December 2009

54718

SUDAN

The Road Toward Sustainable and Broad-Based Growth

السودان

الطريق نحو نمو واسع القاعدة ومستدام

THE WORLD BANK
Poverty Reduction and Economic Management Unit | Africa Region

SUDAN

THE ROAD TOWARD SUSTAINABLE AND BROAD-BASED GROWTH

December 2009

Poverty Reduction and Economic Management Unit
Africa Region

TABLE OF CONTENTS

LIST OF BOXES

LIST OF FIGURES

LIST OF TABLES

SUDAN – GOVERNMENT FISCAL YEAR

January 1 – December 31

CURRENCY EQUIVALENTS (NOVEMBER 2009, CBOS)

Currency Unit: Sudanese Pounds (SDG): 2.26 = US$1.00

ABBREVIATION AND ACRONYMS

ABS	Agricultural Bank of Sudan
AICD	Africa Infrastructure Country Diagnostic
ARHC	Agricultural Revival High Council
ARP	Agricultural Revitalization Program
BoSS	Bank of Southern Sudan
BPD	Barrels Per Day
BRAC	Building Resources Across Communities
CBO	Community Based Originations
CBoS	Central Bank of Sudan
CFSAM	Crop and Food Supply Assessment Missions
CFSVA	Comprehensive Food Security and Vulnerability Analysis
CNCP	Chinese National Petroleum Company
COMESA	Common Market for Eastern and Southern Africa
COMESA FTA	Common Market for Eastern and Southern Africa Free Trade Area
CPA	Comprehensive Peace Agreement
CRS	Catholic Relief Services
DDR	Disarmament, Demobilization, Reintegration
DNB	Dutch Central Bank
DTIS	Diagnostic Trade and Integration Study
EBA	Everything But Arms
EES	Eastern Equatoria State
EITI	Extractive Industries Transparency Initiative
EU	European Union
FAO	Food and Agriculture Organization
FDI	Foreign Direct Investment
FIAS	Foreign Investment Advisory Services
FBO	Farmers Based Organizations
FOB	Freight on Board
FSAP	Financial Sector Assessment Program
GAC	Gum Arabic Company
GACC	Gum Arabic Commodity Council
GDP	Gross Domestic Product
GIC	Government Iiara Certificate
GMC	Government Musharaka Certificate
GMP	Green Mobilization Program
GNPOC	Greater Nile Petroleum Operating Company
GoNU	Government of National Unity
GoS	Government of Sudan
GoSS	Government of Southern Sudan
IDP	Internally Displaced Persons
IFAD	International Fund for Agricultural Development
IMF	International Monetary Fund
INC	Interim National Constitution
JAM	Joint Assessment Mission
JMP	Joint Multipurpose Program
JOC	Joint Operating Companies
KNC	Kunda Nordic Cement Corporation
LDCs	Less Developed Countries
MAL	Marginal Arable Lands
MARF	Ministry of Animal Resources and Fisheries
MDG	Millennium Development Goal

MDTF	Multi Donor Trust Fund
MDTF-N	Multi-Donor Trust Fund – National
MoEM	Ministry of Energy and Mining
MFI	Micro Finance Institutions
MoFNE	Ministry of Finance and National Economy
MSME	Micro, Small and Medium Enterprises
MVA	Megavolt Ampere
NCB	Nile Commercial Bank
NEC	National Electric Company
NETREP	National Emergency Transport Rehabilitation Project
NGO	Non Governmental Organization
NHA	National Highway Authority
NOC	National Oil Company
NOPD	Non-Oil Primary Deficit
NPC	National Petroleum Commission
NPL	Non-Performing Loan
NTC	National Telecommunication Corporation
NTRC	Nile River Transport Corporation
O&M	Operation and Maintenance
ORSA	Oil Revenue Stabilization Account
PDOC	Petrodar Development and Operating Company
PI	Permanent Income
PICS	Productivity and Investment Climate Survey
PPP	Public Private Partnership
PSA	Production Sharing Agreement
PSP	Private Sector Participation
ROSCA	Rotating Savings and Credit Association
RTC	River Transport Corporation
SAF	Sudan Armed Force
SCC	Sudan Cotton Company
SDG	Sudanese Pounds
SFMC	Savanna Farmers Marketing Company
SGB	Sudan Gezira Board
SMDF	Sudan Microfinance Development Facility
SME	Small and Medium Enterprises
SOE	State Owned Enterprises
SPC	Sudan Petroleum Corporation
SPLM/A	Sudan People's Liberation Movement/ Army
SRC	Sudan Railway Corporation
SRTC	Sudan River Transport Corporation
SSCCSE	Southern Sudan Center of Census, Statistics and Evaluation
SSDB	Social Development Bank
SSMDF	South Sudan Microfinance Development Facility
SSL	Sudan Shipping Lines
SSTC	Southern Sudan Trans-Nile Company
TAZARA	Tanzania Zambia Railway Authority
TTCA	Transit Transport Coordination Authority
UAE	United Arab Emirates
UNDP	United Nations Development Program
UNIDO	United Nations Industrial Development Organization
UNS	Upper Nile State
USAID	United States Agency for International Development
USD	United States Dollar
VAT	Value Added Tax
WB	World Bank
WEO	World Economic Outlook
WFP	World Food Program
WUA	Waters Users Association
WVS	World Values Survey

Vice President:	Obiageli Katryn Ezekwesili
Country Director:	Kenichi Ohashi
Sector Director:	Sudhir Shetty
Sector Manager:	Kathie Krumm
Task Team Leader:	Bill Battaile

ACKNOWLEDGMENTS

The World Bank is appreciative of the collaboration provided by the Sudanese authorities in the preparation of this Country Economic Memorandum (CEM), in consultation with ministries of the Government of National Unity (GoNU) and the Government of Southern Sudan (GoSS), private sector organizations, academics and with support from development partners, including financial assistance from the Department of International Development, United Kingdom and the African Development Bank.

The counterpart team in GoNU was led by the Ministry of Finance and National Economy (MoFNE), under the guidance of H.E. Minister Dr. Awad Ahmed Eljaz, State Minster Dr. Lual Deng, State Minister Tarig Shalabi, and Undersecretary Dr. Eltayeb Mustafa Abou-Ganaya. Other members of MoFNE senior management that were particularly helpful include Director General Budget Mustafa Houli and Director General International Cooperation Elfathi Khalid. For work focused on Southern Sudan, a counterpart team in GoSS was led by the Ministry of Finance and Economic Policy, under the guidance of Undersecretary Aggrey Tisa. The team greatly appreciates their close engagement and valuable inputs, including Fiona Davies, Richard Efil, Ben French, Maxwell Melingasuk Loboka, Lee Crawford and Tom Hart.

The CEM team worked in collaboration with a dedicated Steering Committee and would like to thank the members for excellent support and many hours of discussions during the exercise, in particular the Committee Chair Dr. Wani Tombe and Co-Chair Dr. Taj Elsir Mahjoub. The team is also very grateful for the inputs of the Central Bank of Sudan, especially from Governor Dr. Sabir Mohamed Hassan, Director General of the Foreign Debt Directorate Layla Omer Bashir and other staff. The team is also grateful for the inputs received from the Ministry of Agriculture & Forestry led by Undersecretary Dr. Abdel Lateef Ejaimi, from the Chair of the High Council of Agriculture Revitalization Professor Ahmed Ali Ganaff and his staff, and from the Ministry of Animal Resources and Fisheries led by Undersecretary Dr. Mohamed Abdel Razig. The CEM team would like to extend special thanks to the Ministry of Energy and Mining led by Deputy Secretary General Hamid El-Nil Abdelgadir for consultations with senior management and staff. Special thanks also to the GoSS Ministry of Energy and Mining, led by H.E. John Luk Jok. We would also like to thank the authorities and other stakeholders we worked with in Upper Nile and Eastern Equatoria states for their excellent cooperation during the state case study work in Southern Sudan, especially Major General Gatluak Deng Garang, Governor of the Upper Nile State and Brigadier General Aloisio Emor Ojetuk, Governor of Eastern Equatoria State.

The CEM team was led by Bill Battaile (Senior Economist, AFTP2), under the supervision of Deepak Mishra (Lead Economist, AFTP2). The CEM's team contributors included Lant Pritchett (Kennedy School of Government, Harvard University), Michael Levitsky (Lead Energy Economist, COCPO), Stephen Ndegwa (Lead Specialist, AFTPR), Alwaleed Alatabani (Senior Financial Sector Specialist, AFTFP), Magdi Amin (Principal Strategy Officer, CEADR), Sanjeev Ahluwalia (Senior Public Sector Specialist, AFTPR), Mosllem Alamir (Economist, AFTP2), Lebohang Lijane (Economist, AFTP2), Yutaka Yoshino (Economist,

AFTPM), Yadviga Semikolenova (Energy Economist, ECSSD), Ji-Young Choi (Senior Economist, AFTP2), Greg Toulmin (AFCET), Assaye Legesse (AFTAR), Asif Faiz (AFCET), Jeeva Perumalpillai-Essex (SACNP), Mohamed Osman Hussein (AFTAR), Negede Lewi (AFTTR), John Oloya (AFTAR), Charles Yoere (AFTAR), Maisoun Alaaidin Badawi (AFTFE), IJsbrand de Jong (AFTWR), Siobhan Murray (DECRG), Somik Lall (FEUUR), Olasupo Olusi (ECSP3), Halla Qaddumi (AFTWR), Edward Dwumfour (AFTEN), Dirk-Jan Omtzigt (Joint Donor Team, Juba), Hassan Al-Atrash (IMF), Abdul Naseer (IMF), Ali Abbas (IMF), Anders Hannevik (Norway Ministry of Foreign Affairs), Laura James (DFID, UK), Freddie Carver (DFID, UK), Wandia Gichuru (DFID, UK), Appolenia Mbowe (Africa Development Bank), Prajesh Bhakta (Africa Development Bank), and Jack Van Holst Pellekaan, Greg Snyders, Derek Byerlee, Shawki Barghouti, Ali Salih, Ahmed Mina, Tilahun Temesgen, Peter Ajak, Elias Leonardo, Beauty Jiji, Kimo Guoy, Tarig Ismaeil, and Rahi Abdula (Consultants).

The CEM was undertaken with the overall guidance of Kathie Krumm (Sector Manager, AFTP2). The team wishes to acknowledge feedback and guidance received from Kenichi Ohashi, Country Director (AFCE3), Sudhir Shetty (Sector Director, AFTPM), Alassane Sow (Country Manager, AFCE3), and Laurence Clarke (Juba Office Manager, AFCE3). The team also wishes to thank the Bank's Sudan country team members for the many useful insights and advice.

The peer reviewers for the report included Roberto Zagha (Country Director, SACIN), Jorge Arbache (Senior Economist, AFRCE), and Kabbashi Madani (Professor, University of Khartoum). Many thanks for their valuable comments and suggestions, and also to inputs from Alan Gelb (Director, DECRG). Thanks also to the University of Khartoum Faculty of Economic and Social Studies for discussions during the exercise, as well as the University's Development Studies and Research Center for hosting a consultation workshop in October 2009. The team also thanks the staff of the World Bank resident missions in Khartoum and Juba for advice and logistical support: Azza Abdel Magid Imam, Tarig Mohamed Osman, Abir Abdel Rahman, Ali Mohamed Adam, Yousra Mohamed Abdelrahman, Mohamed Osman Hussein, Yousif Mubarak ElFadil, Hassan Abdel Moneim Gaafar, Jennifer Asego, Juliette Guantai, Anne Akwii Kennox, Sit Elnesa Ali Mohammed Babiker, Evans Kijore, Moses Jala, James Mou Badi Aloro, and Millicent Ndolo. Tremendous gratitude is also owed to Tanisha McGill, Dora Harris, Arlette Sourou and Fulvia Toppin for support provided from Washington.

SUMMARY: SUSTAINING RAPID GROWTH IS IMPORTANT, BUT BROAD-BASED GROWTH IS AN IMPERATIVE[1]

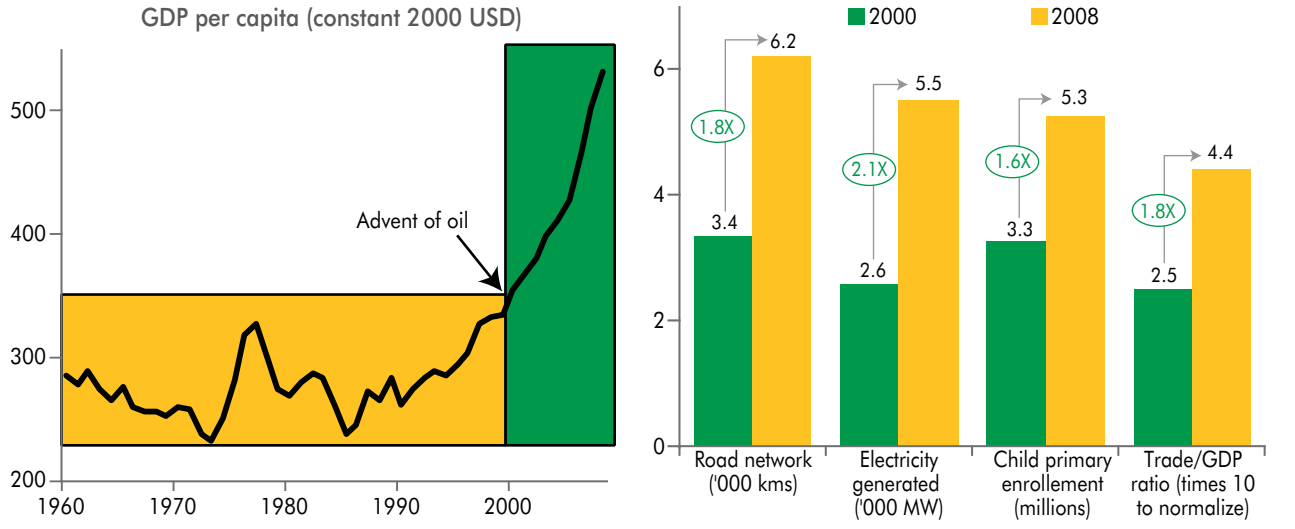
A. Oil-led Growth Has Changed the Sudanese Economy, But Will It Last?

Sudan is in the 10th year of its longest and strongest growth episode since independence, benefiting from the advent of oil in 1999.[2] The size of its economy, measured by nominal gross national product, has grown fivefold—from $10 billion in 1999 to $53 billion in 2008. Per capita income, a summary measure of the living standard of average citizens, has increased from $334 to $532 (constant 2000 USD) over the same time period. This is in sharp contrast to the pre-oil period when real per capita income kept mostly within the $200–300 range during a four-decade period (left panel, Figure 1).

The economy has changed considerably since the onset of oil. Oil wealth has enabled Sudan to roll out a massive expansion of its physical and social infrastructure. The road network has increased from 3,358 kilometers in 2000 to 6,211 kilometers in 2008, electricity generation has more than doubled from 2,569 mw to 5,506 mw during the same period and the number of children enrolled in primary schools has registered a sharp increase from 3.3 million to 5.3 million in

[1] This chapter has been prepared by Deepak Mishra and Bill Battaile, with inputs from individual chapter authors.
[2] Oil was discovered in 1978 in the Bentui area, but significant exports became a reality only in 1999.

FIGURE 1: Some Notable Signs of Economic Change Since the Advent of Oil



Source: World Bank Development Indicators.

a span of eight years.[3] The Sudanese economy has also become more integrated with the rest of the world—its trade to GDP ratio has increased from 25 percent in 2000 to 44 percent in 2008, and the country has emerged as one of the highest recipients of foreign direct investment (FDI) in Africa (right panel, Figure 1). As econometricians would say, the Sudanese economy seems to have undergone a structural break after the advent of oil.[4]

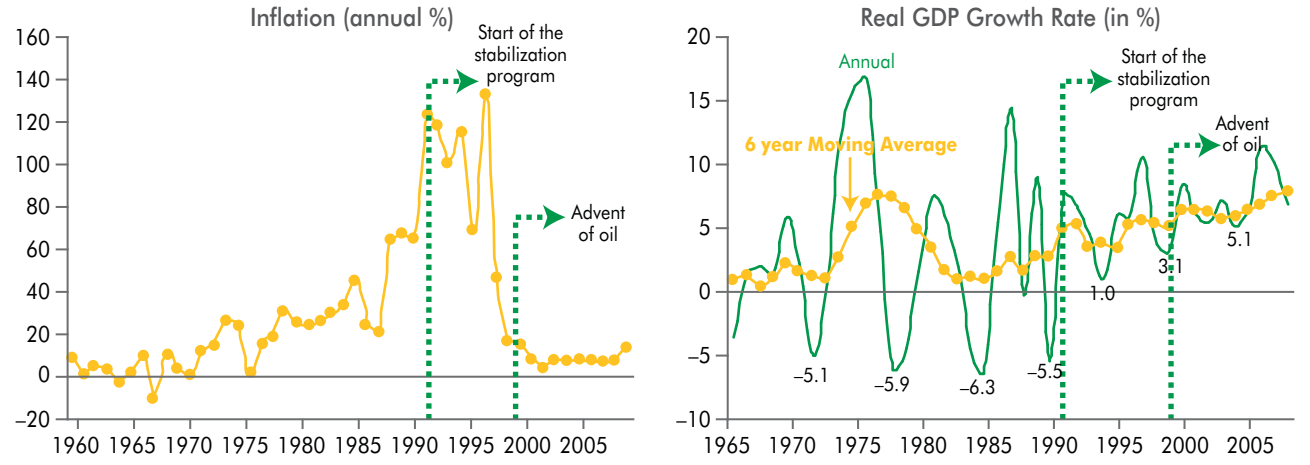
One of the less discernible but important shifts has taken place in the management of the macro economy. Sudan was in economic turmoil during most of the 1970s and 1980s when double-digit inflation was a common occurrence, and there were large swings in the growth rate. Between 1971 and 1991, the average inflation rate was 33 percent, in contrast to 8 percent since the advent of oil (left panel, Figure 2). During 1970–90 the real GDP growth rate fell below –5 percent in six years (1972, 1978, 1979, 1984, 1985, and 1990) and exceeded 10 percent in four years (1974, 1975, 1976, and 1987). In contrast, the growth rate has hovered within the 5–11 percent range during the 1999–2008 period (right panel, Figure 2). After successful stabilization in the mid-1990s, Sudan has built a strong track record for macroeconomic management best exemplified by a low and stable inflation rate, a steady exchange rate, a sustainable external balance, and moderation of its business cycle.

