigating water-related disasters and protecting the environment.

6.23 **Achieving these overall objectives implies success in a set of related objectives**. Among others, these include:

[97] Scenarios have been prepared only for the central and eastern regions. A secenario *Volontariste maitrisé* translates an accelerated infrastructure building policy, rapid improvements in management, reduction in losses aiming at guaranteeing by 2030 priority needs for potable water nationwide; and increasing as much as possible irrigated areas. The *tendanciel pessimiste* scenario is characterized by a limited infrastructure program and less efficient management of reservoirs, transfers, and conveying canals.

- An integrated approach to water resources management through the development of a water basin authority and the appointment of the ministry of water resources as the overall coordinator of water and supply management.
- Decentralization of water delivery and management services using a variety of autonomous, accountable water users associations (public, private, and community-based).
- Prevention of the effects of droughts and floods to prevent losses and displacement of people from affected areas and negative environmental impacts
- Water conservation and harvesting while protecting the environment from further destruction, and restoration of a sustainable balance between economic benefits and environmental protection.
- Regulations for an efficient allocation of water resources while reforming prices.

6.24 **Thus, Algeria has endorsed this overall vision of water development and management in its laws and started to apply it in its policies, while prioritizing sustainable use of water.** However, a comprehensive strategy for the development and management of the water sector has not been formally adopted or widely disseminated. MRE drafted a water master plan (see below) outlining broad objectives to be met though a program of investment and institutional reforms. Unfortunately, such plan is not in formal use, and is not followed as such by any authority yet.

6.25 **In the meantime, the PNE leads to several specific measures.** These include the following.

- *Recognition of* the need for an integrated water resources management. The Ministry of Water Resources has been given responsibility for the overall coordination of water supply and demand management (Decree No. 2000-325).
- Endorsement of a basin approach in water resource management. Five hydrographic basin agencies and five basin committees have been set up by Decree No. 96-280, and a special fund for integrated water resource management (IWRM) has been established to help those agencies fulfill their mandates.98
- Special treatment to water conservation and water harvesting. Promotion of water conservation for irrigation and the environment will be considered in designing rehabilitation projects (for example, Circulaire Interminesterielle No. 294/SPM/86, which reflects the importance that is being given to the Hill Dams Program).
- Decentralization of water delivery services. This includes using several autonomous and accountable agencies, including public, private, and community-based water user organizations. New EPIC status (see above) has been given to ANBT, ONID, ADE, ONA and the national institute for water resources;
- Reform of water pricing regimes for public supplies, for sewerage and sewage treatment, and agriculture. Decree No. 05-13 for water supply and sanitation services, and Decree No. 05-15 for agricultural water were both adopted on January 9, 2005.

6.26 **In sum, water sector strategy and policy formulation are in transition.** Gradually, they are moving toward a framework of stakeholder participation in which issues of quality, economic efficiency, comprehensiveness, and integrated management at the level of implementing ministerial entities are used to make the case for public intervention (or the lack thereof). Nevertheless, accountable, transparent institutional procedures are still at their infancy. Coordination mechanisms

[98] Fonds National de Gestion Integre de la Resource (FNGIRE) has been included in *Loi du budget* since 1996. The fund receives contributions from two types of fees (quality and resource protection). The fees are actually collected by agencies in charge of water production and distribution.

to manage the water sector are absent. This is a key weakness, because several economic sectors as well as the water users themselves are involved in the allocation of water. Dealing with severe water shortages in some parts of the country as well as the need for rapid implementation of the PCSC investment is sufficient justification for bringing the subsectoral strategies together. This is one of the most important recommendations of *La Strategie du Secteur de l'Eau en Algerie* (World Bank, 2003c) (see Annexes N and O). To support the completion of this process, Table 6.7 summarizes some key questions that need to be addressed by subsectoral strategies in the medium-term.

Table 6.7 Issues and Questions for Preparing National and Subsectoral Water Strategies

Water supply	How much water can be saved through better management (compared with increased supply)? What is the cost of transferring water from dams initially designed for irrigation? How are desalination projects selected? How are large water supply projects selected, and who can overcapacity be avoided (as in Beni Haroun and Saf Saf dams, already built; and in the Salah-Tamanrasset transfer, to be launched in 2006)?
Water sanitation	To what extent sanitation should always be coupled with reuse, as works in this area is mainly managed by municipalities that lack the minimum funds to perform it? What minimum funds would be required? How to include rehabilitation or new sanitation? How can sanitation receive the necessary transfers from budget?
Water mobilization	Is additional storage needed? How much storage should be built and in what sequence? How should these new supplies be allocated and distributed? What are the long-term consequences of continued storage depletion? Are economic returns commensurate with the cost of water mobilization? What happens as the limits of water resources are approached? What should be the target level of water security and reliability? Should different levels of security be associated with different water rights?
Irrigation and agriculture	What are the government's options for achieving its goals in food security and rural development? What are the respective costs and risks? Should the irrigated area and supplies of irrigation water be expanded? If so, by how much? Should a major shift in cropping be considered or planned? What changes will be needed in irrigated agriculture and water management related to infrastructure, incentives, and governance? What kind of technologies should be put in place in irrigation schemes, and what are the economic and financial returns that can be expected?
Resource conservation, protection and water quality	What is the role and scope of water conservation? What policy should be put in place to avoid waste and, consequently, allocations for particular users? How to deal with leakages?
Large dams and transfers	How to mitigate the environmental and social impacts of increased water resources development and transfers from the coastal plains to the Hauts Plateaux?
Intersectoral planning, water allocation, and management	As decisionmaking is often triggered by emergencies or political factors, rather than by strategies or feasibility analysis, planning itself should be strengthened. Can future water demand be balanced against incremental increases in supply? What additional changes in sector policy would be needed in water rights, water allocation and operations, pricing and revenue sharing, electricity pricing in the agriculture sector, and so forth? Can irrigation and water supply be better integrated with sanitation policies? Who should finance which programs and new projects? How to integrate users' expectations in the planning process ?
Groundwater regulation and management	Does the new policy and legislative framework provide the right platform for effective groundwater management? What regulatory and monitoring mechanisms should be put in place?
Nonconventional water resources	What role should be given to desalination—as a complement in emergency situations, or as a routine resource?
Water for industry	What incentives for water saving should be built in to industrial water policy—for example, recycling or process modification? What regulations on environmental protection should be strengthened?

Source: Bank staff elaboration

6.27 If Algeria were to adopt subsectoral strategies, selecting projects from the PCSC might benefit from solving a simplified optimization problem, as follows:

Maximized Total Benefits of investment, policy reform, and institutional changes	w1 * **Supply Expansion** (storage expansion, i.e., Saf Saf, Ourkis, Boussiaba, Kissir, Kef Eddir, and other new dams; small dams; improvements in diversion capacity and function; improvements in overall system operation, water conservation and efficiency improvements)
+	w2 * **System Expansion** (e.g., transfers of Kissir, Koudiat Rosfa, and Kramis; urban water supply expansion and rehabilitation for Koudiat Acerdoune-Boughzoul axis; irrigation Hennaya perimeter)
+	w3 * **Management** (e.g., watercourse lining and land leveling—for example, supply management-rehabilitation and modernization; flood protection; improved operations and maintenance versus new investments; improved water allocations and scheduling; improved equity at system and distribution levels; groundwater management incentives; introduction of new agriculture and irrigation technology; effective access to markets, knowledge and information; human resource development and research)
+	w4 * **Environment sustainability** (salinity, reducing drainable surplus, water quality, safeguarding ecology upstream and downstream of dams, wastewater collection and treatment)
+	w5 * **Productivity** (cropping patterns, water rights and markets, water pricing, intersectoral allocations, interbasin allocations)
+	w6 * **Governance and Institutional Reform** (improved public service and accountability; cost reduction; decentralization; empowerment of users; financing of public versus private goods, and so forth.) ***subject to budget, water, labor, equipment, and other resource constraints.***

6.28 **The decision or preference weights, w_i, and the choice of interventions within each component of the model are not determined solely by economic welfare, efficiency, or a general notion of equity.** They are also strongly influenced by political economy considerations (World Bank 2006b) also important is the timeframe in which each investment yields benefits. Is it short, medium, or long term? Limitations of total water resources, the financial resource envelope available for the sector, and the large, lumpy character of some key investments make tradeoffs difficult. Consideration of alternative phasing and sequencing of investments is critical for the overall success of the strategy. This provides an opportunity for the government to choose particular interventions and weights, while the multiple social and economic objectives are being achieved in an acceptable timeframe.

6.29 **The government should be seeking a mixed strategy that balances the ways that different choices can be looked at and evaluated.** Sound planning and technical analysis are essential to effective, timely political economy decisions. Quite apart from the political conflicts and the general complexity of the issues, solving the planning problem for the sector—even simplified attempts—are more difficult because of the prevailing weaknesses in economic analysis, measurement, and research in general. Good studies on the institutional framework are lacking. They are seriously overshadowed by technical and engineering studies, which are generally considered as "the real" analytical tools for water sector analysis. There is currently no water sector investment study nor national water basin models.[99]

[99] Some models have been updated at the regional levels—most recently, the Center-East regions were updated for the PNE work. Nonetheless, there is no consolidated platform to address problems from a national standpoint. Presently, it is extremely difficult to reconcile the 2005 work on PNE update for the Center-East regions with the work for the other three regions.

6.30 **Two other initiatives are also needed.** First, knowledge databases, analytical tools, and information systems need to be improved.[100] Second, a new mechanism is needed for consensus-building among all stakeholders—at the wilaya, water basin, and national levels.

D. OVERALL PUBLIC EXPENDITURE PATTERNS

6.31 **This section looks at the use of public resources in water**. It moves to a general assessment of expenditures trends and the process of resource allocation. Investment trends in the PSCS are reviewed. Performance of public intervention is evaluated in large-scale irrigation to illustrate the difficulties faced by public agencies. The section concludes with options for securing greater benefits from public intervention in water.

Expenditure trends

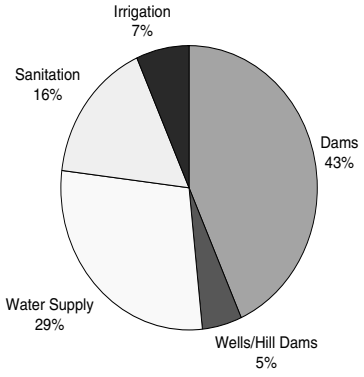
6.32 **Water expenditures have been rising steadily in the 2000s**. As a percentage of GDP, budget authorizations to investments in the water (and agriculture) sector doubled from 1.3 percent in 1999 to 2.6 percent in 2006.[101] This outcome reflects the importance of greater resource mobilization and increased access to water services under the PSRE and in first years of the PCSC. A similar trend occurred in the share of total budget expenditures. For their part, recurrent expenditures represented about one twentieth of total capital expenditures in 2005, thus reflecting their small allocation among sectoral needs.

6.33 **Budget allocations have been consistent with the stated objectives and goals of water policy in the water sector**. Priorities have been on, first, mobilizing more resource through surface infrastructure to meet the potable and industrial water needs; second, protecting water; and third, meeting the needs of agriculture (Figure 6.8).

- Over 1995–2004, water expenditure was split equally between water mobilization (dams and small hydraulic infrastructure) and water delivery and treatment systems (water supply, sanitation, and irrigation).
- Large water mobilization infrastructure (dams) and water supply remain the two largest expenditure categories. On average, they accounted for 43 percent and 29 percent respectively of expenditures.
- Sanitation comes in third place, with 16 percent of water expenditures.
- Though relatively small (only 7 percent of the total), irrigation expenditures grew at the fastest rates. Between 1995 and 1999, no money was spent in this subsector. Between 2000 and 2003, however, irrigation expenditures grew to 10–11 percent of the total (Figure 6.9), thus reflecting a renewed interest in a critical factor of agricultural production.

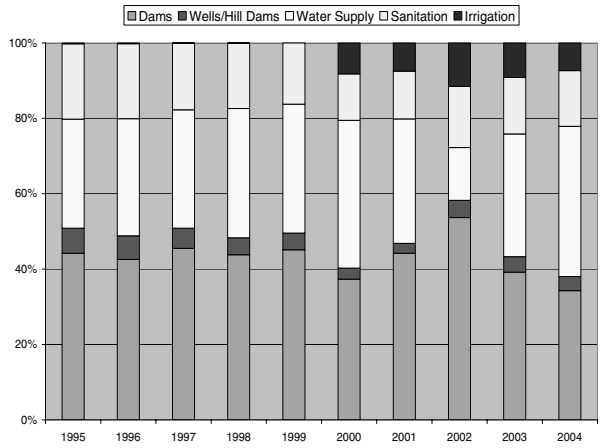
[100] It should be acknowledged that Algeria is on the right track in regard to technical information. MRE has set up a network of technical information in which information from institutional databases (DHW, ANRH, ANBT, ONID, ADE, ONA, and others) is transmitted to the regional databases (ABH) before being consolidated into sectoral databases (MRE level).
[101] Agriculture represented on average about 10 percent of the overall total during this period.

Figure 6.8 Composition of Water Capital Expenditures, 1995–2004 Averages



Source: Staff computations from MRE data.

Figure 6.9 Trends in Composition of Capital Expenditures, 1995–2004



Source: Staff computations from MRE data.

6.34 **The level of execution with respect to the annual investment budget allocations (*credits de paiement*) to the water sector has been particularly high.** Deviations (the share of actual or initially budgeted investment expenditures) were on average just 5 percent greater than budget allocations between 1998 and 2004 (Table 3.4, Chapter 3). This is consistent with high aggregate execution rates in other sectors (see Chapter 3).

6.35 **Nevertheless, underspending on cumulated program authorizations remains high, especially in water, dams, sanitation, and irrigation projects.**[102] In the 2000s, the government has committed significant resources beyond what the sector could actually absorb. Since 1999, cumulated investment expenditure in water and the ratio of cumulated actual over authorized investment expenditures have been highly negatively correlated (Figure 6.10). This critical finding tells us that the absorption capacity of the sector is essentially not determined by the level of budgetary resources committed to the sector, but by institutional constraints. In fact, more that resources are committed, the more that underspending occurs. Figure 6.10 shows an upward trend in reduced deviations between 1995 and 1999, followed by a declining pattern between 2000 and 2003. This shifts only mildly in 2004, which could partly be attributed to the PSRE. The declining pattern in the 2000s is largely driven by the behavior of expenditures in the two major expenditure categories—water supply and dams. However, high underspending also prevails in irrigation, wells, and sanitation projects (Figure 6.11).

[102] For a detailed explanation of the difference between approved (credits) and authorized (committed) budget allocation, see Chapter 3 and Chapter 4.

Figure 6.10 Cumulated Water Spending and Actual over Authorized Ratios, 1995–2004

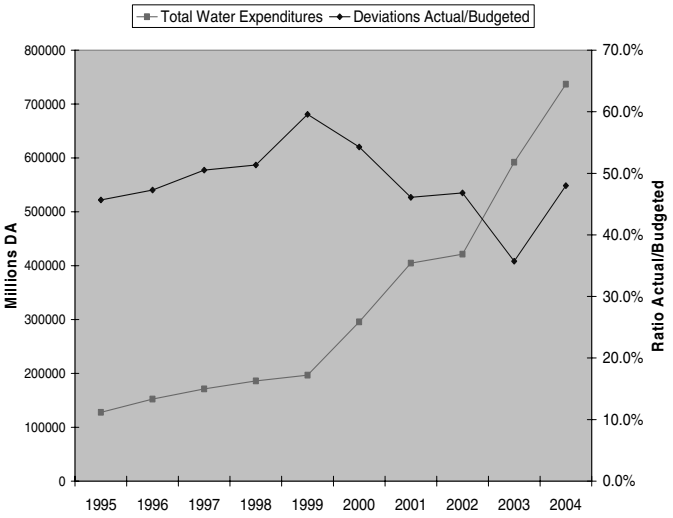
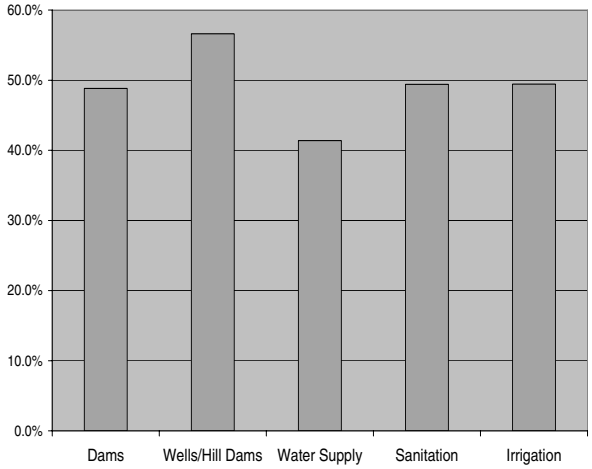


Figure 6.11 Expenditure Deviations by Main Project Category, Average 1995-04



Source: Staff computations from MRE data.

6.36 **Large deviations from authorized allocations also reveal that budgeting is still an incremental process, with severe shortcomings related to how programs and projects are planned and carried out in the water sector**. Central departments—MRE-DPAE and MFP-DGB—have insisted that, first, adequate technical, financial, and economic evaluations are missing; second, priorities are not set in reaching economic and social development objectives; third, there is urgency associated with specific supply-demand gaps and tensions in some water subsectors; and fourth, the management and maintenance of water infrastructure follows a "build-neglect-rebuild" cycle (MRE-DPAE 2005).

6.37 **In addition, existing guidelines are not fully implemented for project inclusion ("inscription") in the budget, in financing, and in monitoring**. As a result, project selection lacks sound planning and programming procedures by specific objectives. It is reduced to a process of negotiation under budgetary constraints. In fact, selected projects to be included in the budget are transferred toward the entities in charge of project management (*ordonnateurs*, such as ANBT or ADE) according to discretionary criteria that are not part of any subsectorial or geographic priorities, and once approved their monitoring is poor. Hence, all sorts of mismatches occur between supply and service delivery infrastructure, as well as between projected and actual costs. This is illustrated for a several cases in Table 6.8.

Table 6.8 Selected Projects with Severe Delays and Coordination Issues

	Dams completed	Dams or transfers not yet completed
Irrigation completed		Transfers of Chifa (80 percent complete; to be delivered in February 2007); Djer for West Mitidja schemes.
Irrigation not completed	Zit Emba (6,500 hectares) Bas Cheliff (9,200 hectares) Jijel (4,500 hectares)	Koudiat Acerdoune Dam scheduled for delivery in 2007, 32 percent complete (May 2006). East Mitidja (3,400 hectares) project not included in PCSC.

Source: ANBT program brochure, 2005; PCSC, "MRE–Water Sector," October 2005; MRE, "Rapport du Groupe de Reflexion MFP-MRE," September 2002.

Water sector investment planning

6.38 **Programs and project planning for water-related activities should follow the pluri-annual approach for investment planning, which was reintroduced by the PSRE in 2001 and is regulated by Decree No. 98–227 relative to all capital expenditures**. This decree defines the procedures for inclusion of programs and projects in the budget according to central, deconcentrated, communal levels. Table 6.9 describes the steps in elaborating the annual water project budget proposal.[103]

Table 6.9 Steps in Algerian Water Project Budget Planning

Step 1	Evaluation of financial and physical results for projects executed by end-year (*n*-2) and (*n*-1)
Step 2	Authorized Proposals for year (*n*) including: • Reevaluations or modifications and restructuring of projects • New operations for the new program ranked according to a priority level
Step 3	Consolidated proposals in year (*n*) for old and new projects.

Source: MRE-DPAE (2005b).

6.39 **In the water sector, the DPAE conducts the planning process for programs and projects as well as the capital budget preparation.** This is done in accordance with a calendar set by the Ministry of Finance. In practice, the process is articulated around a series of negotiated procedures on the allocation of financial resources (authorized or credited) for the various *maitres d'ouvrages* in the sector (for example, by ANBT, ONID, ADE, and ONA). The allocation is established taking into account the degree of completion among ongoing projects under the "Programme en Cours" and a hierarchy for priorities among new projects. Water projects are particular in that some have pre-set priorities (for example, water treatment plants, hill dams, and rehabilitation of water supply systems). Other projects are assessed as a function of ongoing upstream investments, such as transfers from dams or forages. Budget negotiations are conducted through a series of multiparty conferences.[104] For deconcentrated projects, proposals from the DHW are validated in preliminary local-level discussions (Wali/DPAE) during which progress on current projects and proposals for new projects are examined. Based on the outcome, the General Budget Directorate (DGB) and DPAE prepare an annual plan and finalize their lists of new projects and projects. The Ministry of Finance provides notification on the final authorization decisions and approves payment credits.

6.40 **Table 6.10 summarizes the content of the initial water investment portfolio in the PCSC.** The portfolio totals DA 520 billion (approximately US$7.22 billion), or 12.4 percent of the total PCSC. This represents a slight reduction with respect to the 2001–04 allocations, when 13.4 percent of capital expenditures went to the water sector.

[103] See Chapter 3 for a complete description of the budget process for investment and Chapter 4 for total spending.

[104] There are central departments (DGB/MFP-DPAE/MRE), project executing structures (EPA, EPIC, DHW), and the MRE central administration departments covering specific activities (for example, DHA for irrigation, DMRE for dams and transfers, DAEP for water supply, and DAPE for sanitation).

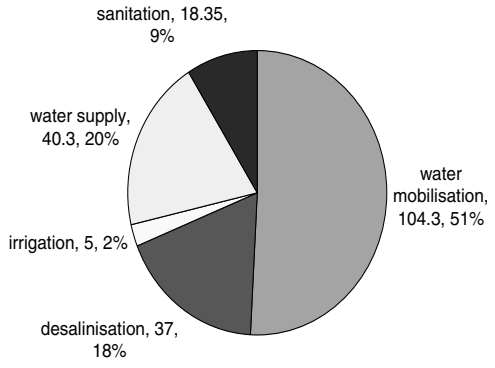
Table 6.10 PCSC Water Program (2005–09)

Type of Program	Content
Water supply DA 127 billion US$1.76 billion	• 10 new water supply systems (potable water) • Rehabilitation of 18 water supply systems • 1,280 water supply projects • 1,150 forages • 230 storage and water towers
Hydraulic infrastructure DA 393 billions US$5.46 billion	• 8 dams • 8 transfers • 9 new wastewater treatment plants • Rehabilitation of 11 wastewater treatment plants • 6 irrigations perimeters • 350 hill dams • Wworks for dams maintenance • Works on siltation of dams • Ouargla Valley (*remontee des eaux*) • Oued Souf (*remontee des eaux*)

Source : MRE and PCSC

The allocation of resources for the *Programme Centralisé* (i.e. excepting deconcentrated projects) implied by the PCSC portfolio is summarized in Figure 6.12 and Table 6.11. Following the choice of weights contained in paragraph 6.27 and outlining a suggested strategic planning approach, these reveal that storage and expansion (w_1) cover 89 percent, with some wastewater treatment plants to handle sustainability of the resource (w_4) at 9 percent. Little attention is given to infrastructure and investment in the management of water (w_3), or to improvement of services in irrigation (w_2), potable water (w_2), productivity (w_5), or institutional reforms(w_6). This imbalance creates a disconnect between the PCSC portfolio and its broad objectives in the water sector (see Chapter 3).

Figure 6.12 Projects in the Complementary Finance Law (LFC) 2005-2007 (Billion DA, % of Total)



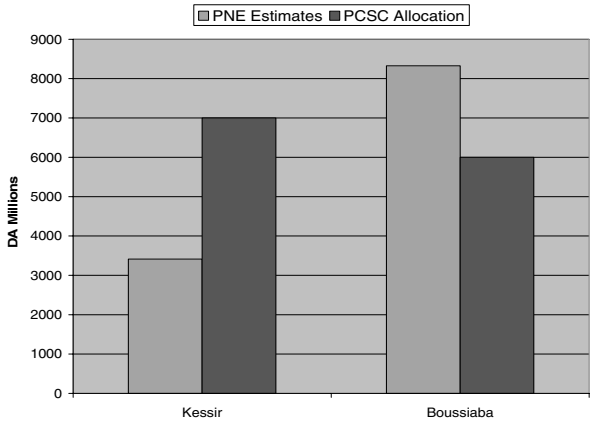
Source: Bank Staff based on MRE data
Note: this refers only to "Programme Centralisé"

Table 6.11 Composition of PCSC Centralized Water Program by Project Purpose

	2005 (DA billion)	2006 (DA billion)	2007 (DA billion)	Total (DA billion)	Cost, % total 2005–07
Supply expansion	4.7	62.8	0	67.5	33
System expansion	36.5	56.5	21	114	56
Management	0.1	5.0	0	5.1	2
Sustainability	2.8	3.6	12	18.4	9
Productivity	0	0	0	0	0
Institutional reforms	0	0	0	0	0

Source: MRE, Programme Complementaire 2005-2009, Secteur Eau, October 2005.

Figure 6.13 Expenditures on Selected Dams: Deviations between PNE Estimates and PCSC Allocations



Source: PNE Center-East Region Update (Mission 5 Report, p. 56), for PNE Estimates. MRE, for PSCS Allocation.

6.41 **There is an important discrepancy between some projects' original estimate in the PNE and their actual allocation in the PCSC**. Figure 6.13 illustrates this discrepancy for two major dams in the program—work on the Kessir Dam (wilaya of Jijel), with a capacity of 68 BCM was scheduled to start December 2005, and the Boussiaba Dam (wilaya of Mila), with 120 BCM was scheduled to start in March 2006.[105]

Operations and maintenance expenditures: The case of irrigation schemes

6.42 **Good management, efficient operation, and well-executed maintenance of irrigation and drainage systems are essential to the success of irrigated agriculture**. They result in better performance, better yields from crops, and sustainable production. Unfortunately, management operation and maintenance are poorly carried out in Algeria's large-scale irrigation. The main reason is generally attributed to inadequate finance, though the lack of available water has also been a justification for scaled down maintenance. There are four main components of operation and maintenance costs for large-scale irrigation: first, operation charges, including personnel, taxes, purchase of inputs, and costs for buildings and cars; second, energy for pumping; third, indirect costs (for example, in general administration); and fourth, general maintenance, which is often taken as residual. Once operation charges are covered—with personnel costs as the bulk of this item (Table 6.12), very little is left for maintenance or rehabilitation of the asset (up to a level consistent with the "normal" functioning of the equipment).

[105] ANBT, Note on "*Mise au Point de Situation des Projets*", October 2005.

Table 6.12 Selected Indicators for Large Scale Irrigation Proj.

Irrigation scheme	Irrigated area (ha)	Staff cost (DA millions)	Maintenance cost (DA millions)	Ratio Staff ost/Total
Habra	5,263	16.5	.31	98
Oued Rhir	3,303	16.3	.33	98
Sig	3,610	12.8	.52	96
La Mina	3,626	18.2	.77	96
Moyen Cheliff	5,290	23.2	1.69	93
Arribs	837	5.8	.53	92
Hamiz	5,121	25.4	2.42	91
Haut Cheliff	5,161	22.9	3.51	87
Ksob	1,659	10.9	2.42	82
Bechar	1,257	6.2	2.32	73
El Outaya	1,059	8.5	8.08	51

Source: MRE-DEAH (2005e).

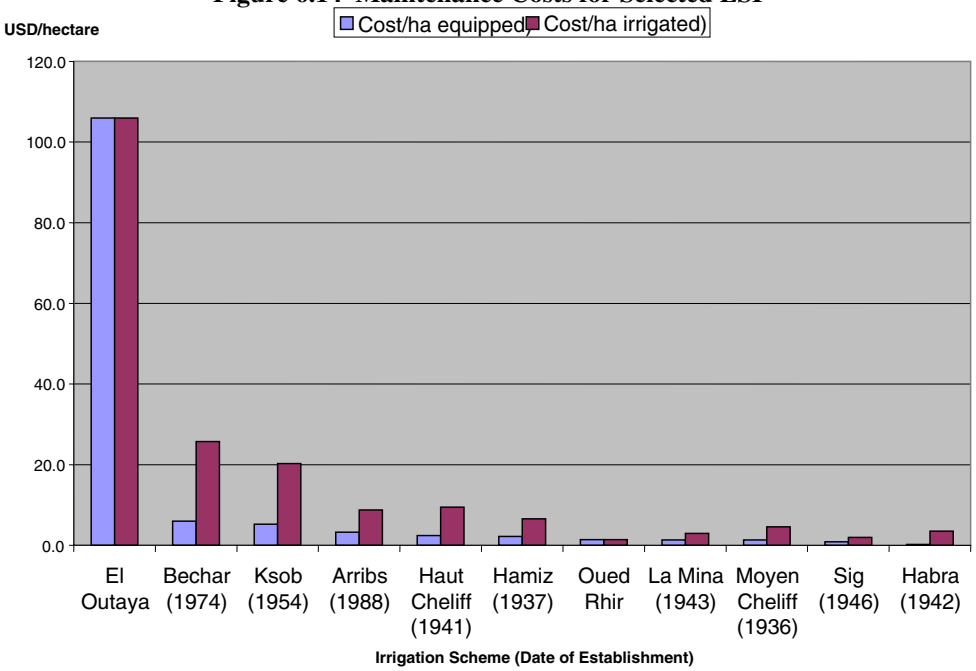
6.43 **Maintenance expenditures in Algeria are alarmingly low**. Works under maintenance is of three types—preventive maintenance, corrective maintenance, and rehabilitation.[106] Unlike expenditures that can be budgeted in reference to historical costs, maintenance costs must be determined on a normative basis. Standard maintenance ratios and replacement costs should be used (see Annex L). Based on international[107] and regional norms,[108] estimated maintenance needs should be within the range of US$100 to 150 per hectare equipped. Available data (MRE-DEAH 2005) show that maintenance expenditures in this subsector have been approximately zero, with exception of the new large-scale projects of El outaya (US$105 per hectare), Bechar (US$25 per hectare) and Ksob (US$20 per hectare). (See Figure 6.14.)