But the sustainability of Sudan's oil-led growth is under threat from a number of economic and political factors. The economic threats come from Sudan's over-reliance on a single commodity as its main source of growth, the neglect of growth in non-oil sectors (a manifestation of the "resource curse") and the increasingly dominant role of the public sector. The political challenge to continued growth and prosperity arises from Sudan's legacy of persistent spatial disparity between the center and periphery, which despite some attempts through the Comprehensive Peace Agreement (CPA), has not been fully resolved during the period of oil boom and therefore remains a potential source for conflict and political instability in the future.

[3] Data for most macroeconomic variables for Southern Sudan are not available. However, in sectors like education, where data are available, its inclusion will further strengthen the case being made in Figure 1.

[4] Some observers have argued that it is not the export of oil, but the stabilization reforms of the 1990s, that set the foundation for a phase of rapid growth in Sudan. We don't disagree with such a viewpoint. In fact, Sudan's recent growth success is most likely a combination of macro stabilization policy of the 1990s, the advent of oil and the return of peace following the signing of the CPA.

FIGURE 2: Sudan Has Achieved Considerable Macroeconomic Stability in Recent Years



Source: Left panel – Central Bureau of Statistics annual reports; right panel – IMF staff reports.

Economic Threats from Oil Dependency and External Volatility

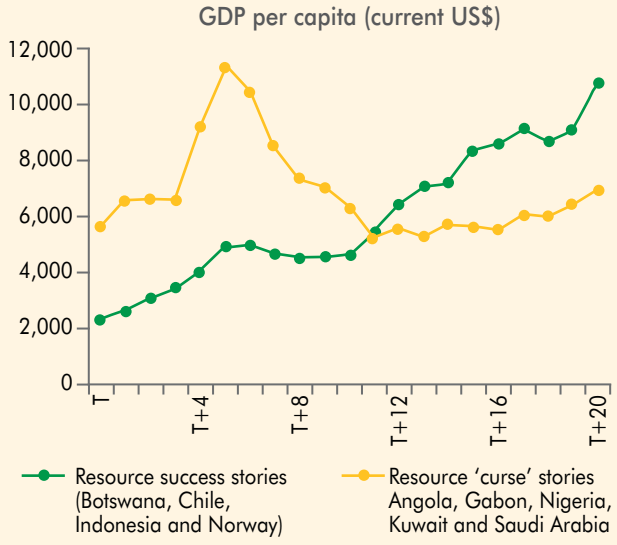
The immediate challenge to sustaining rapid growth comes from Sudan's overdependence on oil revenue, which is intrinsically temporary and fundamentally unreliable. By most accounts, the best days of Sudan's oil windfall are likely in the past. At presently known oil reserve levels and production plans, oil revenues are likely to last for another 20 to 30 years, with oil production peaking by 2012 in the most optimistic scenario. The recent extreme fluctuations in global oil prices and the corresponding volatility in government revenue have made it an imperative that comparative advantages in non-oil sectors are developed and promoted while oil wealth is available. Strengthening the performance of non-oil sources of fiscal revenues will also help counter the country's oil dependency.

A second economic factor that threatens continued growth is the fact that Sudan's economy is beginning to exhibit some of the same problems that have affected "resource curse" economies. These problems include (also see Box 1):

- *Macroeconomic deterioration*. There is a tendency for large external imbalances, and exchange rate appreciations associated with commodity booms that weaken the competitiveness of the non-commodity sectors of the economy. In Sudan's case, recent global crisis underscores the vulnerability of the economy to external instability. In addition, the real exchange rate appreciated by 40 percent between 2005 and 2006, and the share of non-oil sectors in exports fell from 24 percent in 2000 to 5 percent in 2008. The depreciation of the local currency during 2009 has however moved the real exchange rate closer to the equilibrium level and hence this is a less pressing issue now than a year back.
- *Fiscal volatility and looseness*. There is a proclivity for significant fluctuations in export revenues—often exacerbated by pro-cyclical government spending—to accentuate eco-

BOX 1: Same Resources, but Different Outcomes: What Explains It?

Among the resource rich countries, what separates the successful ones from the ones plagued by the resource curse? Countries like Botswana, Chile, Indonesia and Norway were resource rich and succeeded in either managing their resource-driven wealth wisely or diversifying their economies away from natural resources to modern, competitive economies. As the adjacent figure shows, the average per capita income in these countries has increased five-fold over a two decade period. In contrast, countries like Angola, Gabon, Nigeria, Kuwait and Saudi Arabia have seen wide swings in their per capita income coinciding with the global commodity cycles, and the average citizen in these countries have hardly seen any change in their per capita income over a two decade period. The successful countries had put in place the necessary policy and institutions early enough to enable them to diversify their economy and share their prosperity more inclusively and thereby buffeting their economy from economic and political risks. The resource curse countries, on the other hand, squandered their opportunity and remained stuck in weak policy and institutional environments.

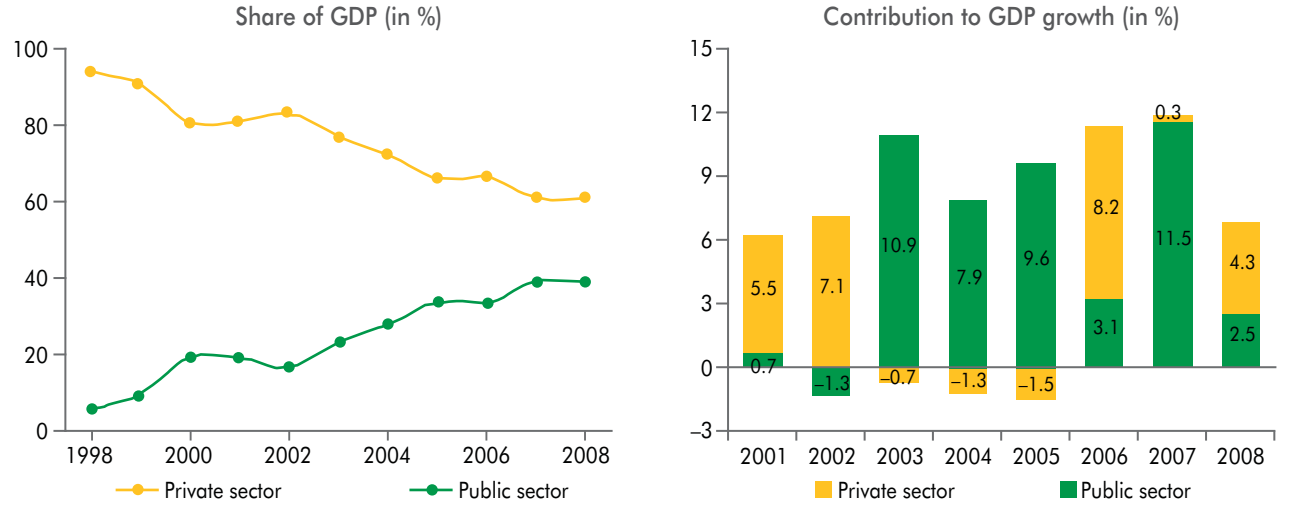


nomic cycles and depress economic growth over the medium term. This aptly characterizes the fiscal position of both GoNU and GoSS. GoNU has run fiscal deficits and accumulated domestic arrears even when oil prices were historically high, while GoSS spent SDG 6.1 billion in 2008 and then drastically reduced planned spending to SDG 3.6 billion in the 2009 budget.

- *Governance lapses*. There is a tendency for high commodity revenues to induce individuals and firms to attempt to appropriate the wealth generated by the resources and, in the worst cases, to engage in outright graft. The high unit cost of civil construction, extremely high level of non-performing loans (NPLs) in the banking system, construction of large infrastructure projects in far flung areas, excessive cost and time overruns in public infrastructure projects, and large amounts of contractual obligations by the government, especially in Southern Sudan, are believed by many to be signs of weak governance.

The third economic challenge to Sudan's growth prospects comes from its large and rapidly growing public sector, which has become an impediment to the development of a robust private sector. During the last ten years, the public sector's share in GDP has increased from 6 percent to nearly 40 percent (left panel, Figure 3). The public sector has also become the principal contributor to the growth process, while private sector growth has been considerably weaker and even negative in three of the last six years (right panel, Figure 3). This follows directly from the dominance of the oil sector—which is almost entirely owned and managed by the government—in the growth boom. Oil revenues have fueled a sharp increase in the investment plan of government and public enterprises, escalating the competition for scarce resources in the domestic economy, like bank credit, skilled labor and land. Given the lack of a level playing field between the public sector and private sector firms, the emergence of a domineering public sector has meant reduced growth prospects for the private sector.

FIGURE 3: Sudan's Growth Has Been Driven Largely through the Expansion of Its Public Sector



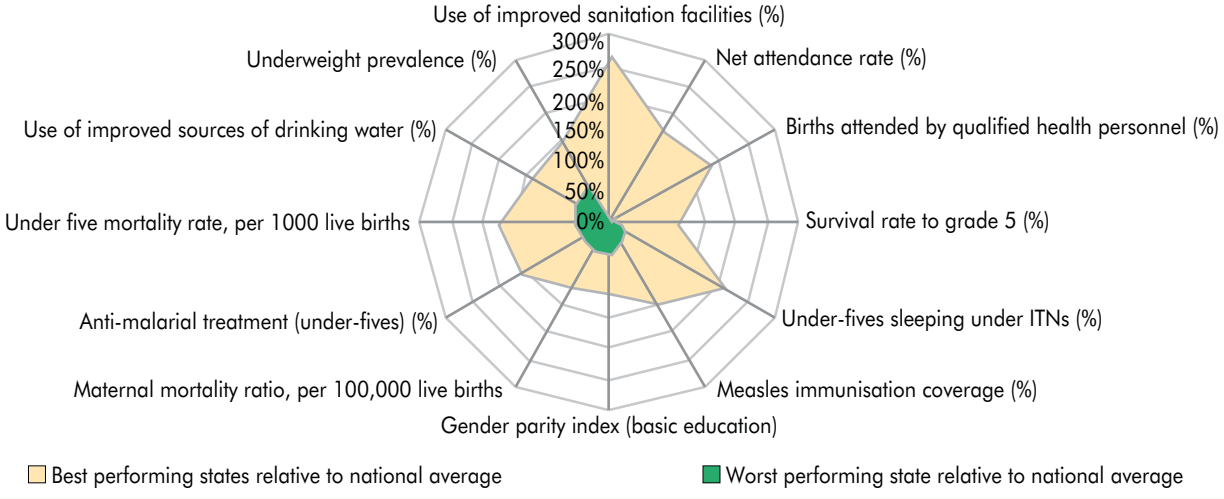
Source: World Bank staff estimates from MoFNE data and various IMF staff reports.
Note: The public sector GDP is calculated as the sum of public consumption, public investment and oil exports, net of imports by the public sector. Since there is no reliable data on the latter, we use the ratio of public and private consumption to estimate the size of imports by the public and private sectors.

Political Threats from Conflicts and Unbalanced Development

The fundamental challenge to Sudan's prosperity is unlikely to be the above economic factors, but its deep-seated political issues. Sudan has experienced conflicts for most periods since its independence in 1956. While these conflicts are often layered with religious, linguistic and ethnic overtones, at their core lies the issue of unbalanced development between the center and a far larger periphery. While the Comprehensive Peace Agreement (CPA), signed on January 9, 2005 by GoS and the Sudan Peoples Liberation Movement/Army (SPLM/A), has created a window of opportunity for peace in certain parts of Sudan, it did not address the concerns of other peripheries, such as the Eastern States and Darfur. A subsequent Eastern Sudan Peace Agreement in 2006 has brought peace to that region, while the Darfur Peace Agreement the same year has not, and continuing conflict in Darfur has threatened stability and development for all of Sudan. During the Interim Period, there have been repeated concerns about the sustainability of the CPA process itself.

The inability of oil-induced growth to be sufficiently inclusive poses the ultimate challenge to its sustainability. Sudan's growth process has been historically unbalanced, with the majority of its manufacturing firms and irrigated land concentrated in Khartoum and Gezira states. Such economic concentration is not unusual and perhaps inevitable (see World Development Report, 2009), but the persistent spatial disparities are neither desirable nor inevitable. As Figure 4 shows, there is a huge disparity in the development indicators between the best and worst performing states in Sudan. For example, in 2006 the net attendance rate in primary schools in the best performing state was 91 percent, while in the worst performing state it was 4 percent. Sudan's capital city consumes nearly a third of the total electricity produced in the country, while less than 7 percent of households in the country have access to the national grid. There are eight bridges over the river Nile around the Khartoum city, while the remaining 1,500 kilometer stretch of the river has only eight such bridges, and only one in Southern Sudan. Going by the public spending pattern of recent years, it is likely that the dispar-

FIGURE 4: Large Disparity in MDG Indicators within Sudan



Source: GoNU and GoSS 2006.
Note: The figure shows the ratio between the number for the best and worst performing state with respect to the national average.

ity between Juba, the capital of Southern Sudan, and its other cities has widened as well. These statistics illustrate the persistence of large spatial, regional and ethnic disparities within Sudan, which have been the source of most of its domestic conflicts.

Since lack of inclusive development is one of the main causes for post-conflict relapses around the world, it is in Sudan's interest to not only sustain the rapid growth but also to make it more broad-based and inclusive. An examination of the growth history of post-conflict developing countries indicates that Sudan, with good policies and sound institutions, can avoid degenerating into a conflict environment. Collier and Hoeffler (2004) show that around half of all civil wars are due to post-conflict relapses, with a high risk of resumed conflict during the first post-conflict decade—typically around 50 percent.[5] Many of these relapses are due to insufficient progress on reducing disparity and unbalanced development in the immediate post-conflict period. The challenge therefore before Sudanese policymakers is to find ways to endure the current high growth rate and to share the growth proceeds more equitably than in the past.

Sudan needs a new, more balanced growth vision that is less reliant on oil, while using the oil wealth to create an economic foundation for a diversified, inclusive and sustainable growth path. The first task is to decouple the economy away from oil and to adopt policies that can stimulate private sector-led growth in the non-oil sector of the economy. At the same time, it is imperative that the gains from growth be shared more broadly to raise the living standard of the vast majority of Sudanese people. Without a tangible peace dividend for most, political and economic stability will remain fragile. Effective resource management and consideration of complex political economy issues will be critical for planning a new growth vision. The growth challenge for Sudan is particularly great, given the track record for resource dependent countries and the complexities of its own political situation. Oil can help, but could easily be a curse rather than a benefit to long run economic performance.

B. Toward a New Growth Vision

How do countries grow richer and sustain their growth? The recent development literature suggests that sustained economic growth generally involves a structural transformation in what countries produce and trade, from producing a relatively small number of simple products requiring few capabilities to more complicated products requiring many capabilities.[6] Cross-country empirics and case studies of success stories (e.g., Korea, Chile, and China) support a strong correlation between higher income per capita and greater diversification and production of goods and services. However, the ability to acquire additional capabilities and make this transformation is influenced by the types of products in the country's existing production set, as well as the income levels of its trading partners. For countries like Sudan that are dependent on resource-intensive sectors, the structural transformation is difficult because of the enclave nature of the oil sector, which does not have significant inter-industry spillovers. Being good at producing oil, especially when predominantly led by foreign operators and supporting services, does not readily lend itself to diversifying into more sophisticated products and moving up the value chain.

What is an appropriate approach for Sudan's current situation? This Report recommends a general approach of working to sustain the current

[5] Even outside the post-conflict setting, sustaining growth spurts is uncommon. A study by Haussmann, Pritchett and Rodrik (2004) identifies instances of rapid acceleration in economic growth that are sustained for at least eight years and found more than 80 such episodes since the 1950s—only 22 of which were sustained over a decade. The Growth Commission Report (2008) found that there are only 13 countries that have experienced fast and sustained growth since the 1950s.

[6] For example, see Zagha and Nankani 2005, Hidalgo et al 2007 and Hidalgo and Hausmann 2009.

growth episode in the near term while laying the groundwork for broader private sector-led growth and structural transformation over the medium and long term. Tailoring of growth strategies is critically important,[7] and important dimensions of the Sudanese context must be taken into account. *First*, in order to address the root cause of conflict and tension in the country, the greatest priority should not be just to achieve rapid growth, but also to ensure that it is broad-based and inclusive. *Second*, domestic political uncertainty and tensions with the international community have created a large risk premium for investment and economic planning from both domestic and foreign sources, whose resolution is critical for sustaining trade and investment. *Third*, oil is a non-renewable resource and not a solid basis for sustainable growth for the future. The current global crisis is a strong reminder of the need to diversify, as well as the particular macroeconomic and governance challenges in the near term. Fortunately Sudan has significant factor endowments outside of oil.

This Report proposes a growth strategy for Sudan that reduces its dependence on oil, while building an economic foundation for a diversified, inclusive and sustainable growth path. Specifically, Sudan's near term strategy should focus on:

a. Developing and maintaining the necessary enabling environment for growth, specifically macroeconomic stability and effective fiscal management (Chapter 1);
b. Implementing policies aimed at improving the investment climate and broadening private sector-led growth (Chapters 2 and 5);
c. Increasing returns to the agriculture sector as the highest potential engine of growth and poverty reduction over the medium-term (Chapter 4);
d. Developing a comprehensive reconstruction plan for the South (Chapter 6); and
e. Complementing technocratic reforms with good governance.

Ensuring Macroeconomic Stability and Effective Fiscal Management

Following successful stabilization in the 1990s, Sudan has built a track record of successful macroeconomic management under successive IMF Staff Monitored Programs. However, the advent of an oil-based economy and sharp fluctuations in global commodity prices have presented new macroeconomic challenges for policymakers—from preventing the economy from overheating to finding ways to keep the economy growing. At the same time the authorities will have to address some of the risks associated with economic deterioration on account of natural resource dependence, with more than 90 percent of Sudan's exports coming from the oil sector. The wealth effect of exploiting oil has also caused a large increase in non-oil consumption imports. As incomes rise, consumption demand generally shifts away from food and basic goods to manufactured goods and services. In an exporting country, this demand shift can occur through increased consumption of imports rather than of domestic supply. In the case of Sudan, oil exports have generated a foreign exchange windfall, which has facilitated the increase in domestic demand to be met in large part by imports. The relative attractiveness of imports has, until recently, been enhanced by the appreciation of the real exchange rate.

The recent experience with the global crisis underscores the challenges in the macroeconomic management of Sudan's oil economy, including the need to flexibly adjust to external imbalance pressures. The cumulative impact of the various transmission channels of the crisis—exports, fiscal, FDI, remittances and the banking sector—could imply upwards of $4–5 billion less in foreign exchange flows in the short term. In early 2009, the Central Bank of Sudan (CBoS) was

[7] Growth Commission 2008.

therefore forced to impose several restrictions on operations of foreign exchange bureaus and reduced the amount of foreign currency for foreign travel. These measures provided a temporary breathing space, but did not address the source of the foreign exchange shortfall, which are likely to be structural in nature. Following the recent depreciation of the currency, the onus of creating a competitive economy rests largely on structural reforms, which can help to diversify its economic base, strengthen non-oil sectors and reduce the country's reliance on imported goods.

Pro-cyclical fiscal policy and weak management of oil revenues have contributed to Sudan's macroeconomic deterioration. Two key characteristics have defined Sudan's fiscal management of the oil revenue boom—expected revenues are temporary in nature and absorption has been nearly complete with volatility transferred to expenditures. At presently known oil reserve levels and production plans, revenues from oil in Sudan will run out in 20 to 30 years, with oil production peaking by 2012 in the most optimistic scenario. And with nearly all oil revenues to date spent under an expansive fiscal policy, the authorities have not managed to accumulate significant savings. The lack of public expenditure smoothing has led to two worrying fiscal results: substantial increases in non-discretionary expenditures (e.g., wages and benefits) that are difficult to reduce in a downturn, and declines in the efficiency of public investments, with budget execution on large investment projects that is considerably above planned allocations, and erratic funding/underfunding of the rest of the portfolio. Hence, difficult fiscal adjustments have been required following the recent sharp decline in oil revenues.

Fiscal planners need to consider a medium term outlook on oil revenues to effectively manage volatility and promote a more reliable expenditure basis for priorities laid out in the Report. Greater volatility in oil prices, when transmitted through oil revenue volatility and then expenditure volatility, tends to harm innovation and economic growth, particularly if financial development in a country is weak, as is the case in Sudan. The efficiency of public investment can be especially affected. Full absorption of oil earnings into the budget, as in the case of Sudan, can lead to unsustainable increases in government expenditure, as evidenced by the recent difficult fiscal adjustments. To effectively manage oil revenue volatility, current expenditure should be decoupled from current resource revenues. Breaking this link leads to smoother and more efficient public expenditure and investments, and helps mitigate the significant costs of future short-term fiscal adjustments. Toward this end, fiscal planners need to take a medium term approach to managing oil revenue. This is especially critical in the South where the dependence on oil revenues is extreme and expenditure volatility is more severe. The medium term focus can include deriving and monitoring estimates of expected oil revenues, for example over a three year basis for the budget, and consideration of fiscal sustainability frameworks to benchmark natural resource management. For example, estimates for the permanent income equivalent applied to Sudan under a set of production, future price and country discount assumptions suggest permanent income levels of roughly $1.3 billion for GoNU and $800 million for GoSS (all in constant 2008 USD). Revenue diversification to non-oil sources is also important in revenue and expenditure smoothing and thus to achieving more reliable and sustainable fiscal position. Lastly, negotiations with creditors on external debt *a la* the HIPC and MDRI initiatives can also augment considerable resources for development purposes.

Broadening Private Sector-led Growth

Sudan's nascent private sector faces major risks, often beyond its control, to grow and diversify. The top three constraints identified by pri-

vate sector firms in Sudan holding back growth and investment are political instability, corruption and economic uncertainty—factors that are intricately linked to the governance of the country. The second set of constraints is infrastructure, finance and taxation, which are not very different from some of the major constraints facing firms in stable middle-income countries like China and India. Not surprisingly, the competitiveness of the private sector in Sudan remains low, due to a combination of high transaction costs, poor market institutions, a lack of infrastructure, and high administrative barriers and transaction costs.

A program to address the key constraints faced by the private sector should focus on increasing economic certainty and predictability, lowering transaction costs and building basic infrastructure, and institutions that will help integrate its disparate markets. In this context, the following areas are particularly important: (i) reducing the reliance on executive decrees and involving the legislature to adopt laws for private sector development; (ii) reducing the cost structure for manufacturing and agri-business through continuing progress on infrastructure development, particularly electricity and transport such as rural roads and connectivity with areas that were historically developed, but have lagged behind because of conflicts and apathy; and (iii) focusing on urban development, which can be a source of growth in itself in secondary cities throughout the country, including Juba, Nyala, Port Sudan, Malakal, Ed Obeid and others.

As a post-conflict country, there is a strong need to improve access to life-sustaining infrastructure and social services. Accessibility to services is reasonable in the North, particularly in the economic centers of Khartoum and Gezira areas. Areas outside these economic centers, particularly the South and Darfur as well as rural areas in general, lag substantially. Inefficiency of services is a nationwide issue. Access to finance remains one of the major constraints faced by businesses throughout Sudan. Data show that 47 percent of firms surveyed considered access to finance a major obstacle to doing business.[8] Southern Sudan, where only conventional banking is in operation, remains heavily under-banked. While the Central Bank has embarked on a number of reforms, further efforts are needed to, inter alia, strengthen supervision, minimize the crowding out of private sector credit, promote rural finance and clarify the policy environment for operation of a dual banking system—conventional and Islamic banking—in the North and the South.

Ensuring access to a minimal basic level of infrastructure services and connectivity is essential to support basic livelihoods of the population and reducing regional disparities. Most areas in Sudan, including conflict-affected areas and rural areas, lack access to affordable basic services and connectivity between regions. This implies the need for some level of investment in life-sustaining infrastructure, particularly in the lagging regions. Beyond providing access to basic infrastructure, there may be a need to address areas where infrastructure deficiencies present constraints to growth in areas with strong economic potential, particularly in agriculture. Weak efficiency of existing infrastructure services, even when they are available, hinders overall productivity in the country. Costs of infrastructure investments are currently prohibitive for many potential activities. More strategic prioritization of investments is important. For effective planning to improve access and efficiency of transport services, there is a need for clear division of labor and policy coordination among different levels of governments—GoNU, GoSS, and states.

The large presence of government and state enterprises and its adverse impact on private investment needs to be curtailed. To scale up the volume of infrastructure services, the government

[8] Sudan PICS 2008.

has been pursing various large-scale public investment programs for infrastructure such as the Merowe Dam. Domestic borrowing from the Sudanese private sector to finance public investment projects has led to a credit crunch in the private credit market. Similarly the presence of state enterprises in selected sectors like agro-processing and automobile assembly, sometimes with preferential treatment from the government, has become an entry barrier for private investment. For efficiency improvement, more direct participation of the private sector in infrastructure services through public private partnership (PPP) in construction and operation should be encouraged through stronger institutional and legal frameworks. GoNU has recently taken steps to liberalize services in inland water transport, rail, and telecommunications and encourage private sector participation, which have led to some improvements in the capacity and the efficiency of service delivery. However, the productivity of state-owned enterprises in infrastructure services remains a challenge.

Recovery and Growth in the Agriculture Sector

The agriculture sector has historically provided over two-fifths of national GDP, employing the majority of the population and earning the bulk of the country's foreign exchange. Exploiting its largest irrigated area in Sub-Saharan Africa, Sudan produced a diversified basket of exports in the past that included cotton, gum arabic, livestock, sesame, and a number of smaller commodities. Several of the major exports (e.g., sheep and gum arabic) are produced in traditional rain-fed areas and provide critical sources of income for the rural poor. The sector also provides inputs to many major manufacturing industries (e.g., edibles oils, leather, and sugar).

Since the advent of oil, agriculture has performed poorly in the North, and is just getting off the ground in the South where most food items are imported. Since 2000 the average growth rate of the sector has been 3.6 percent, down from 10.8 percent growth during the previous decade. As a result agriculture's share of GDP in the economy has declined, rural incomes have decreased and poverty in rural areas may have intensified. The value of agricultural exports as a proportion of GDP from agriculture is now insignificant and Sudanese agriculture largely caters to the domestic market. Over time the uncompetitive status of Sudan's agricultural sector has resulted in reduced incentives for farmers and discouraged younger Sudanese from taking up farming. In Southern Sudan—partly because of decades of conflict and lack of infrastructure—trade has been highly localized and sourced predominantly from Uganda and Kenya.

There is tremendous potential in the near term for the sector to boost diversification of the economy and to revitalize the rural areas. Agriculture is perceived to be Sudan's comparative advantage, and in response to the sector's poor performance, GoNU has launched the Agricultural Revitalization Program (ARP) with a high level of political support. The government's vision is for diversification of production and markets leading to increased growth of the agricultural sector, with the ultimate goal of poverty reduction based on harnessing the energy of the private sector in various ways supported by an improved environment for commercial agriculture through policy change and public investments. Policymakers envision a focus on agriculture as a source of growth and as a way to diversify Sudan's economy. While this is laudable, realizing such a goal will require new approach and determined implementation.

Achieving higher rural incomes and agricultural export growth will involve a significant change in the government's attitude towards the sector, especially with regard to policies meant to enable the private sector to play a greater role. In the past the government has intervened in agricultural markets through a variety of instruments that reduced incentives to produce. Inter-

ventions were *ad hoc* and inconsistent over time and included distorted exchange rates, export taxation, tariff policies, incentive payments, and trading monopolies. Many of these distortions have been reduced, but government involvement in the sector remains strong. Reforms highlighted in the recent Gezira Act emphasize the need for fundamental changes, including new responsibilities for water user groups, farmers' freedom to choose crops, and tradable long-term land leases. Direct government investment, and the accompanying drain on the federal budget, should decrease, and government should focus on supporting research, technology transfer and market information services. While the Act reflects much needed reform, implementation is facing substantial delays.

Specific reforms for the sector, outlined in Chapter 4, include transformation of traditional farming to generate increased production and income. Actions in the traditional sector should focus on improved management and marketing of livestock and gum arabic, and for improved crop varieties, sustainable soil and water management, water harvesting and other low risk technologies. The main constraint for traditional farming is the current land policy. While improved infrastructure in the traditional rainfed farming areas will be important for improving access to markets, the first priority should be to improve the incentives for traditional farmers to invest in improved technology and increase production. This can be started and sustained if there is a reform of the land policy leading to the issuance of long-term leases**.**

Developing a Comprehensive Growth Strategy for the South

The growth challenges in the South are especially daunting, and center on initiating domestic economic activity in a post-conflict environment. Nowhere in Sudan is the gap between current economic reality and unrealized potential greater than in Southern Sudan. The Government of Southern Sudan (GoSS) has autonomy over roughly 25 percent of the country's land area, which is 648,000 km^2 (larger than France). This area contains the majority of the country's currently known proven and probable oil reserves and the best quality agricultural land. With its oil revenues, Southern Sudan has a major advantage over most emerging post-conflict governments, with significant resources potentially available for development. To deliver a peace dividend and increase the likelihood of continued peace for the country, development of a long-term growth strategy is a high priority for the South. Planning for non-oil economic growth in the South is relevant, regardless of the outcome of the 2011 referendum, to further development in the autonomous South under a united Sudan or as a new country.

GoSS is currently initiating the development of a growth strategy for Southern Sudan, and Chapter 6 lays out a useful framework to inform and shape this strategy. The growth diagnostic framework can be a useful tool as it does not begin from any preconceived notions about what the correct policies for growth are, but rather tries to approach the economy from where it is and produce a prioritized, sequenced, set of policy actions to get where it wants to be. This is crucial in Southern Sudan in two ways. First, the situation is unique and the region faces a large number of very challenging conditions and so cannot simply rely on "conventional wisdom" to formulate policies. Second, the environment for analysis is largely free of reliable data, so a method that is based on creatively applying all available data and information to form a coherent narrative is well suited to the problem at hand.

Based on findings for two states, application of the growth diagnostic framework point to three main constraints to private investment and entrepreneurship in Southern Sudan. Case studies were carried out in Upper Nile and Eastern Equatoria states, to illustrate the type of analysis that is necessary to assess the South's comparative

advantage and essential policies and programs to unleash its growth potential. The basic syndrome of these economies is that of an under-investment state, with extremely low or non-existent access to financial services, serious transport infrastructure bottlenecks, existence of *ex-ante* risks, and government failures. The sudden closure of the Islamic banks, while the traditional banks have not expanded beyond Juba, has meant a large majority of Southern Sudanese have no access to banking services—which appears to be the single-most important barrier to growth in the near-term. Infrastructure shortcomings, particularly those related to transport structures such as inter-state and intra-state road networks, are binding constraints to almost all sectors and scale categories. *Ex-ante* appropriability risks are high. Uncertainty over the future of the country and the post-2011 phase as well as continued concerns over the local security condition, restrain productive operations and impede long-term investments. *Ex-post* failures at various levels of the government are also relevant. The multiple taxes and the lack of fiscal policy coordination among various government entities discourage production and marketing activities in various sectors. Misguided incentives are given by the government, which result in lowering agricultural productivity.

Complementing Technocratic Reforms with Good Governance

While technocratic solutions to the economic constraints to growth may look good on paper, in the case of Sudan, they would be of little use unless underlying governance issues are addressed. The manner in which the state exercises control over resources (i.e., governance) is linked to many of the reform areas discussed in this Report. Without adjustments to the role and performance of government and its interface with the private sector, the benefits of the economic reforms will be limited. For example:

- *Investment climate*. According to the roughly 900 firms surveyed for the ICA report, Sudan's private sector perceives weak governance—manifested in the forms of political instability, corruption and economic uncertainty—as its main constraint to growth. So by addressing supply side constraints Sudan's policymakers may lower costs of production, but a wholesale boost to private sector growth will not occur until governance reforms increase economic certainty and predictability. Other potential governance reforms include adopting processes mandated by the CPA, which will reduce reliance on executive decrees and the resulting overlaps, gaps and unpredictability in the legislative framework. Improved federal, state and local-level policy coordination can also help to eliminate the overlapping fees, taxes and customs tariffs, as well as cross-state tariffs in some areas that are currently hampering economic activities.
- *Oil sector*. Implementing recommendations on improved fiscal management of oil revenue volatility requires a more transparent and reliable flow of sector information, including for the South where oil dependence is extreme and technical capacity is low. Effective governance of the oil sector can also ensure available resources for investing in non-oil sources of growth and set an example of transparency and accountability to improve the broader investment climate. Specific areas for improvement include: reforming the role of the Ministry of Energy and Mining and related agencies; strengthening environmental and social governance of the oil industry; and repositioning of Sudapet.
- *Agriculture*. Technical analysis of the agriculture sector demonstrates much lower productivity than potential as defined by research and field trials. This suggests a program of improved seeds, modern irrigation technologies and the provision of fertilizers and other farm inputs. Better inputs are certainly part of the solu-

tion toward higher productivity, but commercialization in the traditional rainfed sector also requires changes in land policy to give small farmers the option of selling their small subsistence farms or purchasing additional land to increase their farm size.

The CPA has gone a long way to create some enabling institutions for sustained peace and prosperity in Sudan. Key institutions at all levels of governments (executive, legislature, and judiciary) have been established and seem to be operating with reasonable success. The signing led to the formation of GoNU, the approval of the Interim National Constitution (INC) and the establishment of GoSS, which has extensive and unprecedented autonomy. The CPA also led to improved decentralization within the Northern States. GoNU has rapidly increased transfers to states to fund decentralized responsibilities as foreseen in the CPA. The rollout of the new national currency in 2007 facilitates economic transactions. In the South, the GoSS's institutions and programs are building up gradually.

An overarching message of the proposed strategy is a reorientation of the role of the State in productive sectors that will enhance political stability and sustain more broad-based growth. This reorientation will require strong political buy-in at the highest level and efficient implementation of the agreed policies. And for growth to be broad-based, this reorientation will depend on adequate progress in the decentralization agenda. Subnational governments should play important roles for providing basic services and supporting private sector activities, but they require adequate resources and strong implementation capacity to support inclusive development.

ملخص:
استدامة النمو السريع هامة، ولكن النمو واسع القاعدة أمر ضروري

ألف. النمو الذي يتصدره البترول غير الاقتصاد السوداني، ولكن هل سيستمر؟

يجتاز السودان عامه العاشر في أطول وأقوى فترة نمو منذ استقلاله، مستفيدا من ظهور البترول في عام 1999.[2] فقد نما حجم اقتصاده، مقاسا بإجمالي الناتج القومي، خمسة أمثال — من 10 مليارات دولار أمريكي في عام 1999 إلى 53 مليار دولار في عام 2008. أما متوسط دخل الفرد، وهو مقياس موجز لمتوسط مستوى معيشة المواطنين العاديين، فقد زاد من 334 دولارا إلى 532 دولارا (بالسعر الثابت للدولار الأمريكي في عام 2000) خلال نفس الفترة الزمنية. ويتناقض هذا تناقضا صارخا مع الوضع الذي ساد في الفترة السابقة لظهور البترول عندما تراوح متوسط دخل الفرد الحقيقي في معظمه ضمن نطاق 200–300 دولار خلال فترة استمرت لأربعة عقود. (الجزء الأيسر من الشكل 1).