[106] Corrective maintenance occurs at the early stages of an irrigation scheme and is often the responsibility of the builder. Preventive maintenance in a second stage is usually performed to keep the asset in working condition. The third stage is characterized by frequent malfunctions related to normal equipment use, with corrective maintenance and rehabilitation as needed. Preventive maintenance helps to defer the need for rehabilitation.

[107] Based on ONID norms, DA 1,000,000 are needed for creation and extension (MRE-DEAH 2005e). If the true costs of maintenance are, say 0.5 percent of the value of the stock of infrastructure (the international benchmark is 1 percent), then the annual cost of maintaining the system would be about DA 5,000, or US$70 per hectare.

[108] Annex L provides maintenance ratio needs for various components of an irrigation scheme in Morocco.

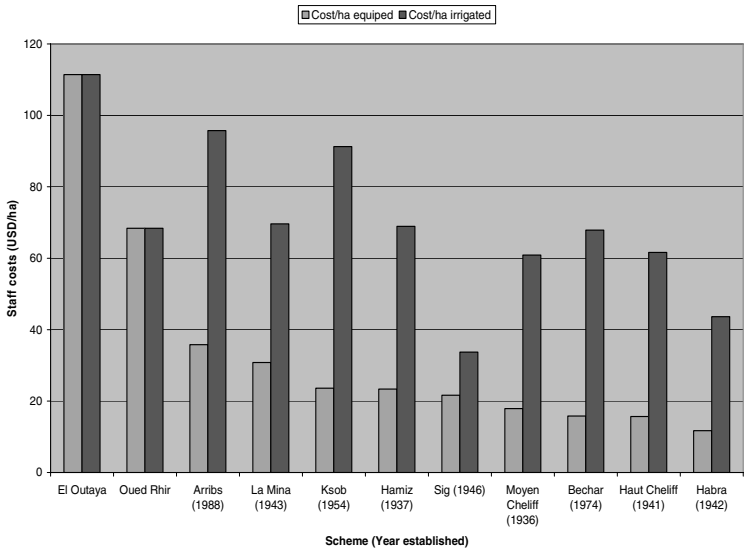
Figure 6.14 Maintenance Costs for Selected LSI



Source: MRE-DEAH, *Etude Tarification de l'Eau Agricole* (2005)
Note: Maintenance costs for El Outaya are estimated for "good practice," not actual costs.

6.44 **The ratio of staff costs vary considerably between different perimeters of large-scale irrigation (LSI) (Figure 6.15) and between perimeters with comparable mode of irrigation (pressurized versus aspersion).** For those perimeters currently in service and for which data were available, the average cost ranged between US$35 to 110 per irrigated hectare, and between US$10 to 110 per equipped hectare. The variability of staff composition (that is, *cadres pour maîtrise d'execution*) also shows large variability between irrigation schemes (Table 6.13). For example, there is one manager for two operational staff in Sig, compared with one for ten in Bas-Cheliff. This high degree of variability in staff level and composition indicates the need for ONID to harmonize and rationalize staff costs, while properly estimating staffing requirements in each large-scale irrigation project.

Figure 6.15 Current Staff Costs in LSI Perimeters



Source: MRE-DEAH (2005e)

Table 6.13 Staff Profile of Large Scale Irrigation Schemes

LSI	Cadres	Maitrise	Execution	Ratio Cadre/ Execution
Habra	10	26	40	0.25
Sig	11	18	23	0.48
Maghnia	0	0	3	0
Haut Cheliff	7	11	78	0.09
Moyen Cheliff	11	16	70	0.16
Bas Cheliff	7	8	66	0.11
La Mina	5	11	61	0.08
Mitidja Ouest II	3	5	66	0.05
Hamiz	8	29	58	0.14
Mitidja Ouest I	8	16	39	0.21
Ksob	6	4	51	0.12
Arribs	4	6	9	0.44
Bechar	2	2	11	0.18
Oued Rhir	11	12	26	0.42
El Outaya	4	6	35	0.11

Source: Data from MRE-DEAH 2005e

6.45 **In summary, Algeria has a relatively small stock of major irrigation infrastructure, with an estimated replacement cost of about US$2.7 billion.**[109] Two thirds of this infrastructure, built before 1962, is now operating well beyond its design life. As described in the PNE, services provided by this infrastructure are critical for rural well-being. However, the output from irrigation service will only be forthcoming if the channels and related equipment are maintained and, when their useful life is over, replaced.

6.46 **As it embarks upon a major infrastructure program, Algeria needs to pay particular attention to setting a modern Asset Management Plan.** With limited O&M expenditures, the quality of service is deficient and infrastructure is deteriorating. This leads toward a cycle of build-neglect-rebuild. Algeria needs to get out of this cycle. There is no amortization program for water infrastructure, no asset inventory, and no cadastre. In addition, executing agencies receive 4 percent from every new project in the investment pipeline as budget for *maitrîse d'ouvrage*. So the disincentive to neglect O&M is strong. As a starting point, MRE needs to prepare reliable estimates of the annualized costs of replacing and maintaining infrastructure. Assuming regular level maintenance, international experience suggests a typical ratio of replacement and maintenance to be about 3 percent of the value of the capital stock of irrigation infrastructure, with equal parts assigned to replacement and to maintenance.[110] In the case of Algeria, this would imply a replacement and maintenance cost for large-scale irrigation at about US$8.1 million a year. Using the benchmark ratios, this would mean that ONID should be investing an average of US$2.05 million a year in replacement and a similar amount in maintenance. In fact, no funds are presently budgeted for replacement, and the expenditure on maintenance in 2003–04 was only about US$200,000,[111] or about 10 percent of the benchmark estimate. There are several reasons why the costs of replacement and maintenance could be lower than

[109] This assumes 191,300 hectares and a replacement cost of DA 1,000,000 per hectare, based on norms for AGID, as reported in PNE (MRE-DEAH 2005e).

[110] This is based on the Australian experience, as reported in Pakistan Water Strategy (World Bank 2005f). The Australian experience shows that the average "renewals annuity", which includes the cost of both replacement and operations and maintenance, is about 3-4 percent for older, and 2-3 percent for newer assets.

[111] Based on known and limited data collected from OPI, from Bechar, Arribs, M'sila, Habra, Sig, Haut Cheliff, Moyen-Cheliff, La Mina, Hammiz, and Oued Rhir (MRE-DEAH 2005e). Total reported costs are DA 14.8 million.

the benchmark, such as water not available because of drought or potable water diversion, or security issues). However, the obvious reality is that only a small fraction of what is needed has been provided for replacement and maintenance of infrastructure.

6.47 **Finally, excessive staffing, low tariffs, and other factors exacerbate an already-dramatic financial situation in large-scale irrigation**. First, a large proportion of recurrent expenditure in the offices of irrigated perimeters (OPI) budgets are spent on staff. Operational policies in these EPICs dictate that very high salaries (with respect to salaries paid to staff from ministries)[112] have the first claim on resources. Maintenance expenses are a "residual" priority. Second, revenue collection is not only low but declining. Although data on tariff collection were not available for detailed analysis of generated revenues, authorities suggest that OPIs have generally been unable to cover even their personnel expenditures. On aggregage, irrigation departments lost DA 34.0 million in the 2002 financial exercise, DA 67.2 million in 2003, and DA 118.7 million in 2004. These sums reveal the presence of explicit contingent liabilities. In addition, the new tariff structure, which doubled water charges, will (with few exceptions) not significantly narrow the gap between revenues and adequate levels of O&M costs (Table 6.14).

Table 6.14 Share of O&M Covered by the New January 2005 Tariff Schedule

Hydrologic Region	Scheme	Volumetric Tariff [/a] (DA/m3)	Fixed tariff [/b] (DA/ls/s/ha)	Revenues from Tariffs[/c] (DA/ha)	Revenues from tariffs[/d] (US$/ha)	Share (%) of O&M ($200/ha)covered by tariffs[/e]
RH5	Oued Rhir	2	250	24,790	344	172
RH5	Bechar	2	250	21,550	299	150
RH2	Bas Cheliff	2	250	15,360	213	107
RH2	Moyen Cheliff	2	250	14,930	207	104
RH2	La Mina	2	250	14,755	205	102
RH5	El Outaya	2	250	12,550	174	87
RH2	Haut Cheliff	2.5	400	12,305	171	85
RH3	Hamiz	2.5	400	11,580	161	80
RH3	Mitidja Ouest I	2.5	400	11,395	158	79
RH3	Mitidja Ouest II	2.5	400	11,285	157	78
RH4	Bounemmoussa	2.5	400	9,080	126	63
RH1	Sig	2.5	250	7,985	111	55
RH4	Guelma	2.5	400	7,890	110	55
RH3	Ksob	2	250	7,770	108	54
RH1	Maghnia	2	250	7,460	104	52
RH3	Arribs	2	250	7,365	102	51
RH1	Habra	2.5	250	6,415	89	45
RH4	Saf Saf	2	400	5,840	81	41
RH3	Mchedellah	2	250	4,615	64	32

Source : Bank staff elaboration based on MRE data and interviews

[a] Volumetric water tariffs as set in Decree No. 5-14 of January 9, 2005.

[b] Fixed water tariffs as set in Decree No. 5-14 of January 9, 2005.

[c] Estimates made by MRE-DEAH (2005e) on average and standard water consumptions.

[d] Exchange rate of DA 72 per one US dollar.

[e] Assuming a minimum of US$200 per hectare for O&M based on DA 5,000 per hectare, or US$70 per hectare for a maximum in terms of staff costs (MRE-DEAH 2005e, p. 30) and DA 9,400 per hectare, or US$130 per hectare for other costs including maintenance.

[112] According to officials in the ministries, the salary ratios between comparable job categories in the EPIC and the ministry are above 3 to 1 in the case of an engineer (the one at the ministry earning 12,000 dinars), and 2.4 to 1 in the case of a director (120,000 dinars vs 50,000 dinars).

E. RECOMMENDATIONS

6.48 **This diagnostic points toward the following conclusions. Algeria must address three major—scarcity, service delivery and governance—gaps in the water sector (see para. 6.6).** From this review of the water sector, one could arguably conclude that Algeria could improve economic returns from its public investment. Sufficient investment is already planned in hydraulic infrastructure for the next 4 years, but a part of those resources could be redirected toward truly public goods—for example, regulatory and institutional reforms for both resource and service needs, wastewater collection and drainage, and incentives for water conservation in irrigation. However, key challenges remain**:**

- Groundwater exploitation is an issue. Perverse incentives that exploit groundwater beyond sustainable levels should gradually be removed from misallocated subsidies in agriculture, energy, and distorted trade policies. New approaches that stimulate affected groups' participation in the regulation of groundwater use should be adopted.
- Time has come to allow water utility companies to operate as independent entities with operational autonomy, predictable budgets, good accounting and reporting, and clear service standards.
- The need for improved governance is overwhelming.
- Inequity in access to water is also an issue. Rather than the current untargeted subsidies for both irrigation and water supply and sanitation, the focus should be on designing specific, targeted subsidies—for example, for the urban and rural poor, for municipal pollution, and so forth.
- Transfer of decisionmaking to the waterbasin agency level could allow local stakeholders a greater voice in water service quality and coverage, an important shift as user fees are gradually adjusted to improve cost recovery.

6.49 A**lgeria has taken important steps toward meeting those challenges.** It is changing the way that intends to conduct business. This includes:

- Starting to adapt its water laws and regulations into a modern framework. New concepts for water development and management are being introduced. These include: integrated water resource management, water basin agencies, private participation through concessions, water pricing adjustments (the most recent in January 2005), commissioning new studies for potable water and irrigation pricing increases, institutional reorganization of its water *Enterprises Publiques Economiques* (for example, ANB and AGID) into EPICs, and updating the PNE for the central and eastern regions. Communal water services were set in place in October 2005, and management transfer should be completed in 2007.
- Allocating a large share of its capital budget to water infrastructure (more than12 percent since the beginning of PSRE).
- Starting to define concrete goals reflecting its water vision, such as meeting 100 percent of potable water needs and reallocating the rest for the needs of agriculture and industry.
- Looking for new public-private partnership arrangements in service delivery for urban water supply as in Algiers (with the French operator Suez). By end-2006, the arrangements for Oran, Constantine and Annaba should be completed. Authorities intend to associate eight additional cities to such an arrangement in the future.

- Embarking on a major program of surface water mobilization (to reach 67 dams by 2009) and desalinization (12 stations) to fill the scarcity gap.

6.50 **These steps are leading to concrete improvements in reducing the scarcity and improving the service delivery and governance gaps; however, recent measures are insufficient**. Water operators have become more dependent on budgetary support for their survival, while the share of expenditures covered by their own revenues is insufficient. Water projects continue to face severe difficulties in terms of financial sustainability and delays of implementation. End users of rural water have interrupted service. There is limited monitoring and evaluation. Further improvements in the efficiency of public intervention do not depend on a less-than-restrictive fiscal space, but on a desire to do better. But changes will only happen if Algeria also makes major changes in the way it develops and manages its water resources and how it uses public monies and intervention. Basically, the government has two important and interrelated sets or groups of policy choices to make.

- **Improve its investment strategy, not only in how much new water supply to develop but in which strategic problems to prioritize through a well-defined, long-term sequence of investments**. For example, should it first secure fully and reliable potable water and sanitation services for urban and rural consumers? Close the geographic deficits? Modernize the existing system? Or expand irrigation into new areas? In this context, what would be the best sequence in which to develop additional storage, and how should this storage be allocated and reservoirs operated? At present, the slow pace of project preparation contrasts with the sizable resource envelope allocated through the PSRE and PCSC in dictating the sequence and priority of sector investments.
- **Develop policies that affect incentives to use water more efficiently and productively, while achieving sustainable and effective O&M.** These policies include the principles and institutional arrangements on which water distribution between the source and the destination will be based; new water pricing for service providers (for example, ADE and ONID, as well as ANBT, the bulk water provider)[113]; new electricity pricing in the agriculture sector (this may be the best and most efficient way to begin managing and regulating the use of groundwater); and concession of water rights or entitlements to empower farmer organization and farmers to use their water more efficiently and productively. A budgeting line should also be included to clearly identify O&M costs.

6.51 **In addition, the government of Algeria must consider the following measures**:

- **Slow down the process of building dams until a review of existing investments is completed in the near term, a follow-up well-planned pipeline is designed and the *maitrise d'ouvrage* is strengthened.** Water storage in dams is an important part of an integrated strategy, but it needs occur in a carefully sequenced fashion. Experience in the region and elsewhere (Iran, Morocco, Yemen) indicates that the institutional and political dynamics of dam construction can create the wrong incentives, leading to situations that are extremely inefficient in hydrological and economic terms. In addition, strengthening the *maîtrise d'ouvrage* is essential to contain costs and improve the quality of infrastructure. This is an area where training and technical expertise can prove helpful.
- **Instead, introduce an integrated water resource management plan based on strategy and providing for investment planning and budgeting in the entire sector.** This requires:

[113] Authorities indicate that fully autonomous ANBT subsidiaries, having adequate financial and human resources, will be created in 2007.

- A consolidation of all PNE updates, currently limited to the center-east regions.
- Preparation of subsector strategies to be consolidated into a national water development and management strategy adopted by all stakeholders.
- Substantial capacity building, with associated human and financial resources to MRE-DPAE to oversee water planning and coordination of programs and projects. The establishment of an integrated water planning system and project evaluation is currently being prepared with assistance from the German Agency for Technical Cooperation (GTZ).[114] According to authorities, the new system will allow to integrate the three planning cycles (long, medium and short term), which is essential to rationalize investment choices.
- Preparation of an asset management plan for all the country's major infrastructure, including supply expansion, system expansion, environment and management.
- Preparation of a consolidated water investment plan by a joint water/agriculture working group, providing a medium-term expenditure framework in water and identifying future budget obligations. This would include counterpart funding and the O&M implications of the expenditure plan.
- Modification of the balance among current water programs, shifting more resources toward management, productivity, and governance-related programs. This could deviate resources in the supply mobilization or system-expansion infrastructure programs toward management and institutional programs that are consistent with the objectives of the new water law. Slowing down the large infrastructure program will not necessarily compromise the overall plan. Project delays will occur one way or another because of the limited absorptive capacity and sheer size of the current program.

- **Develop an incentive-based regulatory approach to water sector reform in contrast to the actual rationing mode.** This involves designing technical regulations, controls and tools supporting the 2005 Water Law. These would allow an enhanced management of water resources, and an improved efficiency of water services delivery.
- **Plan for decades of future "drought**." Make sure that the hydrological data on which investments are planned are based upon a sufficiently long time series. Virtually all predictions are that future rainfall will decline. Whether or not they turn out to be right, water storage planning should take them into account.
- **Prioritize urban water carefully and ensure that cities too have incentives to conserve water during dry years**. The idea of using agricultural water as a residual is good. However, this choice needs to be flexible. Dams store different amounts of water every year. If all water is used in a dry year, it cannot then be used for agriculture the following year.[115] In a better system, a "normal" year would give the city 100 units of water. If a dry year then occurs, that amount would be proportionately reduced; and the city would have to compensate farmers if it could not otherwise reduce its consumption.

[114] Integrated Water Management Project—Phase I (2003–06).
[115] In Morocco, one basin is locked into a 20 yr agreement with a private operator to provide a fixed amount of water every year for urban supplies.

6.52 **The government also has to solve several irrigation issues.** Irrigation development is arguably a major long-term priority for the agricultural sector. Despite the attractiveness of low-cost farmer-managed irrigation development, as evidenced by the substantial increase in small and medium hydraulic (PMH) projects using groundwater, the government investment plan contains six new, capital-intensive PCSC projects. A more effective use of resources should also concentrate on rehabilitating and maintaining existing schemes. The government should:

- **Slow down investing in new large-scale irrigation infrastructure until an irrigation strategy is adopted by all stakeholders in the near term**. If new schemes must be considered, reduce their size so that management and maintenance can be managed on the ground by water user groups. Partially as a result of overestimating water that would be stored in dams, several countries in the region have built more irrigation than they reliably have water to serve. Water rationing has to take place, with consequent inefficiencies as well as important social and economic costs. Uncertainty about water availability will force farmers either to tap groundwater resources or, more commonly, to plant lower-value crops that can tolerate variable water supplies.
- **Consider various forms of irrigation management transfers.** This is in line with the process of economic liberalization and the Investment Code, including but not limited to Build on Time (BOT) concessions, and *affermage*.
- **When rehabilitating or constructing new irrigation schemes, go straight to pressurized systems suitable for high-efficiency irrigation**. Tunisia has and Morocco and Egypt are in the process of providing incentives to convert their public irrigation systems to high-efficiency irrigation, such as drip.[116]
- **Make ONID subsidies explicit and provide them only on a contractual and performance-based system.** This would include clear responsibilities for service delivery and financial support, to be stated clearly in a contract. This implies, first, equilibrium subsidies (*subventions d'équilibre*) for reduction of water quotas theoretically allocated to meet the needs of large-scale irrigation; and second, tariff compensation subsidies (*subventions de compensation tariffaire*) for the differential between the cost of water production and tariffs charged to users. This is an output and performance-based system.

[116] Notice that this is costly and doing it on a farm by farm basis is inefficient (each farmer has to construct a storage pond, losing productive land and leading to evaporative losses, and buy and operate a pump. It would be better to construct pressurized systems from the start. Farmers wishing to convert to drip can simply connect to the system. It does have higher O&M costs but will lead to much greater efficiency in the long run

CHAPTER 7: FINE TUNING EDUCATION REFORM WITH ADEQUATE INVESTMENT

All recommendations suggested in this chapter are registered in the assigned objectives of the education reform.

—Comments to the Education Chapter of the PER
Ministry of Education

How does the educational system perform in Algeria? What are its major outcomes? And how are public resources utilized for education at different levels? After briefly introducing the Algerian educational system, this chapter reviews the trends and composition of public expenditure, including the structure of unit costs, disparities across regions, and the effectiveness of resource use. The sectoral strategy defined by the 2003 reform is examined. The PCSC investment program in education is then assessed, including sectoral resource requirements for recurrent and capital expenditures under three contrasting scenarios. The final section provides key recommendations.

A. OVERVIEW

7.1 **Algeria has achieved significant successes in universalizing primary education and increasing access to other levels of education, financed almost entirely by public spending**. Historically, private financing and provision played a negligible role in the education sector, with the constitution guaranteeing free (and legally compulsory) education until the age of 16. Although precise information is unavailable, household expenditures on education are assumed relatively small, mostly for the purchase of textbooks post-2001, when the policy of free, state-supplied textbooks ended.

7.2 **The Algerian educational system operates at four levels.** These are: (*a*) preschool, until recently provided largely by the private sector and local nursery schools; (*b*) a primary cycle of five years and a lower (middle) secondary cycle of four years, constituting nine years of compulsory education; (*c*) postcompulsory education consisting of two streams—upper secondary education of three years provided by secondary schools, and vocational training of varied duration provided by vocational training centers; and (*d*) higher education provided in universities and specialized national institutes. Private schools were abolished in 1976. Until they were reauthorized in 2004, all education other than vocational training was financed and provided entirely by the public sector. The education sector is under the administrative management of the *Ministere de l'Education Nationale (MEN) and Ministere de l'Enseignement Superieure et de la Recherche Scientifique* (MESRS). Vocational training is an essential axis in the Algerian educational system and is overseen by the *Ministere de la Formation et de l'Enseignement Professionelle* (MEFP). Functions by level of administration are described in Annex R.

7.3 **The current reform, in effect from the 2003–04 school year, reorganized the previous 6 + 3 primary and lower secondary cycles to the 5 + 4 pattern**. As the primary school population declined and classrooms and teachers were freed by shortening the primary cycle, the government decided to gradually provide one-year preprimary education (publicly funded) in all primary schools. The emphasis in schooling is on universalizing completion at the lower secondary level, expanding access at the upper secondary level, and improving quality. The vision for vocational training within the new strategy of expanding postcompulsory secondary education has yet to be clearly outlined. Traditionally, vocational training has operated as a safety net for students with poor academic records who could not gain access to upper secondary schools, for students who came out of postcompulsory secondary

education and did not attend higher education, and for laid off workers who want to expand their training tools, providing them with training linked to employment opportunities. In higher education, the reform aims first at rapid quantitative growth and second at alignment with the Bologna Initiative, which is trying to harmonize degrees across Europe through three-year undergraduate, two-year masters, and three-year doctoral programs (License-Maîtrise-Doctorat, or LMD).

B. PERFORMANCE OF THE EDUCATION SECTOR

7.4 **Since 2000, enrollment at the primary level has declined with the sharp drop in fertility rates and reduced size of the 0–5 year population**. During the past 5 years, enrollment at the primary level fell at 2 percent per year. In contrast, enrollment in lower secondary and upper secondary grew at about 3.4 percent per year. Enrollment in higher education grew at 12.4 percent per year, tripling between 1994 and 2004 and doubling since 1999. As a result, in 2004–05, there were 4.36 million students in primary, 2.26 million in lower secondary, and 1.11 million in upper secondary schools. Undergraduate enrollment stood at 722,000 students; an additional 33,600 were enrolled in postgraduate studies. (See Figures 7.1a–7.1c).

Figure 7.1a Enrollment in Primary Education (1962–2004)

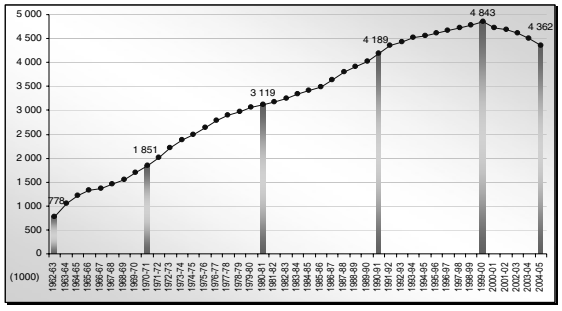


Figure 7.1b Enrollment in Lower and Upper Secondary Education (1962–2004)

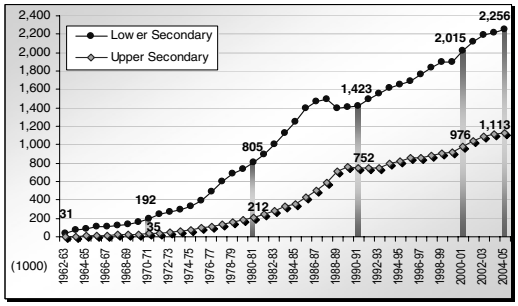
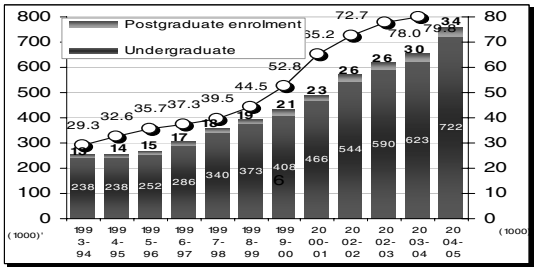


Figure 7.1c Enrollment in Higher Education (1994–2004)



Source: MEN, Données Statistiques, various years

7.5 **These trends reflect the steady expansion of the educational system despite the political turmoil of the 1990s**. Equally significantly, the participation of girls at all levels has remained high. The proportion of boys entering Grade 1 is slightly higher than that of girls (97 and 94 percent respectively), resulting in a 48 percent female share in the first nine years of school; however, the share of girls rises to about 58 percent in the upper secondary stage and 55 percent in the tertiary stage.

7.6 **The expansion of school infrastructure was especially rapid in lower secondary and upper secondary, and to a lesser extent in primary education**. In the last decade, the number of lower and upper secondary schools grew by 36 and 44, and the number of primary schools by 15 percent (Table 7.1).

Table 7.1 Growth of the Education System in the Past Decade

	Establishments (thousands)		Teachers (thousands)		Students (millions)		Girls (%)
	1994–95	**2004–05**	**1994–95**	**2004–05**	**1994–95**	**2004–05**	**2004–05**
Primary	14.8 schools 109.7 rooms	17.0 schools 128.6 rooms	166.8	171.5	4.55	4.36	47.0
Lower secondary	2.8 schools	3.8 schools 55.6 rooms	96.5	107.9	1.65	2.26	48.7
Upper secondary	.97	1.4 schools 29.1 classes 6.4 labs		53.2	0.82	1.11	57.5
Vocational/ technical	.39	.83	8.5	11.1	.22	0.40	44.7
Higher education		.06	14.6	25.3	.24	0.76	54.9

Source: MEN, Données Statistiques; MFEP, Données Statistiques; MESRS, Données Statistiques.

7.7 **Algeria has achieved near-universal participation in primary education and relatively high participation in lower secondary education, but compared with other countries, the rates in upper secondary and higher education remain low** (Table 7.2). The lower-secondary gross enrollment rate (GER) of 105 reflects a large proportion of over-aged students. At the upper secondary level, the GER is above that of Morocco and similar to that of Venezuela, Malaysia, and Indonesia; but it is significantly lower than other countries. The countries with relatively high GERs have high proportions of students in technical and vocational programs. Indonesia, for example, has an upper secondary GER similar to Algeria's despite its much lower per capita income. In higher education, Algeria's participation rate is significantly lower than that of Tunisia and Jordan (which have comparable per capita incomes) and Egypt (which has lower per capita income). Algeria lags far behind high-income countries of Asia (Malasia) and Latin America (Argentina).

7.8 **While the primary survival rate is very high, the transition rate to lower secondary education is relatively low**.[117] In 2002–03, this transition rate was only 79 percent, similar to that of middle-income countries such as Morocco and Indonesia; but much lower than many countries at similar income level (Table 7.3). A 14 percent gross entry ratio to higher education (that is, the percentage of those aged 18–19 who enter higher education) gives an idea about the transition between upper-secondary and higher education. Thus, Algeria ranks close to Indonesia, though far below many countries for which data are available.

[117] The primary survival rate is the percentage of children who start the first and reach the final grade of primary education. It has been calculated here using the reconstructed cohort method, which uses data on enrollment and repeaters for two consecutive years in each grade. The calculation is made by dividing the total number of pupils belonging to a school cohort who reach each successive grade of the specified level of education by the number of pupils in the school cohort (in this case, students originally enrolled in Grade 1 of primary education) and multiplying the result by 100.

Table 7.2 Participation Rates by Subsector in Algeria and Peer Countries, 2002–03

	Per capita GNI (current US$)	Primary NER (%)	Lower secondary GER (%)	Upper secondary GER (%)	Higher Education	
					GER (%)	Students/ 100,000 population[a] (2004–05)
Algeria	1,930	95	105	55	21	2,300
Other middle-income countries						
Tunisia	2,240	97	98	62	27	3,226
Morocco	1,310	90	59	31	11	959
Egypt	1,390	97	95	75	29	2,910
Iran	2,010	87	91	68	21	n.a.
Jordan	1,910	100	90	77	39	n.a.
Indonesia	940	92	76	46	16	n.a.
Malaysia	3,380	95	94	52	29	n.a.
Argentina	3,840	100	119	80	60	n.a.
Venezuela	3,470	91	83	50	40	n.a.

Sources: UNESCO Institute of Statistics, 2005; World Bank, EDSTATS Database.
Notes: Primary NER is from the EDSTATS database; lower secondary and upper secondary GER is based on enrollment in all programs, including technical/vocational. All other data from UIS; n.a. signifies not available.
[a]Bank staff calculations.

Table 7.3 Progression and Completion Rates in Algeria and Peer Countries, 2002–03

	Primary survival rate	Primary completion rate[a]	Transition rate to lower secondary	Gross entry ratio to higher education[b]
Algeria	94	96	79	14[c]
Other middle-income countries				
Tunisia	93	n.a.	88	36
Morocco	76	59	79	n.a.
Egypt	98	91	84	31
Iran	95	123	96	n.a.
Jordan	96	98	97	39
Indonesia	86	107	81	14
Malaysia	84	n.a.	100	32
Argentina	90	100	94	56
Venezuela	80	n.a.	97	n.a.

Sources: UNESCO Institute of Statistics, 2005; World Bank, EDSTATS Database; Bank staff for Algeria (GER to higher education).*Notes:* For definitions and methods for calculating indicators in progression and completion rates, see sources; n.a. signifies not available.
[a] Primary completion rate from EDSTATS database.
[b] Higher education signifies ISCED 5A, a program of at least three-years.
[c] The Algerian gross entry ratio to higher education is for 2003-04, based on Bank staff calculations.

7.9 **The primary completion rate of 96 percent reflects a substantial improvement over the 80 percent completion rate in 1995**.[118] Together with the proportion of girls in secondary education exceeding 50 percent, this means that Algeria should rapidly attain its Millennium Development Goals for education. The main problems in student progression and completion rates are at the postprimary levels, resulting in a low number of students graduating from the system at different levels. In 2003, of those entering Grade 1, about 83 percent reached the first year of lower secondary education (Grade 7 in the old cycle); 39 percent reached the first year of upper secondary education (Grade 10); and 11 percent reach the first year of higher education.[119]

7.10 **Postprimary schooling is characterized by a high dropout rate after the terminal year of each cycle because of examination failures and high levels of repetition**. This is in contrast with the primary level, for which each wilaya traditionally has designed its own graduation examination and for which pass rates are generally around 80 percent. However, in 2004–05, a new national primary school examination was introduced, which resulted in a pass rate of only 53 percent. Dropping out is especially significant in lower and upper secondary education, both with a rising rate of about 16 percent. In the latest year of lower and upper, the dropout rate becomes somewhat higher (Table 7.4). Dropping out is higher among boys than girls.[120]

Table 7.4 Dropout and Repetition Rates by Grade and Education Level, 2003–04

Primary Dropout rate (%)							
Grade	**1**	**2**	**3**	**4**	**5**	**6**	**Overall**
Boys	1.3	1.5	0.3	2.1	2.5	5.6	2.3
Girls	3.7	0.4	0.8	1.2	1.9	5	2.2
Primary Repetition rate (%)							
Boys	12.9	8.7	10.8	13.5	14.1	18.2	13.2
Girls	9	5.6	6.2	7.7	7.8	11.8	8.1
Lower Secondary School Dropout rate (%)							
Grade	**7**	**8**	**9**				**Overall**
Boys	13.2	11.5	23.9				16.2
Girls	6.5	5.1	19.3				10.8
Lower Secondary School Repetition rate (%)							
Boys	24	19	30.7				24.7
Girls	15.6	6.8	30.2				18.4
Upper Secondary School Dropout rate (%)							
Grade	**10**	**11**	**12**				**Overall**
Boys	8.9	11.9	20.7				15.5
Girls	5.1	5.9	17.3				10.3
Upper Secondary School Repetition rate (%)							
Boys	29.1	17.4	39.1				29.4
Girls	19.7	12.3	37.9				23.6

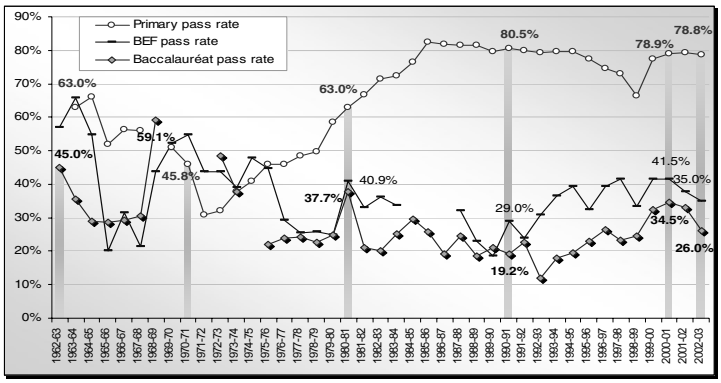
Source: Bank staff estimates based on reconstructed cohort, using data from MEN, Données Statistiques.

[118] The primary completion rate is the percentage of children who complete the final grade of primary school, expressed as a percentage of the population at the theoretical completion age (11 years old) who have completed 6 years of primary education.
[119] Bank staff calculations, based on the reconstructed cohort method using Ministry of Education data.
[120] Lack of a lower secondary school in close proximity to the residence seems also to be a reason. A survey of 8th grade students in 2002–03 (hence, students in the second year of the former lower secondary cycle) indicated that 65 percent of students lived within three kilometers of their school, but almost 16 percent lived beyond five kilometers; all children walked to school (MEN 2004 – MLA 2 survey). However, it is not clear why inaccessibility should affect boys more than girls.

7.11 **Repetition rates are less than 13 percent in the early years of the primary cycle, but they rise at the transition points in the beginning and final years of each cycle**. In 2003–04, these were 15 percent in the final year of primary schooling (6th grade in the previous structure), 20 percent in the first year (7th grade) and 30 percent in the final year of lower secondary schooling (9th grade), and 19 percent in the first year (10th grade) and 38 percent in last year of upper secondary schooling. Significantly, repetition rates at all levels are higher for boys than for girls.[121]

7.12 **The higher repetition rate at the beginning of each postprimary cycle points to difficulties encountered in adjusting to new learning environments and changes in the curricula.** Furthermore, the higher repetition rates at the end of each cycle reflect high failure rates in the terminal examinations and the inability to enter the next cycle. At the end of the lower secondary cycle, the pass rate on the Brevet de l'Enseignement Fondamentale-BEF (to be renamed *Brevet de l'Enseignement Moyen*-BEM) is around 40 percent (Figure 7.2). The new evaluation system gives greater weight to the examination relative to the classroom performance. Hence, the transition rate to the upper secondary level will fall unless examination performance improves dramatically.[122] The pass rate in the baccalaureate has historically hovered around 20–30 percent. However, in 2003–04, it was about 44 percent, significantly above the trend; and in 2004–05 it slightly fell to about 40 percent.

Figure 7.2 Pass Rates on Primary, BEF, and Baccalaureate Exams



Source: MEN, Données statistiques, various issues.

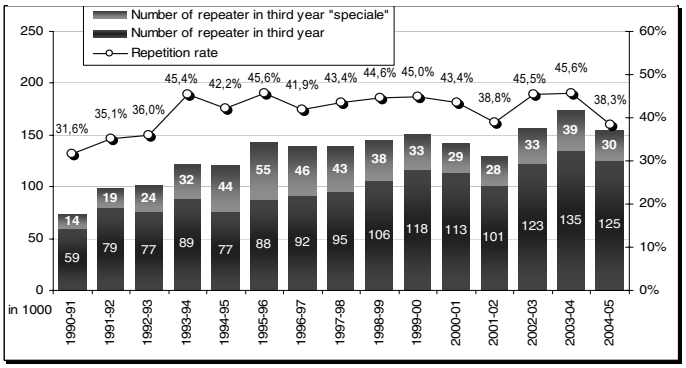
[121] As in other countries based on the French educational model, repetition is viewed as a pedagogical instrument for improving mastery of content. The cause for higher repetition rates among boys is unclear. However, young boys can generally find employment in the informal sector more easily than can girls. The private opportunity cost of repetition may therefore be higher for boys than for girls. Instead of increasing their achievement level, repetition may cause them to leave school altogether.

[122] Those who pass the exam move automatically into upper secondary. For those who do not, an average score is computed using a weight of 3 for the examination score and 1 for class score. Previously, the weights were 2:1.

7.13 **With a low pass rate in the baccalaureate, the repetition rate is extremely high in the final year of upper secondary education, fluctuating between 38 and 46 percent in the last decade** (Figure 7.3).

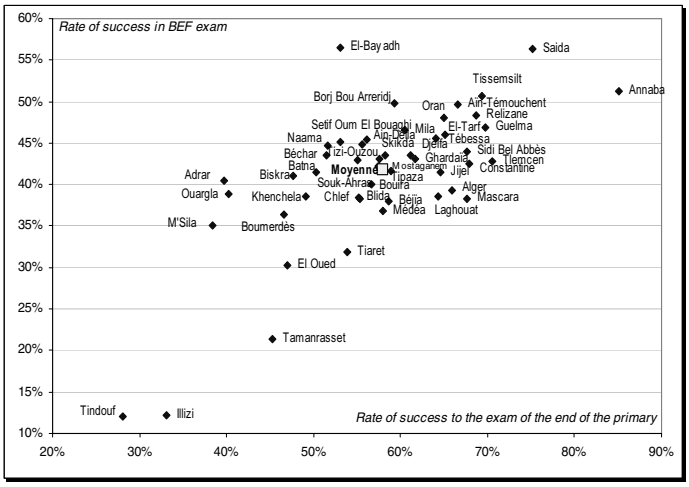
Nearly one-quarter of no-pass students are in the special third-year category for those who have repeated more than once. Many students repeat this grade several times. The number of students who repeat the final year has doubled over the past fifteen years.

Figure 7.3 Repetition in Final Year of Upper Secondary

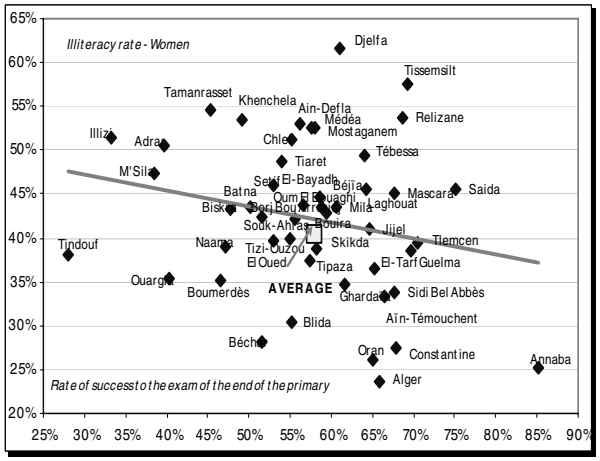


Source: MEN and Bank staff calculations

Figure 7.4a Primary and BEF Pass Rates, by Wilaya, 2004



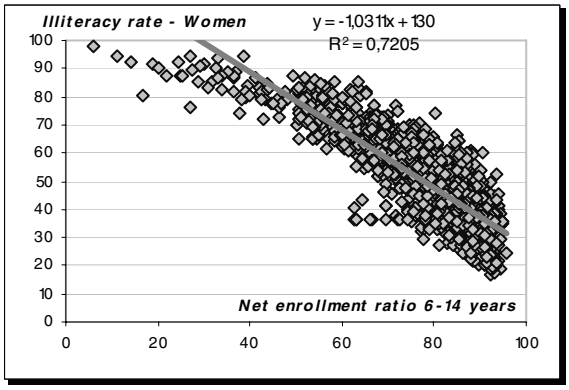
7.4b Primary Pass Rate (2004) and Women's Illiteracy Rate by Wilaya, 2004



Source: MEN Données Statistiques.

7.14 **Regional inequalities in pass rates for primary and lower-secondary schools are quite pronounced and tend to be correlated themselves**. Low-performing wilayas are generally in the South, bordering the Sahara. There is a greater dispersion in performance for wilayas on the primary school examination (50–75 percent pass rate) compared with results in lower secondary education (37–50 percent pass rate) (Figure 7.4a). The primary pass rate is in turn negatively correlated with the rate of women's illiteracy (Figure 7.4b). Even more striking is the strong negative relationship between the net enrollment ratio for those aged 6–14 (which therefore includes participation in lower secondary education) and female illiteracy rate by commune, although these are based on data

Figure 7.4c NER for Ages 6–14 and Women's Illiteracy Rate by Commune, 1998



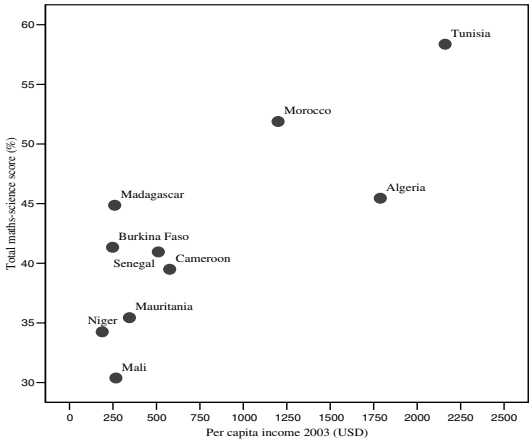
Source: Calculated from 1998 census data, ONS.

from the national census of 1998) (Figure 7.4c). In other words, previous educational inequalities condition later access to and continuation in higher levels of education, despite the wide geographical coverage of schools.

7.15 **Data on student achievement are limited, so it is difficult to gauge how students learn with respect to curricular expectations, or how they perform in relation to their peers in other countries**. Algeria's proposed participation in the next international survey of student achievement will provide the opportunity to match itself against other countries and to create capacity for a national assessment. The only recent data on student achievement are from UNESCO-UNICEF.[123] In 2002–03, the Monitoring of Learning Achievement (MLA 2) survey tested Algerian 8th grade students in mathematics and sciences, allowing for some international comparisons.[124] Their mean score in mathematics was 38.2 percent and 52 percent in sciences as a whole, confirming the poor performance suggested by the low pass rates on the BEF (the lower secondary school examination). Their performance in mathematics is characterized both by low average scores and high dispersion, while results for the sciences display a higher score and lower dispersion (Suchaut 2006).

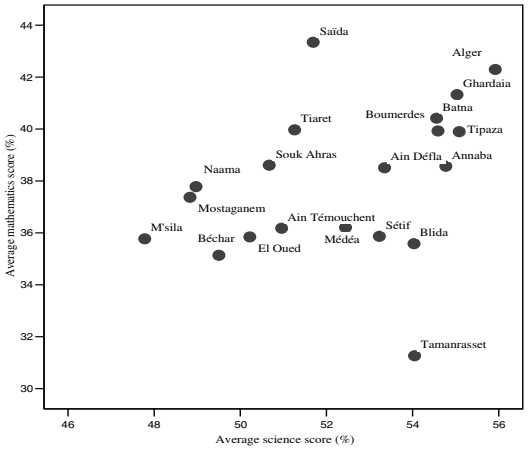
7.16 **Algeria's performance on the MLA tests was better than that of poorer Sub-Saharan African countries yet lower than would be expected based on its per capita income**. Figure 7.5 plots the combined mathematics and science scores of participating countries against their per capita incomes, revealing a positive correlation. Algeria, however, is an outlier in this statistical relationship, which is explained by its poor score in mathematics. Madagascar, for instance, has a total score comparable to Algeria's, although its per capita income is only one-sixth as high. In addition, scores differ widely across Algerian wilayas, with a wider dispersion in mathematics than in science but a moderate correlation between both tests (Figure 7.6). Excluding the wilaya of Tamanrasset, which shows an exceptionally low performance on the mathematics test, the correlation is about 0.52.

Figure 7.5 MLA 2 Test Scores and Per Capita Income for Algeria and Other Countries



Source: Suchaut (2006).

Figure 7.6 Average MLA 2 Mathematics and Science Scores by Wilayas



Source: Suchaut (2006).

[123] A total of 6,513 pupils were tested in Algeria, drawn from a stratified random sample of 189 lower secondary schools in 20 wilayas in the four regions.

[124] The MLA tests are not standardized in the manner of Trends in International Mathematics and Science Study (TIMSS) or PISA tests. They are based on national curricula. The results are not strictly comparable across countries other than showing how countries rank on mean performance relative to their own curricula. To the extent that curricula are similar across countries in Grade 8, which is likely because these comparator countries all follow the French educational system, the scores do provide a basis for cross-country comparisons of student achievement.

Vocational education and training: Internal and external efficiency

7.17 **Enrollment in vocational education and training (VET) has been rising steadily, more than doubling over the past 10 years**. In 2004–05, these programs enrolled almost 400,000 students, representing almost one-quarter of the enrollment in postcompulsory education. Another 35,000 to 40,000 students are enrolled in evening and distance courses. These trends partly reflect the restricted access to upper secondary education. Over half the enrollment is in residential programs offering five types of qualifications for semiskilled workers, skilled workers, and supervisors (levels 1–3), and technicians and higher- level technicians (levels 4–5). The remainder is enrolled in apprenticeship training programs (levels 1-5). Distance learning can admit a significant number of students. This is also facilitated by the ongoing modernization of the sector with new information technologies, which also allows students with special needs to enroll.

7.18 **In 2002–03, apprenticeship dropout rates were close to 18 percent in training programs for levels 1–3 and 10 percent for levels 4–5**. Such programs are supposed to train for direct entry into the labor market. The high dropouts reflect either irrelevant curricula or students poorly prepared for entry to these courses, or poor training in jobs (levels 4-5), or lack of motivation of trainers, or even a number of students that just use their training as a way to obtain an education certificate that serves as justification to avoid military service, before entering the informal sector.

7.19 **The poor labor market performance of trainees is even more striking**. Tracer studies are conducted regularly by the Centre d'etudes et de Recherche sur les Professions et les Qualifications (CERPEQ).[125] A recent study of students who had earned their diplomas in 1999 showed that only a quarter were employed in the formal sector in 2003 (four years after graduation), while less than 10 percent reported being employed a year after graduation.[126] There was virtually no difference in the employment rate between the apprenticeship programs and the residential technician training programs after five years, although a greater proportion of apprentices were employed after the first year. Jobs did not correspond to the specializations in which a student had been trained; however, the level of certification did appear to make a difference. The employment rate was highest among those with the highest levels of training— about 54 percent for level-5 trainees, compared with 43 percent for level-1 and 20 to 25 percent for levels 2 through 4.[127]

7.20 **The poor external efficiency of vocational training programs raises concerns about their content and quality**. The VET system needs to be more responsive to changes in the external environment. Flexibility is needed to increase, decrease, or change current programs, or introduce brand new programs for entirely new occupations. The sectoral orientation of legacy VET programs, with its heavy sunk investment in plant, equipment, and permanent teachers, makes this flexibility difficult to achieve. Some new programs have recently been introduced, but the trainees low employment rates—and lower still in the areas in which they were trained—indicate waste of public resources. Moreover, VET programs are not oriented to the informal sector, where the majority of new entrants actually enter the labor force.

[125] CERPEQ results are not published or used to adjust program offerings.

[126] These data were made available to the PER mission by CERPEC in the form of a brief extract from the study report of 2003.

[127] Data need to be treated with caution because of the low response rate (about 45 percent), which could create substantial biases, and because of the focus on the formal sector.

The efficiency of higher education

7.21 **Consistent with the policy of greater accessibility in higher education, virtually all medium-size towns have established institutions in the chef-lieu of almost every wilaya during the past 15 years**. Universities account for 84 percent of undergraduate students and 89 percent of postgraduate students, as well as 84 percent of teachers. University centers account for 12.5 percent of students. The national schools and institutes account for another 3.5 percent.

7.22 **Technology and science disciplines are offered in almost all universities, accounting for 31 percent of undergraduate enrollment, a ratio similar to that of other countries**. This represents a radical reversal over the past 20 years, when almost 70 percent of all students were enrolled in these courses. Law is also available in most towns and accounts for 16 percent of enrollment. A few disciplines, such as medical sciences, architecture, and veterinary sciences, are restricted to a few institutions (8 percent of total). On the other hand, economic, social, political, and language studies occupy an intermediate position. They are available in many institutions and together account for 45 percent of enrollment. Ninety percent of student enrollment is in courses of long duration at the undergraduate level (from four to seven years). Of those enrolled in the courses of short duration (three years), almost 60 percent are in technology and information sciences. In 2002–03, about 64,000 students graduated with an undergraduate degree (a long cycle), and another 15,000 with a short-cycle diploma.

7.23 **Postgraduate ratios are also similar to those in other countries at similar levels of development**. Postgraduate students comprise less than 5 percent of the student body in higher education. The share does not exceed 10 percent in any university; and apart from the top eight universities, most universities have less than 3 percent (the same as in the *centres universitaires*). In 2003–04, the total number of doctoral students was just over 9,600, representing 1.2 percent of total enrollment. Scientific and technological disciplines predominate, accounting for almost half of enrollment. The number of PhD graduates per 1,000 people aged 25–29, however, is about 1.4, a much lower rate than the EU average of 2.9.[128]

7.24 **Information is not collected nor systematically analyzed on either the internal or external efficiency of higher-education systems**. Repetition rates are high, especially in the *tronc commun,* the first year of undergraduate education. In the University of Science and Technology Houari Boumedienne (USTHB), one of the most respected technological institutes in the country, only 30–50 percent of first-year students pass in some disciplines; and because the student can repeat only once, the dropout rate is high. The ministry estimates that pass rates in the first year are between 15 and 20 percent in science and technology disciplines, 41.9% percent in social sciences, and 50 percent in medicine. In the first year, these rates reach 52% for core courses and the short cycle, all fields put together. One reason for this high failure rate is the transition to French as the language of instruction in the scientific and technological disciplines. Another reason is the reduction in practical lab work related to overcrowding of laboratory facilities. During the following years, the centralized system and the fact that a significant proportion of students—for example, about one third at the USTHB—do not get their preferred choice of discipline, and thus more rapidly loose interest, are the reasons of failures. However, measures have been taken for a better guidance of the new applicants as well as for a computerized processing of the applications. An amendment project of the Law N.99-05 relating to the creation of an evaluation body of external and internal efficiency of the higher education system is being adopted.

7.25 **Enrollment management across disciplines represents a particular challenge for Algerian universities, including the related issue of efficient utilization of faculty time and other resources**. Apart from disciplines in national institutes or specialized disciplines—for example, medicine—that are

[128] For Algeria, Bank staff estimates are based on annual doctoral theses granted and the population aged 25–29.

only available in some universities, the Ministry of Higher Education allocates quotas for each discipline to individual universities. Each university caters to students from surrounding wilayas. Eligibility in each course is determined by subjects chosen for the baccalaureate examination as well as the average score obtained. Students list their choice of disciplines in order of preference at the assigned university. Since the enrollment and pass rates differ by discipline across wilayas from year to year, this can lead to imbalance in demand for disciplines relative to the supply.[129] Further, applicants with low average scores do not generally gain entry into the chosen discipline for which they might otherwise be eligible. This system of centralized allocation based on regional quotas will need to be adapted to enable universities to respond better to student demand and labor market needs.

C. Overall Public Expenditure Patterns

7.26 **Budgetary decisions within the school education sector are highly concentrated within the central ministry**. Decisions include service planning, curriculum design, budget preparation, resource allocation across wilayas, and personnel management (Annex R). However, during budget preparation, wilayas assess their needs for additional schoolrooms and teachers, based on school mapping exercises and enrollment projections. Once decided, a wilaya effectively manage its allocation for engineering services, school construction, and major repairs on secondary schools. Monitoring by the ministry is based on reports submitted by the wilayas. For their part, municipalities are supposed to finance repairs on primary schools and provide for ordinary nonsalary expenditures, but the paucity of funds often limits these actions in practice. In regard to recurrent expenditures, teacher salaries are disbursed at the wilaya level; while secondary schools incur nonrecurrent expenditures such as maintenance against notified budget amounts that follow standard norms. Accounts are maintained at each wilaya.

7.27 **While this system has been reasonably effective in equitable geographical allocation of resources, it is not conducive to efficiency in expenditure management**. In fact, no decisionmaking levels have incentives to improve quality or meet performance outcomes. Algeria has a reliable, fairly up-to-date system for data collection that reaches right down to the school level. However, variables such as reduced repetition and dropout rates and improved pass rates are not used to monitor performance or to determine incremental budget allocations. As a result, institutional budgets are not linked to broader educational objectives. Furthermore, wilayas and institutions do not monitor, nor is there any incentive to monitor, the unit costs of boarding facilities, canteens, transport, or quality of services.

7.28 **Universities have limited autonomy over course content and the number of students**. **Teaching programs for each field are developed by the national education committees.** The administration's role consists in allocating the necessary means for a good functionning of the committees. Training offers and budgetary posts needs for permanent positions are worked out by university establishments, arbitrated and accorded by the Ministry of Finance. Thus, Eligible faculty positions are decided by the ministry, though with several major concessions from the centralized administration of university finances. Universities recruit teachers, but salaries are determined according to civil service regulations. Three important recent innovations have been made. First, preauthorization of expenditures by the Ministry of Finance (*contrôle à priori*) has been replaced by *contrôle à posteriori.* This has increased the flexibility of directors to manage the nonsalary recurrent budget and reduce the payment period. Second, greater authority has been granted to institutions to undertake and

[129] By way of example, in 2005–06 the University of Mentouri Constantine, the second largest university in the country, was allocated, based on an estimation of its faculty and other resources, a quota of 11,450 new entrants, of whom 6,000 were in the social sciences and arts. However, only 8,917 students had passed the baccalaureate in the two catchment wilayas of Constantine and Mila, a reduction of almost 28 percent compared to 2004. Moreover, the reduction in the arts stream was about 63 percent, while there was an increase of 18 percent in sciences.

retain the fees from consultancy services. These fees are not deducted from budgets.[130] Third, a separate agency has been created, the Office Nationale des Oeuvres Universitaires (ONOU), for the management of university social charities with the aim of providing better housing conditions, canteens, transport, cultural and scientific, sports and leisure activities, and scholarships.This helps university management to focus on academic matters.

7.29 **Budgets are not linked to outputs and outcomes, neither for universities nor for the ONOU**. These are governed with the same applicable rules to the Government's budget**.** The main weakness is the separation of the recurrent and investment budgets. Projections of future requirements are inertial rather than based on an evaluation of full costs and intended results. However, initial attempts to move toward a budgeting program centered on results are still at a pilot stage since March 2006 (see Chapter 4).

Expenditure trends

7.30 **Real expenditures on education grew strongly by over 56 percent between 2000 and 2005 (Table 7.5).** These trends were reflected in both recurrent and capital spending, with close to 80 percent real growth in the latter.[131] Increases in recurrent expenditure are explained by the recruitment of additional teachers with higher levels of qualification, even for primary and lower-secondary teachers—that is attainment of a baccalaureate plus four years of university education rather than a baccalaureate plus two years. The composition of spending remained roughly constant, with about four-fifths being devoted to recurrent expenditure. Overall, the fiscal priority given to education remained roughly unchanged, between 18 and 19 percent of total spending and an average of over 6 percent of GDP. Per capita expenditure showed a 58 percent rise between 2000 and 2004.

7.31 **Budget allocations for 2005 and 2006 decreased in real terms, which suggests changing priorities for education during the first two years of the PCSC**. First, the share of public spending being allocated to the sector declined from about 20 percent between 2000 and 2004 to about 15 percent in 2006. Public spending as a share to GDP (including hydrocarbon) will decline to about 5 percent in 2006; the decline in this ratio reflects the sharp rise in GDP due to booming oil prices. As a proportion of non hydrocarbon GDP, however, the ratio has remained constant at about 10 percent. Second, expenditure composition tilted toward capital expenditures, with over one-quarter of the education budget being devoted to the latter in 2006, compared with over one-fifth in 2000.[132]

[130] Fee distribution is regulated. Fifty percent goes to personnel who render the consultancy services; 35 percent goes to the institution; 10 percent goes to the particular department; and 5 percent goes to social expenditures.
[131] This reflects enhanced allocations under the PSRE.
[132] Final budget allocations may still vary. Figures for 2006 are approved, while those for previous years are executed.