تغير الاقتصاد بدرجة كبيرة منذ ظهور البترول. مكنت الثروة البترولية السودان من الشروع في عملية توسع هائلة في بنيته المادية والاجتماعية. فزادت شبكة الطرق من 3,358 كيلومترا في عام 2000 إلى 6,211 كيلومترا في عام 2008، وزادت الكهرباء المولدة بأكثر من الضعف من 2,569 ميغاواط إلى 5,506 ميغاواط خلال نفس الفترة، وسجل عدد الأطفال المقيدين في المدارس الابتدائية زيادة حادة من 3.3 مليون إلى 5.3 مليون طفل في غضون ثمانية أعوام.[3] كما أصبح الاقتصاد السوداني أكثر تكاملا مع سائر العالم — فقد زادت نسبة التجارة إلى إجمالي الناتج القومي السوداني من 25 في المائة في عام 2000 إلى 44 في المائة في عام 2008. وبرز السودان كواحد من أكثر البلدان تلقيا للاستثمار الأجنبي المباشر في أفريقيا (الجزء الأيمن من الشكل 1). وعلى حد قول علماء الاقتصاد القياسي، يبدو أن الاقتصاد السوداني قد شهد انطلاقة هيكلية بعد ظهور البترول.[4]

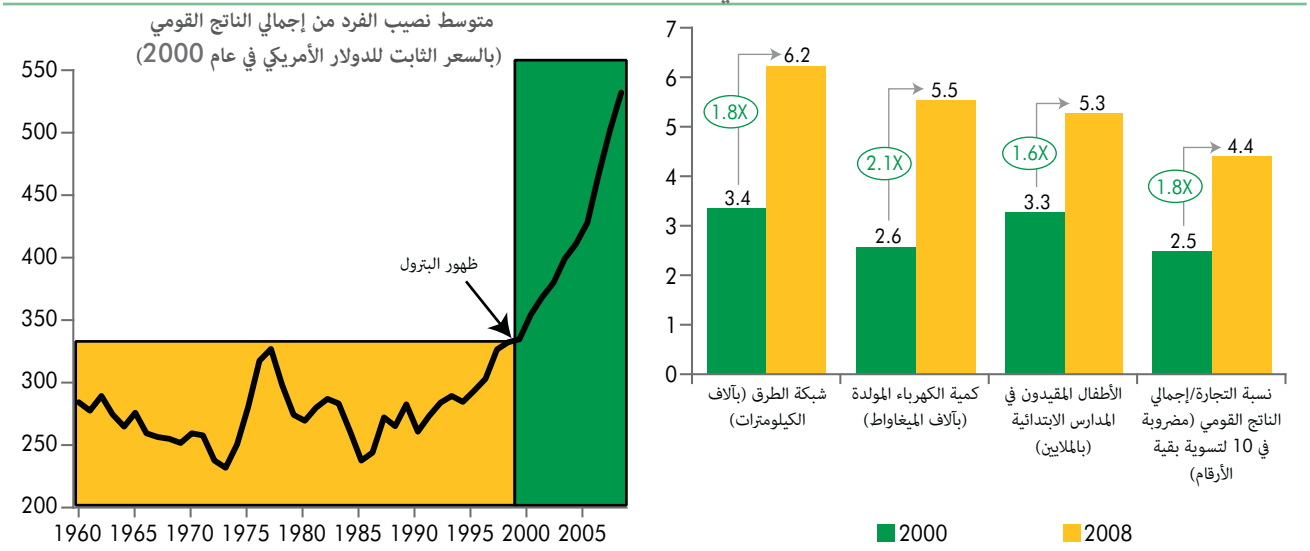
[1] أعد هذا الفصل Deepak Mishra و Bill Battaile، بمساهمات من كل من مؤلفي الفصول.

[2] اكتشف البترول في عام 1978 في منطقة بانتيو (Bentui)، ولكن الصادرات الكبيرة لم تصبح حقيقة واقعة إلا في عام 1999.

[3] البيانات الخاصة بمعظم متغيرات الاقتصاد الكلي في جنوب السودان غير متوفرة. غير أنه في قطاعات مثل التعليم، حيث تتوفر البيانات، سيؤدي إدراجها إلى زيادة تعزيز الحجة التي يسوقها الشكل 1.

[4] يرى بعض المراقبين أن الإصلاحات التي أدت إلى تثبيت أوضاع الاقتصاد في التسعينيات، وليس تصدير البترول، هي التي وضعت الأساس لمرحلة النمو السريع في السودان. ونحن لا نختلف مع هذا الرأي. بل في الواقع أن نجاح النمو في السودان في الآونة الأخيرة هو على الأرجح ناتج عن توليفة من سياسة تثبيت أوضاع الاقتصاد في التسعينيات، وظهور البترول، وعودة السلام في أعقاب توقيع اتفاق السلام الشامل.

الشكل 1: بعض الدلالات الجديرة بالذكر على التغير الاقتصادي منذ ظهور البترول



المصدر: مؤشرات التنمية في العالم التي يعدها البنك الدولي.

واحدة من التغيرات الأقل وضوحا إلا إنها هامة، قد حدثت في مجال إدارة الاقتصاد الكلي. فقد عانى السودان من فوضى اقتصادية خلال معظم السبعينيات والثمانينيات عندما كان التضخم ذو المنزلتين العشريتين شائع الحدوث، وكانت هناك تقلبات كبيرة في معدل النمو. ففيما بين عامي 1971 و 1991، بلغ متوسط معدل التضخم 33 في المائة، مقابل 8 في المائة منذ ظهور البترول (الجزء الأيسر من الشكل 2). وخلال فترة السنوات 1970–1990، هبط معدل نمو إجمالي الناتج المحلي الحقيقي إلى أدنى من -5 في المائة في ست سنوات (1972، 1978، 1979، 1984، 1985 و 1990) وتجاوز 10 في المائة في أربع سنوات (1974، 1975، 1976 و 1987). وعلى نقيض ذلك، تراوح معدل النمو في نطاق 5–11 في المائة خلال فترة السنوات 1999–2008 (الجزء الأيمن من الشكل 2). وبعد نجاح تثبيت أوضاع الاقتصاد في منتصف التسعينيات، بنى السودان سجلا ثابتا قويا في إدارة الاقتصاد الكلي وكان أفضل مثال على ذلك انخفاض واستقرار معدل التضخم، واستقرار سعر الصرف، واستدامة الحساب الخارجي، واعتدال تقلبات الدورة الاقتصادية.

ولكن استدامة النمو الذي يقوده البترول في السودان مهددة بعدد من العوامل الاقتصادية والسياسية. تأتي التهديدات الاقتصادية من اعتماد السودان المفرط على سلعة أولية واحدة كمصدر وحيد للنمو، وإهمال النمو في القطاعات غير البترولية (وهو مؤشر لظاهرة «لعنة الموارد»)، والدور المتزايد لهيمنة القطاع العام. وينشأ التحدي السياسي لاستمرار النمو والرخاء من تركة السودان المتمثلة في استمرار التفاوت بين المركز والمناطق المحيطة به، وهي مشكلة لم تحل حلا كاملا خلال فترة الطفرة البترولية على الرغم من بذل بعض المحاولات من خلال اتفاق السلام الشامل، ولذلك تظل تشكل مصدرا محتملا للصراع وعدم الاستقرار السياسي في المستقبل.

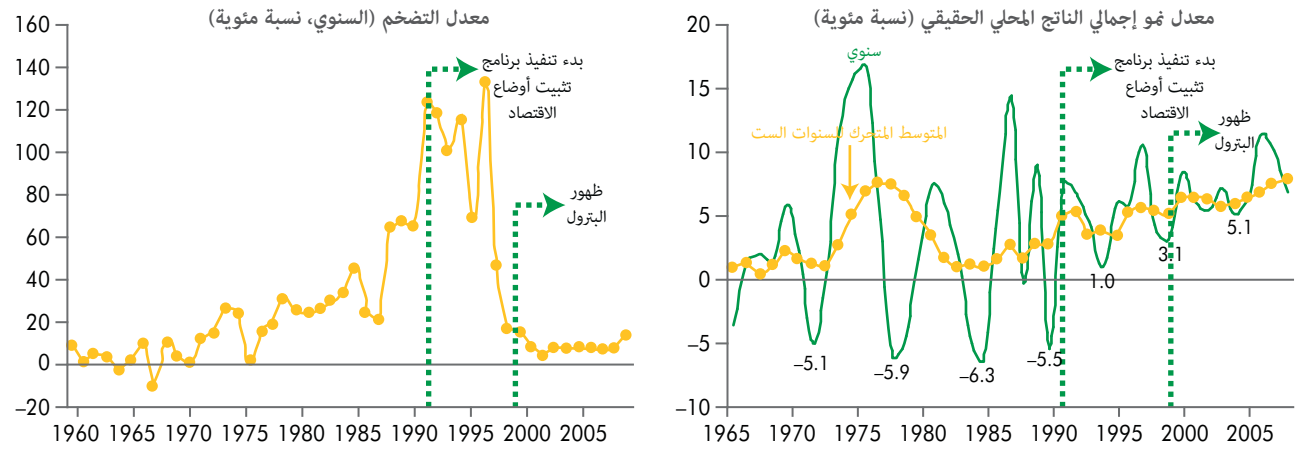
التهديدات الاقتصادية نتيجة الاعتماد على البترول وتقلب الأوضاع الخارجية

يأتي التحدي الراهن لاستدامة النمو السريع من اعتماد السودان المفرط على عائدات البترول، التي تعتبر بطبيعتها مؤقتة ولا يمكن الاعتماد عليها بدرجة أساسية. حسب معظم التقارير، من الأرجح أن تكون أفضل أيام حصول السودان على عائدات كبيرة مفاجئة من البترول قد ولت بالفعل. وعلى أساس مستويات الاحتياطيات البترولية المعروفة حاليا وخطط الإنتاج الحالية، من المحتمل أن تستمر عائدات البترول لفترة إضافية تتراوح بين 20 و 30 سنة، بحيث سيبلغ إنتاج البترول ذروته في عام 2012 حسب أكثر التصورات تفاؤلا. وجدير بالذكر أن التقلبات الشديدة في أسعار البترول العالمية في الآونة الأخيرة وما قابلها من تقلب في الإيرادات الحكومية جعل من الضروري تنمية وتشجيع المزايا النسبية في القطاعات غير البترولية لاسيما وان الثروة البترولية لا تزال متاحة. كما أن تعزيز أداء المصادر غير البترولية للإيرادات المالية سيساعد الاقتصاد على موازنة الاعتماد على البترول.

ثمة عامل اقتصادي آخر يهدد استمرار النمو ألا وهو أن اقتصاد السودان بدأ يظهر بعض المشاكل المماثلة لتلك التي أثرت في اقتصادات البلدان التي حلت بها «لعنة الموارد». تشمل هذه المشاكل (انظر الصندوق 1):

- تدهور أوضاع الاقتصاد الكلي. هناك اتجاه نحو حدوث اختلالات خارجية كبيرة، وزيادات في سعر الصرف ترتبط بازدهار أسعار السلع الأولية، والتي تضعف القدرة التنافسية لقطاعات الاقتصاد الأخرى غير قطاعات السلع الأولية. في حالة السودان، تؤكد الأزمة العالمية التي حدثت في الآونة الأخيرة مدى تعرض الاقتصاد لعدم الاستقرار الخارجي. إضافة إلى ذلك، ارتفع سعر الصرف الحقيقي بنسبة 40 في المائة فيما بين عامي 2005 و 2006، وهبطت حصة القطاعات غير البترولية في الصادرات من 24 في المائة في عام 2000 إلى 5 في المائة في عام 2008. غير أن انخفاض قيمة العملة المحلية في عام 2009 جعل سعر الصرف الحقيقي يقترب من مستوى التوازن ولذلك فإن هذه قضية أقل إلحاحا الآن مما كان عليه الوضع قبل سنة.
- التقلب والتراخي الماليان. هناك نزعة نحو حدوث تقلبات كبيرة في عائدات الصادرات — وهو وضع في العادة يتفاقم بسبب الإنفاق الحكومي المضخم لآثار تقلبات الدورة الاقتصادية — تزيد من أثر الدورات الاقتصادية وتثبط النمو الاقتصادي على الأمد المتوسط. ويميز هذا بشكل دقيق الوضع المالي

الشكل 2: حقق السودان استقرارا معتبرا في الاقتصاد الكلي في السنوات الأخيرة

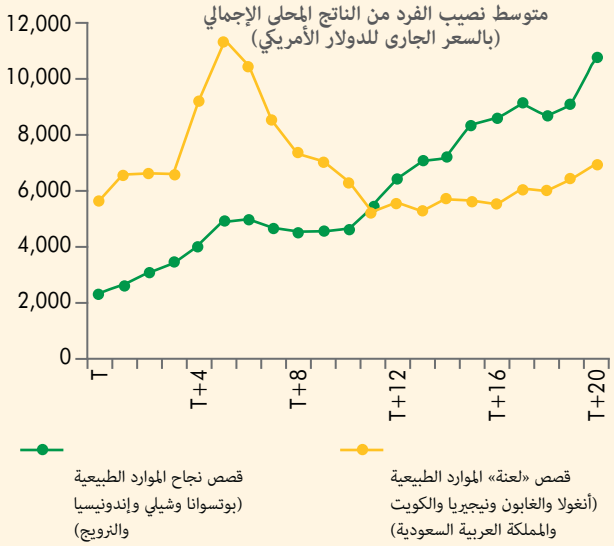


المصدر: الجزء الأيسر – التقارير السنوية للجهاز المركزي للإحصاء؛ الجزء الأيمن – تقارير موظفي صندوق النقد الدولي.

الصندوق ١: نفس الموارد، ولكن نتائج مختلفة: ما تفسير ذلك؟

فيما بين البلدان الغنية بالموارد الطبيعية، ما الذي يميز البلدان الناجحة عن البلدان المصابة بلعنة الموارد؟ كانت بلدان مثل بوتسوانا وشيلي وإندونيسيا والنرويج غنية بالموارد الطبيعية ونجحت في إدارة ثروتها المدفوعة بالموارد بحكمة، أو في تنويع اقتصاداتها بالابتعاد عن الموارد الطبيعية والاتجاه نحو إقامة اقتصادات حديثة قادرة على المنافسة.

وكما يبين الشكل المرفق بهذا الصندوق، زاد متوسط دخل الفرد في هذه البلدان خمسة أمثال على مدى فترة عشرين سنة. وعلى نقيض ذلك، شهدت بلدان مثل أنغولا والغابون ونيجيريا والكويت والمملكة العربية السعودية تقلبات حادة في متوسط دخل الفرد فيها تزامنت مع دورات تقلب الأسعار العالمية للسلع الأولية، ولم يشهد المواطن العادي في هذه البلدان أي تغير تقريبا في متوسط دخله على مدى فترة عشرين سنة. وقد أوجدت البلدان الناجحة السياسات والمؤسسات الضرورية في وقت مبكر كان كافيا لتمكينها من تنويع اقتصادها وتوزيع الرخاء المتحقق بطريقة أكثر شمولية وبالتالي حماية اقتصادها من المخاطر الاقتصادية والسياسية. ومن ناحية أخرى، أهدرت البلدان المصابة بلعنة الموارد الفرصة التي سنحت لها وظلت حبيسة لبيئات سياسات ومؤسسات ضعيفة.



لحكومة الوحدة الوطنية وحكومة جنوب السودان على حد سواء. فقد عانت حكومة الوحدة الوطنية من عجوزات في الموازنة وتراكمت عليها متأخرات الديون المحلية حتى عندما كانت أسعار البترول مرتفعة في الفترة الماضية، بينما أنفقت حكومة جنوب السودان 6.1 مليار جنيه سوداني في عام 2006 وبعد ذلك خفضت بشدة الإنفاق المخطط إلى 3.6 مليار جنيه سوداني في موازنة عام 2009.

- الأخطاء في نظام الإدارة العامة. هناك اتجاه لأن تغري عائدات السلع الأولية المرتفعة الأفراد والشركات بمحاولة الاستيلاء على الثروة المتحققة من الموارد الطبيعية، وفي أسوأ الحالات التورط صراحة في الكسب غير المشروع. ويعتقد الكثيرون أن ارتفاع تكلفة وحدة الإنشاءات المدنية، والارتفاع الشديد لمستوى القروض المتعثرة (غير المنتظمة في السداد) في الجهاز المصرفي، وتنفيذ مشروعات بنية أساسية كبيرة في مناطق نائية، والتكلفة المفرطة وتجاوز مواعيد التنفيذ في مشروعات البنية الأساسية العامة، وزيادة حجم الالتزامات التعاقدية من جانب الحكومة، خاصة حكومة جنوب السودان، في نظر الكثيرين جميعها تشكل دلالات على ضعف نظام الإدارة العامة.

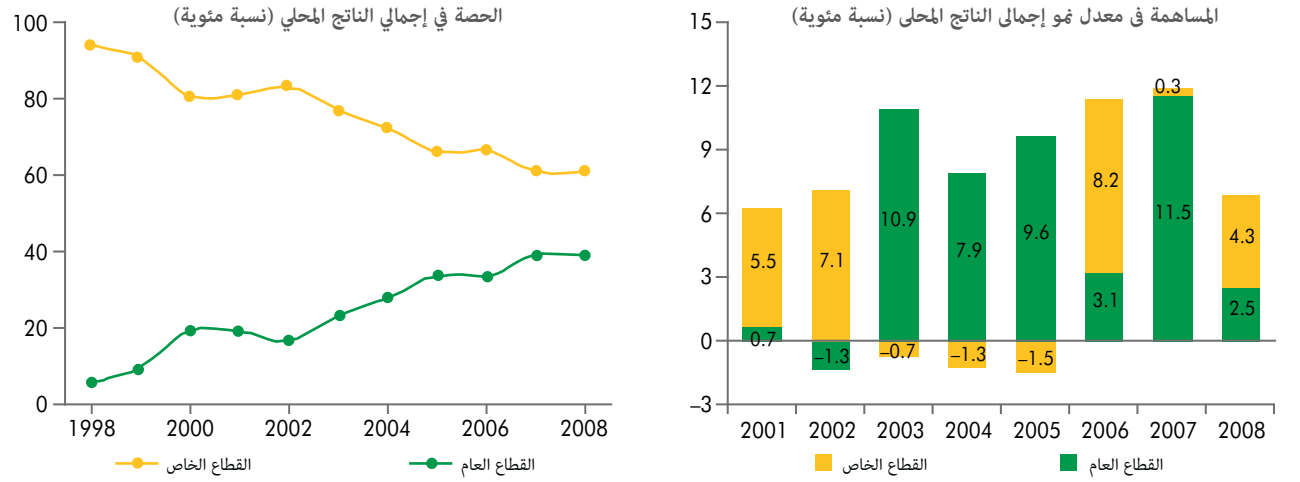
التحدي الاقتصادي الثالث أمام آفاق نمو السودان يأتي من قطاعها العام الآخذ في النمو بسرعة، والذي أصبح عائقا أمام تنمية قطاع خاص قوي. خلال السنوات العشر الماضية، زادت حصة القطاع العام في إجمالي الناتج المحلي من 6 في المائة إلى حوالي 40 في المائة (الجزء الأيسر من الشكل 3). كما أصبح القطاع العام المساهم الرئيسي في عملية النمو، بينما كان نمو القطاع الخاص أضعف كثيرا بل وسلبيا في ثلاث من السنوات الست الماضية (الجزء الأيسر من الشكل 3).