Table 7.5 Evolution of Public Education Expenditure in Algeria, 2000–06

	2000	2001	2002	2003	2004	2005	2006
Total educ. expenditure (nominal, billion DA)	223	274	302	338	376	400	439
Total education expenditure (real, billion DA)[a]	223	263	285	312	335	350	n.a.
Real annual growth (%)	n.a.	17.9	8.4	9.4	7.3	4.6	n.a.
Education as % tot government expenditure	19.0	20.8	19.5	20	19.9	16.7	15.3
Education as % GDP	5.5	6.5	6.8	6.4	6.2	5.4	4.9
Education as % NHGDP	9.1	9.7	9.8	10.0	9.9	9.7	n.a.
Per capita public expenditure (nominal)							
n.a. Algerian dinar	7,340	8,881	9,621	10,624	11,627	12,155	13,156
US$	98	115	121	137	161	166	171
As ratio of total education expenditure							
Recurrent (%)	80.8	77.0	77.9	78.8	77.6	78.0	73.8
Capital (%)	19.2	23.0	22.1	21.2	22.4	22.0	26.2

Sources: For education data—MEN, MEFP, MESRS, and MoF. For population data—ONS. For government budget, GDP, and exchange rate—IMF. *Note:* Actual expenditures until 2004. Initial budget figures for 2005 and 2006.
[a] Real expenditure is calculated using a CPI deflator (2000 = 100).

Composition of recurrent expenditure and unit costs

7.32 **Subsectoral allocations indicate strategic objectives on the 2025 horizon and show a steady trend in priority toward higher education**. The shae rose from about one-fifth of the education budget in 2000 to one-third in 2006 (Table 7.6). The share comprising primary, lower secondary, and secondary declined to about 60 percent, with the share of technical and professional training remaining roughly unchanged. Substantial changes in the capital budget in favor of higher education are responsible for this overall trend. In 2006, over half the capital budget is for higher education, compared with one-quarter in 2000. Higher education's share of recurrent expenditure has also increased to about one-quarter of total recurrent spending. The objectives of higher education are: welcoming 1.4 million students from 2009-10; generalization of the education reform; quality; promotion of excellence poles, development of scientific research, opening to the international environment; generalization of the use of new technologies of information; and a good governance of higher education establishments.

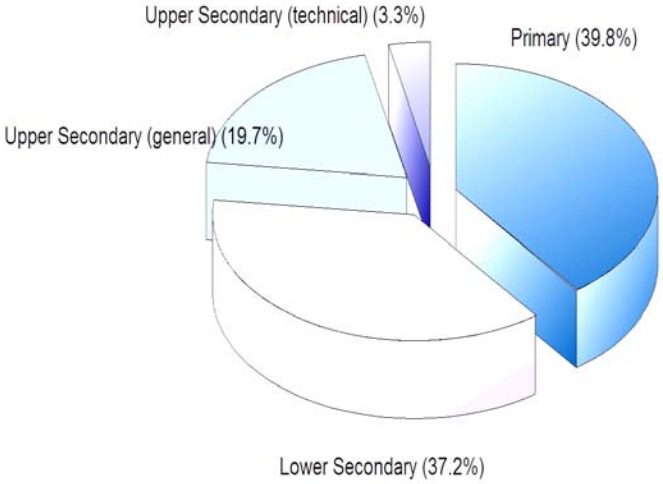
Table 7.6 Public Education Expenditures by Subsector, 2000-2006

	2000	2001	2002	2003	2004	2005	2006
Total (billion DA)	223	274	301	338	376	400	439
School education[a] (% total)	71.6	68.7	66.2	66.3	67.6	65.1	59.3
Technical and professional (% total)	6.7	7.4	7.4	7.9	6.2	7.8	7.5
Higher (% total)	21.8	23.9	26.4	25.8	26.1	27.1	33.2
Recurrent (billion DA)	180	211	235	267	299	312	324
School education (% recurrent)	74.5	72.7	69.9	70.8	71.8	69.5	68.5
Technical and professional (% recurrent)	4.6	5	5.1	5.4	5.1	5.3	5.2
Higher (% recurrent)	20.9	22.3	25	23.8	23	25.2	26.3
Capital (billion DA)	43	63	67	72	77	88	115
School education (% capital)	59.2	55.3	53.3	49.7	51.4	49.4	33.4
Technical and professional (% capital)	15.5	15.3	15.3	17.2	10.5	16.7	14.0
Higher (% capital)	25.3	29.4	31.4	33.1	38.2	33.9	52.6

Source: MEN, MEFP, MESRS, and MoF.
Notes: School education expenditure includes primary, lower and upper secondary levels corresponding to the budget of MEN.
[a] Actual expenditure until 2004; initial budget figures for 2005 and 2006.

7.33 **Algeria spends a relatively low share of its recurrent budget on a six-year primary cycle.** The budget classification does not provide for a time series of expenditures by level of school education. The recurrent expenditure on primary, lower secondary, and upper secondary education for 2003 was estimated for this PER using data on teachers, their average salaries, and norms for nonsalary expenditures at each level. As a proportion of the school education recurrent budget, primary education absorbed approximately 40 percent, lower secondary education 37 percent, and upper secondary education 23 percent (Figure 7.7).

Figure 7.7 Composition of School Education Expenditure in Algeria, 2003



Source: Bank staff calculation

7.34 **The composition of subsectoral recurrent spending reveals the persistence of serious imbalances**. Using data from 2000, this finding was highlighted already by the 2002 PER. In Algeria, the share of salaries in recurrent spending is well above 66 percent, the international norm for education (Crouch 2006). About 85–90 percent of recurrent spending is on salaries. Only in upper secondary technical education is the share about 73 percent (Table 7.7). At the primary level, less than 1 percent of recurrent spending is on nonpersonnel expenditures (excluding student support), which amounts to US$2 per student per year. In principle, the municipalities finance the operating expenditures of primary schools. No data are available on these expenditures, but information provided by the Ministry of Education suggests that most communes have limited resources. Apart from textbooks, which are paid for by households, there are virtually no other teaching/learning materials in primary education, except in communes that devote resources to schools, with obvious effects on quality.

7.35 **Equally striking are the imbalances between the lower secondary and upper secondary (general and technical) levels in nonsalary expenditures, excluding transfers**. Per pupil expenditure on materials in lower secondary (US$23) is actually higher than for upper secondary (general), the latter being only US$14 per year, an astonishingly low figure.[133] By contrast, the per pupil expenditure in upper secondary (technical) is almost 20 times as high at US$285 per year. These average figures include nonsalary recurrent expenditure in administration, so that the amount reaching the school is even smaller. Basic resources such as a small library, laboratory equipment, dictionaries, maps, and so forth are provided when a school is initially set up, so teachers generally have access to standard school materials. Nevertheless, the low level of recurrent spending on teaching-learning materials limits the range and variety of what students and teachers need for quality education. It also restricts the ability of school administrators to tailor programs to specific student needs and schools.

[133] This was corroborated during a site visit by the PER mission. Based on the data provided by the local school authorities, the per pupil nonsalary expenditure on instructional expenditures per year was estimated at US$5.

Table 7.7 Composition of Recurrent Spending by Subsector, 2003

	Primary	Lower secondary	Upper secondary, general	Upper secondary, technical
Salaries (% of total)	85.2	86.4	88.5	72.9
Central administration	0.1	0.1	0.1	0.1
Regional services	2.2	2.2	2.3	1.9
Schools	82.9	84.1	86.1	71
Goods and services (% of total)	0.9	5.4	3.6	18.2
Central administration	0	0	0	0
Regional services	0.2	0.2	0.2	0.2
Schools	0	4.5	2.7	17.4
Other institutions[a]	0.7	0.7	0.7	0.6
Transfers (% of total)	13.9	8.2	7.9	8.9
Subsidies for boarding and canteens	0.1	3.4	3.4	6.6
Scholarships	0	0.2	0.4	0.2
Primary school canteens	4.8	0	0	0
Other[b]	8.9	4.5	4	2.1
Total recurrent expenditure (%)	100.0	100.0	100.0	100.0
Total recurrent expend (DA billions)	75. 18	70. 20	34. 98	8. 43
Per pupil nonsalary spending (US$)	2	23	14	285
Per pupil expenditure on transfers (US$)	29	35	32	140

Source: Bank staff calculations based on data from MEN on actual expenditures (*credits consommés*).

[a] Other establishments include pedagogical support, institutions for research, training, curriculum development, etc.

[b] Other transfers comprise special allowances for poor children, school health programs, and sports, cultural, and extracurricular activities.

7.36 **Expenditures on student support (transfers) exceed those on school operations (goods and services)**. Transfers average about US$30 per student in primary, lower secondary, and upper secondary (general). Apart from expenditure on boarding and food, a significant share of the DA 6 billion "other transfers" expenditure underwrites interventions that include allowances for poor children (which accounted for about half the total in 2003), school health, and extracurricular activities.

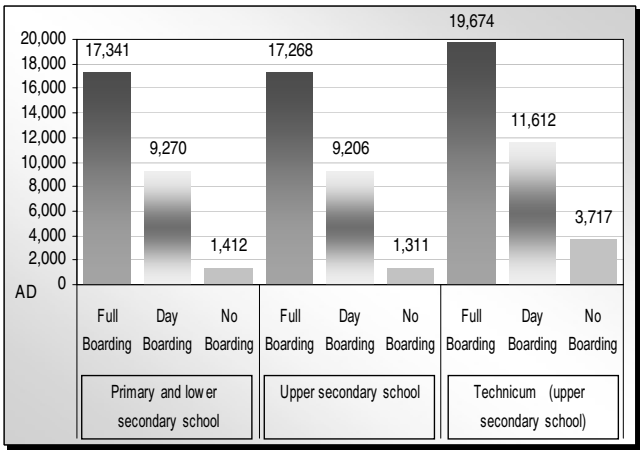
7.37 **Thus, support is severely underfunded for administrative and pedagogical management of the system—currently about 3.5 percent of total recurrent spending**. There are no obvious benchmarks to help evaluate the adequacy of this level of spending, or even whether sending the majority of resources to the schools is an appropriate policy. Looking to the future, however, such questions need to be addressed if school management is to be improved and the quality of the system upgraded.

7.38 **In a similar vein, very little is spent on regular maintenance of school buildings, although a major renovation of primary schools was carried out under the PRSE**. Municipalities are expected to maintain and repair primary schools from their own funds. This is not carried out regularly. It is seldom a priority, and the poorer communes often lack minimal resources. For secondary schools, funds for maintenance are designated within school budgets based upon a building's age, varying from about US$300 for a building under 5-years-old to US$1,000 for a building over 25-years- old. Because of the difficulties in covering maintenance under the recurrent budget, particularly for primary schools, an allocation of DA 3.2 billion was included in the PSRE capital budget. About 15 percent of primary schools have been completely revamped, and some maintenance work has been done on most of the rest. Prioritization of renovation was done in consultation with wilayas, starting with the age of the

building and a categorization of needed repairs. Buildings posing a physical or health risk to students (for instance, leaking roofs) were first in line, followed by repairs for heating and sanitation. International experience shows that skipping regular maintenance hastens the need for large-scale renovation and repair and rapidly erodes the effective life of buildings.

7.39 **Providing boarding facilities in remote areas has furthered the strategy to ensure access equity**. Nonsalary expenditure for a full boarder is about 12.3 times higher than for an external student, while 6.6 times higher than for a day boarder in primary and lower secondary education. The ratios are slightly higher in upper secondary and lower in technical upper secondary education (Figure 7.8). Overall, targeting has successfully limited the proportion of students in such facilities, which come from areas with low population density and poor transportation: Only 5 percent of students in upper secondary education are full boarders and another 12 percent are day boarders; similarly, 11 percent of students in lower secondary education are full or day boarders.

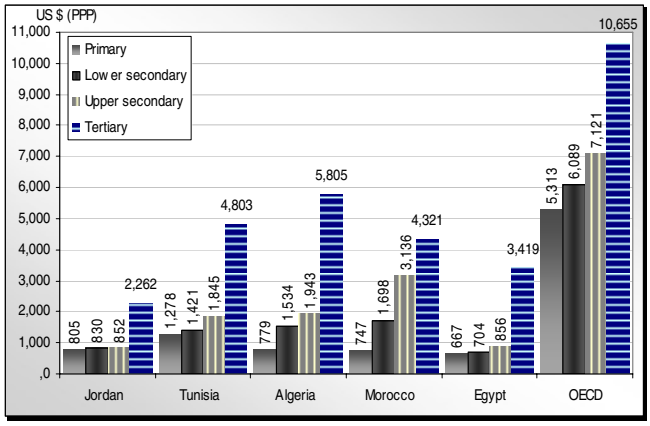
Figure 7.8 Per Pupil Nonsalary Expenditures in Primary and Lower- and Upper-Secondary Schools, 2003



Source: For norms per school-MEN, Sous-direction de la tutelle.
Note: Figures reflect bank staff calculations.

7.40 **In US$ purchasing power parity terms (PPP), per pupil recurrent expenditure on primary education is about the same in Algeria (US$779) as in comparator countries of the region (US$667–805), except for the significantly higher rate in Tunisia** (Figure 7.9). Unit costs in lower and upper secondary schools also resemble those in Tunisia and Morocco, but are higher than in Jordan and Egypt. However, Algeria's unit spending in higher education greatly exceeds that of other countries in the region, and is about 20 percent above the next highest spender, Tunisia.

Figure 7.9 Per Pupil Recurrent Expenditure by Level of Education in PPP U.S. Dollars for Algeria and Other Countries, 2002–03



Source: OECD. World Bank. and Bank staff calculations.

7.41 **The ratio of secondary to primary unit costs is higher than in other countries of the region (except Morocco).** Per pupil expenditure in higher education represents a larger multiple (7.5) of expenditure in primary education compared with neighboring countries: 3.8 in Tunisia, 5.8 in Morocco, and 2.0 in the OECD.

7.42 **Differences in per pupil spending in school education are driven by variations in pupil to staff ratios, the composition of staff, and average salaries** (Table 7.8). The average class size is smaller in primary (31) than in lower secondary (38); and the difference in the pupil to teacher ratio arises from the greater number of specialized teachers required in the lower secondary curriculum. The differential in average teachers' salaries is small—only about 8 percent higher in lower secondary schools. Lower secondary schools also have a much lower ratio of pupils to administrative staff—about

32 to 1, compared with 354 to 1 in primary schools (administrative staff in the latter are supposed to paid by municipalities).[134]

Table 7.8 Key indicators by Level of Education, 2003-04

	Pupil to teacher ratio[/a]	Teacher to admin staff ratio	Pupil to admin staff ratio	Average class size	Average annual teacher salary[/b] ($US)
Primary	27	13.4	354	30	4,890
Lower secondary	21	1.6	32	38	5,263
Upper secondary	19	1.2	23	36	6,007
Vocational	12	1	16	n.a	n.a.
Higher	29	1[/b]	29	n.a.	10,925[/c]

7.43 **Earnings ratios are similar to those in Asian countries (with per capita GDP below US$ 2,000), but slightly less than those in other Middle Eastern and North African countries.[135]** In 2004, teachers' salaries (including all remunerations and benefits) were about 2.1 times per capita GDP at the primary level, rising to about 2.6 times per capita GDP at the upper secondary level. The base salary is low, typically representing only about 40 percent of the total remuneration of teachers. Special allowances (such as *indemnité pédagogiques* linked to grade and experience), contribution to social insurance programs, and family allowances make up the rest of the remuneration (Table 7.9).

Table 7.9 Composition of Teachers' Remuneration by Grade of Teacher, 2004

	Total remuneration (DA)	As percentage of total remuneration				
		Base salary	Special allowances	Family allowances	Social security	Others
Instructeur	352,208	38	36	4	19	3
Maître Enseignement Fondamental	379,272	39	35	3	19	3
Professeur certifié Ens. Fondamental	432,839	38	36	3	19	3
Directeur d'AEF	423,227	38	37	3	19	3

Source: MEN, Direction General de la Planification (Sous-direction du budget).

7.44 **Algerian schools have a high proportion of administrative staff in relation to the teaching staff in lower secondary and upper secondary schools**. The ratio of teaching to administrative staff is 13.4 to 1 in primary; 1.6 to 1 in lower secondary; and 1.2 to 1 in upper secondary schools (Table 7.9). Staff composition reveals a relatively low proportion of technical assistants (3 percent) and laboratory assistants (6 percent) in lower secondary. The proportion of general unskilled administrative staff and security workers (nearly 45 percent) is high in lower secondary education (Table 7.10). The same happens in upper secondary. These ratios are partly explained by difficult security conditions over the

[134] However, this does not contribute to the overall unit cost differential because the salaries of these administrative staff are very low.

[135] World Bank (2002a) indicates that teacher wages are low, averaging about 1.02 times per capita GDP; but it does not says whether total remunerations are included in this calculation. No substantial revision in civil servants salaries had occurred until July 1st. 2006, when public wages were increased by an average 15 percent.

past decade, leading to hiring a large number of guards. Thus, the high ratios of other categories of workers are indicative of overstaffing. Given the extremely low average salaries among these categories of staff, these high ratios do not raise unit costs to a great extent; however, from an efficiency point of view, they do have implications for personnel management at the school level (as well as for unit costs in the event of future salary increases).

Table 7.10 School Education – Distribution of Administrative Workers, 2003

	Primary	Lower secondary	Upper secondary
Total number of administrative staff	12,730	68,810	47,877
Percent of total admin staff	9.8	53.2	37.0
School management		31	32
Office staff		16.7	14.2
Technical and laboratory workers		3.0	6.5
Boarding and kitchen workers		4.7	8.1
Other workers[a/]		24.9	24.4
Security workers		19.7	14.8

Source: MEN, Données Statistiques, 2003–04.
Notes: [a/]Other workers include all those who could not otherwise be classified by function.

7.45 **Algeria spends relatively more on higher education than many comparator countries; but this is mainly because of high social, not instructional, expenditures**. Social expenditures include boarding, scholarships, food, and transport. Together, these now account for nearly 50 percent of recurrent expenditure in higher education, compared with nearly 40 percent in 2001 (Table 7.11). The increase in 2003 of the social spending share part in the recurrent budget, compared to 2001, is explained by the increase in the number of students and in the university infrastructure works. Excluding social expenditures, per student expenditures actually declined in absolute terms between 2001 and 2004. Unlike secondary education, there is little targeting of these expenditures ostensibly aimed at increased social access. Almost 90 percent of students are provided scholarships. Fifty percent are entitled to free room and board, and all are entitled to subsidized lunch. The expenditure on food represented between 30 and 40 percent of all social expenditures between 2001 and 2005; and even so, the quality of food in the university canteens is reportedly considered poor. Scholarships accounted for only 20 percent of social expenditures because, despite the near universal coverage, amounts per student are relatively low. Transportation represented over 10 percent. A final contributing factor to the high unit cost in higher education is the high ratio of administrative to teaching staff (1 to 1, as shown above in Table 7.10. Yet salaries of university teaching staff are not high relative to countries of similar per capita incomes. Average salaries are about 4.8 times per capita income.

Table 7.11 Composition of Recurrent Expenditure in Higher Education, 2001–05

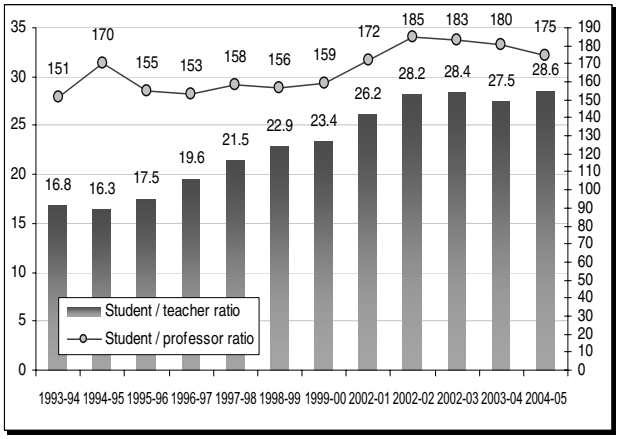
	2001	2002	2003	2004	2005
Total recurrent expenditure (DA millions)	47,103	58,716	63,495	68,908	78,671
Social expenditure (DA millions)	18,745	27,757	32,045	33,595	37,475
Social expenditure (as percentage of total)	39.8	47.3	50.5	48.5	47.8
Per student social expenditure (DA)	38,363	48,703	51,998	51,431	51,904
Per student all other expenditure (DA)	58,036	54,321	51,033	54,061	57,058
Composition of social expenditures (In percent)					
Wages	20.5	17.6	15.8	17.4	17.3
Materials and maintenance	9.1	21.1	25.1	22.5	9.7
Cultural and sports activities	0.9	1.5	1.8	1.5	1.8
Scholarships	22.9	18.7	15.9	18.2	20.0
Food	38.8	32.9	31.2	28.6	40.0
Transport	7.7	8.3	10.2	11.8	11.2

Source: MESRS budget data, and *Annuaire Statistique 2003–04*.
Notes: Social expenditures means recurrent spending on student hostels, food, transportation, scholarships, and cultural activities.

7.46 **Rising social expenditures related to rapid expansion of enrollment has affected the quality of instruction**. Salary expenditure on teaching staff has been contained by allowing the student to teacher ratio to increase. The average student to teacher ratio in universities is actually higher than the in primary education (and significantly higher than in secondary education – Table 7.8).

7.47. **Unlike the ratios in other educational levels, the student to teacher ratio in higher education has been steadily rising.** Over the past 10 years, the undergraduate student to teacher ratio has increased to 29, while the graduate student to professor ratio has risen to 175 (Figure 7.10).

Figure 7.10 Student to Teacher Ratios in Higher Education



Source: MESRS, Annuaires Statistiques.

7.48 **These average ratios hide extreme disparities across disciplines** (Table 7.12)**.** In undergraduate education, the student to teacher ratio ranges from 12 in natural sciences to 75 in law and economics and management. In post-graduate education, the ratio ranges from 14 to 44. While this may be caused by weaknesses in the supply while recruiting new faculty in some fields (computer science, foreign language, law, management and economy sciences) to keep pace with the surge in enrollment, it also reflects the limited fiscal space within the higher education budget in light of continued pressure for greater access. To face this, the sector has established a strategy strengthening international cooperation, an increase in the number of doctorate schools, welcoming visitor teachers, granting scholarships studies in foreign countries, etc.

Table 7.12 Student Teacher Ratios by Discipline in Higher Education, 2003–04

	Undergraduate		Postgraduate	
	% of total	Student to teacher ratio	% of total	Student to professor ratio
Natural sciences	12.8	12	21.5	14
Technology and information sciences	18.3	19	23.7	40
Medical and veterinary sciences	8.2	18	17.2	11
Social sciences	9.8	36	9.6	33
Languages and culture	15.3	40	12.7	40
Economics, management, commerce	20.2	76	6.8	44
Law	15.4	75	8.5	32
	100.0		100.0	
Total number and ratios, all disciplines	622,380	27	30,221	21

Source: MESRS, Annuaire Statististique.

Notes: Undergraduate enrollment includes students in long and short duration courses. Only faculty at the rank of professors are used to calculate the student to professor ratio in postgraduate courses.

7.49 **For its part, spending on nonsalary instructional materials is very low in higher education by international standards**.[136] In the 2005 budget, the average expenditure per student in instructional materials—including both undergraduate and postgraduate levels—was only about DA 7,000 (US$ 95), not much higher than in secondary education. However, university laboratories have benefited from additional credits of 1.5 billion DA for equipment budget in order to rehabilitate practical work and improve training quality. As part of the supplementary Budget Law of 2006, PCSC provided multi-annual financing for these activities.

School construction costs

7.50 **Based on the limited available information, the unit costs for school construction appear to be relatively high**. The average unit cost of a primary school classroom is over US$ 17,000, nearly double the present average cost in Latin America and similar to that of Latin America and Asia in the early 1990s (Theunyck 2002). This seems partly explained by differences in architectural norms and technical standards, as well as by higher construction costs. Algeria's norm is about 62 square meters per classroom overall, with average class size of 30 pupils at the primary level—that is to say, a generous per pupil area of 2.1 square meters. Internationally, the usual standard is between 1.0 to 1.5 square meters per pupil, with the upper end of that range generally considered to be adequate for active teaching, group work, or students working by themselves. Furthermore, construction cost is also high—US$ 274 per square meter as compared with about US$ 200 in middle-income Latin American countries and about US$ 100 in Asian countries. This difference could be explained by the technical requirement for anti-seismic construction, which was introduced after the 2003 earthquake. Labor costs might also be higher. Procurement practices could also be leading to higher costs. Finally, and according to Authorities, they are also due to the lack of a market structure that prevents having a tight control of construction costs by the *maîtres d'oeuvre*. These factors can be reversed with training and technical assistance. Experience with donor-assisted projects shows that procurement procedures fostering competition reduce costs. In the past two decades, many middle-income Latin American and low-income African countries have significantly lowered their unit costs of construction from levels similar to those of Algeria today. These factors merit further investigation. Although there is relatively little

[136] Some instructional expenditures of a recurrent nature may be charged to the capital budget or to research laboratories attached to universities, but this would not change our overall findings.

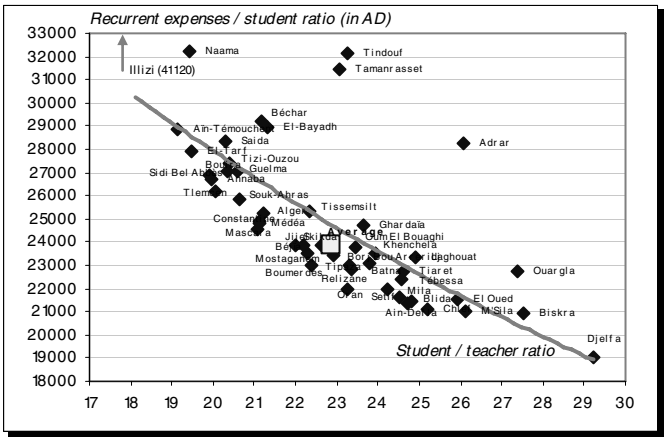
new construction at the primary level, major rehabilitations are under way; and this effort would benefit from a review of norms, standards, and procurement practices.

7.51 **The cost of a lower secondary school is twice that of a primary school of comparable size**. Higher costs should be expected because of the additional requirements for laboratories, libraries, and staff rooms required by the curriculum. International benchmarks to judge the cost-differential are hard to find. Nevertheless, it would be appropriate to review norms and standards. Savings on construction costs could be used to equip schools with more computers, information technology, and laboratory equipment. Finally, for both primary and secondary schools, inappropriate technical norms also raise the associated recurrent costs, especially for heating and maintenance.

Expenditure and geographic equity

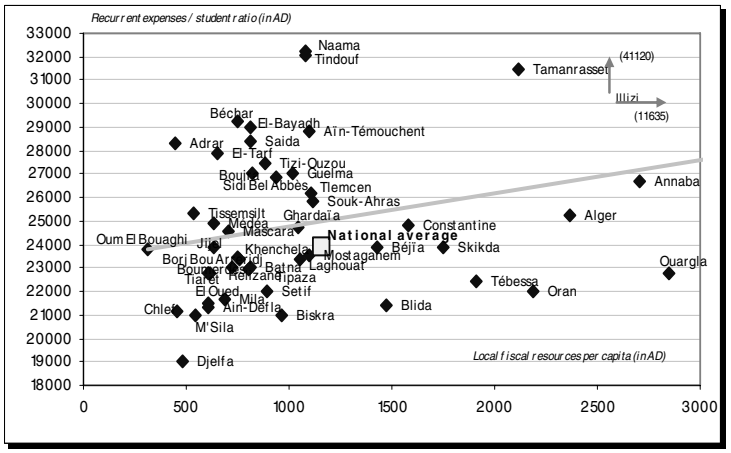
7.52 **Despite national norms that govern the deployment of teachers and nonsalary expenditure, public education expenditures are accentuating economic disparities.** Across wilayas, there is considerable variation in the per student recurrent expenditure in schools. In large measure, these disparities are positively correlated with the variation in the average pupil to teacher ratio—the lower the student to teacher ratio, the higher the per pupil recurrent expenditure (Figure 7.11a). There are, however, some wilayas where the per-student expenditure is considerably higher than would be expected in light of the student to teacher ratio. This is the case of Illizi, Naama, Tindouf, Tamanrasset,

Figure 7.11a Per Student Recurrent Expenditure and Pupil-Teacher Ratio by Wilaya, 2004



Source: Bank staff calculations based on MEN data.
Note: Per student expenditure and student-teacher ratios are averages for primary, lower secondary, and upper secondary education.

Figure 7.11b Per Student Recurrent Expenditure and per Capita Local Fiscal Resources by Wilaya, 2004



Sources: MEN data; *Carte de pauvreté*.
Note: Per capita fiscal resources were taken from the *carte de pauvreté.* Data for 1,541 communes were aggregated to the wilaya level after weighting by the population of each commune within the wilaya.

and Adrar, which receive a greater share of nonteacher resources than do other wilayas. Low student-teacher ratios are related to factors such as population density and the small schools that are needed to ensure access to dispersed habitations. However, not all wilayas with low student-teacher ratios fall into this category. Similarly, the per student expenditure is positively correlated with the income level of the wilaya as measured by per capita fiscal transfer (Figure 7.11b).

7.53 **A high proportion of schools lack essential education inputs**. Supply of basic school inputs are driven by construction norms that are uniform across the country and applied in practice. The analysis of the MLA 2 survey indicates that almost all lower secondary schools have basic student and

teacher furniture as well as usable office equipment such as typewriters, photocopiers, and telephone. A significant proportion, however, lacks essential pedagogical materials (Suchaut 2006). Also, two thirds of schools report that teachers do not have a cupboard in their classrooms, and a third do not have basic scientific equipment, models, and materials for practical work.

The survey reveals a surprising lack of the more sophisticated resources, such as computers and Internet access, which might otherwise be expected in a middle-income country. This confirms the analysis of budgetary data on marginal spending on instructional materials (paragraph 7.37). Almost two-thirds of lower secondary schools report no computers for students, and 23 percent report just one computer. About 82 percent of schools have no computer exclusively dedicated for teachers, and 95 percent have no Internet access. There is also disparity in the availability of textbooks. While over 85 percent of students in most wilayas do have textbooks, shortages are acute in Tamanrasset (28 percent), Mostaganem (45 percent), and Ghardaia (58 percent). Since textbooks are privately purchased or rented from the school, these figures reflect either the inability of poor students to buy or rent books, or inadequate availability in certain schools.

Increasing the cost-benefit of public resources

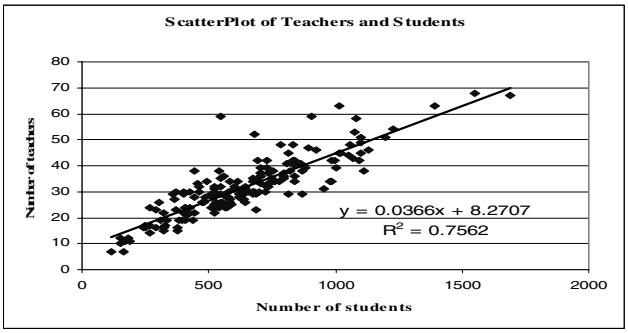
7.54 **The unit cost of producing graduates at each educational level is very high.** Because of repetition and dropout, the actual costs are much greater than the average cost per year multiplied by the number of years in the cycle. At the primary level, the cost of producing a graduate is 30 percent higher than in a system with no dropout or repetition. At the lower secondary level, the cost is more than twice as high; and at the upper secondary level about 2.3 times greater (reflecting the higher repetition and dropout rates at the secondary level). The cost of producing a vocational graduate is particularly high given the poor internal and external efficiency of training in that subsector, which compounds the waste of public resources (paragraphs 7.19 and 7.20).

7.55 **The MLA 2 survey suggests areas where resources could be used more effectively.** In general, the number of teachers varies with the number of students (Box 7.1, first graph). More effective management of teacher deployment would improve utilization of existing resources. The analysis of per pupil salary costs suggests economies of scale until school size reaches about 400 students (Box 7.1, second graph). Larger schools offer no significant economies; and as it happens, almost 80 percent of sample schools are larger than this size. Similarly, the Ministry of Education's current guidelines for construction indicate that large schools do not yield significant savings. Hence, unless it can be shown that large schools are more effective in terms of student achievement, an argument can be made for reducing school size in order to widen access to lower secondary education.

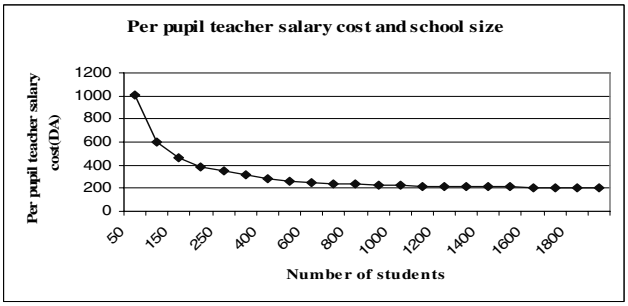
7.56 **Student achievement is not correlated with basic teaching-learning resources (such as class size, which varies from 16 to 60 in the sample schools, as shown in the third graph of Box 7.1), or by the pupil-teacher ratio (Suchaut 2006).** An analysis of student achievement using multivariate (on several levels) modeling shows that only 8 to 9 percent of the variance in scores (on both tests) is between schools. By contrast, over 90 percent of the variance is among students within each school or class—in other words, that the differences are primarily among pupils. Four factors are associated with achievement on both tests—first, age (older children perform worse); second, type of dwelling (those living in less durable houses have lower scores); third, parents' expenditures on schooling materials (positive); and fourth, homework (positive). Others factors show a significant effect on only one or another test result—gender (negative effect for girls in mathematics); repetition (negative for science); mother educated to university level (positive for mathematics test), French spoken at home (positive in science test); expenditure on fees and family's wealth status (positive for science). (See Annex P for model results).

7.57 **School factors associated with better performance do not relate to school inputs or teacher qualifications and training**. Among the many variables constructed to measure these factors, only one variable exerted a positive effect in both tests—the percentage of women teachers in the school. For the science test scores, some variables exerted a counterintuitive negative effect—for example, the availability of basic equipment in the school or the degree of autonomy (an index variable created from the head teacher's responses to questions on decisionmaking). In mathematics, the availability of mathematics textbooks for more than 75 percent of students and a female head teacher exerted a positive effect, while older teachers (above 45 years-old) were associated with lower achievement.

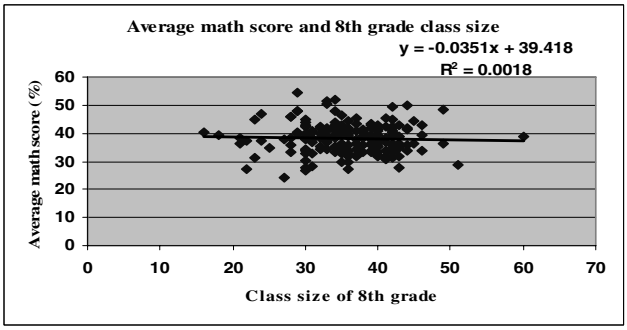
Box 7.1 Use of Resources in Lower Secondary Schools in Algeria: Findings from Analysis of the MLA dataset



The graph plots teachers and the number of students in each lower secondary school in the sample. (Ten schools were eliminated that were outliers or had missing values.) In general, the number of teachers increases with students, but about 25 percent of the variation in number of teachers is not explained by the number of students.



The unit salary cost declines as school size increases to 400 students. But there are few economies of scale when schools are beyond this size.



The plot of the class average test score in mathematics against the size of the class shows negligible correlation. Class sizes range from about 16 to 60.

Source : Suchaut 2006

A math teacher having received pre-service training in mathematics had no effect on student achievement. Overall, all factors taken together explain about 22 percent of the between-school variation and only 2 to 4 percent of the within-school variation. In both cases, students' socioeconomic characteristics explain relatively little of the variation in scores. There is also little association between student achievement and easily measurable physical inputs, a common finding in similar analyses for middle-income and richer countries. Some variables that are hypothesized to influence achievement relate to measures such as school environment and leadership by the school headmaster. These were either poorly measured, or not captured at all by the survey instruments. Such results serve to

underscore that improving quality will require effort that goes beyond physical inputs or the qualifications and training of teachers.

D. THE SECTOR STRATEGY

7.58 **Algeria has undertaken a comprehensive education reform strategy**. In 2001, the government established the National Commission on Education, whose report and recommendations formed the basis of the new reform strategy adopted by the Council of Ministers in 2002. Implementation began in 2003–04. Annex Q summarizes the key elements with respect to each level of education; while Annex Y, provided by Authorities, describes the main outcomes and indicators contained in the *Carte scolaire*.[137] The reform strategy comprises three main axes for basic and secondary education:

- Upgrading teacher quality by improving the qualifications of teachers.
- Modernizing curricula, textbooks, pedagogical methods, and student evaluation based largely upon a competency-based approach.
- Restructuring the primary and lower secondary cycles.

7.59 Within the context of the PCSC 2005–09, the government's strategy for education is to ensure increased access at postprimary levels while improving quality across the board. Three ambitious quantitative targets are to be achieved by 2010:

- A level of 90 percent of students matriculating to 9th grade, the final year of lower secondary education (versus 63 percent in 2004-05)
- A level of 75 percent of 9th grade graduates to enroll in upper secondary education or vocational training (versus 42 percent in 2004-05)
- 70 percent passing rate in the secondary-school terminal examination (versus 40 percent in 2004-05)

7.60 **In higher education, the focus of the new strategy is to, first, rapidly expand access as well as pass rates on the baccalaureate[138] and, second, introduce the *License-Maîtrise-Doctorat* (LMD) programs**. Its quantitative targets consist of:

- Doubling the number of university places (and enrollment to 1.2 million) by 2010; which will require a substantial investment in university infrastructure (including new universities), and in student accommodation.
- Hiring 25,000 additional teachers within three years if current student-faculty ratios are to be maintained.
- Encouraging universities to adopt the LMD; which will introduce a credit system, and allow students more flexibility and choice.

[137] Authorities indicate these have been set up at the local level, with the active participation of the local communities. In so doing, they aim to reduce the gaps in teachers'posts, reduce inequalities inter- and intra wilayas, and complete the mise a niveau of schools.

[138] By law, the MESRS is required to ensure a university place to all those who have passed the baccalaureate. Again, by law 50 percent of university students must be offered residential accommodation, with priority given to those who live too far to commute daily.

An element of the reform strategy was improved articulation between upper secondary and higher education. To avoid overspecialization, the number of streams for the baccalaureate was reduced from 15 to 6 streams. It is expected that broader use of the LMD will further reduce repetition by permitting students greater choice in career decisions. At present, each university course must be approved by the Ministry of Education. The ministry would encourage greater autonomy by permitting teacher teams to create new curricula. This shift toward greater autonomy could be accompanied by creation of an external quality assurance agency, which would assess the performance and programs of each institution.

7.61 **Broadly, the overall strategy is well founded, especially in its linkages across components and levels of education.** However, various components could be improved, reducing their costs and improving their feasibility and effectiveness. The proposed upgrading of teacher's qualifications is the single most important program, so its first year of implementation should be carefully evaluated. The content of the training modules has been developed by universities in consultation with the Ministry of Education. These are to be delivered by universities at each wilaya center. Because the costs of the program are not part of the capital budget, they are not provided in the PCSC or in the strategy paper. However, the ministry estimates a global cost of roughly US$ 600 million over ten years, including distance- and face-to-face learning.[139] This significant amount reflects both the extensive coverage of the program (about 214,000 out of 280,000 teachers in primary and lower secondary schools are to be trained) and the length of the training. The program aims at upgrading teachers' content knowledge. On the other hand, upgraded qualifications are not necessarily the best method of improving content knowledge. Other learning alternatives should be considered to allow teachers greater choice in course offerings.[140] Participation is voluntary, but so far has been limited, indicating little apparent interest. This has prompted the ministry to consider mandatory participation.

7.62 **The strategy also pays insufficient attention to improving the efficiency of the system**. Algeria's education strategy does not address the need to reduce the high repetition and dropout rates. Instead, the ministry proposes a competency-based approach based on a change in examination and transition policies. These are more likely to improve student flow within and between cycles in the short run only.

7.63 **The proposed expansion of vocational education and training (VET) to increase the coverage of post-compulsory education—and as an alternative to general upper secondary education—is not well targeted.** Its main objectives should be to serve labor market needs and to regulate the flow of students to upper secondary education. The real choice for policymakers is between lowering the costs of VET programs in order to serve more students and allowing a greater proportion of students to go through general secondary education at lower cost (and eventually onto higher education). The key elements in reducing VET costs are to expand choices for occupational specializations, eliminate long-duration courses, and allow greater student flexibility among shorter courses. This subsector now includes significant private participation. Therefore, the public sector should assess private sector supply while pinpointing those skills and geographical areas where the private sector cannot provide cost-effective services. A critical question is: How can labor market information be integrated into the planning and direction of VET? Greater authority needs to be devolved so that the training supply becomes more flexible and this should be combined with greater accountability. Incentives should be provided to increase the efficiency of resource use and the results

[139] This estimate does not take into account the additional costs to the salary budget from these teachers joining a new grade. A teacher who successfully completes the program would be considered equivalent to a university graduate in the civil-service pay scales.

[140] Instead of a single one-time program that is compulsory for all teachers, now may be an opportune moment to develop a framework for continuous professional development, emphasizing diversification in a teacher's knowledge and skills, and also instructing them in school decision-making tools.

should be monitored. International experience also suggests that the government's role could be refocused. Occupational standards and quality assurance could be greatly strengthened. Curricula and instructional prototypes could be developed. Mechanisms for monitoring labor market requirements could be set up. Innovations could be developed in vocational teacher training programs and in tertiary educational institutions. Finally, incentives should be created for firms to offer workers specialized training. With donor assistance, some of this work has already started.

7.64 **A clear definition was defined for the overall vision for year 2025, objectives, and strategy for modernizing higher education, improving its efficiency, and increasing its contribution to growth and social development.** This would enable a better assessment of the proposed large-scale public investments in education, as well as the weights given to expanding access and improving quality. Participation rates in tertiary education are low and need to be increased if Algeria is to have a highly skilled labor force. However, exclusive public financing is not necessarily the best way to do so. Paradoxically, full public financing affects quality. As has happened in Algeria and in some European countries, excessive financing to deal with high student/faculty ratios have in some cases led to lower quality. To actually improve access and quality education, funding sources need to be diversified; while acknowledging that this does not guarantee quality improvements by itlself. Concerns remain that diversification and the need to increase cost-sharing would undermine equity goals and limit access of students from lower socioeconomic backgrounds. On the other hand, evidence from OECD countries suggests that countries with low participation and attainment rates are less equitable in the socioeconomic composition of the universities' student body than countries that increase access while allowing a higher share of private financing (Education Policy Institute 2005). In the medium term, the strategy also considers the option of importing higher education services to meet the challenge of increasing access rapidly particularly where there is strong student demand in the face of capacity constraints such as faculty shortages. The development of new institutional forms of trade in higher education has enabled many developing countries to build their skills in the short run and contribute to capacity building of the domestic higher education sector. The examples of Malaysia, China and many Latin American countries can be evaluated. The import of higher education services can take the form of sending students and faculty abroad through scholarship programs or facilitiating twinning arrangements or other forms of institutional collaboration. The globalization of higher education has allowed countries to look for least-cost, highest value suppliers from a variety of countries. This option should be evaluated for easing medium-term constraints, while domestic capacity is being expanded.

7.65 **Improving the quality of higher education requires not only significantly higher investment in teachers and equipment, but changes in the governance and management of universities.** Many countries have granted greater autonomy to universities in several areas— setting the academic structure and course content; deciding on the size of student enrollment; giving institutions greater responsibility for managing additional resources to achieve their objectives; and creating more accountability for efficient use of public resources. New models of institutional governance have been developed that give more executive authority to professional administrators. Some of these reforms are under discussion in Algeria; however, measures to date—such as allowing universities to introduce specialized postgraduate courses based on specific demands from private and public companies, and allowing academics to undertake consultancy services—are still too modest for significant impact, even though they may be steps in the right direction.

7.66 **Finally, the size and distribution of allocations for different education subsectors under the PCSC has major implications for the implementation of the education reform**. The specific objectives of the PCSC in the education sector were explained in paragraph 7.60 above. It consists of taking charge of a total number of nearly 1.4 million students in the years 2009-10. In this horizon, the ministry of higher education and scientific research take into account improvement factors of teaching and training conditions according to universally admitted norms; despite the fact that approximately one

third of available hosting capacity is inherited from other sectors, and does not correspond to standards of higher education. Thus, our analysis reveals inconsistencies between the strategy and the implementation of the PCSC (Box 7.2). A main drawback of the PCSC expenditure projections is that total sectoral financing requirements, covering both recurrent and capital costs, have not been estimated. Also, the tradeoffs and policy choices not been explicitly considered in terms of their fiscal impact or achievement of sectoral goals. Expenditure projections were undertaken for this PER using alternative policy goals and scenarios (Annex S). Four broad conclusions are suggested.

- The PCSC doubling enrollment target for higher education cannot be met unless internal efficiency in lower secondary and upper secondary improves, together with higher pass rates in terminal examinations. This requires a number of policy measures as well as increased access at the secondary level.
- Second, the allocation for the education sector might have to rise between 2007–12 to finance the increased access under existing service delivery parameters (pupil to teacher ratios, class size, and so forth).
- The PCSC investment program underestimates the investment requirements for school education—DA 80 billion for 2005–09 if sector targets are to be met. This could be a result of underestimation in the number of additional schools and major rehabilitations. On the other hand, the requirements for the university level and for vocational training are overestimated by about DA 50 billion.
- The sector could realize a saving of about 0.5 percent of GDP by limiting the proportion of students with free accommodation to 30 percent and by better targeting of scholarships, which is already a topic discussed by the authorities.

Box 7.2 Aligning Education Strategy and the PCSC

The main drawback of the PCSC is that total sectoral financing requirements, covering both recurrent and capital costs, have not been estimated nor have the tradeoffs and policy choices been explicitly evaluated for their fiscal impact or for achievement of sectoral goals. Various scenarios are considered here to assess the realism of the PCSC projections and the impact of cost sharing in higher education (Annex S).

Assessing the adequacy of projected education expenditures under the PCSC in relation to the reform strategy brings several conclusions:

- Any assessment is constrained since the program projects only investment expenditures for 2005–09, but quality control measures require expanding and restructuring the recurrent budget, which is not in the PCSC.
- The investment program is skewed heavily toward higher education (over 50 percent of total allocation); while about 40 percent is for school education and 10 percent for vocational education and training.
- Looking at expenditures from the perspective of expanding access, especially in higher education, about 40 percent of PCSC resources is for construction of academic infrastructure, over half of which is for higher education and research. Another 40 percent is for building student dormitories, dining halls, and sports facilities, nine-tenths of which are allocated to higher education. Finally, only 20 percent of funds is for instructional materials and equipment, nearly two-thirds of which goes to higher education.

Using past trends to assess the feasibility of realizing these projected investments suggests the targets in school education and vocational training are more likely to be reached than those in higher education:

- High execution rates assumed for school education and vocational training are feasible. The school education target is to build 120 lower secondary and 58 upper secondary schools per year, only a bit more than the average of 110 and 44 completed respectively during the past three years. The vocational training target is to build 6,000 additional places pedagogiques per year. In 2002 alone, the Ministry of Education added 13,000.
- This is not the case for higher education, which receives a huge increase in proposed allocations compared to past expenditures. The jump is from an annual average execution of 13.7 billion DA to an annual PCSC projection of 48.5 billion DA. And in terms of physical plant, PCSC envisages annual construction of 93,400 places pedagogiques, a 50 percent rise over the 61,000 per year realized in 2001–04. PCSC also is particularly ambitious in its plans for university accommodation: calling for an additional 70,000 places yearly, compared to the 27,700 brought on stream yearly during 2001–04—an increase of 152 percent. Opening the market to foreign construction firms, under consideration by the Ministry, could speed up realization of the proposed infrastructure; but will not solve the critical constraint posed by limited managerial capacity to prepare and launch bids, finalize contracts, and ensure proper technical oversight.
- In the unlikely event that capacity constraints in construction are somehow overcome, it would still be necessary to assess whether the goals of (a) doubling enrollment by 2010 and (b) recruiting 25,000 additional teachers can be met. The first requires increasing the internal efficiency in lower secondary education and raising the pass rate in the *baccalaureat*. The second is even harder to realize. It is less a matter of financial constraints than the capacity of the system to produce enough teachers. Since about 2,000–2,500 teachers were recruited each year of the past five, annual recruitment would have to double. Meanwhile, the annual output of doctoral student postgraduates is only 900, which cannot be increased in the short run. The Ministry is offering significant incentives to professors for each completed thesis (100,000 DA, about two-months salary), enticing postgraduate students to complete their theses more quickly even at the risk of lowering quality. An alternative is to recruit teachers from abroad, especially from the diaspora, but this would mean offering competitive salaries that would raise the overall cost of expanding the program.

Source: Bank Staff

E. RECOMMENDATIONS

7.67 **On sector performance in school education**, the priorities are to improve (*a*) the internal efficiency of school education by reducing repetition and dropout rates, especially for boys, and improving transition rates between different cycles; and (*b*) student learning. This requires

- Using evaluation mechanisms as quality assurance feedback tools to improve student flow and progression, greater school accountability and provision of greater support to poorly performing schools; establishing a system to measure and monitor a well-defined set of student outcomes , and providing feedback and support to teachers to improve outcomes.
- Upgrading curricula, diversifying materials, and improving teacher pedagogy and teacher professional development, all of which require increased allocations for nonsalary inputs.
- Focusing greater attention on strengthening in-school processes and leadership by school principals to monitor and improve school and pupil performance outcomes.

7.68 **Regarding the sectoral strategy,** the priorities are to further elaborate (*a*) the implications of the goals for increasing access at each level and (*b*) specific approaches for quality improvement. This implies

- Undertaking enrollment projections to assess the realism of policy targets and the instruments for realizing them, and calculating the physical requirements for additional schools, teachers, and other resources needed at each level.
- In the case of *higher education*, reconsidering the pace of university expansion and evaluating alternative strategies to increase access through institutional and programmatic diversification and import of higher education services.
- Clarifying VET objectives in meeting the needs for skilled labor and its relationship with general secondary education, and redesigning programs accordingly. In fact, a Governement council meeting that took place on November 15-16, 2006 indicates the decision to upgrade the sector and realize a study with four objectives: (a) evaluate training needs demand; (b) evaluate training supply and gaps; (c) project supply in the medium term; and (d) design of a "Shema directeur" for 2025. The study will be concluded in 2007.
- Evaluating the cost-benefit of current pedagogical training to develop a framework for sustained teacher professional development.
- Creating a system to monitor and periodically assess student learning in schools.

To improve the quality and relevance of higher education, the strategy needs to identify essential reforms in governance, institutional management, and financing to make universities more responsive to the economy and the labor market.

7.69 **Regarding public expenditure levels and composition, and sectoral financing**, the priorities are to (a) increase educational resources but rebalance them across subsectors and regions to meet the objectives of the strategy for increased access and quality; (b) reduce the share of social expenditures in higher-education public spending to release resources for improving instruction; (c) increase allocations for nonstaff instructional inputs; and (d) seek

greater efficiency in public spending, especially in construction and in support-service provision. In the medium term, the new budgetary classification—economic and per program (see Chapter 4) will not only integrate recurrent and capital spending, but align resources (inputs) with inteneded outputs. In the meantime, this means:

- Increasing education sector allocations over the medium-term to provide for increased access and improved quality.
- Increasing allocations to lower secondary and upper secondary education (over current PCSC allocations) for building new schools and hiring teachers.
- Addressing inequalities in school expenditures across wilayas and communes by improving the allocation of teachers and providing additional funds to poorer communities.
- Targeting free accommodation (or new cost-sharing mechanisms), scholarships, and other social services in higher education to students from poorer families/regions.
- Make targeted use of higher education imports through employment of specialized faculty, foreign study scholarship program, twinning arrangements or other forms of institutional collaboration in specialized/priority areas to ease domestic capacity constraints. The effort should be to seek value for money in the global higher education market. Examples such as Malaysia and China should be studied.
- Setting higher per student expenditure norms for instructional inputs.
- Reviewing technical standards and norms for school construction to reduce unit construction costs and related recurrent expenses for operation and maintenance.
- Assessing the actual usage rates and pupil needs of student boarding and canteen facilities, outsourcing services where possible.

7.70 **To improve programming of sectoral expenditures**, establish a policy planning unit of education planners and specialists and economists, which could undertake medium-term expenditure planning, analyze the implications of policy choices for both recurrent and investment expenditures, and use findings in preparing the annual budget. Since expenditure programming is for the whole sector spanning all three ministries, the adequate institutional home for such a unit, and how it will interact with the Ministry of Finance, needs careful consideration.

7.71 **To encourage wilayas to monitor educational outcomes and improve efficiency**, useful measures would include providing some untied funding to improve classroom performance and encourage school systems to operate more efficiently. A list of eligible expenditures would offer guidance in using funds (including, among others, teacher professional development and additional educational tools to meet the needs of specific schools). Monitoring indicators such as entry/transition rates into lower secondary and upper secondary education, repetition rates, pass rates on examinations, as well as student performance assessments in core subjects could be adopted to gauge progress in schools and systemwide. Wilayas could also be required to introduce indicators like utilization rates, unit costs, and service quality to improve efficiency in their operating funds for boarding facilities, canteens, and transport. The process could be started by the Central Ministry defining key indicators and publishing wilaya level outcomes and providing funding to wilayas for measuring indicators to monitor results. Eventually funding formulae for providing "block grants" for non-salary expenditures should be developed to enable wilayas to capture efficiency gains.

7.72 **To improve planning and funding of school maintenance in a process that integrates wilayas and municipalities, information for maintenance planning could come from the regular data supplied by schools on the quality of their infrastructure and periodic evaluations by wilaya engineering personnel**. While regular maintenance/repair funds should be included in secondary school budgets, budget resources should be allocated to each wilaya for major repairs, and these expenditures should be monitored. Until the communes have reliable alternative revenue streams, itemizations for maintaining primary schools should be maintained in the Ministry's budget.

7.73 **Effectively devolving greater financial autonomy to and demanding greater accountability from educational institutions for the use of public funds requires reforms on a scale new in Algeria**. Various university institutions apply it already according to the recommendations of a CREAD study relating to the definition of the distribution keys concerning functioning credits. The design and implementation of this process requires action over many years. Some specific options that can be developed and implemented experimentally to further that process might include the following:

- *For upper secondary schools*, provide incremental funds (for nonpersonnel expenditure) to improve their instructional practices by developing three-to-four-year plans that focus on better student performance and outcomes, particularly lower repetition and dropout rates, and on better use/redeployment of nonteaching staff. These funds could be administered at the wilaya level under guidelines and procedures developed in consultation with the Central Ministry. Institutions would be permitted to retain savings to reinvest in instruction and maintenance.
- *For universities*, and as part of governance reforms in higher education, create a financial environment for operational efficiency that is innovation friendly and permits the generation of a private competitive system. Several measures can be considered. First, provide core funding through a block grant for nonpersonnel-related expenses that gives institutions the flexibility to allocate resources across departments or subject areas, depending on their strategic priorities. The core funding should be linked to student numbers and types, with simple and transparent criteria that reflect cost differences between disciplines and the mix of courses. The funding mechanism could incorporate performance indicators based on international benchmarks, such as pass rates or time taken to graduate. Second, for new initiatives, provide multiyear funding covering both recurrent and investment expenditures that conform to institutional plans with performance indicators. Once new programs have met assessments for relevance and quality, a part of their funding could be reserved as incentives to better utilize personnel, facilities, and technology or reduce any imbalances in administrative staff. Third, enable institutions to generate and carry forward surpluses to build up reserves for long-term building maintenance, cover equipment and furniture replacement costs, or invest in major new activities. Over time, greater autonomy in personnel decisions should be considered, especially at the main universities, which need to recruit staff to meet their institutional plans and exercise greater flexibility in salaries to fill vacancies, particularly in disciplines facing faculty shortages.
- Finally, concerning the private competitive financing, some observations given by the ministry seem to be valid. First of all, there is no high demand from the private to invest in this sector yet. Moreover, if it exists, it should be guided by other criteria than that of short term profitability. Finally, in this private competitive system, it is important to introduce actions aimed at avoiding the intensification of social inequalities.

CHAPTER 8: IMPROVING THE EFFICIENCY OF HEALTH EXPENDITURE

It should be recognized that both the diagnostic and recommendations of this chapter join and reproduce, to a great extent, our own analyses of the national health system .

—Comments to the Health Chapter of the PER
Ministry of Health, Population and Hospital refomr

This chapter reviews the development of the reform agenda for the health sector. The first section provides a brief overview of the health sector. The second section reviews the institutional context and government strategy. The third section examines expenditure patterns during the past decade. Particular attention is paid to the sources and uses of funds, and their impact in terms of efficiency, equity and cost-benefit. The main findings and recommendations are summarized in the final section.

A. INTRODUCTION

8.1 **All citizens' right to health care is enshrined in the Constitutions of the Democratic and Popular Republic of Algeria of 1989, and 1996**. This has resulted in a predominantly public-service delivery system with limited, but increasing private participation. The Ministry of Health, Population, and Hospital Reform (MOHPHR) is responsible for the overall management of the public health system, and regulates the provision of private health services.