وينتج ذلك مباشرة من هيمنة قطاع البترول — الذي تمتلكه الحكومة وتديره كله تقريبا — في طفرة ازدهار النمو. فقد غذت عائدات البترول حدوث زيادة حادة في الخطة الاستثمارية للحكومة والمؤسسات العامة، مما زاد من حدة المنافسة على الموارد الشحيحة في الاقتصاد المحلي، مثل الائتمان المصرفي، والعمالة الماهرة، والأراضي. ونظرا لعدم وجود منافسة عادلة بين القطاع العام وشركات القطاع الخاص، فقد أدى ظهور قطاع عام مهيمن إلى انخفاض آفاق نمو القطاع الخاص.

التهديدات السياسية الناتجة عن الصراعات والتنمية غير المتوازنة

لا يحتمل أن يأتي التحدي الأساسي لرخاء السودان من العوامل الاقتصادية الآنفة الذكر، ولكن من القضايا السياسية المترسخة. عانى السودان من الصراعات خلال معظم الفترات منذ استقلاله في عام 1956. ومع أن هذه الصراعات تكتسي في أحيان كثيرة بنبرات دينية ولغوية وعرقية، فإن جوهرها ينطوي على قضية عدم المساواة الشديدة بين المركز، الذي تهيمن عليه الخرطوم والشمال، خاصة القرى الممتدة بمحاذاة نهر النيل، وبين المناطق المحيطة الأكبر كثيرا، والتي تشمل الجنوب والشرق والغرب (دارفور). ومع أن اتفاق السلام الشامل، الذي وقعته في 9 يناير 2005 حكومة السودان والحركة الشعبية/الجيش الشعبي لتحرير السودان، خلق فرصة لتحقيق السلام في أجزاء معينة من السودان، فإنه لم يعالج مصادر قلق المناطق المحيطة الأخرى، مثل الولايات الشرقية ودارفور. وأسفر اتفاق السلام في شرق السودان الذي تم التوصل إليه بعد ذلك في عام 2006 عن تحقيق السلام في تلك المنطقة، بينما لم ينجح في ذلك اتفاق السلام في دارفور الذي تم التوصل إليه في نفس السنة، ويهدد استمرار الصراع في دارفور الاستقرار والتنمية في كافة أنحاء السودان. وخلال الفترة الانتقالية، ظهر قلق متكرر بشأن استدامة عملية اتفاق السلام الشامل نفسها.

الشكل 3: نمو السودان كان مدفوعا إلى حد كبير بزيادة حجم القطاع العام



المصدر: تقديرات موظفي البنك الدولي من بيانات وزارة المالية والاقتصاد الوطني وتقارير مختلفة من إعداد موظفي صندوق النقد الدولي.
ملاحظة: تحسب حصة القطاع العام في إجمالي الناتج المحلي باعتبارها حاصل جمع الاستهلاك العام، والاستثمار العام، وصادرات البترول، مطروحا منه واردات القطاع العام. نظرا لأنه لا توجد بيانات يعتمد عليها عن هذه الواردات، فإننا نستخدم نسبة الاستهلاك العام والخاص لتقدير حجم واردات القطاعين العام والخاص.

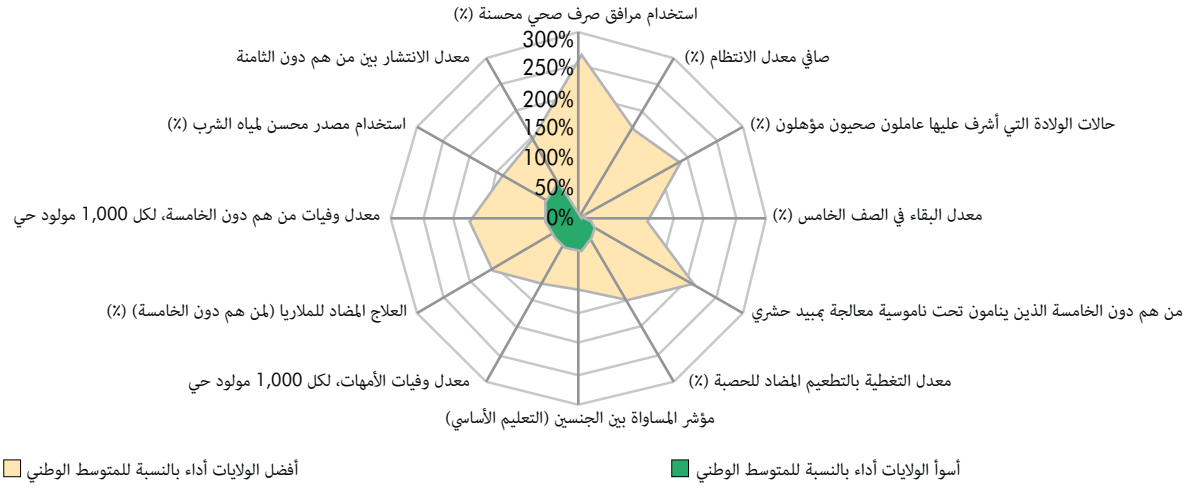
عدم قدرة النمو المدفوع بالبترول على أن يكون إشراكيا بدرجة كافية يشكل التحدي الرئيسي. كانت عملية النمو في السودان غير متوازنة تاريخيا، حيث تركزت معظم الشركات الصناعية والأراضي المروية في ولايتي الخرطوم والجزيرة. وهذا النوع من التركز الاقتصادي ليس غير عادي وربما كان حتميا (انظر تقرير عن التنمية في العالم 2009)، ولكن استمرار مظاهر التفاوت المكانية ليس مرغوبا فيه وليس حتميا. وكما يبين الشكل 4، هناك تفاوت هائل في مؤشرات التنمية فيما بين أفضل وأسوأ الولايات أداء في السودان. فعلى سبيل المثال، في عام 2006 كان صافي معدل الانتظام في المدارس الابتدائية في أفضل الولايات أداء 91 في المائة، بينما بلغ في أسوأ الولايات أداء 4 في المائة. وتستهلك العاصمة السودانية حوالي ثلث مجموع الكهرباء المنتجة في البلاد، بينما تتمتع نسبة تقل عن 7 في المائة من الأسر السودانية في بقية أنحاء البلاد بإمكانية الوصول إلى الشبكة الوطنية. وتوجد ثمانية كباري (جسور) على نهر النيل حول مدينة الخرطوم، بينما لا توجد سوي ثمانية من هذه الكباري على باقي نهر النيل الممتد لمسافة 1,500 كيلومتر، وكوبري واحد في جنوب السودان. وعلى أساس نمط الإنفاق العام الذي شهدته السنوات الأخيرة، من المحتمل أن يكون التفاوت قد ازداد اتساعا أيضا بين جوبا، عاصمة جنوب السودان، وبين مدن الجنوب الأخرى. وتوضح هذه الإحصائيات استمرار مظاهر التفاوت المكانية والإقليمية والعرقية الكبيرة داخل السودان، وهي التي كانت السبب في معظم صراعاته المحلية.

نظرا لأن انعدام التنمية الإشراكية يمثل واحدا من الأسباب الرئيسية للانتكاسات التي تحدث في أعقاب انتهاء الصراعات في كافة أنحاء العالم، فإن من مصلحة السودان ليس مواصلة النمو السريع فحسب، وإنما أيضا جعله أوسع قاعدة وأكثر إشراكا. ويشير فحص تاريخ النمو في البلدان النامية في أعقاب انتهاء الصراعات إلا أن بوسع السودان، بإيجاد السياسات الرشيدة والمؤسسات السليمة، أن يتجنب تدهور الوضع ليصل إلى حد استئناف الصراع. ويبين Collier و Hoeffler (2004) أن حوالي نصف جميع الحروب الأهلية راجع إلى الانتكاسات في أعقاب انتهاء الصراعات، مع ارتفاع خطر استئناف الصراع خلال السنوات العشر الأولى من انتهاء الصراع — ويبلغ هذا الخطر عادة حوالي 50 في المائة.[5] ويرجع كثير من هذه الانتكاسات إلى عدم إحراز تقدم كاف بشأن تخفيض مستوى التفاوت والتهميش في الفترة التي تلي مباشرة انتهاء الصراع. ولذلك فإن التحدي الماثل أمام واضعي السياسات السودانيين هو إيجاد وسائل لمواصلة معدل النمو الحالي المرتفع وتقاسم ثمار النمو بطريقة أكثر عدلا مما حدث في الماضي.

يحتاج السودان إلى رؤية نمو جديدة أكثر توازنا وأقل اعتمادا على البترول، مع استخدام ثروته البترولية لخلق أساس اقتصادي لمسار نمو متنوع وإشراكي ومستدام. تتمثل المهمة الأولى في فصل الاقتصاد عن البترول واعتماد سياسات يمكنها حفز النمو الذي يقوده القطاع الخاص في قطاع الاقتصاد غير البترولي. وفي الوقت نفسه، من الضروري أن يتم تقاسم ثمار النمو على نطاق أوسع لرفع مستويات معيشة الغالبية الساحقة من الشعب السوداني. وبدون توزيع ثمار السلام الملموسة على معظم الناس، سيظل الاستقرار السياسي والاقتصادي هشا. وستكون الإدارة الفعالة للموارد ومراعاة قضايا الاقتصاد السياسي المعقدة أمرين حاسمين لوضع رؤية نمو جديدة. إن تحدي النمو الماثل أمام السودان كبير بشكل خاص، نظرا للسجل الثابت للبلدان المعتمدة على الموارد الطبيعية وتعقيدات الوضع السياسي في السودان نفسه. ويمكن أن يكون البترول عاملا مساعدا، ولكنه يمكن بسهولة أن يصبح لعنة أكثر منه نعمة تفيد الأداء الاقتصادي الطويل الأمد.

[5] لجنة النمو 2008.

الشكل 4: التفاوت الكبير في مؤشرات الأهداف الإنمائية للألفية الجديدة داخل السودان



المصدر: حكومة الوحدة الوطنية وحكومة جنوب السودان ٢٠٠٦.

ملاحظة: يبين الشكل النسبة بين العدد الخاص بأفضل وأسوأ الولايات أداء فيما يتعلق بالمتوسط الوطني.

باء. نحو رؤية نمو جديدة

كيف تزداد البلدان ثراء وتواصل نموها؟ تشير أدبيات التنمية في الآونة الأخيرة إلى أن تحقيق النمو الاقتصادي المتواصل يتطلب بشكل عام تغييرا هيكليا فيما تنتجه البلاد وتتبادله تجاريا، ابتداء من إنتاج عدد صغير من المنتجات البسيطة التي تتطلب قدرات قليلة وحتى إنتاج المنتجات الأكثر تعقيدا التي تتطلب قدرات كثيرة.[6] وتساند الدراسات التجريبية التي شملت بلدانا عديدة ودراسات حالات قصص النجاح (على سبيل المثال، كوريا وشيلي والصين) وجود ارتباط قوي بين ارتفاع متوسط دخل الفرد وزيادة درجة التنويع وإنتاج السلع والخدمات. غير أن القدرة على اكتساب قدرات إضافية وإحداث هذا التغيير تتأثر بأنواع المنتجات في قاعدة الإنتاج الحالية للبلد المعني، وكذلك مستويات دخل شركائه التجاريين. بالنسبة لبلدان مثل السودان معتمدة على القطاعات المكثفة لإنتاج الموارد الطبيعية، يكون التغيير الهيكلي صعبا بسبب الطبيعة المغلقة لقطاع البترول، الذي ليست له آثار امتدادية هامة فيما بين الصناعات. ذلك أن إتقان إنتاج البترول، خاصة عندما تتصدره بصورة مهيمنة الشركات المنتجة والخدمات المساندة الأجنبية، لا يساعد بسهولة على التنوع وإنتاج منتجات أكثر تعقيدا والترقي على سلم سلسلة القيمة.

ما هو النهج الملائم للوضع الحالي في السودان؟ يوصي هذا التقرير باتباع نهج عام يتمثل في العمل على مواصلة حالة النمو الحالي في الأمد القريب مع وضع الأساس لنمو أوسع نطاقا يقوده القطاع الخاص وإحداث تغيير هيكلي على الأمدين المتوسط والطويل. ولتكييف استراتيجيات النمو أهمية حاسمة،[7] ويجب أن تؤخذ في الاعتبار بعض الأبعاد الهامة في السياق السوداني. أولا، من أجل معالجة السبب الجذري للصراع والتوتر في السودان، يجب ألا تقتصر الأولوية الأولى على مجرد تحقيق نمو سريع، وإنما أن تضمن أيضا أن يكون واسع القاعدة وإشراكيا. ثانيا، خلقت الأوضاع السياسية المحلية الغامضة والتوترات مع المجتمع الدولي مخاطر كبيرة للاستثمار والتخطيط الاقتصادي من المصادر المحلية والأجنبية على حد سواء، وتعتبر إزالة أسبابها أمرا حاسم الأهمية لمواصلة التجارة والاستثمار. ثالثا، البترول مورد غير متجدد ولا يشكل أساسا متينا للنمو المستدام في المستقبل. وتعتبر الأزمة العالمية الحالية تذكرة قوية بالحاجة إلى التنويع، وكذلك التحديات الخاصة أمام الاقتصاد الكلي ونظام الإدارة العامة في الأمد القريب. ومن حسن الطالع أن السودان يمتلك ثروات كبيرة من عوامل الإنتاج الأخرى إلى جانب البترول.

يقترح هذا التقرير استراتيجية نمو للسودان تقلل الاعتماد على البترول، بينما تبني قاعدة اقتصادية لمسار نمو متنوع وإشراكي ومستدام. على وجه التحديد، يجب أن تركز استراتيجية السودان في الأمد القريب على:

أ. تنمية البيئة التمكينية للنمو والحفاظ عليها، وبالتحديد استقرار الاقتصاد الكلي والإدارة المالية الفعالة (الفصل الأول)؛

ب. تنفيذ سياسات تستهدف تحسين مناخ الاستثمار وتوسيع نطاق النمو الذي يقوده القطاع الخاص (الفصلان الثاني والخامس)؛

ج. زيادة العوائد من قطاع الزراعة باعتباره المحرك المحتمل الأعلى للنمو وتخفيض أعداد الفقراء في الأمد المتوسط (الفصل الرابع)؛

د. وضع خطة تعمير شاملة للجنوب (الفصل السادس)؛ و

هـ. تكملة الإصلاحات التكنوقراطية بنظام إدارة عامة سليم (حكم رشيد).

[6] حتى خارج إطار ما بعد انتهاء الصراع، فإن مواصلة طفرات النمو أمر غير شائع. فقد حددت دراسة أجراها Haussmann و Pritchett و 2004) Rodrik) أمثلة على التسارع الشديد للنمو الاقتصادي أمكن مواصلتها لمدة ثمانية أعوام على الأقل ووجدت أكثر من 80 من هذه الحالات منذ الخمسينيات – لم يتم مواصلة سوى 22 منها لمدة تجاوزت السنوات العشر. ووجد تقرير لجنة النمو (2008) أن 13 بلدا فقط هي التي تمتعت بنمو سريع ومتواصل منذ الخمسينيات.

[7] على سبيل المثال، انظر Zagha و Nankani 2005، و Hidalgo وآخرين 2007، و Hidalgo و Hausmann 2009.

ضمان استقرار الاقتصاد الكلي والإدارة المالية الفعالة

في أعقاب النجاح في تثبيت أوضاع الاقتصاد الكلي في التسعينيات، بنى السودان سجلا ثابتا من الإدارة الناجحة للاقتصاد الكلي في ظل برامج متعاقبة نفذت تحت رقابة موظفي صندوق النقد الدولي. غير أن ظهور اقتصاد مستند إلى البترول والتقلبات في الأسعار العالمية للسلع الأولية شكلا تحديات جديدة للاقتصاد الكلي أمام واضعي السياسات — ابتداء من منع حدوث فورة في النشاط الاقتصادي وحتى إيجاد وسائل لمواصلة نمو الاقتصاد. وفي الوقت نفسه، سيتعين على السلطات معالجة بعض المخاطر المرتبطة بالتدهور الاقتصادي بسبب الاعتماد على الموارد الطبيعية، حيث يأتي أكثر من 90 في المائة من الصادرات السودانية من قطاع البترول. كما أن أثر الثروة الذي أحدثه استغلال البترول تسبب في زيادة كبيرة في الواردات الاستهلاكية غير البترولية. فمع ارتفاع الدخول، يتغير الطلب الاستهلاكي عادة بالابتعاد عن الأغذية والسلع الأساسية وباتجاه السلع المصنعة والخدمات. في بلد مصدّر، يمكن أن يحدث هذا التغير في الطلب من خلال زيادة استهلاك الواردات وليس المعروض من المنتجات المحلية. وفي حالة السودان، حققت صادرات البترول إيرادات مفاجئة من النقد الأجنبي، سهلت زيادة الطلب المحلي التي تتم تلبيتها إلى حد كبير عن طريق الواردات. وحتى عهد قريب، زادت الجاذبية النسبية للواردات بسبب ارتفاع سعر الصرف الحقيقي.

تؤكد التجربة الأخيرة المتعلقة بالأزمة العالمية التحديات الماثلة في مجال الإدارة الاقتصادية الكلية لاقتصاد البترول السوداني، بما في ذلك الحاجة إلى التكيف بمرونة مع ضغوط اختلالات الحساب الخارجي. الأثر التجميعي للقنوات العديدة لنقل آثار الأزمة — الصادرات، الموازنة، الاستثمار الأجنبي المباشر، التحويلات، والجهاز المصرفي — يمكن أن يعني انخفاض تدفقات النقد الأجنبي بأكثر من 4–5 مليارات دولار في الأمد القصير. لذلك اضطر بنك السودان المركزي، في أوائل عام 2009، إلى فرض عدة قيود على عمليات مكاتب الصرافة وخفض مبالغ العملات الأجنبية المسموح بها للمسافرين إلى الخارج. وقد أتاحت هذه الإجراءات مهلة مؤقتة لالتقاط الأنفاس، ولكنها لم تعالج مصدر نقص النقد الأجنبي، الذي يحتمل أن يكون ذا طبيعة هيكلية. وفي أعقاب الانخفاض الذي طرأ على قيمة العملة السودانية في الآونة الأخيرة، فإن عبء خلق اقتصاد قادر على المنافسة يقع إلى حد كبير على عاتق الإصلاحات الهيكلية، التي يمكن أن تساعد على تنويع القاعدة الاقتصادية، وتقوية القطاعات غير البترولية، وتخفيض اعتماد السودان على السلع المستوردة.