8.2 **The country continues to make considerable efforts to ensure access to health services, but significant challenges remain**. Geographic access to health facilities is at 98 percent, and the entire population has financial coverage for health care services, at least in the public sector. As a result, health indicators have improved dramatically. However, the delivery of health care is inefficient; the overall quality of services is less than optimal, and inequities prevail. Delivery is mostly public with very low hospital occupancy rates, frequent drug shortages (especially in rural areas), and equipment shortages. Physical access in rural areas is hampered by lack of equipment, drugs, and medical staff. Most health and nutrition indicators in rural areas, especially in the southern part of the country are worrisome. Maternal mortality varies from 43.3 per 100,000 to 232 per 100,000 among wilayas. Approximately 18.2 percent of children under the age of five suffer from low weight for their age in the south, compared with 5 percent in the north. In addition, the private sector is growing rapidly because of the low quality of public providers. Patients using private providers pay most costs out of pocket, creating a major source of inequity. Financial constraints of the health care system will increase for several reasons—inadequacies in revenue, the extensive coverage of benefits, inefficiency in service provision, the high cost of pharmaceuticals, and the changing burden of diseases related to the health transition.

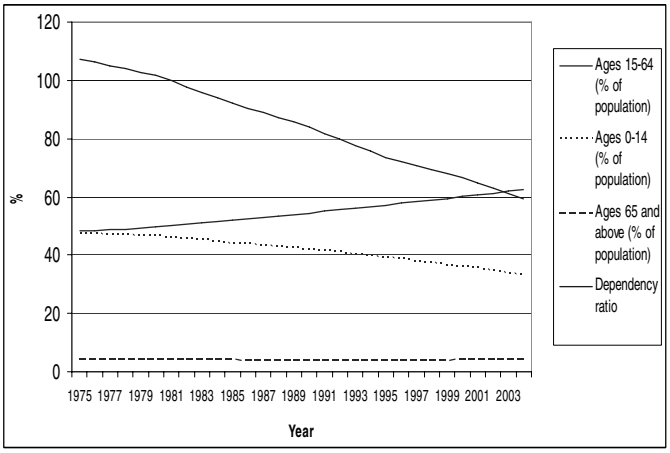
8.3 **In response to these challenges, a global reform is needed**. In 2002, MOHPHR started an ambitious reform program. A new law was drafted for consultation in February 2003 (*Avant-projet de loi sanitaire*.)[141] However, the process was not concluded. To manage its health care system, Algeria needs to invest a great deal into capacity building for its human resources and technical infrastructure and in designing an information, monitoring, and evaluation system for decisionmaking.

B. PERFORMANCE OF THE HEALTH SECTOR

Demographic profile of population and health status

8.4 **Algeria is in the middle of its demographic transition**. The population is about 32 million. The percentage of Algerians under the age of 15 has steadily declined since 1975, while the 15–64 age group has risen (Figure 8.1). This is very typical for a country that has experienced a significant fertility decline (from 7 children per woman born in 1977 to 2.7 in 2003). With the elderly population (age 65+) hovering at around 4 percent, the dependency ratio (calculated as the ratio of persons in the "dependent" ages, less than 15 years + 65 and over) decreased significantly between 1975 and 2004.

Figure 8.1 Population by Age Groups and Dependency Ratio, 1975–2003

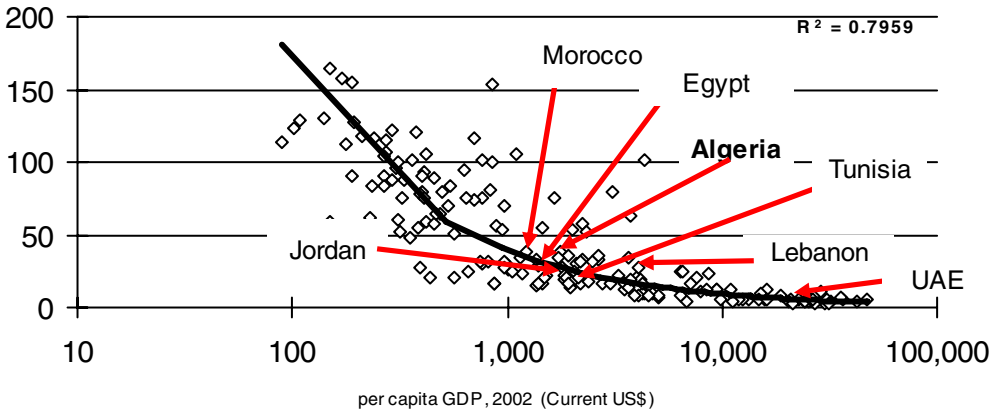


Source: World Bank, WDI 2005 database

8.5 **While health indicators have improved, projected outcomes to reach Algeria's MDGs are mixed**. Life expectancy at birth increased from 53.5 years in 1970 to 71 years in 2004,[142] higher than other lower middle-income countries. Similarly, the infant mortality rate (IMR) decreased from 94 per 1,000 children in 1980 to 33 per 1,000 children in 2004 (World Bank: WDI 2005 database).[143] This rate is comparable with other lower middle-income countries (Figure 8.2.). In terms of the under-five mortality rate, Algeria has improved consistently, standing at 41 per 1,000 live births in 2003. As of mid 2006, it appears that Algeria may reach the MDG on child mortality if the present trend continues at the same pace.[144] However, the MDG on maternal health will not be reached (Figure 8.4).[145] The maternal mortality ratio (MMR) has shown slow improvement and is worse than in countries of comparable GDP per capita (Figure 8.3). In 2000, the MMR was 140 per 100,000, down from 160 per 100,000 in 1990 (Figure 8.5).[146]

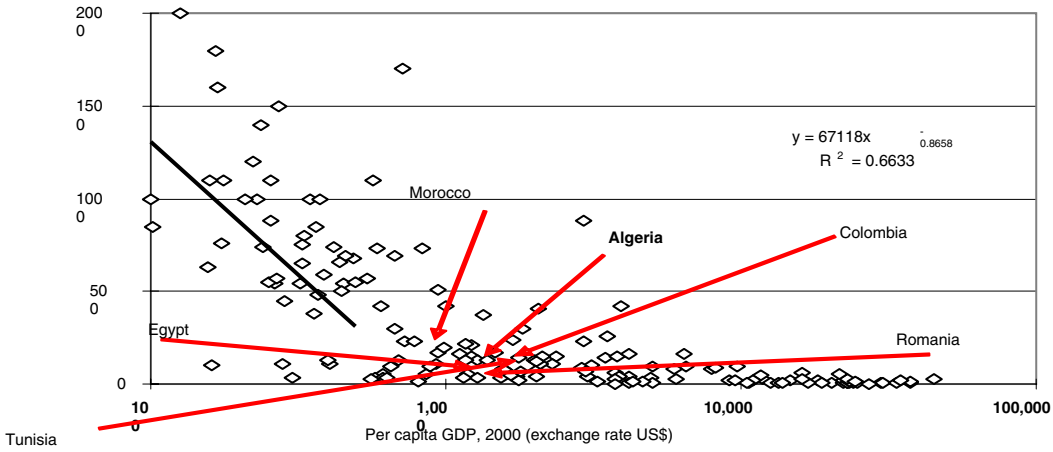
[141] A revised version of this law, *Avant-projet de loi relative à la santé*, has been prepared more recently.
[142] According to Algerian data sources (MOHPR), life expectancy is at 74.8 in 2004.
[143] According to Algerian data sources (MOHPR), it is at 30.4 per thousand in 2004.
[144] For the child mortality MDG, the target is to reduce the under-five mortality rate by two-thirds between 1990 and 2015. The under-five rate for Algeria was 69/1,000 live births in 1990. So, the target is 23/1,000 by 2015.
[145] For the maternal mortality MDG, the target is to reduce the maternal mortality ratio by three-quarters between 1990 and 2015. The ratio in Algeria was 160/100,000 live births in 1990. So, the target is 40/1,000 by 2015.
[146] The MMR is very difficult to measure, and often underestimated, even in high income countries. WHO, UNICEF and UNFPA have developed a new estimation method, which provides the numbers described here. Algerian data (MOHPR), however, are better (230/100,000 in 1989, 117.4 in 1999, and 96.8 in 2004).

Figure 8.2 Infant Mortality Rate, 2002



Source: World Development Indicators 2004

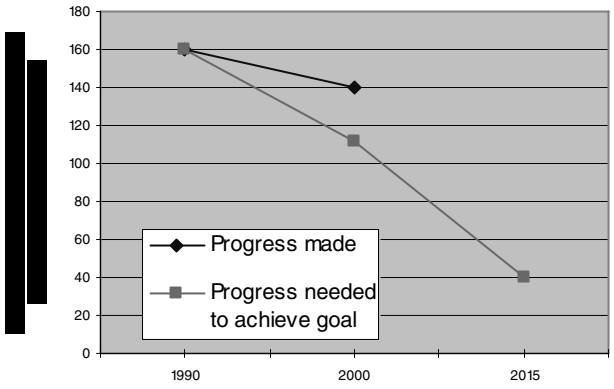
Figure 8.3 Maternal Mortality Ratio, 2000



Source: World Development Indicators 2005

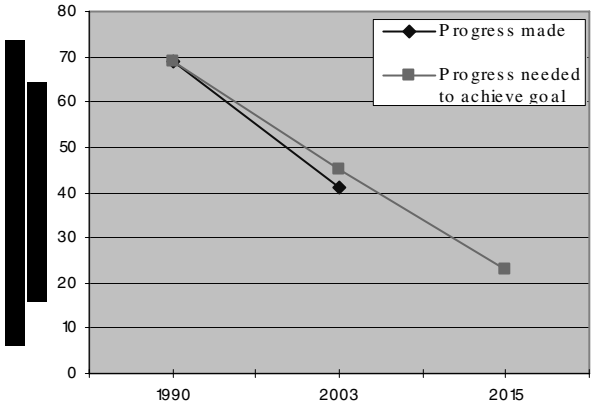
8.6 **Like most lower middle-income countries, Algeria is in the midst of its epidemiological transition.** That makes Algeria prone to conditions that are characteristic of both developed and developing countries. By 2002, noncommunicable diseases had risen to the number one cause of death (55 percent). While communicable diseases have decreased steadily, they still cause 28 percent of deaths. According to a recent study in 12 wilayas, the leading cause of death in Algeria is attributed to the circulatory system (INSP 2005). In addition, the incidence of cancers and traffic accidents is rising rapidly. The number of accidents increased from 27,500 in 1982 to 43,500 in 2003, an increase of almost 60 percent. In response, the government has developed a road safety strategy, including enforcement of seat belt use.

Figure 8.4 MDG : Maternal Health



Source: World Development Indicators 2005

Figure 8.5 MDG : Child Mortality



Source: World Development Indicators 2005

8.7 **There are relatively little reliable data on the incidence and prevalence of noncommunicable diseases.** Noncommunicable diseases are much more expensive to treat. So, the government should seriously invest in its health information system to collect more accurate data on mortality and causes of death. This would help to rationalize investment and improve the projection of future expenditures. This is especially important because noncommunicable diseases, such as hypertension and diabetes mellitus; and risky behavior, such as smoking, are becoming more prevalent (Table A.7.3).

8.8 **In general, communicable diseases are on the retreat; and specifically, diphtheria, tetanus, and cholera are under control (Table A.7.4).** Nevertheless, there are close to 20,000 tuberculosis cases a year, more than twice the level of 1990, and the incidence is growing despite a 98 percent rate of BCG[147] vaccination in 2003. The immunization rates for measles and DTP (diphtheria, tetanus, pertussis) strongly increased from 1985 to 1999 before decreasing over the last few years. The rate of HIV is still low, with 266 new cases in 2004; but it has risen steadily since 2001. The presence of risk behaviors among vulnerable groups as well as the diversity in prevalence rates among regions requires action to prevent further spread of the epidemic.

8.9 **The organization of health care services features a dense and highly structured network.**[148] Before the recent emergence of the private sector, the Algerian health system relied almost exclusively on a network of public health institutions that was highly developed and structured. Even today, the public sector remains dominant. The country is divided into 185 *secteurs sanitaires* (health districts), which are responsible for addressing all health problems of the populations within their jurisdictions. Each *secteur sanitaire* normally has at least one general hospital and several polyclinics, health centers, and treatment rooms. These are grouped into *sous-secteurs sanitaires*. The polyclinics and the health centers deliver primary and secondary care—consultations with general practitioners and specialists, basic examinations, and testing. Some of these facilities have hospital beds. A physician is not generally at hand in the treatment rooms. Only the most basic services, such

[147] Bacille Calmette Guerin (BCG) is the most widely used vaccination in the world. BCG was developed in the 1930s and remains the only vaccination available against tuberculosis today.

[148] Except where otherwise indicated, all data in this section are for the year 2004 and are taken from the health map prepared by the Ministry of Health.

as injections and the dressing of wounds, are provided. Nevertheless, in regions such as the southern part of the country, where polyclinics and health centers are generally far removed from each other, the *secteurs sanitaires* have had to "medicalize" their treatment rooms. These facilities are supposed to refer their patients to the local hospital or to a specialized hospital (EHS) or university hospital (CHU) as the situation requires. A total of 13 CHUs and 32 EHSs provide secondary and tertiary care. They draw their patients from several wilayas and, in some cases, from the entire country. The CHUs undertake teaching and research, as well as care delivery. The EHSs include psychiatric hospitals and hospitals specialized in fields such as cardiology or nephrology.

8.10 **With 1.77 beds per 1,000 people in 2004, Algeria had one of the lowest ratios among countries of comparable income.**[149] Algeria generally places better than or as well as neighboring countries. Tunisia's rate was 1.73 beds per thousand in 2002, and Morocco's rate was 0.78 in 2004. Despite the rapid growth of the private sector, 96 percent of hospital beds remain in the public sector (2001). A similar general pattern holds for the ratio of physicians to population. The ratio of physicians per 1,000 (1.21) falls short of the average of lower middle-income countries (1.49 in 2004), but it is slightly better than the average of MENA countries (1.18 in 2004). In 2003, there were 23,416 practicing physicians and dental surgeons in the public sector (MOHPR 2003c). Their number has been growing slowly but steadily since the early 1990s. In 1991, there were 19,801 physicians and dental surgeons in the public sector (a figure that rose by 18 percent between 1991 and 2003). The Algerian population rose at exactly that rate during that period, so that the ratio of public physicians per 1,000 inhabitants remained virtually stable (slipping from 0.77 to 0.74). The sharp increase in private-practice physicians (see below), however, raised the overall ratio of physicians from 1.05 to 1.21 per 1,000 people between 1991 and 2003.

8.11 **The emergence of the private health care sector is a recent phenomenon**. It was only in 1988 that a new law allowed for private clinics (Law of May 3, 1988). While there were only 2 inpatient clinics in 1990, there were 69 by 2004 (Table A.7.9). Previously, the private sector was limited to doctors' offices, test laboratories, and maternity clinics. Private health care providers have gradually sprung up throughout the country, although they are more numerous in the major cities of the north (Algiers, Oran, Annaba, and Tizi-Ouzou). Algerian authorities have little knowledge of the private sector, however, and data on that sector are scarce and often incomplete. Once a license has been granted, the authorities exercise no control over the licensed facility's activities or the quality of care that it offers.

8.12 **The number of physicians in private practice has surged in recent years.** It more than doubled from 7,240 in 1991 to 15,268 in 2003 (an increase of 110 percent). By 2003, 44 percent of specialists and 34 percent of general practitioners were operating in the private sector. The pay gap between the public and private sectors, above all for specialists, is driving more and more health professionals to private practice.

8.13 **In hospital beds, the private sector contribution is still low but rising**. By contrast, the private sector accounts for a significant proportion of medical imaging equipment, especially the more costly types. In 2000, the private sector accounted for 89 percent of scanners, 45 percent of ultrasound equipment, and 17 percent of X-ray devices in operating condition. It also accounted for 14 percent of surgical units.

8.14 **Other health care providers play a minor role**. Apart from the facilities operating under the Health Ministry and the private sector, there are health care facilities that are part of other ministries

[149] Comparisons are not always straightforward. *World Development Indicators* for 2005 refer to the beds ratio for 1998. It is possible, however, to derive orders of magnitude, for example, a ratio of 3.38 for lower-middle-income countries in 1998.

(the Ministry of Defense, in particular) and other public institutions and enterprises. These facilities are dedicated to caring for the staff of the organizations concerned. In 2001, there were 464 "social medical centers" (*centres médicaux–sociaux*) and 94 occupational medicine centers, embracing 935 physicians and dental surgeons and 949 nurses and nurse's aids. For its part, the Caisse Nationale des Assurances Sociales des Travailleurs Salariés (CNAS) runs one hospital directly and a network of polyclinics. This network has shrunk considerably since 1987, when it was transferred to the Ministry of Health.

Health care coverage

8.15 **In principle, all Algerians are covered by public health insurance.** The social security system covers people who meet its eligibility criteria. There are two sickness insurance funds—CNAS and the Caisse Nationale de Sécurité Sociale des Non-Salariés (CASNOS).

- CNAS covers salaried employees, their dependents, and certain categories of the population identified by law as eligible (students, unemployed disabled persons, and indigent recipients of state welfare support). Six million people are affiliated with the CNAS, of whom 3 million are actively employed insurees. Including eligible dependents, nearly 24 million people are covered by the CNAS, or 73 percent of the total population (2004). The system is financed in the first instance by a portion of the 34.5 percent of social security contribution paid by employers and employees.[150]
- CASNOS covers independent workers such as merchants, artisans, farmers, and the liberal professions, as well as their eligible dependents. The contribution rate is 15 percent, 7.5 percent of which is for sickness coverage. Of the 1.2 million potential affiliates, only 450,000 are up to date in their contributions.

8.16 **The benefits package covered by these sickness funds is defined very broadly to cover nearly all curative and preventive care possible (Social Insurance Law of July 2, 1983).** The sickness funds cover all care provided to their affiliates in public facilities through a *forfait hôpitaux* (a lump-sum hospitals grant, described below). Private medical care and reimbursable drugs are paid up to 80 percent of the regulatory rates. This rate is raised to 100 percent in cases such as chronic illness, hospitalization exceeding 30 days, and low-income pensioners. The regulatory rates have not been revised since 1987, so they fall far short of actual fees charged in the private sector—to the point that reimbursements today from the social security system are merely of symbolic value.

8.17 **Finally, indigent persons not affiliated with CNAS are covered directly by the state (Ministry of Employment and National Solidarity)**. Their health care expenses are paid from a portion of the operating grant that the state provides health institutions (see below). No specific benefit package is defined, and all services provided by the public sector are covered. The state does not reimburse any expenses that indigents might incur in the private health sector.

C. INSTITUTIONAL FRAMEWORK AND SECTOR STRATEGY

The present institutional framework does not allow a good management of the health system[151]

[150] These contributions cover retirement, unemployment, occupational accident, and CNAS benefits for sickness, maternity, disability, and death benefits. The latter distribution dates from a decree of 2000 that assigned 14 percent of the 34.5 percent to CNAS (12.5 percent paid by the employer and 1.5 percent by the employee). In the case of insured "non-wage earners", the state contributes on their behalf at a reduced rate—6 percent of the national guaranteed minimum wage (SNMG) for indigents, 2 percent of the SNMG for students, and so forth.

[151] See Annex T for a description of functions by institution in the health system.

8.18 **The lack of coordination among central government services affects system management**. Several ministries run the health care system. Chief among these are the Ministry of Health, which provides overall guidance and management for the system; the Ministry of Labor and Social Security, which takes care of the*Caisses d'Assurance Maladie;* the Ministry of Finance which, together with the Ministry of Health, negotiates public sector health budgeting; and the Ministry of Higher Education, which is primarily responsible for the training of physicians. For the system to function properly, these institutions must satisfactorily cooperate. In fact, interministerial cooperation is very limited. In addition, the relationship between the Ministry of Health and the Ministry of Labor and Social Security is particularly strained, in part because of the unresolved issue of how to share the operational expenses of public health facilities. The Ministry of Higher Education establishes the content of the teaching program at medical faculties—though with negligible input from the Ministry of Health, which in principle is best placed to assess training needs.

8.19 **Coordination is also insufficient among the main ministerial departments**. In the Ministry of Health, for example, the setting of public health priorities is not reconciled with the financial resources that are actually available. There is ample room for strengthening contacts and the sharing of information among institutions that are responsible for these matters.

8.20 **Another source of difficulties is the separation between the bodies responsible for investment and those responsible for operations (recurrent) outlays in public health institutions.** The Ministry of Health mirrors the institutional budget separation within the Ministry of Finance. Two separate sections of the budget office deal with capital and recurrent expenditures respectively. Similarly, budget negotiations over investments and recurrent credits take place separately. Often, the recurrent charges necessary to keep an investment project running smoothly are not provided for during the fiscal year in which the investment component is completed, with negative consequences for the utilization of the new health centers or facilities financed. Moreover, there is no sector specialization within the Ministry of Finance. Each investment and recurrent expenditure officer monitors a large number of health districts, but covers only a portion of each. Officers thus have little detailed familiarity with the great number of files for which they are responsible.

8.21 **Current efforts by the Ministry of Finance to develop program budgeting and budgeting-by-objectives may help to improve coordination.**

Efficient system management is undermined by institutional fragmentation

8.22 **The lack of a strong local player harms the management of the system** (see Annex T). Algeria has five health regions (Center, East, West, Southeast, and Southwest). Each has had a Regional Health Council since 1997. These bodies represent the principal stakeholders in the system—the state, the social security funds, physicians, associations, and so forth. The health councils are supposed to coordinate activities and promote consensus-building in the field. In practice however, their role is essentially advisory; and their operational responsibilities are limited. Each of the 48 wilayas has a *Direction de la santé et de la population* (DSP) representing the Ministry of Health at the deconcentrated level. The Decree of July 14, 1997, governs their organization and operations and gives them a broad mandate—planning and coordination of public health activities, prioritization of health care, distribution of funding among health institutions; evaluation and supervision of their activities; monitoring of investments; and training programs among others. In reality, they have sufficient resources neither to properly carry out these tasks nor to serve as an effective interface with the Ministry of Health at the local level. Moreover, the wilaya health authorities do not have the critical reach to deal with the broader challenges related to geographical distribution and coordination among health care providers.

8.23 **Decentralization of the health system is very limited.** As a result, the central government is not able to fulfill what should be its key role, overall stewardship for the system**.**

8.24 **The management of hospitals is excessively rigid**. Hospitals belong to the category of public institutions called *établissements publics administratifs* (EPA). The EPAs operate along the lines of a traditional state bureaucracy, applying standard rules of public accounting and public service statutes for personnel management. When it comes to budgeting, managers have next to no autonomy. In the case of recurrent expenditures, for example, a hospital manager who wants to transfer funds from one budget category to another must obtain central approval through a ministerial order. In the case of personnel expenditure, modifications cannot be made at all.

8.25 **Relations are unsatisfactory between hospitals and the central government**. Because of the public administrative status of hospitals, managers can be subject to suffocating oversight. Numerous controls a priori limit a manager's capacity to take initiative. At the same time, the government has set no precise objectives to guide actions. There are no contractual arrangements between the DSPs *(*or the Ministry of Health) and the hospitals that might otherwise help to define expected outcomes and ensure the minimum resources (inputs) necessary for achieving them. Finally, the activities and performance of hospitals is subject to no evaluation whatsoever.

8.26 **The budgetary process does not respond to a strategic orientation.** As a consequence of institutional segmentation, the recurrent budget is prepared in an inertial way. It has little to do with a hospital's real needs.

- Hospitals receive very little guidance from the DSPs or the central government in preparing their budget forecasts. There are no indications concerning the pace of expenditure increases, priority activities, and so forth.
- Hospital budgets are essentially based on the previous year with a small increase.
- DSPs receive the hospital budget requests and transmit them to the Ministry of Health without major amendments.
- The Ministry of Health negotiates with the Ministry of Finance based on these budget proposals.

8.27 **For the investment budget, a distinction must be made between centrally managed and decentralized investment projects**. Only investments relating to the *centres hospitalo-universitaires* (CHU) and certain specialized hospital facilities are managed at the central level. For this type of investments, the decisionmaking process is relatively simple: The Ministry of Health selects the projects that it likes based on available information and its own priorities. Common issues in the management of these investments are not related to the budget procedure, so much as to other factors—gaps in the health map, lack of accurate information on institutional performance, or simply capacity in project preparation. On the contrary, at the deconcentrated level (DSP and wilayas), there are different kinds of inadequacies in the budgeting procedures for investments. For example:

- Hospitals submit their needs to the DSP and the wali. The wali makes the decision, with the DSP consigned to the role of technical advisor. Not surprisingly, projects that are selected are often shaped as much by the local political context as by technical considerations.
- After reaching the Ministry of Health, the proposed investment project is merely transmitted to the Ministry of Finance.
- Investment appropriations are allocated to the wilayas in lump sums.

The Sector strategy

8.28 **Despite multiple efforts developed by health authorities to draft partial strategies, it is only in October 2006 that the ministry of health put together a comprehensive document that defines priorities for the entire health sector**. A previous useful document is the draft Health Bill (*Avant projet de loi sanitaire*), which was prepared in 2003.[152] The preamble describes how the context has changed since the 1985 Health Act and why reforms are called for. It states the main objectives of the proposed reforms and the measures contained in the law (Box 8.1). It provides an excellent starting point and could be strengthened. Afterwards, a comprehensive strategy is approved on October 7th 2006 (National Health Policy, Ministry of health, 2006).

Box 8.1 Content of the Draft Heath Bill (February 2003)

The preamble to the bill stresses the need to adapt the health system to the new challenges—in particular, the epidemiological and demographic transitions and increasing demands from the population for a better protection and improved quality of care. It details the principles guiding the bill, which mirrors the main objectives of the health system—namely,

- universality and equality of access to health care.
- solidarity, equity and continuity.
- rational use of care and health facilities.
- decentralization and intersectoriality.
- evaluation and control.

Several measures are proposed to address the new challenges and meet these objectives.

1. Create a National Health Council in charge of defining public health priorities and preparing reports on the health status of the population.
2. Introduce a set of measures such as free screening and treatment for noncommunicable diseases.
3. Devise specific health programs for prioritized categories such as mothers and children, women, teenagers, elderly people, and poor people.
4. Decentralize the health system with the creation of health regions, regional health agencies, and regional health care delivery plans.
5. Integrate the private sector in government policy by submitting private providers to the same general rules as public institutions and holding them to contracts with the Ministry of Health as conditions for operation.
6. Develop information systems at every level of the health sector.
7. Create an agency for the accreditation and evaluation of heath services.
8. Grant new status to public health institutions to allow them greater autonomy.
9. Obligate public hospitals to contract with the regional health agencies in order to qualify for government funding.
10. Prepare national health accounts on an annual basis.

8.29 **A major effort is being made to gather data and analyze the health care system**. The Ministry of Health publishes an annual statistics report providing data on system resources and their utilization. Entitled "The Health of Algerians" (*La santé des Algériennes et des Algériens*), the document provides a yearly snapshot of the state of public health and of the health care system. The

[151] The first draft was revised without major modifications. However, the future of this bill appears uncertain.

[152] The rapid finalization of the strategy might be an indirect fortunate outcome of the preliminary discussions between the Review and the ministry's authorities during the seminar of July 2006. At that stage, the authorities had already announced its preparations that led to its urgent finalization.

"health map" was partly updated in 2005. The report on hospital reform, which has not yet been published, analyzes and proposes a number of particularly useful reforms. National health accounts (NHA) were published for the first time in 2003. This is an exercise that should be updated regularly but, as the NHA report indicates, this will require provision of additional resources.

8.30 **But multiple gaps prevent the drafting of a sound strategy**. The health map does not include epidemiological data, so it is not possible to establish the linkage between institutions and facilities and public health needs. As of 2005, the health map shows data on private-sector capacities, but these are still not taken into account in projections. Finally, the standards applied for equipment—in particular, the number of beds per capita—have not been updated since 1980. They are ambitious and should be reexamined. Besides, the NHA contain no incidence analysis of health spending, thus it is not known whether improved health access has really benefited the most vulnerable population groups. Finally, there is very little information on the activity of health institutions and on the quality of the care that they provide.

8.31 **Data are not widely disseminated**. It appears that some documents are known and used only by the offices that prepare them, rather than serving to guide the overall activity of the Ministry of Health (for example, in the case of the health map). In the public health field, many thematic programs are defined based on the problems identified in the wilayas—for example, combating hospital-acquired infections, and the national tuberculosis campaign. Yet the link between these programs and their funding is not always made.

8.32 **Finally, most of these problems can be explained by inadequate resources in information systems and qualified personnel, both at the central and wilaya levels**. For example, the ministry's planning directorate has only one information technology expert and one statistician on staff, far too few to computerize the system and collect and exploit data.

D. OVERALL PUBLIC EXPENDITURE PATTERNS

Expenditure trends[153]

8.33 **The overall level of health funding is relatively low**. Health expenditure rose from DA 106 billion in 1998 to DA 192 billion in 2002, an increase of 81 percent (Table 8.1). The significance of this increase however must be viewed in context: as a proportion of GDP, health spending rose only from 3.8 percent to 4.3 percent during this period; and as a proportion of NHGDP, it increased from 4.9 percent to 6.3 percent. The level of total health expenditure is thus relatively low in comparison to other countries with similar income levels (Table 8.2).