أسهمت السياسة المالية المضخمة لآثار تقلبات الدورة الاقتصادية وضعف إدارة عائدات البترول في تدهور أوضاع الاقتصاد الكلي السوداني. حددت سمتان رئيسيتان إدارة السودان المالية لطفرة عائدات البترول — العائدات المتوقعة ذات طبيعة مؤقتة واستيعابها كان شبه كامل مع نقل عبء التقلبات إلى جانب النفقات. على أساس مستويات احتياطيات البترول المعروفة حاليا وخطط الإنتاج الحالية، فإن عائدات البترول في السودان ستنضب خلال فترة تتراوح بين 20 و 30 سنة، مع بلوغ إنتاج البترول ذروته في عام 2012 وفقا لأكثر التصورات تفاؤلا. ونظرا لأن كل عائدات البترول كانت تنفق وحتى الآن في ظل سياسة مالية توسعية، فإن السلطات لم تتمكن من تجميع مدخرات كبيرة. وأدى عدم تحقيق استقرار في مستوى الإنفاق العام إلى نتيجتين ماليتين مثيرتين للقلق: حدوث زيادات كبيرة في النفقات غير التقديرية (على سبيل المثال، الأجور والإعانات) التي يصعب تخفيضها في فترات انخفاض الإيرادات، وحدوث انخفاض في كفاءة الاستثمارات العامة، مع الإنفاق من الموازنة على المشروعات الاستثمارية الكبيرة بما يتجاوز كثيرا المخصصات المخططة، والتمويل غير المنتظم/نقص التمويل لبقية حافظة المشروعات. ولذلك كان مطلوبا إجراء تعديلات مالية صعبة في أعقاب الانخفاض الحاد في عائدات البترول في الآونة الأخيرة.

يتعين على المخططين الماليين البحث لإيجاد أفق متوسط الأمد لعائدات البترول من أجل الإدارة الفعالة للتقلبات وتشجيع إيجاد أساس إنفاق يمكن الاعتماد عليه بدرجة أكبر بالنسبة للأولويات المبينة في التقرير. التقلبات الأكبر في أسعار البترول، عندما تنتقل من خلال تقلبات عائدات البترول ومن ثم التقلبات في مستويات الإنفاق، تضر عادة بالابتكار والنمو الاقتصادي، خاصة إذا كان التطور المالي في البلد المعني ضعيفا، كما هو الحال في السودان. ويمكن أن تتأثر كفاءة الاستثمارات العامة بشكل خاص. ويمكن أن يؤدي الاستيعاب الكامل لعائدات البترول في الموازنة، كما هو الحال في السودان، إلى زيادات غير مستدامة في الإنفاق الحكومي، كما يستدل على ذلك من التعديلات المالية الصعبة في الآونة الأخيرة. ومن أجل الإدارة الفعالة لتقلب عائدات البترول، يجب فصل الإنفاق الجاري عن عائدات الموارد الجارية. ويؤدي كسر هذه الرابطة إلى إنفاق عام واستثمارات عامة أسلس وأكثر كفاءة، ويساعد على تخفيف التكاليف الكبيرة للتعديلات المالية القصيرة الأمد في المستقبل. ولتحقيق هذه الغاية، يتعين على المخططين الماليين اتباع نهج متوسط الأمد تجاه إدارة عائدات البترول. وهذا الأمر حاسم الأهمية بشكل خاص في الجنوب حيث الاعتماد على عائدات البترول يبلغ أشده وتقلب الإنفاق أكثر حدة. ويمكن أن يتضمن محور التركيز في الأمد المتوسط إعداد تقديرات لعائدات البترول المتوقعة ومتابعتها، على سبيل المثال على أساس ثلاث سنوات بالنسبة للموازنة، وبحث إيجاد أطر استدامة مالية من أجل وضع معايير قياسية لإدارة الموارد الطبيعية. على سبيل المثال، تشير التقديرات الخاصة بمعادل الدخل الدائم المطبق على السودان بموجب مجموعة من الافتراضات الخاصة بالإنتاج، والأسعار المستقبلية، والخصم القطري إلى أن مستويات الدخل الدائم تبلغ حوالي 1.3 مليار دولار بالنسبة لحكومة الوحدة الوطنية و 800 مليون دولار بالنسبة لحكومة جنوب السودان (وكل هذه المبالغ بالسعر الثابت للدولار الأمريكي في عام 2008). كما أن تنويع الإيرادات لتشمل مصادر غير بترولية هام لتحقيق استقرار مستويات الإيرادات والنفقات وبالتالي تحقيق وضع مالي أكثر استدامة ويمكن الاعتماد عليه بدرجة أكبر. وأخيرا، يمكن أيضا للمفاوضات مع الدائنين بشأن الدين الخارجي على أساس مبادرة تخفيض ديون البلدان الفقيرة المثقلة بالديون ومبادرة تخفيض الديون المتعددة الأطراف أن تزيد الموارد المخصصة للأغراض الإنمائية.

توسيع نطاق النمو الذي يقوده القطاع الخاص

يواجه القطاع الخاص الناشئ في السودان مخاطر كبيرة، كثيرا ما تكون خارج نطاق سيطرته، تحد من نموه وتنوعه. والقيود الثلاثة الرئيسية التي تعيق نمو شركات القطاع الخاص في السودان واستثماراتها هي عدم الاستقرار السياسي، الفساد، وغموض الأوضاع الاقتصادية — وهي عوامل مرتبطة ارتباطا دقيقا ومعقدا بنظام الإدارة العامة في السودان. المجموعة الثانية من القيود هي البنية الأساسية، التمويل، والضرائب، وهي لا تختلف كثيرا عن بعض القيود الرئيسية التي تواجهها الشركات في البلدان متوسطة الدخل ومستقرة الأوضاع كالصين

والهند. ولذلك فليس من المستغرب أن قدرة القطاع الخاص السوداني على المنافسة لا تزال منخفضة، نظرا لتوليفة من ارتفاع تكاليف المعاملات، وسوء أداء مؤسسات السوق، وانعدام البنية الأساسية، وارتفاع الحواجز الإدارية وتكاليف المعاملات، بما في ذلك تكاليف الفساد.

يجب أن يركز أي برنامج لمعالجة القيود الرئيسية التي يواجهها القطاع الخاص على زيادة حالة اليقين بالأوضاع الاقتصادية وإمكانية التنبؤ بها، وتخفيض تكاليف المعاملات، وتشييد مرافق البنية الأساسية الرئيسية، وبناء المؤسسات التي ستساعد على تكامل أسواقه المتفاوتة. في هذا الإطار، تكتسب المجالات التالية أهمية خاصة: (1) تخفيض الاعتماد على المراسيم الرئاسية وإشراك البرلمان في اعتماد القوانين الخاصة بتنمية القطاع الخاص؛ (2) تخفيض هيكل تكاليف الصناعات التحويلية والصناعات الزراعية من خلال مواصلة إحراز تقدم في مجال تنمية البنية الأساسية، خاصة الكهرباء والنقل مثل الطرق الريفية ووسائل الانتقال إلى المناطق التي كانت تاريخيا متطورة، ولكنها تخلفت بسبب الصراعات والإهمال؛ و (3) التركيز على التنمية الحضرية، التي يمكن أن تكون مصدرا للنمو في حد ذاتها في المدن الثانوية في كافة أنحاء البلاد، بما فيها جوبا ونيالا وبورسودان وملكال والأبيض وغيرها.

باعتبار السودان بلدا يجتاز مرحلة ما بعد انتهاء الصراع، هناك حاجة قوية إلى تحسين إمكانية الحصول على خدمات البنية الأساسية والخدمات الاجتماعية المساندة للحياة. إمكانية الحصول على الخدمات معقولة في الشمال، خاصة في المراكز الاقتصادية في منطقتي الخرطوم والجزيرة. أما المناطق الواقعة خارج هذه المراكز الاقتصادية، خاصة الجنوب ودارفور وكذلك المناطق الريفية بشكل عام، فإنها متخلفة بشدة. وتعتبر عدم كفاءة الخدمات مشكلة على المستوى الوطني. ولا تزال إمكانية الحصول على التمويل تمثل واحدا من القيود الرئيسية التي تواجهها مؤسسات الأعمال في كافة أنحاء السودان. وتظهر البيانات أن 47 في المائة من الشركات التي استطلعت آراؤها اعتبرت إمكانية الحصول على التمويل عقبة رئيسية أمام ممارسة أنشطة الأعمال.[8] ولا يزال جنوب السودان، الذي تتوفر فيه الأنشطة المصرفية التقليدية فقط، محروما بشدة من الخدمات المصرفية. ومع أن البنك المركزي شرع في تنفيذ عدد من الإصلاحات، فإن هناك حاجة إلى جهود إضافية لتحقيق عدة أهداف من بينها تعزيز الرقابة، وتقليل مزاحمة القطاع الخاص في الحصول على الائتمان إلى أدنى حد، وتشجيع التمويل الريفي، وتوضيح بيئة السياسات الخاصة بتشغيل نظام مصرفي مزدوج — النظام التقليدي والنظام الإسلامي — في الشمال والجنوب.

ضمان إمكانية الحصول على مستوى أساسي أدنى من خدمات البنية الأساسية ووسائل الانتقال أمر ضروري لمساندة مصادر الأرزاق الأساسية للسكان وتخفيض مظاهر التفاوت الإقليمية. معظم المناطق في السودان، بما فيها المناطق المتأثرة بالصراعات والمناطق الريفية، تفتقر إلى إمكانية الحصول على الخدمات الأساسية التي يمكن تحمل تكلفتها ووسائل الانتقال فيما بين المناطق. ويعني هذا الحاجة إلى تنفيذ مستوى من الاستثمار في مرافق البنية الأساسية المساندة للحياة، خاصة في المناطق المتخلفة. وإلى جانب توفير إمكانية الحصول على خدمات البنية الأساسية الرئيسية، ربما تكون هناك حاجة إلى معالجة المجالات التي يمثل فيها نقص مرافق البنية الأساسية قيودا على النمو في المجالات التي تتمتع بإمكانات اقتصادية قوية، خاصة الزراعة. ذلك أن ضعف كفاءة خدمات البنية الأساسية القائمة، حتى عندما تكون متاحة، يعيق إنتاجية البلاد بشكل عام. وجدير بالذكر أن تكاليف الاستثمارات في البنية الأساسية باهظة في الوقت الحالي بالنسبة لكثير من الأنشطة المحتملة. ومن الأهمية بمكان تحقيق قدر أكبر من الترتيب الاستراتيجي لأولويات الاستثمارات. ومن أجل التخطيط الفعال لتحسين إمكانية الحصول على خدمات النقل وكفاءتها، هناك حاجة إلى تقسيم واضح للعمل وتنسيق السياسات فيما بين مستويات الحكومة المختلفة — حكومة الوحدة الوطنية وحكومة جنوب السودان والولايات.

يجب الحد من الوجود الكبير للحكومة والمؤسسات المملوكة للدولة وأثره السلبي على الاستثمارات الخاصة. لزيادة حجم خدمات البنية الأساسية، ما برحت الحكومة تنفذ عدة برامج استثمارات عامة كبيرة الحجم لبناء مرافق البنية الأساسية مثل سد مروي. وقد أدى الاقتراض المحلي من القطاع الخاص السوداني لتمويل مشروعات الاستثمار العام إلى ضائقة ائتمانية في سوق الائتمان الخاص. وبالمثل، فإن وجود المؤسسات المملوكة للدولة في قطاعات مختارة مثل الصناعات الزراعية وتجميع السيارات، مع منحها أحيانا معاملة تفضيلية من الحكومة، أصبح يشكل حاجزا أمام دخول الاستثمار الخاص. ومن أجل تحسين الكفاءة، يجب تشجيع المزيد من الاشتراك المباشر للقطاع الخاص في تقديم خدمات البنية الأساسية من خلال الشراكة بين القطاعين العام والخاص في مجالي البناء والتشغيل من خلال إيجاد أطر مؤسسية وقانونية أقوى. وقد اتخذت حكومة الوحدة الوطنية في الآونة الأخيرة خطوات لتحرير الخدمات في مجال النقل المائي الداخلي، والسكك الحديدية، والاتصالات السلكية واللاسلكية، وتشجيع اشتراك القطاع الخاص، وهي خطوات أدت إلى بعض التحسينات في القدرة على تقديم الخدمات وكفاءتها. غير أن إنتاجية المؤسسات المملوكة للدولة في مجال خدمات البنية الأساسية لا تزال تشكل تحديا.

الانتعاش والنمو في قطاع الزراعة

تاريخيا، أسهم قطاع الزراعة بأكثر من خمسي إجمالي الناتج المحلي، حيث يعمل فيه غالبية السكان، ويحقق معظم إيرادات السودان من النقد الأجنبي. وقد استغل السودان أكبر مساحة مروية في منطقة أفريقيا جنوب الصحراء، وأنتج في الماضي سلة متنوعة من الصادرات شملت القطن والصمغ العربي والماشية والسمسم وعددا من السلع الأولية بكميات أصغر. ويتم إنتاج عدد من الصادرات الرئيسية (على سبيل المثال، الأغنام والصمغ العربي) في مناطق تقليدية مروية بالأمطار وتوفر لفقراء المناطق الريفية مصادر حاسمة الأهمية للدخل. كما يوفر القطاع مدخلات (مستلزمات) لكثير من الصناعات التحويلية الرئيسية (على سبيل المثال، زيوت الطعام، والجلود، والسكر).

منذ ظهور البترول، ساء أداء قطاع الزراعة في الشمال، وبدأ لتوه يقف على قدميه في الجنوب حيث يتم استيراد معظم المواد الغذائية. ومنذ عام 2000، بلغ متوسط معدل نمو القطاع 3.6 في المائة، مقابل معدل نمو بلغ 10.8 في المائة خلال الفترة السابقة. ونتيجة لذلك، انخفضت حصة قطاع الزراعة في إجمالي الناتج المحلي للاقتصاد، وانخفضت الدخول الريفية، وربما يكون الفقر في المناطق

[8] البنك الدولي – مسح الإنتاجية والمناخ الاستثماري 2008.

الريفية قد ازداد حدة. والآن أصبحت قيمة الصادرات الزراعية كنسبة من إجمالي الناتج المحلي من الزراعة ضئيلة وتكتفي الزراعة السودانية إلى حد كبير بتلبية احتياجات السوق المحلية. وبمرور الوقت، أسفر وضع عدم قدرة القطاع الزراعي السوداني على المنافسة عن تخفيض الحوافز المقدمة للمزارعين وردع الشباب السوداني عن امتهان حرفة الزراعة. وفي جنوب السودان، كانت التجارة محلية إلى حد كبير ومصدرها المهيمن من أوغندا وكينيا — ويرجع جزء من السبب في ذلك إلى عقود طويلة من الصراع، والتهميش، وانعدام مرافق البنية الأساسية.

هناك إمكانات هائلة في الأمد القريب لكي يعطى القطاع دفعة قوية لتنويع الاقتصاد وإنعاش المناطق الريفية. ينظر إلى الزراعة باعتبارها الميزة النسبية للسودان، وكرد فعل لسوء أداء القطاع، دشنت حكومة الوحدة الوطنية برنامج االنهضة الزراعية الذي يحظى بمستوى عال من المساندة السياسية. وتتمثل رؤية الحكومة في تنويع الإنتاج والأسواق مما يؤدي إلى زيادة نمو القطاع الزراعي، بهدف نهائي هو تخفيض أعداد الفقراء استنادا إلى تعبئة طاقة القطاع الخاص بوسائل مختلفة بمساندة بيئة محسنة للزراعة التجارية من خلال تغيير السياسات وتنفيذ استثمارات عامة. وينوي واضعو السياسات التركيز على الزراعة كمصدر للنمو وكوسيلة لتنويع الاقتصاد السوداني. ومع أن هذا أمر محمود، فإن تحقيق هذا الهدف سيتطلب نهجا جديدا وتنفيذا حازما.

ستتطلب زيادة الدخول الريفية ونمو الصادرات الزراعية إحداث تغيير هام في موقف الحكومة تجاه القطاع، خاصة فيما يتعلق بالسياسات التي تستهدف تمكين القطاع الخاص من الاضطلاع بدور أكبر. في الماضي، تدخلت الحكومة في الأسواق الزراعية من خلال مجموعة متنوعة من الأدوات التي أدت إلى تخفيض الحوافز الدافعة إلى الإنتاج. وكانت الإجراءات التدخلية ذات طبيعة مؤقتة وغير متسقة بمرور الوقت وشملت أسعار الصرف المشوهة، وفرض ضرائب على الصادرات، وسياسات التعريفات الجمركية، ومدفوعات الحوافز، والاحتكارات التجارية. وقد خُفض كثير من هذه التشوهات، ولكن تدخل الحكومة في القطاع لا يزال قويا. وتشدد الإصلاحات التي أبرزها قانون الجزيرة الذي سن في الآونة الأخيرة على الحاجة إلى إجراء تغييرات أساسية، بما في ذلك منح مسؤوليات جديدة لمجموعات مستخدمي المياه، وحرية المزارعين في اختيار المحاصيل، وعقود استئجار الأراضي الطويلة الأمد القابلة للتداول. ويجب تخفيض الاستثمار الحكومي المباشر، وما يقترن به من استنزاف للموازنة الاتحادية، ويجب أن تركز الحكومة على مساندة البحوث، ونقل التكنولوجيا، وتوفير خدمات معلومات الأسواق. وبينما يعكس القانون الإصلاح الذي تمس الحاجة إليه، فإن تنفيذه يواجه تأخيرا كبيرا.

تشمل الإصلاحات المحددة الخاصة بالقطاع، والملخصة في الفصل الرابع، تغيير نظام الزراعة التقليدية لتحقيق مزيد من الإنتاج والدخل. يجب أن تركز الإجراءات في القطاع التقليدي على تحسين إدارة وتسويق الماشية والصمغ العربي، وتحسين أنواع المحاصيل، والإدارة المستدامة للتربة والمياه، وتجميع المياه، واستخدام التكنولوجيات الأخرى المنخفضة المخاطر. يتمثل القيد الرئيسي على الزراعة التقليدية في سياسة الأراضي المطبقة حاليا. وبينما سيكون تحسين البنية الأساسية في مناطق الزراعة التقليدية المطرية هاما لتحسين إمكانية الوصول إلى الأسواق، فإن الأولوية الأولى يجب أن تكون تحسين الحوافز المقدمة للمزارعين التقليديين للاستثمار في التكنولوجيات المحسنة وزيادة الإنتاج. ويمكن البدء في ذلك ومواصلته إذا أصلحت سياسة الأراضي مما يؤدي إلى إصدار عقود إيجار طويلة الأمد.

وضع استراتيجية نمو شاملة للجنوب

تحديات النمو في الجنوب صعبة بشكل خاص، وتتركز على بدء النشاط الاقتصادي المحلي في بيئة ما بعد انتهاء الصراع. الفجوة بين الواقع الاقتصادي الحالي والإمكانات غير المتحققة أكبر في جنوب السودان مما هي في أي مكان آخر في السودان. إذ تتمتع حكومة جنوب السودان بالحكم الذاتي على حوالي 25 في المائة من مساحة البلاد، أو 648,000 كيلومتر مربع (أكبر من مساحة فرنسا). وتضم هذه المساحة غالبية احتياطيات السودان البترولية المعروفة والثابتة حاليا وأجود الأراضي الزراعية. ونظرا لعائداته البترولية، يتمتع جنوب السودان بميزة رئيسية على معظم الحكومات الخارجة من صراعات، حيث يحتمل أن تتوفر موارد كبيرة للتنمية. لتقديم ثمار السلام وزيادة احتمال استمرار السلام في السودان، يعتبر وضع استراتيجية نمو طويلة الأمد أولوية عالية بالنسبة لجنوب السودان. وبغض النظر عن نتيجة الاستفتاء الذي سيجرى في عام 2011، فإن التخطيط للنمو الاقتصادي غير البترولي في الجنوب أمر هام، من أجل تحقيق مزيد من التنمية في الجنوب الذي يتمتع بالحكم الذاتي سواء في إطار السودان الموحد أو كبلد جديد.

شرعت حكومة جنوب السودان حاليا في إعداد استراتيجية نمو لجنوب السودان، ويعرض الفصل السادس إطارا مفيدا لصياغة هذه الاستراتيجية وتزويدها بالمعلومات. ويمكن أن يكون إطار النمو التشخيصي أداة مفيدة نظرا لأنه لا يبدأ من أي أفكار مسبقة عن ماهية السياسات الصحيحة اللازمة لتحقيق النمو، وإنما يسعى إلى تناول الاقتصاد من واقعه الحالي ويستنبط مجموعة من إجراءات السياسات المرتبة بالتسلسل حسب أولويتها للوصول إلى حيث يريد أن يكون. وهذا أمر حاسم الأهمية في جنوب السودان من ناحيتين. أولا، الوضع فريد والمنطقة تواجه عددا كبيرا من الأوضاع المثيرة لتحديات كبيرة ولذلك لا يمكن الاعتماد على «الأفكار التقليدية الشائعة» لصياغة السياسات. ثانيا، بيئة التحليل تفتقر إلى حد كبير إلى البيانات التي يمكن الاعتماد عليها، ولذلك فإن إيجاد طريقة تستند إلى التطبيق الخلاق لجميع البيانات والمعلومات المتاحة لصياغة خطة متماسكة يناسب تماما المشكلة الحالية.

استنادا إلى النتائج الخاصة بولايتين، يشير تطبيق إطار النمو التشخيصي إلى وجود ثلاثة قيود رئيسية على الاستثمار الخاص والمشروعات الخاصة في جنوب السودان. فقد أجريت دراسات حالة في ولايتي أعالي النيل وشرق الاستوائية، لتوضيح نوع التحليل الضروري لتقييم الميزة النسبية لجنوب السودان والسياسات والبرامج الجوهرية اللازمة لإطلاق إمكانات النمو فيه. المشكلة الأساسية التي يواجهها اقتصاد هاتين الولايتين هي حالة نقص الاستثمار، مع الانخفاض الشديد للخدمات المالية أو انعدامها، ووجود اختناقات خطيرة في البنية الأساسية للنقل، ووجود مخاطر مسبقة، ومظاهر إخفاق حكومي. وكان معنى الإغلاق المفاجئ للبنوك الإسلامية، بينما لم تكن البنوك التقليدية قد توسعت خارج مدينة جوبا، أنه لا تتاح للغالبية الكبيرة من مواطني جنوب السودان إمكانية الحصول على الخدمات المصرفية — وهو يمثل على ما يبدو أهم حاجز أمام النمو في الأمد القريب. كما أن نقص مرافق البنية الأساسية، خاصة تلك المتعلقة بمنشآت النقل مثل شبكات الطرق بين الولايات وداخل الولايات يشكل قيودا معوقة تقريبا لجميع القطاعات وجميع فئات الحجم. وتعتبر مخاطر الملاءمة appropriability المسبقة عالية. كما أن عدم التيقن من مستقبل البلاد ومرحلة ما بعد استفتاء عام 2011

وكذلك القلق المستمر بشأن أوضاع الأمن المحلية، تقيد العمليات الإنتاجية وتعيق الاستثمارات الطويلة الأمد. كما أن لمظاهر الإخفاق الحكومي اللاحقة على مختلف المستويات أهميتها. ذلك أن الضرائب المتعددة وانعدام التنسيق المالي بين الهيئات الحكومية المختلفة يثبطان أنشطة الإنتاج والتسويق في القطاعات المختلفة. وتقدم الحكومة حوافز سيئة التوجيه، مما يسفر عن انخفاض الإنتاجية الزراعية.

تكملة الإصلاحات التكنوقراطية بإصلاح نظام الإدارة العامة (الحكم الرشيد)

بينما قد تبدو الحلول التكنوقراطية للقيود على النمو جيدة على الورق، فإنها في حالة السودان ستكون عديمة الفائدة تقريبا ما لم تعالج القضايا الأساسية الخاصة بنظام الإدارة العامة. فالطريقة التي تمارس بها الدولة السيطرة على الموارد (أي نظام الإدارة العامة) ترتبط بكثير من مجالات الإصلاح التي تناقش في هذا التقرير. وبدون إدخال تعديلات على دور وأداء الحكومة وتعاملها مع القطاع الخاص، ستكون منافع الإصلاحات الاقتصادية محدودة. على سبيل المثال:

- مناخ الاستثمار. يرى القطاع الخاص السوداني أن ضعف نظام الإدارة العامة — الذي يتجلى في عدم الاستقرار السياسي، والفساد، وغموض الأوضاع الاقتصادية — يمثل القيد الرئيسي على نموه. ولذلك فإن واضعي السياسات السودانيين يمكن أن يخفضوا تكاليف الإنتاج لو عالجوا القيود في جانب العرض، ولكن إعطاء دفعة شاملة لنمو القطاع الخاص لن يحدث إلا إذا زادت إصلاحات نظام الإدارة العامة واليقين بالأوضاع الاقتصادية وإمكانية التنبؤ بها. وتشمل الإصلاحات المحتملة الأخرى في نظام الإدارة العامة اعتماد العمليات التي يفرضها اتفاق السلام الشامل، والتي ستقلل الاعتماد على المراسيم الرئاسية وما ينتج عنها من عمليات التداخل(الازدواجية)، والفجوات، وعدم إمكانية التنبؤ في الإطار التشريعي. كما أن التنسيق على المستوى الاتحادي ومستوى الولايات والمستوى المحلي يمكن أن يساعد على إزالة الرسوم والضرائب والتعريفات الجمركية المتداخلة (المزدوجة)، وكذلك التعريفات عبر الولايات في بعض المجالات التي تعرقل حاليا الأنشطة الاقتصادية.
- قطاع البترول. يتطلب تنفيذ التوصيات الخاصة بتحسين الإدارة المالية لتقلب عائدات البترول تدفقا أكثر شفافية ومصداقية للمعلومات الخاصة بالقطاع، بما في ذلك المعلومات الخاصة بالجنوب حيث الاعتماد شديد جدا على البترول وحيث القدرات الفنية منخفضة. كما أن الإدارة الفعالة لقطاع البترول يمكن أن تضمن توفر الموارد للاستثمار في مصادر النمو غير البترولية وتقدم نموذجا للشفافية والمساءلة لتحسين مناخ الاستثمار الأشمل. وتشمل المجالات المحددة للتحسين: إصلاح دور وزارة الطاقة والتعدين والهيئات ذات الصلة؛ وتعزيز الإدارة البيئية والاجتماعية لصناعة البترول؛ وتصحيح وضع شركة البترول الوطنية السودانية (سودابت).
- الزراعة. يظهر التحليل الفني لقطاع الزراعة انخفاضا شديدا في الإنتاجية عن إمكانات القطاع التي حددتها البحوث والتجارب الميدانية. ويشير هذا إلى ضرورة تنفيذ برنامج لتوفير البذور المحسنة، وتكنولوجيات الري الحديثة، والأسمدة والمدخلات (المستلزمات) الزراعية الأخرى. ومن المؤكد أن تحسين المدخلات يشكل جزءً من حل المشكلة باتجاه تحسين الإنتاجية، ولكن إضفاء الطابع التجاري على القطاع التقليدي المطرى يتطلب أيضا تغييرات في سياسة الأراضي لمنح صغار المزارعين خيار بيع مزارع الكفاف الصغيرة التي يمتلكونها أو شراء أراض إضافية لزيادة حجم مزارعهم.

قطع اتفاق السلام شوطا طويلا نحو إنشاء بعض المؤسسات التمكينية لمواصلة تحقيق السلام والرخاء في السودان. فقد أنشئت مؤسسات رئيسية على كافة المستويات الحكومية (التنفيذية، والتشريعية، والقضائية) ويبدو أنها تعمل بقدر معقول من النجاح. وأدى توقيع الاتفاق إلى تشكيل حكومة الوحدة الوطنية، والموافقة على الدستور الوطني المؤقت، وتشكيل حكومة جنوب السودان، التي تتمتع بقدر واسع النطاق وغير مسبوق من الحكم الذاتي. كما أدى اتفاق السلام الشامل إلى تحسين اللامركزية داخل الولايات الشمالية. وزادت حكومة الوحدة الوطنية بسرعة التحويلات إلى الولايات لتمويل المسؤوليات التي أزيلت مركزيتها ونقلت إلى الولايات حسبما توقع اتفاق السلام الشامل. ويسهل إدخال العملة الوطنية الجديدة في عام 2007 المعاملات الاقتصادية. وفي الجنوب، تقوم حكومة جنوب السودان تدريجا ببناء المؤسسات وتنفيذ البرامج.

الرسالة الرئيسية للاستراتيجية المقترحة هي إعادة توجيه دور الدولة في القطاعات الإنتاجية مما سيحسن الاستقرار السياسي ويحافظ على استمرار النمو واسع القاعدة. وستتطلب عملية إعادة التوجيه هذه إرادة سياسية قوية على أعلى المستويات وتنفيذا يتسم بالكفاءة للسياسات المتفق عليها. ولكي يكون النمو واسع القاعدة، ستعتمد عملية إعادة التوجيه هذه على إحراز تقدم كاف في برنامج إزالة المركزية. ويجب أن تلعب الحكومات على المستوى دون القومي أدوارا هامة في تقديم الخدمات الأساسية ومساندة أنشطة القطاع الخاص، ولكنها تحتاج إلى موارد كافية وقدرات تنفيذ قوية لمساندة التنمية واسعة القاعدة.

Chapter 1

MACRO AND FISCAL MANAGEMENT IN A VOLATILE WORLD ECONOMY[9]

A. Sudan's Oil Driven Boom and Bust Cycle

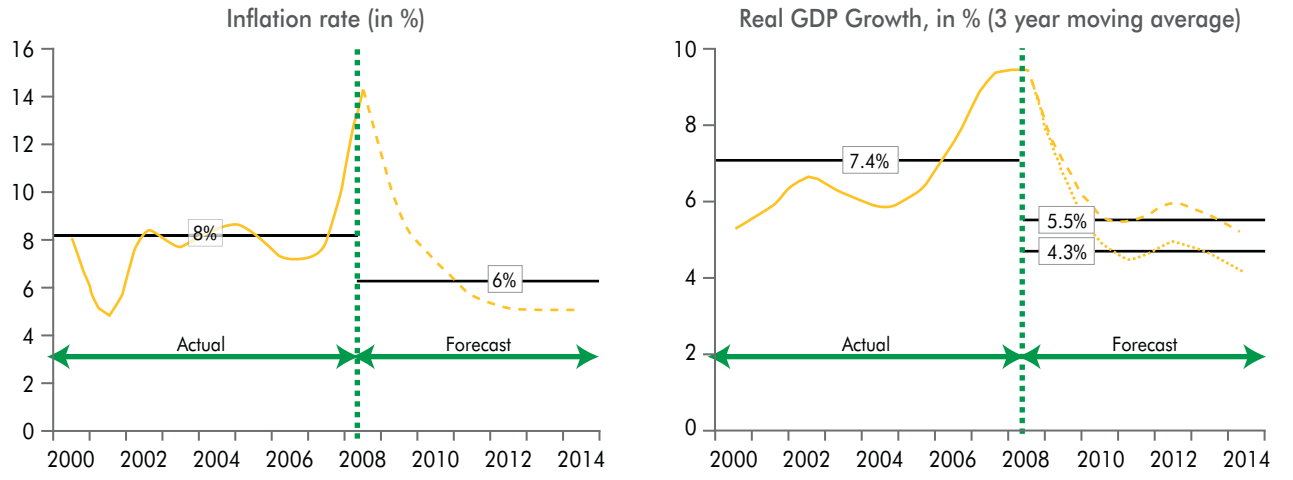
Following successful stabilization in the 1990s, Sudan built a track record of successful macroeconomic management. In the past five years Sudan has been one of the fastest growing countries in Africa. It has maintained macroeconomic stability with a relatively low and stable inflation rate and has managed to dampen the wild swings in its growth rate. The growth acceleration has been accompanied with greater openness of the economy. International trade has expanded rapidly and Sudan has become one of the largest recipients of foreign direct investment (FDI) in Africa. The country's robust economic performance, carefully documented in a series of successive IMF Staff Monitored Programs, has been underpinned by a period of relative peace and stability, especially in Southern Sudan though parts of the country continue to experience sporadic violence and conflicts.

The advent of an oil-based economy and the recent sharp fluctuations in global commodity prices have created macroeconomic challenges for Sudan that are different and more complex than the stabilization of the 1990s. The onset of the global economic crisis and its impact on Sudan's economy has become the immediate concern for its policymakers. The economy, which has enjoyed 7–8 percent average annual real GDP growth during the 2000–08 period, is expected to grow slower, between 4–6 percent in the 2009–14 period (right panel, Figure 1-1). With the softening of global prices and slowdown in the economy, the inflation rate may come down gradually to a more benign level (left panel, Figure 1-1). These factors imply a change in the macroeconomic landscape and call for different policy priorities, from preventing the economy from overheating to finding ways to keep the economy growing. The required macroeconomic adjustment requires mutually reinforcing fiscal, monetary and exchange rate policies that safeguard the external position without undermining key infrastructure and pro-poor programs. At the same time the authorities will have to address some of the symptoms of resource curse that have arisen on account of heavy dependence on oil.

Sudan's ability to successfully respond to the new global environment will largely depend on the flexibility of its policy stance. Sudan's recent growth acceleration was fueled largely by external factors—a rapid increase in oil production, the global commodity price and investment boom and a benign world environment—all of which have been altered dramatically since late-2008. Government estimates of oil production show that output from known sources is peaking and is most likely to decline in the coming years. Oil prices are unlikely to return to mid-2008 levels over the medium term, and FDI could take at least 3 to 5 years to return to its pre-crisis level. Adjusting to this new environment requires fine-tuning the current policy stance. Some of this flexibility in policy

[9] This chapter has been prepared by Deepak Mishra and Bill Battaile, with input from Mosllem Alamir and Greg Snyders.

FIGURE 1-1: Sudan's Near Term Macroeconomic Situation Will Differ from Recent Experience



Source: IMF various staff reports.

is already evident. For example, while in the past a strong and stable exchange rate prevented the economy from overheating and kept inflation low, the authorities allowed the exchange rate to depreciate in the first half of 2009 in the face of a widening external imbalance—thereby demonstrating the flexibility that was needed to diffuse the fallout of the global crisis. Such flexibility in policy instruments is required to ensure macroeconomic stability and promote growth, allocate production incentives to the primary sectors in the economy, and to rebuild foreign exchange reserves. A quick response is also called for to reduce Sudan's dependence on oil revenues through strengthening non-oil revenue mobilization and prudent fiscal spending.

The rest of this chapter is organized as follows. Section B describes the problem of external imbalance arising out of the slump in the global economy and the policy priorities for external stability. Section C looks at the implications of the economy's resource dependence and directions for addressing structural imbalances. Finally, Section D deals with fiscal management issues, especially how to manage the oil wealth in an environment of wide gyrations in commodity prices.