[153] The figures used in this section are taken from the WDI (2005). Algeria compiled National Health Accounts (NHA) for the first time in 2003. That report however covers only the years 2000 and 2001 and does not allow for longer-term comparisons of total health spending or of the public-private split. Use of the *WDI* data also facilitates international comparisons. In the remainder of this report, the more detailed Algerian data are generally used for more in-depth analysis of the distribution, efficiency, and equity of public health spending.

Table 8.1 Health Expenditure Trends, 1998–2002 (% of GDP unless otherwise noted)

	1998	1999	2000	2001	2002
Health expenditure (MMDA)	106	117	145	165	192
Health expenditure	3.8	3.7	3.6	3.9	4.3
Private health expenditure	1.3	1.2	1.1	1	1.1
Public health expenditure	2.5	2.5	2.5	2.9	3.2
Memo: GDP (MMDA)	2,782	3,168	4,023	4,236	4,455

Source: WDI 2005
Note: MMDA equals billions of dinars.

Table 8.2 International Health Expenditure Comparisons (2002 data)

Country	Per capita GDP (US$)	Health expenditure per capita (US$)	Health expenditure per capita (in 2002 US$ PPP)	Public health expenditure (% GDP)	Private health expenditure (% GDP)	Total health expenditure (% GDP)
Algeria	1,823	77	249	3.2	1.1	4.3
Egypt	1,600	59	174	1.8	3.1	4.9
Iran	1,630	104	340	2.9	3.1	6.0
Jordan	1,796	165	375	4.3	5.0	9.3
Morocco	1,234	55	172	1.5	3.1	4.6
Tunisia	2,122	126	396	2.9	2.9	5.8
MENA Region	1,789	80	n.a.	2.5	2.9	5.4
Middle-income countries	1,829	107	n.a.	2.9	3.1	6.0
Lower-middle-income countries	1,324	75	n.a.	2.5	3.3	5.8

Source: World Development Indicators 2005
Note: Not available is indicated by *n.a.*

8.34 **Algeria faces high health financing needs that require strong efforts to control expenditures and reforms that generate fiscal space.** According to Bank estimates, the demographic transition alone will require health spending to rise by about 60 percent in real terms between 2000 and 2020 (Figure 8.6)[154]. But other factors will also be in play:

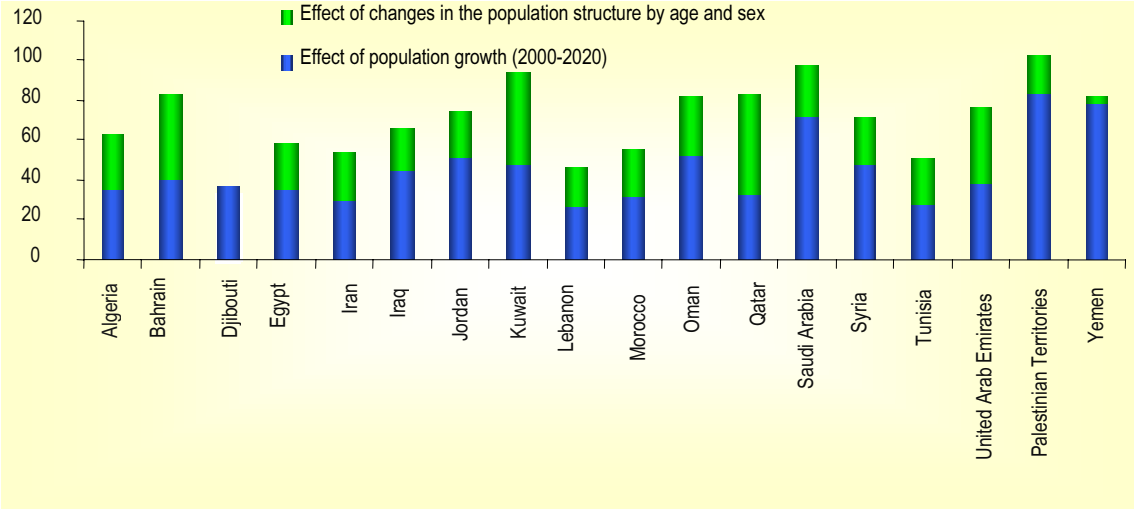
- The epidemiological transition is under way. Algeria will face significant costs as the proportion of chronic illnesses rises, while at the same time it will need to continue the fight against communicable diseases such as tuberculosis.
- Medical progress to meet public expectations demands costly new technologies and pharmaceuticals. For example, 3,000 drugs in various formats are now being dispensed at hospitals or are eligible for reimbursement when sold to outpatients. France meanwhile

[154] This estimate assumes that per capita health expenditure by age and by sex remains constant. Since data on health expenditure by age and by sex are generally unavailable for low- and middle-income countries, the weighting used is for the United States. As a result, the impact of age could be overestimated, recognizing the very high level of technology and resources in the United States that are devoted preponderantly to older population cohorts.

reimburses outpatient purchases of 6,057 drugs in all formats (another 2,804 are registered but not reimbursed), and 5,677 are dispensed through hospitals.

- Health professionals in the public sector are demanding higher salaries in line with private-sector remuneration. If the salary trend of recent years continues, this could further impact public expenditure (see the analysis of operating expenditure in Table 8.6).
- Finally, the social security system reimburses private medical treatment based on rates unrevised since 1987, artificially depressing public expenditures. The reimbursable charge for consultation with a general practitioner is DA 50, while the patient is actually billed around DA 400. A visit to a medical specialist is reimbursable for DA 100, although the patient must pay DA 700. These rates are being revised, which could boost not only public health spending but overall spending if, as is likely, more-generous reimbursements increase the number of privately performed procedures.

Figure 8.6 Impact of Future Demographic Changes on Health Expenditure in the MENA Region



Source: World Bank, 2002b.

Sources of financing

8.35 **The distribution of health financing reveals a high percentage of public expenditure (the state plus Social Security) and a very low percentage of private expenditure**. An estimate was completed during preparation of the national health accounts for 2001 (Table 8.3).[155] In 2001, the public share of expenditure stood at 74 percent, versus 26 percent for private expenditure. For the Middle East and North Africa region, these figures were 46 percent and 54 percent respectively, and were 48 percent and 52 percent for middle-income countries (*WDI* 2005). Although revealing, these figures need qualification.[156] The social security system is the main source of public financing. It provided 41.6 percent of health sector resources versus 33 percent from the budget. However, this too

[155] Beyond 2001, the data available to us for interpretation are much more detailed for the "major funding sources" (Ministry of Health, and Social Security) than for the other sources (other ministries than Health, and households).

[156] Private expenditure relates primarily to expenses from private care providers. It is especially difficult to find reliable figures, however, because the government does not collect any systematic data on this activity. Generally speaking, the private sector is not well understood by the authorities and is subject to little regulation. The private expenditure share may therefore be understated in official statistics. One remedy would be to conduct regular surveys of household health outlays. The National Health Account (NHA) report, published in May 2003, also recommended that the National Statistics Office surveys this issue.

requires a caveat. If one looks at care and prevention activities and excludes cash payments financed by the social security system (sickness allowances, disability pensions), the situation becomes more balanced: the state's portion would be 33 percent of the total versus 30 percent by Social Security.

Tableau 8.3 Sources of Health System Funding, 2001

	Expenditures	% total	% GDP	% NH GDP
Budget				
Ministry of Health (operating budget)	43.9	25.2%	1.0%	1.56%
Other ministries' operating budgets	6.9	4.0%	0.2%	0.24%
Total operating contributions	*50.8*	*29.2%*	*1.2%*	1.80%
Ministry of Health (capital budget)	5.95	3.4%	0.14%	0.21%
Other ministries (capital budgets)	0.6	0.3%	0.01%	0.02%
Total capital contributions	*6.6*	*3.8%*	*0.15%*	0.23%
TOTAL BUDGET	*57.37*	*32.9%*	*1.35%*	2.04%
Social security	72.4	*41.6%*	*1.7%*	2.57%
Total public expenditures	129.75	74.5%	3.05%	4.61%
Private expenditure				
Mutuelles (insurance cooperatives)	1.96	1.1%	0.05%	0.07%
Enterprises	1.90	1.1%	0.04%	0.07%
Private sector investment	5.21	3.0%	0.1%	0.18%
Households	35.15	20.2%	0.8%	1.25%
Total private expenditures	44.22	25.4%	1.04%	1.57%
International cooperation	0.2	0.1%	0%	0%
Total sources	174.18	100%	4.09%	6%

Source: National Health Accounts, May 2003.
Note: Expenditures are in billions of dinars.

8.36 **The bulk of budgetary health sector funding—87 percent in 2001—comes from the Ministry of Health.** Other ministries also contribute. The Ministry of Defense funds military hospitals; the Ministry of Higher Education and Research covers the salaries of university hospital physicians; the Ministry of Education and the Ministry of Youth and Sports conduct prevention activities; while other ministries finance health facilities for particular population groups. Nonetheless, no available public document traces accurately and in detail the state effort in the health sector.[157]

8.37 **The Health Ministry expenditure share of the state's budget is low.** The share of total recurrent spending varied between 3.9 percent in 1996 and 5.2 percent in 2005. Data for capital spending are only available for 2001 and 2002. They reveal that the Health Ministry's share of total government capital spending for the two years was very low, at 2 percent and 1.2 percent respectively. Moreover, while investment in the health sector should rise significantly as a result of the five-year program 2005–09, the health sector's share is still only 2 percent (DA 85 billion of the initial PCSC total allocation of DA 4,202.7 billion). This is partially explained by the fact that health sector investments (except for a few big hospital projects) are by nature less costly than those in such sectors as transportation and housing.

[157] This issue is addressed only in the NHA, and the authors of that report lacked all the necessary information. They had to estimate health spending by the Ministry of Defense since the ministry did not provide precise financial data. This situation poses management and programming difficulties, and could even create problems coordinating operations among the various ministries. It would be desirable in the future to prepare an annual synthesis summarizing all state financing of the health sector.

8.38 **For its part, the social security system's health care spending has recently increased sharply**. It increased by 70 percent between 2000 and 2004 (Table 8.4). These funds come essentially from the CNAS, which accounted for nearly 96.5 percent of the total in 2004, versus 3.5 percent for the CASNOS.

Table 8.4 Social Security System Health Outlays (executed expenditures)

	2000	2001	2002	2003	2004	
CNAS	45.33	49.33	57.59	67.43	77.12	
Trend n+1 /n (%)		*8.8*	*16.7*	*17.1*	*14.4*	
CASNOS	1.17	1.47	1.63	2.18	2.89	
Trend n+1 /n (%)		*25.6*	*10.9*	*33.7*	*32.6*	
Total	46.50	50.80	59.22	69.61	80.01	
Trend n+1 /n (%)		*9.2*	*16.6*	*17.5*	*14.9*	

Source: Ministry of Labor and Social Security
Note: Expenditures are in billions of dinars.

8.39 **It is unlikely that social security resources devoted to the health system can continue to rise over the medium term at the same pace as in recent years.** The social security system is laboring under a number of constraints:

- Tax evasion is widespread in Algeria, although no studies accurately gauge the scope of underreporting and nonreporting of income. Tax evasion primarily affects the CASNOS, which looks after non-wage earners, although the CNAS may also be affected, particularly by underreporting. During the review of public social expenditure in 2002, it was estimated that only 20 percent of persons who should be affiliated with the CASNOS actually were. The MOL estimates that only 450,000 contributors are up-to-date in their contributions, out of 1.2 million surveyed. Thus, tens of billions of dinars escape the social security system. This explains why the CASNOS is unable to contribute to hospital financing despite legal stipulations to do so. The scope of tax evasion also creates problems in fairness since those who do not pay their contributions are treated the same as those who do, at least in the public sector. Except for a few pilot hospitals, public health care facilities generally do not check whether patients being admitted are up-to-date in their contributions.
- Beyond this phenomenon of "social evasion," high unemployment severely curtails social security system funding.
- Moreover, the public pension system has nearly always been in deficit since the early 1990s (the deficit stood at DA 6.35 billion in 2004), primarily because contributions have not kept pace with benefit provisions at a time when dependency ratios are rising.[158]
- Finally, the contribution rate of 34.5 percent to the social security system as a whole is particularly high. Increasing it further without reducing employment is unlikely, and is difficult to envision since the unemployment rate is already considerable.

8.40 **The sharing financing arrangement between the state and the social security does not work satisfactorily.** The 1992 budget law states that the financing of public health facilities should be shared "on the basis of contractual relationships between the social security system and the Health Ministry.**"** The details of such contracts are to be established by regulation. Indeed, the sharing formula in effect since the 1994 Budget Act, and reaffirmed in each successive budget act, is clear: the

[158] For an analysis of this issue, see World Bank (2002a).

state must finance "expenses for prevention, training, medical research, and care provided to indigent persons without social insurance." The social security system is supposed to cover "the medical costs of social insurees and their eligible dependents." Finally, policy also requires that spending on indigent persons be financed from budget appropriations of the Ministry of Employment and National Solidarity. Each year the ministry is to use these appropriations to finance care to indigent persons by the MOHPR.[159]

8.41 **In practice, however, these legal provisions have never been applied**. Each year the Ministry of Finance sets a flat social security contribution that takes no account of the actual costs incurred by health institutions in caring for social insurance patients, but essentially reflects the views of the hospitals. This explains why there have been significant changes over time that bear no relation to the number of persons covered by the two sources: Between 1980 and 2005, the state contribution has increased from 49 to 65 percent of the total; while the social security contribution has decreased from 46 to 34 percent, with the remainder comprised of revenues from user fees (see Table A.7.5 for the full 25-year trend). Finally, the financial sharing arrangement is blurred even more by the fact that a lump-sum payment from the state covers a portion of the costs of indigent patients affiliated to the CNAS.

8.42 **Delays in contracting health services damage the health care financing system.** On one hand, the government is unaware whether it is subsidizing the social security system and, if so, by how much. On the other hand, both the government and the social security system behave as "blind buyers" of health care. Thus there is no real separation between care payer and care supplier that might encourage health institutions to improve service efficiency and quality. A direct consequence is that hospitals have no incentive to calculate unit delivery costs for health services, which deprives them and the Ministry of Health of a very useful management tool. Finally, this situation generates tensions among the ministries of labor and social security, finance, and health.

8.43 **Efforts to introduce health service contracting face a number of obstacles**. The lack of up-to-date records makes it impossible to identify indigents and social insurance holders accurately. Even if this could be done, one would have to provide different health cards to each person in these two groups in order to monitor the costs incurred by public health facilities for each patient, and to define how to set rates for invoicing those costs to the different funding sources. The health and labor ministries are still discussing the latter point. The Ministry of Health favors a method based on the "average daily cost," while the Ministry of Labor and Social Security is calling for a diagnosis-related group system. In fact, the Ministry of Health wants to avoid a method so complicated that hospitals cannot apply it for lack of technical means (computerization) and human resources. The Ministry of Labor and Social Security, on the other hand, wants a method that would spare it the costs of inefficiencies in certain hospitals. It would therefore prefer to define "norms" as the basis for invoicing. Whatever method is finally chosen, implementation of contracting will be a major managerial improvement of an Algerian health system in which unit costs are generally unassessed.

8.44 **Private contributions to financing public sector health services are low.** The Algerian health system is still deeply influenced by the doctrine of free care. This principle was enshrined in the Constitution until 1996. The 1996 Constitution drops reference to free health care.[160] On the other hand, the law of February 17, 1985, still in force, contains such references (Articles 20 and 22) even if, paradoxically, it also authorizes charging user fees (Article 231). Quite apart from these legal

[159] For brievity, the Ministry of Health, Population, and Hospital Reform is referred to in the remainder of this report as simply the "Ministry of Health" or the "Health Ministry."

[160] Article 54 merely declares, "All citizens are entitled to protection of their health. The state is responsible for prevention and for combating epidemic and endemic diseases."

considerations, the principle of free public sector health care is deeply anchored in the minds of patients and health system workers alike. Thus, public sector patients are expected to make only modest contributions. Every person treated in a public institution is supposed to pay a user fee for each procedure. This fee is set at rates that were determined in 1987 for social health insurance reimbursements in the private sector. They are very low in comparison to the real cost of care, and there are numerous legal exceptions (chronic illnesses, children, the indigent) as well as nonlegal loopholes (uncharged amounts when the patient has friends among hospital staff, for example) whereby patients avoid payments. Hence, self-generated revenues still represent a very low portion (1.5 percent in 2003) of the recurrent budget of public health care institutions (Table A.7.6).

8.45 **To increase funding for the public sector, a January 2002 decree reassessed mandatory user fees, but its provisions have gone unenforced in the face of stiff public pressure.** The planned increases were very significant (contributions were to rise from DA 50 to DA 250 for a consultation with a general practitioner, and from DA 100 to DA 450 for a visit to a specialist). It also appears that the decree was not adequately vetted with health system users or health professionals. This bad experience has made the Algerian authorities very cautious about asking patients to pay an increased share of health costs.

8.46 **Private sector expenditures on private health services are of three kinds.** The first category is spending by 35 *mutuelles* (cooperatives), with a total of 1.6 million members. Mutuelles supplement benefits from the sickness funds up to 100 percent of the regulatory rate. Second are the health expenditures (financing medical and occupational health centers) made by large corporations for their staff. Finally, the bulk of such spending comes from outlays by households for private-sector care, totaling about 38.4 billion dinars (Table A.7.7). Lack of systematic reporting means that little is known about this spending. However, such spending likely has spiked in recent years, given the accelerated proliferation of private service providers. Additionally, international assistance to the health sector traditionally has been low: US$2.7 million in 2001.[161] It is targeted exclusively at certain national programs, such as the AIDS campaign.

The breakdown between recurrent and capital expenditures

8.47 **Capital spending nationally, taking into account private spending, accounts for only a thin slice of total health outlays.** The 2003 NHA estimated that capital spending was barely 6.7 percent of total health spending in 2001. According to the same source, the private sector financed 45 percent of health sector investments in 2001. These figures need to be taken cautiously, yet they highlight the need to include the private sector in health planning exercises and to regulate its activity. Besides, assessments of private sector investments include only new investments, and exclude the renovation and replacement of existing equipment or the rehabilitation of facilities. It is quite possible then that these figures may underestimate the weight of the private sector. Finally, since 2001 State investment has risen sharply, which might tend to reduce the weight of the private sector. Nevertheless, private clinics are growing rapidly and it is likely that private investments have also continued their growth.

8.48 **At the central government level the Ministry of Health is the major player in health investments**. Data for 2001 reveal that public investment in health, measured in terms of appropriations (*crédits de paiement*), represented 11 percent of total state health spending, and 91 percent of it was allocated to the budget of the Ministry of Health, while the residual was assigned to other ministries (Table 8.3).

[161] Assistance provided by the World Health Organization, the United Nations Fund for Population Activities, and UNICEF.

8.49 **To address growing needs, investment authorizations have risen sharply since 1999 (Table 8.5)**. For most of the 1990s, fiscal adjustment and the difficult circumstances in the country reduced public health investments, negatively impacting infrastructure and the quantity and quality of medical facilities. Investments have recovered since 1999 as health has become a priority sector, especially under the PSRE in 2001 and PCSC in 2005 (Box 8.2).

Table 8.5 Health Ministry Program Authorizations, 1998–2007 (MDAs)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Program authorizations	1465	2777	2966	12517	13254	14799	12349	16250	37440	27810
Trend *n*+1/*n* (%)	na	90	7	322	6	12	-17	32	130	-26

Source: Ministry of Health

Box 8.2 Health Sector Investments under the PCSC

At 81.5 billion dinars, health sector appropriations represent barely 2 percent of the PCSC envelope. Less than half of the 2005–07 program authorizations are for construction of new facilities, while the majority is devoted to modernizing existing institutions (rehabilitation, acquisition of medical equipment). However, the amount of program authorizations is significant when compared to previous years: The total for 2006 and 2007 is almost as much as for the previous five years. Furthermore, the program includes large-scale projects for a total amount of 30 billion dinars such as the construction of seven hospitals, four cancer centers, five geriatric centers, 50 polyclinics, and 100 maternity centers, and the procurement of medical equipment.

Hence there is a high risk that PCSC implementation will exacerbate weaknesses in the management of investment projects in the health sector.

Investment planning is done on a relatively empirical basis. The overall choice of projects for PCSC financing reflects an underlying logic: to equalize the beds-per-capita ratio nationwide as far as possible, and to create specialized institutions in sectors where needs are most pressing (in particular cancer, orthopedics, geriatrics, and psychiatric care). But no in-depth analysis has been conducted of the abundant available data to justify these choices in greater detail.

In addition, the Health Ministry's investment planning has many shortcomings. First, to speed up completion, many projects start without a proper feasibility study. Second, no consulting firms in Algeria specialize in assisting the government plan and execute big investments in hospital projects. Third, since very few building contractors specialize in that field, the biding process is usually unsuccessful. Finally, health departments at the wilaya level and the Health Ministry itself lack enough trained staff to design important projects, assess their costs, monitor their execution, and evaluate their quality and impact upon completion. All these deficiencies may create severe problems when executing the PCSC. Therefore big investment projects will need strong capacity building to be firmly assessed, coordinated, and managed by the Health Ministry and the wilayas.

Source : Bank Staff

8.50 **But attention should be paid to notable shortcomings in the investment process**. In addition to the difficulties noted in Box 8.2, the lack of a health map as a planning tool, and previously cited problems inherent in the budget process, the following areas also need to be addressed:

- No one has a detailed overview about sector investments being made by different institutions. The Health Ministry closely tracks "centralized" investments, but it has no oversight of deconcentrated investments or of projects financed by the social security system. No regular reporting on investments by other ministries is available either. This is likely to create problems in coordinating project implementation.

- Maintenance regimes are deficient, resulting in the very high rates of equipment failure reported by health facilities. About 24 percent of ultrasound scanners, 34 percent of endoscopes, and 23 percent of incinerators were out of service in 2003.[162] Medical equipment that breaks down is generally not repaired. If funds are available, broken equipment is replaced with brand-new purchases. There are several reasons for this phenomenon: (*a*) maintenance is not a priority in many hospitals; (*b*) no effective procurement policy exists; (*c*) Algeria has a shortage of technicians and spare medical parts. To address this situation, the Health Ministry ordered, as of September 1, 2005, that equipment purchase contracts must contain clauses stipulating suppliers' obligations for maintenance (for example, a commitment to provide skilled technicians in Algeria, and a minimum warranty period for servicing and repairs).
- Hospitals do not use depreciation accounting. It is, therefore, difficult to anticipate their investment needs, and it is impossible to draw up an accurate balance sheet for the hospitals.

8.51 **Meanwhile, recurrent expenditures have decreased continually in terms of GDP during the last decade**. Recurrent expenditures are classified under nine categories in Algeria's central government budget (Table 8.6). From 1994 to 1999, inflation alone explains the rise in expenditures in nominal terms: while the inflation rate was a high 75 percent, recurrent outlays increased by 78 percent. By contrast, from 1999 to 2004 inflation was relatively subdued, expenditure increases were driven essentially by the needs of the health sector: recurrent expenditure rose by 76 percent, while prices increased by 13 percent over that period. The main items responsible for the increase were payroll costs, drugs, and medical materials, which together accounted for 80 percent of the increase recorded over that time.[163] In GDP terms, however, recurrent expenditure diminished from 2 percent in 1994 to 1.6 percent in 2004 (in terms of NHGDP the fall is slighter from 2.6 to 2.5 percent).

8.52 **Growth in payroll costs is under control.** Between 1994 and 2004, payroll costs as a proportion of total operating expenditures declined by 10 percent, but at 61 percent they remained, by far, the biggest expenditure item. This ratio, however, is not particularly high in international terms (for example, France's 73 percent figure in 2004 and Morocco's 76 percent in 2003). The recent decline can be explained by the sharp increases in other expenditure items (particularly drugs) and by changes in staffing levels and salaries. Staffing levels increased steadily but slowly during the past 15 years: 9.4 percent between 1991 and 2003 (Table 8.7).

[162] See *Statistiques sanitaires – Année 2003*, Ministry of Health.

[163] Expenditure increases were not concentrated at any particular level of care. The distribution of spending remained relatively stable for *secteurs sanitaires* delivering primary and secondary care on the one hand, and CHU and EHS delivering secondary and tertiary care on the other hand (see Table A.7.10).

Table 8.6 Operating Expenditures (in millions of current dinars and %)

Expenditure category	1994				1999				2004				10-year Trend in nominal terms (%)
	Amount	%total	%GDP	% NH GDP	Amount	%total	%GDP	% NH GDP	Amount	%total	%GDP	% NH GDP	
Personnel	21,503	70.5	1.44	1.86	36,313	66.9	1.12	1.68	58,057	60.6	0.95	1.53	170
Training	910	3.0	0.06	0.08	1,338	2.5	0.04	0.06	2,187	2.3	0.04	0.06	140
Food	700	2.3	0.05	0.06	938	1.7	0.03	0.04	1,828	1.9	0.03	0.05	161
Drugs	4,057	13.3	0.27	0.35	9,258	17.1	0.29	0.43	17,633	18.4	0.29	0.46	335
Prevention	470	1.5	0.03	0.04	1,161	2.1	0.04	0.05	2,609	2.7	0.04	0.07	455
Medical materials	823	2.7	0.06	0.07	1,861	3.4	0.06	0.09	4,953	5.2	0.08	0.13	502
Maintenance	450	1.5	0.03	0.04	800	1.5	0.02	0.04	2,730	2.9	0.04	0.07	507
Social services	370	1.2	0.02	0.03	609	1.1	0.02	0.03	1,037	1.1	0.02	0.03	180
Other	1,200	3.9	0.08	0.10	1,998	3.7	0.06	0.09	4,701	4.9	0.08	0.12	292
Medical research	30	0.1	0.002	0.003	20	0.04	0.001	0.00	40	0.04	0	0.00	33
Total	30,513	100	2.05	2.64	54,296	100	1.68	2.52	95,775	100	1.56	2.52	214

Source: Ministry of Health

Therefore, the ratio of public health institutional staff per 1,000 inhabitants declined over the period. The distribution of staff among major personnel categories is stable and appears relatively balanced. In particular, the proportion of administrative and technical personnel—34 percent—is at an acceptable level (by way of comparison, these categories account for about 29 percent of public hospital staff in France, where many tasks such as food and laundry services are outsourced; which is not the case in Algeria).

Table 8.7 Public Sector Staffing Levels

	1991		1996		2000		2003	
	Number	% total	Number	% total	Number	% total	Number	% total
Medical personnel	24,365	15.3	24,286	14.6	26,734	15.7	29,024	16.7
Paramedical personnel	83,362	52.5	84,065	50.4	85,717	50.3	86,205	49.6
Administrative, technical, and support personnel	51,036	32.2	58,514	35.0	57,793	34.0	58,478	34.0
Total	158,763	100.0	166,865	100.0	170,244	100.0	173,707	100.0

Source : MOH (*Sante des Algériens 2003* for medical personnel and *Annuaires Statistiques* for other categories of personnel)

8.53 **Salary increases have been very modest during the past 15 years**. The purchasing power of health institution personnel deteriorated 1994–99: payroll costs rose by 69 percent, while inflation was up by 75 percent, and employment in health care facilities edged up. Real wages recovered somewhat 1999–2004: personnel costs rose by 60 percent, while inflation was 12.6 percent, and employment rose by about 5 percent. Some recent changes by grade can be noted in one specialized hospital, where salaries rose 44 percent for a professor, 49 percent for a specialist, and 34 percent for a state-licensed nurse between 2002 and 2005.

8.54 **Despite this recent increase, primarily due to the introduction of bonuses in 2002 for certain personnel categories, salaries in public institutions remain low, particularly in comparison with the private sector.** To compensate for their low official salaries, many public sector physicians have taken advantage of the law of August 19, 1998, to pursue "supplementary practice" in the private sector. Yet this provision does little to improve general living standards for health care personnel since only the "corps of university hospital specialists" is eligible. More importantly, public hospital performance is being disrupted as many eligible specialists devote more than the one day per week mandated by law to their private practices, and some physicians begin to steer their better-off patients toward the private sector. No large-scale study has looked at these trends, but examples are cited anecdotally in the Algerian press and in official government documents. The 2003 report on *The Health of Algerians* notes that "since the introduction of legislation on supplementary practice, activity in public hospitals has tended to decline considerably after 12 noon."

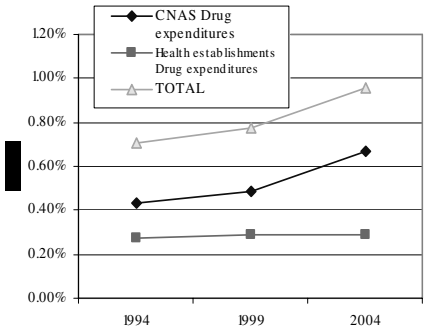
8.55 **For this reason, control over operating expenses does not necessarily signify improved efficiency in health care facilities**. Comparison between expenditures and the quantity and quality of care provided shows the system's performance to be relatively unsatisfactory.

8.56 **Drug costs have risen sharply during the past 10 years**. Drug costs are the second-largest operating expenditure, accounting for 18.4 percent of total outlays. Reasons for such growth mirror those noted for insurance-reimbursed outpatient drug sales (see Box 8.3).

Box 8.3 The Spike in Public Sector Drug Costs

In recent years, there has been a significant rise in drug expenditures by the government and the social security system (Figure 8.7). Reimbursements by the CNAS rose from 0.4 percent to 0.7 percent of GDP between 1994 and 2004 (in terms of NHGDP from 0.56 percent to 1.08 percent). Costs of hospital-dispensed drugs rose from 0.27 percent of GDP to 0.29 percent over the same period (i.e. from 0.35 percent to 0.46 percent of NHGDP). Drug outlays per capita, however, remain very low: around US$28 annually per person in 2004. Consequently there is potential for further increases, given the progress of chronic illnesses that are costly to treat, the high degree of public drug coverage in Algeria, and the likely introduction of new specialty medications dispensed in hospitals or reimbursed by Social Security.

Figure 8.7: Drug Expenditures, % GDP



Sources: MoHPR, MoL

Outpatient drug sales are also rising sharply and placing the CNAS and CASNOS sickness funds under stress. The lack of a precise information system precludes detailed analysis of expenditure trends, but this increase can probably be explained by several factors: (*a*) the epidemiological transition toward higher incidence of chronic diseases, (*b*) higher costs of new drugs (anticholesterol and antihypertension medications, proton pump inhibitors, etc.), (*c*) the high proportion of drugs covered by social health insurance; (*d*) an inadequate generic drug policy, (*e*) the lack of a prescription control policy, (*f*) the transfer of hospital prescriptions to pharmacy sales, and (*g*) fraudulent claims for reimbursement. This upward trend has been slowed, however, by measures to restrict the marketing of innovative drugs: the registration of new drugs was suspended for several years, and is now slowly picking up. In addition, import restrictions have also caused stocks of many drugs to run out.

In hospitals, drug costs jumped by a factor of 20 in 14 years, from DA 800 million in 1984 to DA 17.6 billion in 2004, with wide fluctuations year to year (with annual increases ranging from 10 percent to 100 percent). As with outpatient sales, these fluctuations are difficult to analyze because there is no effective information system. However, plausible explanations would include some of the same factors listed above: (*a*) the epidemiological transition, (*b*) more-expensive new drugs (cancer medicines, blood derivatives, drugs developed through biotechnology, and so forth.), and (*c*) an inadequate generic drug policy. Other factors may include (*d*) no procurement policy, (*e*) inadequate management of drug usage, (*f*) a decline in the numbers of pharmacists, and (*g*) pilferage.

Social security outlays.[164] There has been a sharp increase in outlays by the sickness funds in recent years, both in nominal terms and GDP terms (Table 8.8). The CNAS accounts for 96 percent of all Social Security health spending. Several points should be noted:

- Drug outlays alone account for 67 percent of the increase recorded by the CNAS between 2000 and 2004. The rising trend in pharmaceutical expenses dates back much earlier, rising by a factor of 30 between 1991 and 2004 (see Table 8.8 for an analysis of expenditure trends). These outlays today represent 53 percent of health spending by the CNAS, and 0.67 percent of GDP compared to 0.5 percent in 2000 (i.e. 0.8 percent and 1.08 percent of NHGDP).
- The other significant item in CNAS outlays is the hospital grant (*forfait hospitalier*), which represented 35 percent of total health spending in 2004. It more than tripled between 1989 and 2004, to meet rising institutional needs and to prevent a spike in the state contribution (see 2.2 for an analysis of this issue). However, in GDP (and NHGDP) terms, the contribution grant has decreased during the past four years.

[164] Data for the Social Security system are less comprehensive than those for the State. No data were available on health expenditures by the insurance funds prior to 2000, or on the trend in the numbers of social insurees, or on the revenues and profit/deficit of the funds.

- The medical procedures item is relatively stable, reflecting their very low reimbursement rates. Efforts now under way to revise the 1987 tariffs could, however, increase these expenditures.
- Finally, expenditures for transfer for treatment abroad remains very high, totaling DA 3.13 billion in 2002 and 2.6 billion in 2003. The final figure for 2004 was apparently higher than expected, at around DA 3.8 billion[165], compared to the 2.1 billion previously forecast. Steps have been taken to reduce this expenditure item. In particular, the number of contracts with Algerian private hospitals has risen significantly in recent years (there were eight private cardiovascular surgery clinics under contract in 2004 compared to one in 2000, 36 private dialysis clinics in 2004 compared with 4 in 2000). Despite this, the number of patients treated abroad has not declined significantly (1,441 in 2000; 1,512 in 2002; 727 in the first half of 2004), and the unit cost of treatment has increased, causing a steady rise in outlays. The effort to reduce the cost of transfers should therefore be intensified by expanding the measures taken to date (increasing the number of contractual arrangements, reducing the number of illnesses that entitle patients to a transfer, diversifying host countries, and encouraging foreign medical teams to come to Algeria).

Table 8.8 Health Outlays by the Social Security Funds, 2000-2004

	2000	2001	2002	2003	2004
CNAS	**45.33**	**49.33**	**57.59**	**67.43**	**77.12**
% GDP	1.10%	1.16%	1.27%	1.28%	1.26%
% NH GDP	1.84%	1.75%	1.88%	1.99%	2.03%
Trend n+1/n		8.8%	16.7%	17.1%	14.4%
- medical procedures	**1.51**	**1.65**	**1.59**	**1.8**	**2**
Trend n+1 / n		9.3%	-3.6%	13.2%	11.1%
- pharmaceuticals	**19.67**	**22.77**	**25.54**	**33.33**	**41**
% GDP	0.48%	0.53%	0.56%	0.63%	0.67%
% NH GDP	0.80%	0.81%	0.83%	0.98%	1.08%
Trend n+1 / n	24.2%	15.8%	12.2%	30.5%	23.0%
- other in-kind benefits (fittings, spa treatments…)	**1.48**	**1.49**	**1.83**	**2.4**	**3**
Trend n+1 / n		0.7%	22.8%	31.1%	25.0%
- hospitals grant	**20.6**	**21.5**	**24**	**25**	**27.02**
% GDP	0.50%	0.50%	0.53%	0.47%	0.44%
% NH GDP	0.84%	0.76%	0.78%	0.74%	0.71%
Trend n+1 / n		4.4%	11.6%	4.2%	8.1%
- transfers for treatment abroad	**1.8**	**1.92**	**3.13**	**2.6**	**2.1**
Trend n+1 / n		6.7%	63.0%	-16.9%	-19.2%
- financing of institutions under contract	**0.274**	**0.0002**	**1.5**	**2.3**	**2**
Trend n+1 / n		-99.9%	*x7500*	53.3%	-13.0%
CASNOS	**1.17**	**1.47**	**1.63**	**2.18**	**2.89**
Trend n+1/n	44.4%	25.6%	10.9%	33.7%	32.6%
TOTAL	**46.5**	**50.8**	**59.22**	**69.61**	**80.01**
Trend n+1/n		9.2%	16.6%	17.5%	14.9%
GDP	4,123.5	4,260.8	4,546.1	5,264.3	6,126.7
NH GDP	2,464.3	2,816.9	3,069.1	3,391.1	3,797.4

Source : Ministry of Labor and Social Security

Notes: Figures in bold are in billions of dinars; figures and percentage for 2004 are estimates

[165] See the Statement by the Minister of Labor and Social Security to the Finance and Budget Committee of the People's National Assembly (APN) on October 27, 2005.

Expenditure efficiency

8.57 **It is very difficult to make an informed judgment on the efficiency of health expenditures, especially with the lack of data in Algeria on hospital activities and on health care quality**. Overall, Algeria's health indicators are positive for a country at its income level, while health spending—as a proportion of GDP—is on the low side. However, this observation must be tempered by the following caveats.

8.58 **The quality of health care seems far from optimal.** Studies conducted in two university hospitals in 1991 and 2000 reveal a high rate of in-hospital infections (16 percent), indicating internal deficiencies. Other indicators also suggest that the quality of care delivered in public institutions is inadequate: including shortages of drugs and operating facilities in some facilities, a high rate of malfunctioning medical equipment, and resentment and lack of motivation (leading to absenteeism) among health personnel because of low pay, and so forth.

8.59 **The various levels of health care are not being used properly**. The average length of stay in public institutions is satisfactory. However, bed occupancy rates are very low and have declined recently, dropping overall from 57 percent in 2000 to 50 percent in 2003. These rates are inadequate for the CHUs and the EHSs, but the situation is particularly critical in the *secteurs sanitaires* (local hospital) facilities, where the occupancy rate was 44 percent in 2003 (Table 8.9), compared to 50 percent in 2000. The number of medical consultations per capita in the public sector is also very low: 1.3 per person, including all public service providers, and 1.13 in the *secteurs sanitaires*. These figures seem to confirm that patients have little confidence in *secteurs sanitaires* s. It is clear that they prefer to turn directly to a CHU or EHS, or to the private sector, for consultations, which generates additional costs for the health system. The lack of qualified medical staff and a shortage of drugs and materials, especially in rural areas, would seem to be the underlying causes of this underutilization of *secteurs sanitaires* resources.

Table 8.9 Public Health Activities, 2003

	Beds	Admissions	Days of hospitalization	Consultations	Occupancy rate (%)	ALOS (days)
Secteurs sanitaires	32,970	1,343,828	5,255,761	37,237,607	44	3.9
EHS	5,961	117,988	1,422,469	1,111,688	65	12.1
CHU	12,375	429,242	2,757,099	4,120,792	61	6.4
Total	51,306	1,891,058	9,435,329	42,470,087	50	5.0

Source: Statistiques Sanitaires, Année 2003.
Note: Average length of stay (ALOS).

Expenditure equity

8.60 **Access to care is still subject to major inequalities by geographic zone**. Algerian authorities have made significant efforts to equip the entire country with health infrastructure. Thus, the ratio of beds per 1,000 inhabitants is higher than the national average in the Southwest region and close to the national average in the Southeast region (Table 8.10). However, there are still considerable variations from one wilaya to the other. For example, in the central region, Algiers has 2.89 beds per 1,000 inhabitants, while Medea has only 40 percent as many (1.17). Moreover, while rates in the South are broadly satisfactory, they mask the fact that people often live too far from health centers, most of which lack adequate transportation to bring treatment to the countryside. Finally, most of the new private clinics are located in the wealthier wilayas, which exacerbates hospitalization access inequality.

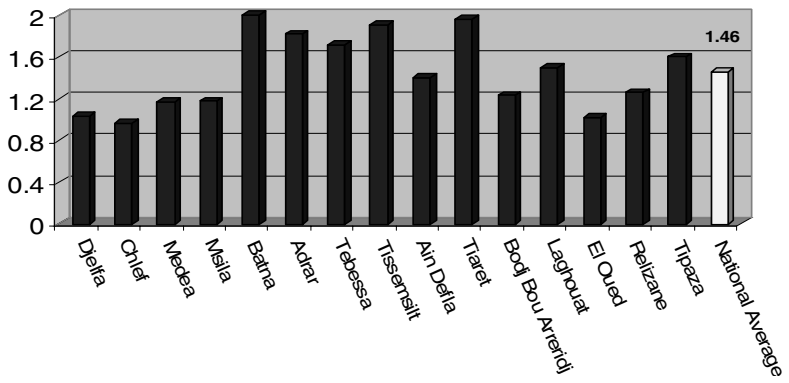
Table 8.10 Geographic Distribution of Health Care by Regions, 2004

	Population	Number of beds[a]	Number of physicians[b]	Beds/1,000	Physicians/ 1,000
Center	10,624,293	18,543	16,164	1.75	1.52
East	9,616,633	15,214	14,177	1.58	1.47
West	7,477,354	6,561	8,413	0.88	1.13
Southeast	2,610,160	3,431	2,102	1.31	0.81
Southwest	898,901	1,998	839	2.22	0.93
Total	31,227,341	45,747	41,695	1.46	1.34

Source: Health Map.
[a] Includes public-sector beds only; the number of private-sector beds, likely still low, is unknown.
[b] Public and private sector physicians.

8.61 **The most glaring inequalities occur, however, in the distribution of health professionals.** There are sharp discrepancies among regions: from 0.81 physicians per 1,000 inhabitants in the Southeast to 1.52, or nearly twice as many, in the Center. These gaps reflect physicians' reluctance to serve in rural or isolated regions, particularly in the South, and their preference to reside and tendency to be concentrated in the major cities. Even public sector physicians resist assignments in the South or Western regions. To address this situation, the Ministry of Health announced that it would not post positions in the northern part of the country for physicians graduating in 2005 who must fulfill their national service obligations. Nonetheless, and despite the reduced period of compulsory service and the supplementary bonuses being offered, many physicians, women in particular, have given up their practices rather than leave the big coastal cities. Correlating access to health care with the 2001 Health Map confirms that public health facilities (beds) are now present in the poorest wilayas (Figure 8.8),[166] but very few physicians choose to practice in them (Figure 8.9).

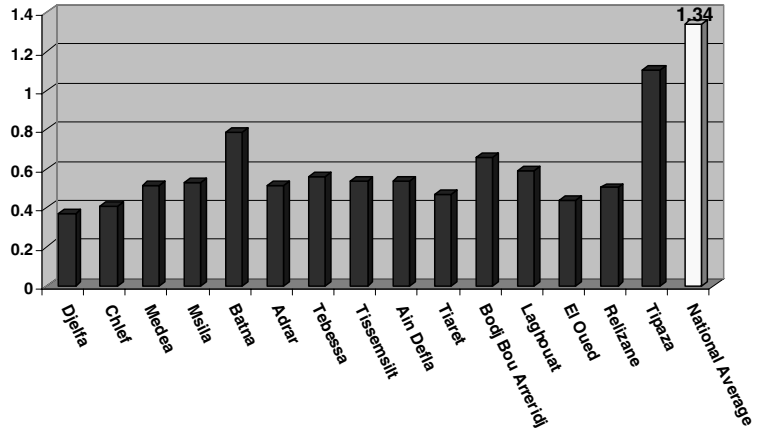
Figure 8.8 Number of Beds/1,000 Inhabitants in the "Poorest Wilayas," 2004



Source: MOL (Health Map), ONS (Poverty Map 2001).
Note: From left to right, in decreasing order (from the poorest to the "richest").

[166] The poorest wilayas are those that include most towns classified as "poor" in the four dimensions of the health map study: wealth, education, health, and housing.

Figure 8.9 Number of Physicians/1,000 Inhabitants in the "Poorest Wilayas," 2004



Source: MOL (Health Map), ONS (Poverty Map 2001).

8.62 **The rapid growth of the private sector, overcoming shortcomings in the public sector, is exacerbating inequalities in the quality of services**. Income is not an important factor in determining access to care in the public sector. On the contrary, health expenditures in the private sector are poorly covered by the social security system, because reimbursement rates are very low (see paragraph 8.34). Only the better-off population can afford private care. To prevent accentuating this tendency, either the quality of care in the public sector will have to be improved, or the conditions under which private medical services are covered by Social Security will have to be improved.

E. RECOMMENDATIONS

8.63 **The Algerian authorities are fully aware of the challenges facing the health system, but their concerns and desire to carry on reforms are only slowly translating into concrete measures**. Apart from the technical and budgetary issues that need to be addressed, the ministry has also suffered from severe leadership instability. There have been three successive health ministers since 2002, and each new minister needs time to become familiar with the ministry's affairs before being able to decide on reforms, especially in the absence of a sector strategy. This is why, with the exception of implementation of the National Health Accounts, most recommendations in the 2002 *Social Sector Public Expenditure Review* (World Bank 2002a) have not been implemented (Box 8.4). These recommendations are valid.

8.64 **An increase in nonoptimally allocated resources will not resolve the sectors' problems**. The problems with Algeria's health system are partially attributable to relatively inadequate resources. But shortcomings in the way the system is planned and managed play a major role. Therefore, it is essential to make progress on four fronts simultaneously.

On reinforcing the planning and management of the system

8.65 **The sector strategy is finished and it has to be strongly supported**. Several efforts are being implemented on (a) reorganizing the organigramme of the central administration; (b) introducing management change in 4 hospitals; (c) developing a new information system (intranet) between the ministry and the health establishments; and (d) opening hospital activities to private operators under the framework of private sector integration to a new national health system. A concerted approach, led by the highest authorities, to prepare this strategy would be preferred since consensus among all the principal players in the system is needed. To this end, a committee could be set up to prepare the strategy, chaired by the Health Ministry. It would include representatives of the ministry's main departments, as well as the other ministries involved (in particular Social Security, Finance, National Solidarity, Higher

Education). The strategy should strengthen planning and management capabilities, and it should be used to update the forward-planning aspect of the health map and to prepare health care delivery plans in each region.

Box 8.4 Progress in Implementing Policy Recommendations from the 2002 Social Sector Public Expenditure Review

1. Develop a health sector master plan that would determine the optimal size and function of the health care delivery system over the next decade — helping to rationalize the delivery system for the future needs of the Algerian population.

   Status of the reform: not implemented

2. Revise existing treatment norms for health facilities and personnel, as a function of a rational hierarchy of care based on the level of the facility.

   Status of the reform: not implemented

3. Develop and implement a contracting system between the Ministry of Health and CNAS that will allow the Ministry of Health to submit bills by medical act and by insured patient, instead of the current lump-sum transfer.

   Status of the reform: ongoing effort

4. Revise the reimbursement schedule for private health care — this schedule has not been updated since 1987 and is considerably below market prices.

   Status of the reform: ongoing effort

5. Maintain and reinforce access to a package of essential health care services — including preventive health care, contraception, and the most cost-effective curative services.

   Status of the reform: ongoing effort

6. Conduct an analysis of the pharmaceutical sector, rationalize drug consumption, and control expenditures for pharmaceuticals.

   Status of the reform: ongoing effort

7. Carry out a National Health Accounts (NHA) study. NHA provides information on the total (public and private) resources going into the health sector, their sources, and the types of services funded.

   Status of the reform: completed

The planning and management capacities should be strengthened.

- **At the central level, strengthen the human resources needed for managing the system** (information technology technicians, statisticians, actuaries, health economists). The Health Ministry needs to carry out its primary responsibilities for system planning and oversight, which implies designing a sectoral strategy, maintaining the overall financial sustainability of the system, and monitoring the performance of health institutions on the basis of agreed operational indicators.
- **Improve training for system managers**. Action is required on two fronts in particular. First the financial and managerial skills of institutional managers should be enhanced. This is essential if plans to increase the autonomy of health institutions are to be realized. Second, physicians' training needs to include management and health economics to build awareness of controlling costs and preparing doctors to run the service.
- **Develop information systems at all levels.** Links intranet and internet among health establishments, health directorates and the MOHPR just were put into place. The health system suffers from major information gaps. The following tools must be developed: (*a*) insuree/indigent central databases; and (b) management systems with data on service providers,

the demand for care and drugs, monitoring indicators measuring the quality of health care, the operational activity of health institutions, and medical supply costs.

- **Introduce an external institution for evaluating the activity of health institutions and the quality of care**. The creation of an independent agency to evaluate health facilities would be desirable to establish clear separation between evaluation and operational responsibilities. This agency could also be responsible for a system of accreditation for private hospitals.

On improving the institutional framework

8.66 **An enhanced institutional environment implies three main actions:**

- **Reorganize the central structure of the Health Ministry to promote greater policy consistency and improved coordination.** One possibility is to merge the various departments into two separate main branches: a "public health" branch and a "health institutions" branch. This way, there will be a main responsible for the two main tasks of the ministry, which would improve policy consistency on each of them. In the meantime, authorities have already reorganized and restructured the organigramme of the central administration.
- **Set up regional health agencies. Regional health agencies could be introduced to serve as local relay points for the central ministry in implementing health policies**. The central ministry would then be in charge of the overall management of the system, leaving regional bodies to implement its policies. Regional agencies should include representatives of the Ministry of Health and the Ministry of Labor and Social Security. They would have the following tasks: (a) to define and implement regional health care delivery plans; (b) to coordinate the activities of public and private health care facilities (contracting hospitals); and (c) to determine their resources according to well-defined criteria and accountability.
- **Make hospitals more autonomous.** The new status of the hospitals in Oran and Ain Témouchent (as well as 2 other) represents a positive development (see the presidential decree of August 3, 2003, for Oran, and the executive decree of November 30, 2005, for Ain Témouchent), and should be extended elsewhere once its reform would have produced tangible efficiency gains in these four hospitals. The new regime combines greater management autonomy with the obligation to establish business plans and to accept contractual objectives with the relevant health authority. Technical assistance based on external expertise could be helpful. Consideration should also be given to the arrangements under which hospital staff is paid, so that a portion of salaries will depend on performance. Such an initiative would improve morale among the more competent health professionals and managers.

On rationalizing health system usage

8.67 **A rationalized use of the different levels of care would:**

- **Reinforce the primary and secondary levels**. The local health centers and hospitals need to be revitalized to attract more patients. This includes assigning them more doctors, particularly specialists, and ensuring that facilities have the necessary medical equipment. Any solution will require new incentives (for example, higher bonuses paid to personnel willing to work in rural areas).
- **Develop a "gatekeeper" system**. This measure applies to two settings. First, when a patient is being treated in the private sector, the gatekeeper physician prevents needless referrals to specialists, reducing the financial burden placed on the social security system paying for such care. Second, to steer patients in the public sector to the most suitable level of care, a gatekeeper physician would examine patients at a health center or a polyclinic and handle relatively simple

complaints before authorizing treatment at a higher level. This keeps patients from seeking routine care directly from general hospitals. Exceptions for direct care would be made for medical emergencies.

8.68 **Consider a comprehensive approach to organizing and regulating health care, namely by taking into account the private sector.** Private health care providers should respect minimum standards of safety, quality care, and patient follow-up, as well as financial and accounting standards (transparency and accuracy in their bookkeeping). A useful step toward this goal would be to introduce procedures for accrediting health care providers and for specifying their rights and duties in contracts. Furthermore, regular inspection and supervision are essential for guaranteeing that private care providers respect the rules established at the time of accreditation or contracting. To improve systemic efficiency, private care should also be integrated into health map projections and regional planning. However, new private professionals should not sign up for the new system unless some tangible compensation offsets the additional constraints being imposed: that is, a greater portion of their income must come from Social Security, which involves upward revision of the 1987 rates (see below).

On reforming the financing system

8.69 **Better control over expenditure would prevent increasing both the government and social security's contributions to financing the health system.** This involves

- ***Issuing new rates for outpatient care.*** Revision of the 1987 rates should guarantee financial sustainability of the health system. Preparatory work should include actuarial studies to assess the financial impact of the reform. Moreover, raising rates will provide an opportunity to introduce contractual relations with the health professions and use this mechanism to achieve overall strategic ends. Finally, conditions should be examined for instituting mechanisms to pay service providers that allow for cost control, such as methods based on capitation.[167] A revision of the 1987 base rates will provide an opportunity to revisit all these issues. It will be important not to miss this opportunity since experiences in other nations show that it is very difficult to secure health professionals' agreement to reduce any advantages once they are in place.
- ***Outsourcing public health institutions***. Quality of care and the cost-benefit ratio will not improve without significant reforms like those discussed above. Consideration should also be given to outsourcing services (food services, laundry, cleaning) that are not part of hospitals' "core activities," but only if doing so would generate significant savings and improve service quality. Initially, outsourcing of certain services might be tried on an experimental basis.
- ***Containing drug costs.*** It is very unlikely that outlays on drugs will decrease in future years. The low level of current expenditure, the arrival of new and more costly drugs, the generosity of social security coverage, and the epidemiological transition are factors bound to drive increased spending. Technical assistance based on external expertise could be helpful. However, the trend toward higher expenses could be slowed through active policies focused on the points raised below.

Outpatient sales:

[167] Capitation means that a fixed amount is paid to provide a defined set of services to an individual patient for a given period of time. Experience shows that fee-for-service can be inflationary by providing incentives for more procedures than necessary. Still, any payment mechanism, taken in isolation, can have perverse effects, whether on the number of procedures, on cost control, or on service quality. Capitation generally allows for sound cost control and promotes service quality, but it may induce health professionals to limit contact with their patients. For this reason, the most effective payment systems for health services are often those that combine different mechanisms.

- **Generic drugs**. Adopt a generic drugs policy, preparing a list of generic drugs and their equivalent brand names as a guide to substitution; amend the system of pharmacy markups in order to encourage substitution; institute an outreach policy for communicating with physicians, pharmacists and, above all, patients; establish contractual substitution objectives with pharmacists, and rules for applying the fixed reimbursement rate.
- Prices. Review the mechanism for setting drug prices based on their therapeutic value added, rather than on the price in the country of origin; stabilize and publish drug prices.
- Information system. Equip the sickness funds with information systems that can facilitate detailed analysis of expenditure structures and trends.
- Controlling prescriptions. Raising physician fees and establishing contracts with the sickness funds will provide an opportunity for controlling prescription outlays by each doctor. International experience has shown that establishing individual prescription budgets for physicians is an excellent means of limiting expenditures.

***Hospital dispensing**:*

- **Purchasing.** Procurement regulations should be enforced in hospitals to ensure that drugs are purchased at the best possible price. To this end, managers need to be trained in the new procedure.
- Drug management. The role of pharmacists as drug managers should be reinforced by enlisting them to work with oversight committees to establish a list of drugs for hospital dispensing based on medical and economic grounds. The procurement chain, from prescription to dispensing, should be computerized so that consumption can be understood and controlled.
- Provision of drugs to hospital patients. Hospital pharmacies should supply all drugs needed by hospital patients so that these costs will not flow through to the outpatient category. This would facilitate better management of drug procurement.

8.70 **Combating "social evasion."** Reducing nonpayment of social contributions seems to be the best way of expanding the resources of the social security system since any increase in contribution rates would be politically difficult.

8.71 **Consider establishing a benefits package.** Current legislation sets no limits on services covered by Social Security or the state. However, the system's generosity is somewhat theoretical. Because resources are limited, care is in effect rationed through a process uncontrolled by authorities, creating unpredictable consequences for the equity and effectiveness of expenditures and on the quality of care. A benefits package could be established to free up financial maneuvering room for using public funds to meet selected government priorities. The World Bank (2002a) recommended that a commission be set up to make proposals on this matter.

8.72 **Consider possibly increasing the household financial contribution**. Free care poses several disadvantages. For one thing, there is the risk that users will abuse the system. For another thing, universal free care makes it impossible to target public funds toward government priorities, such as providing coverage for the poorest, overcoming regional inequalities, or modernizing hospitals. As illustrated by the aborted attempt to revise rates in 2002, users' participation is a delicate political issue. Hence, it would be advisable to move forward cautiously, without penalizing most vulnerable population groups (indigents, children, the elderly, and chronically ill people).

8.73 **Reexamine financial sharing arrangements among the different funding sources.** As noted earlier, a number of technical obstacles still hinder introduction of a system of contracting for medical

services. Moreover, the various stakeholders may have differing views about both the current financial situation and the viable options. To overcome this deadlock, a quick and targeted audit could be undertaken, analyzing all the points involved in the reform. When more-specific questions arise about the remuneration mechanisms, the following considerations will have to be considered:

- Public health care facilities must have the human and technical resources to apply the payment method: the method selected should not be too complicated;
- Public health care facilities must not be financially destabilized by the payment method since they have specific public service responsibilities (presence in low density populations, permanent minimum level of health care, etc.);
- The method selected should encourage institutions to be more efficient, not merely record their standing costs, which implies moving toward "standards";
- The method selected should fit public health priorities and promote disease prevention.

On the method and sequencing of reforms

8.74 **Experience in other countries provides many examples of reforms that, while inherently sound, failed because the method and sequencing were wrong**. A key factor for success will rely in the capacity of the Algerian authorities to establish priorities, to determine which reforms can and should be undertaken immediately, and which ones should be postponed until later, if for example they demand significant input from experts. Overall, particular attention must be paid to the following broad guidelines:

- Establish a clear and binding timetable for preparation and implementation.
- Define a working approach. An interesting example is Morocco's reform of its health system. It set up several thematic commissions representing all stakeholders (ministries, health professionals, and so forth). The work of these commissions was overseen by the office of the prime minister. They worked to a clearly defined schedule and were able to draw upon expert advisors.
- Provide public reports at all stages of the process and encourage maximum consensus building.
- Test reforms through pilot projects within a region, a wilaya, or one or more hospitals.
- Introduce devices for ongoing evaluation of reforms to identify needed improvements.

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ALGERIA

PROVINCE CAPITALS
NATIONAL CAPITAL
RIVERS
MAIN ROADS
RAILROADS
PROVINCE BOUNDARIES
INTERNATIONAL BOUNDARIES

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