B. Managing External Imbalance Pressures

Sudan was a big benefactor of the global commodity price boom; it could also become one of the biggest victims of the global bust. The global linkages responsible for Sudan's past economic gains are now responsible for transmitting the effects of recent global shocks. With the deterioration in the external environment, Sudan will continue to face the risk of a protracted slowdown in growth and overall economic deterioration unless prompt corrective actions are taken. Analyzing the channels through which the global shocks are being transmitted to Sudan can inform the policies needed to mitigate the downside risks in the near term and strengthen the economy's longer-term prospects for sustained growth. Some of the channels of transmission include:

- *Exports*. Oil accounts for nearly 90 percent of Sudan's exports. Hence the most direct impact of the global slowdown has been the significant decline in its exports of goods and services, which is expected to fall from $12.5 billion in 2008 to $7.0 billion in 2009. Average oil prices

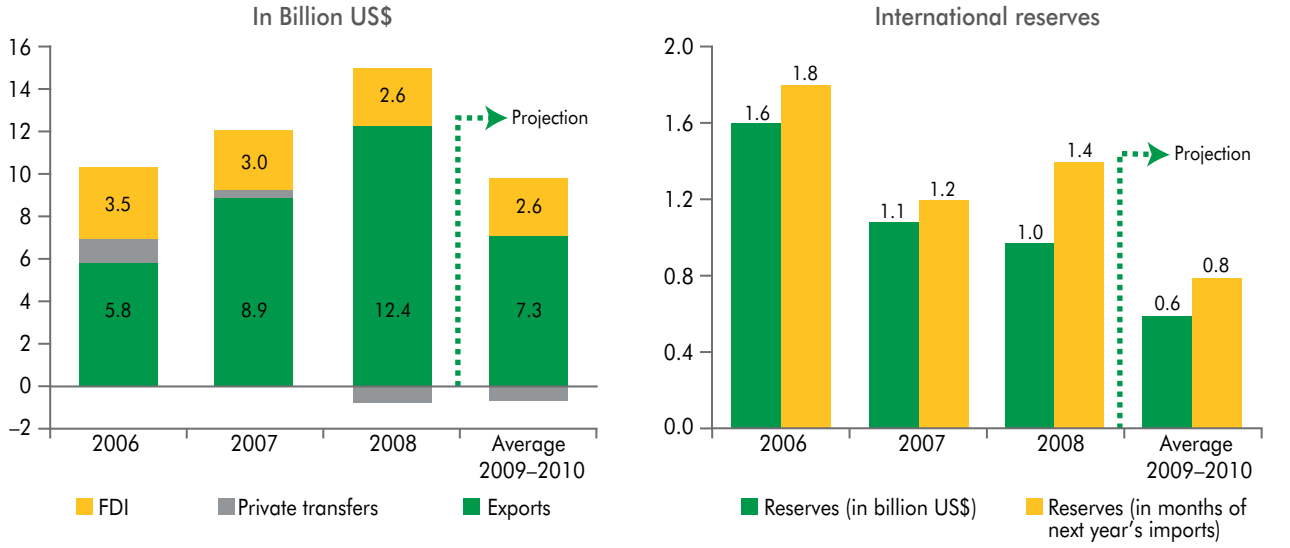
have fallen from roughly $100 per barrel in 2008 to an estimated $60 in 2009, resulting in considerable deterioration in the terms of trade. The problem, however, is unlikely to be limited to oil alone. Coupled with structural constraints in domestic production (see Chapters 4 and 5), lower global demand will put significant downward pressure on non-oil products like livestock, sorghum and gum-arabic as well. According to IMF projections, it will take several years for Sudan to return to its peak export performance of 2008.

- *Revenues*. The precipitous fall in oil revenues has caused fiscal difficulties for Sudan, reflected in financing shortages for the 2009 federal budget. The situation is compounded by the fact that in the past years Sudan spent most of its oil revenue and is now being forced to make considerable reductions in public spending—GoNU expects 2009 spending to be 11 percent below budget, with the largest cuts in development transfers to Northern states and the national development program. The fiscal impact of falling prices is especially severe for Southern Sudan, which relies on oil revenues for more than 95 percent of total revenues. GoSS' oil revenues (excluding payments for oil arrears) in the first quarter of 2009 were less than one third of budgeted levels. Some part of the fiscal stress has been offset by improved non-oil revenues, which are expected to be 102 percent of 2009 budget in case of GoNU. Nevertheless, unlike some of the other oil exporting countries, neither GoNU nor GoSS have been able to afford counter-cyclical stimulus programs to dampen the effects of the downturn.
- *Foreign Direct Investment*. FDI has become a very important source of external financing for Sudan, and an important source of foreign exchange to support the country's recent current account deficits. Net FDI and portfolio inflows hit $3.5 billion in 2006, largely because of foreign entrants in the telecommunications and banking sectors, in addition to FDI supporting foreign operators in the oil sector. However, net inflows subsequently declined, and are projected to be $2.4 billion for 2009, which is one-third less in relation to the peak in 2006. In addition, there is general concern that such flows are unlikely to be sustained without discovery of new oil sources or renewed privatization.
- *Remittances*. Like most African countries, remittances are a significant source of external financing for Sudan. Remittances in Sudan have constituted an average of 3.5 percent of GDP and have increased substantially in recent years. In 2000 remittances were $641 million and had increased to $1,850 million by 2008. Between 2006 and 2007 these inflows increased by about 50 percent, but in 2008 the increase was only 5 percent, perhaps capturing some effect of the crisis. With about 80 percent of remittances originating from developed countries, Sudan is vulnerable to a potential decline from economic downturns in these countries, as the level of income in host countries is an important determinant of remittances. The World Bank estimates that in 2009, worldwide remittances will decline by 5–8 percent.
- *Banking*. Banks in Sudan have thus far escaped the severe impacts of the crisis observed in other countries, mainly due to the reliance on Islamic banking in the North and lack of strong cross-border linkages. However, the economic slowdown will adversely impact the quality of bank assets since the corporate sectors' profitability is under pressure. In Southern Sudan, low oil revenues have led to severe liquidity problems in the region's thin banking sector. While the problems may have their origin in some structural issues (see Chapter 5 for fuller discussion), the crisis has exposed the frailty of the banking sector and is likely to generate wider consequences as the result of liquidity problems.

The cumulative impact of the above transmission channels has been a severe foreign exchange shortage in the short-run. Sudan receives most of its foreign exchange from three sources: exports, FDI and private transfers (mostly remittances). As shown in the left panel of Figure 1-2, the hard currency inflow to Sudan from each of these three sources is likely to decline considerably during 2009–10, with up to $4–5 billion less hard currency available for imports relative to 2008. Fortunately, the import bill is also likely to come down, but not enough to offset the full decline in foreign exchange inflow. In the past 12 months, Sudan has faced increased excess demand for hard currency, and its exchange rate came under pressure. Net international reserves fell below $1 billion by end-2008, covering about 1.2 months of imports and slid further to $300 million by end-March 2009 due to the insufficient adjustment in the exchange rate in reaction to the sharp drop in oil prices. But the Central Bank of Sudan (CBoS) acted soon thereafter and allowed the exchange rate to depreciate (right panel, Figure 1-2).

Sudan's policymakers will need to use a combination of structural, exchange rate and monetary policies to address its external imbalance problem. The CBoS has already imposed some restrictions on the foreign exchange market to clamp down on speculative activities and to reduce capital flight. The terms of trade shock that came with the global financial crisis has been significantly corrected through the above mentioned depreciation of the Sudanese pound. Depreciation will however have to be balanced against other concerns, like the impact of depreciation on inflation, though as a precaution to inflationary pressures, contractionary monetary and fiscal policies can be simultaneously undertaken. In addition, the prospect of a depreciation causing a boost in foreign exchange earnings through increased non-oil exports will be limited by a weak supply response in the absence of structural reforms in other parts of the economy. Other short-term options include reducing interest outflows on foreign currency loans by renegotiating the terms, attracting more FDI and prioritizing public sector imports. In the medium-term, Sudan will have to diversify its eco-

FIGURE 1-2: The Dynamics of Sudan's External Imbalance



Source: IMF Staff Monitored Program for 2009–10.

nomic base, expand its agriculture and domestic manufacturing sectors and reduce its reliance on imports. It can also take a number of measures to encourage non-oil exports as outlined in Chapters 4 and 5. Finally, Sudan should consider negotiating with bilateral donors about its debt arrears and take steps to resume normal lending relationships with multilateral agencies.

C. Symptoms of Resource Curse?

Resource rich countries are usually confronted with the challenge of trying to combine their good fortune with appropriate macroeconomic policies to support broad-based development of their economies. Cross-country evidence shows that the discovery and exploitation of commodities (e.g., oil) has generally been associated with a shrinking of the non-oil tradable goods sector. Why? Because the influx of foreign exchange from oil exports leads to an appreciation of the real exchange rate which weakens the competitiveness of traditional export products. Windfalls from the oil sector also cause a wealth effect and increased demand for non-tradables including domestically provided services. The profitability in non-tradables causes a reallocation of production inputs into this sector and away from non-oil tradable production activity.[10] The challenge then is how to use oil revenues to develop the economy away from oil dependence and to develop the non-oil tradable sectors that are the ultimate source of sustainable growth.

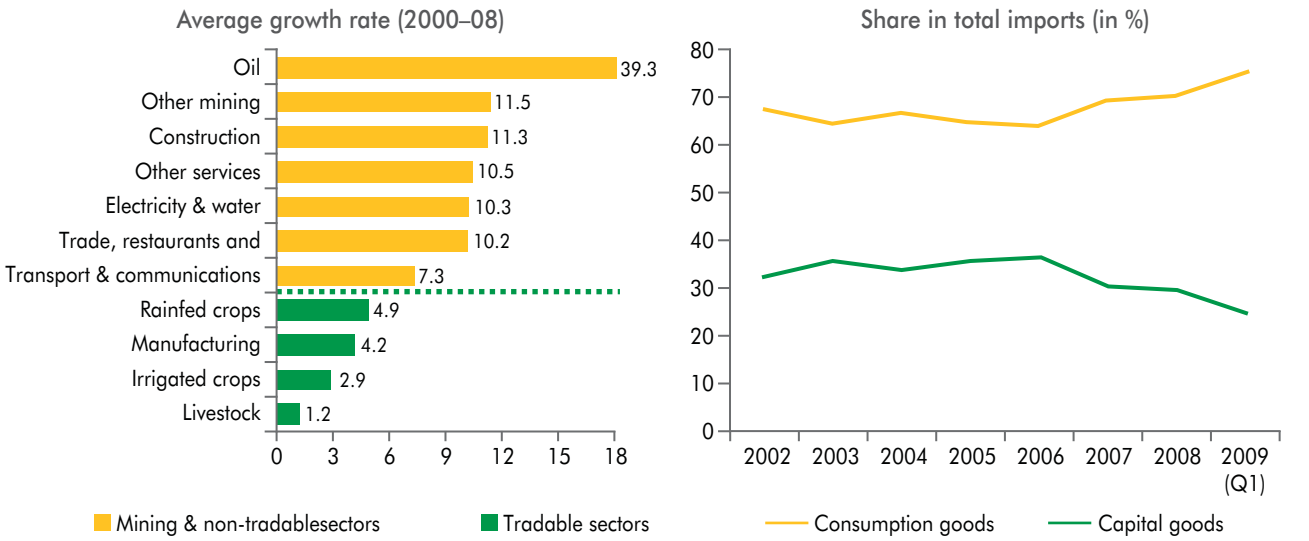
Resource endowments need not be equivalent to a resource curse. Evidence shows that with sound institutions, resource rich countries have been successful in transforming their economies. These are countries that have diversified their exports, strengthened budget management and invested wisely. In most successful cases, countries have created and strengthened institutional capacities and management before attempting to use resource revenues to stimulate growth. Recent economic research has shown that the correlation between slow economic growth and natural resource intensiveness does not imply any causal relationship.[11] Instead, certain key variables are associated with better management of natural resource endowments in developing countries: strength of institutions, openness to trade, well-developed financial systems and good governance more generally. However, such generic correlations associated with "escaping the resource curse" are not necessarily helpful for policy makers trying to design and implement systems for the effective management of natural resource revenues.

From the pattern of growth and the composition of its trade account, Sudan's economy does show some symptoms commonly exhibited by resource curse economies, though the evidence remains inconclusive. All of Sudan's fast growing sectors are either related to oil or non-tradable services, while the growth of agriculture and manufacturing has been slower than the growth rate of the overall economy (left panel, Figure 1-3). Similar evidence comes from the shift in the composition of exports and an increase in import of consumer goods. More than 95 percent of Sudan's exports are now coming from the oil sector, while the share of non-oil exports has fallen from nearly 5 percent of GDP in early 2000s to less than 2 percent in 2008. On the other hand, the share of consumption goods in total imports has increased in recent from already high base (right panel, Figure 1-3). The flip side of increased imports of consumption goods is a decline in the manufacturing sector's share in total output. The appreciation of the real exchange (during the 2006–08 period) is likely to have played a role in making imports attractive and domestic manufacturing unattractive. However this problem

[10] In a general model of Dutch disease, profitability in the booming tradable sector also causes a reallocation of production inputs into this sector and away from other production activity for other tradables (i.e., the substitution effect). However, this effect is dampened in the case of oil because of the sector's enclave characteristics, with limited employment and reliance on specialized foreign capital.

[11] Collier, van der Ploeg and Venables 2009.

FIGURE 1-3: Sudan's Unusual Growth and Import Pattern: What Do They Imply?



Source: Left panel – IMF staff reports; right panel – Central Bank of Sudan annual reports.

has subsequently been addressed with domestic currency depreciating by 20–30 percent against currency of key trading partners.

Sudan could join the ranks of countries that have successfully managed non-renewable resource wealth, but will require bold structural reforms and significant investment in infrastructure. Depreciation following the global crisis has largely occurred, though continuous monitoring and adjustment of both nominal and real exchange rate movements are needed. The real exchange rate is an important relative price in an economy as it can drive the relative structure of incentives across sectors and consequently the allocation of resources.[12] Given that the Central Bank's exchange rate policy is primarily driven to keep inflation low, the onus of creating a more competitive economy largely rests on government. Fiscal policy in particular has influenced the real exchange rate, as expansionary public spending has channeled most of the oil revenue inflows into the economy and raised domestic aggregate demand. This in turn has put pressure on the real exchange rate to appreciate, and shift the relative structure of incentives toward non-tradable sectors. At the sector level, structural reforms continue to lag behind. Sudan's growth sustainability depends critically on being able to promote the non-oil sectors and integrate into the global and regional supply chains. In particular Sudan's agricultural sector has enormous potential that has not been fully tapped. Consequently, Sudan will need to take broad reforms and invest in infrastructure to improve productivity and competitiveness of these sectors.

D. Effective Fiscal Management

The advent of the oil sector has led to a dramatic increase in Sudan's revenues. The CPA in 2005 coincided with the completion of major new projects that led to a large increase in oil production, exports, and revenues from late 2006. Average daily production rose from almost 290,000 bpd in 2005 to nearly 500,000 bpd in 2008. With the dramatic increase in oil prices, which peaked in July 2008

[12] Elbadawi 2008.

BOX 1-1: Indonesia's Successful Management of Oil Rents

Indonesia provides a good example of a resource-rich country that managed to avoid the economic difficulties experienced by most oil-exporting countries. Oil still constitutes a significant part of Indonesia's exports (25 percent), however non-oil exports have also expanded significantly and the country is no longer dependent exclusively on oil.

A key element of Indonesia's success was the government's commitment to macroeconomic performance and prudent fiscal and exchange rate policies. This has been particularly important as the government stance during oil booms plays a very important role in determining the extent to which the economic structure will be affected. Indonesia followed a conservative fiscal policy that entailed accumulating oil revenues and exercising fiscal discipline with respect to government spending. The government accumulated budget surpluses and spent resource gains on strengthening the production base of non-oil tradable sectors, through expansion of infrastructure and investment in social services and agriculture. The government has been particularly active with rural development programs aimed at driving agricultural growth.

Despite these successes, Indonesia has had to deal with an appreciation of the real exchange rate that seriously threatened the competitiveness of the manufacturing and food sectors. In addition to other policy reforms, Indonesia undertook timely devaluations and minimized Dutch disease effects and improved the profitability of the tradable sector.

at over $145 per barrel, Sudan's oil revenues have also increased significantly in recent years: from $3.7 billion in 2005 to nearly $8.3 billion in 2008. As noted above, this large increase in revenues has been accompanied by equally large increases in government expenditures, with GoNU expenditure rising from 8.5 percent of GDP in 1999 to roughly 23 percent of GDP in 2008.[13]

Ineffective fiscal management is a key channel through which commodity dependence contributes to weaker economic growth.[14] Volatility and exhaustibility of revenues in resource-rich developing countries frequently leads to unsustainable increases in government expenditure. Sudan is no exception, as evidenced by the recent difficult fiscal adjustments. To effectively manage oil revenue volatility, current expenditure should be decoupled from current resource revenues to stop pro-cyclical patterns of spending, make public expenditure and investments smoother and more efficient and build reserves to help mitigate the significant costs of future short-term fiscal adjustments.

The Need to Counter Pro-cyclical, Volatile and Unsustainable Fiscal Policy

Two key characteristics underscore Sudan's need for more effective management of natural resources revenues—spending virtually all the oil earnings to date has implied significant expenditure volatility and expected future revenues are risky in nature. Oil price volatility has led to significant volatility in earnings for oil exporters, which in many countries has led to substantial volatility in government expenditures. In the case of Sudan, absorption of current oil revenues by current government expenditure has been virtually complete—nearly all the country's oil revenues have been spent on increasing public expenditure and investments, without regard to what level of fiscal expenditure derived from oil revenues is sustainable in the long run. In addition revenues from oil are intrinsically temporary, and as detailed below, the best days of Sudan's oil windfall are likely in the past. Because natural resource commodity prices tend to be highly volatile, their revenues are fundamentally unreliable.[15]

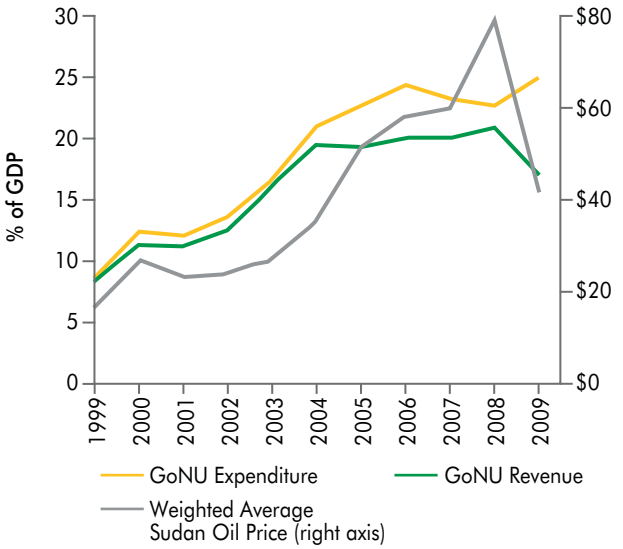
National government expenditure and oil revenues in Sudan have been nearly perfectly correlated since 2002 (correlation coefficient of 0.86), and the growth in public expenditure has outpaced revenues since the country began

[13] MoFNE annual budget reports and IMF staff reports.
[14] World Bank 2009a.
[15] Collier, van der Ploeg and Venables 2009.

exporting oil in 1999, as evident in Figure 1-4. Public expenditure has far exceeded fiscally sustainable levels in Sudan in recent years. Using the baseline Permanent Income (PI) approach to oil revenue management detailed below, spending out of oil revenues last year exceeded the fiscally sustainable Non-Oil Primary Deficit (NOPD) by nearly *five-fold*. Even with a "front-loaded" oil revenue management rule that allows a greater amount of spending in earlier years, spending exceeded the fiscally sustainable NOPD by nearly *three-fold*.

As a symptom of the resource curse, Sudan has entered into obligations beyond its means guaranteed by flows of oil. The fiscal balance has turned to growing deficits since 2005, after nearly a decade of prudence. Including the rundown in the ORSA reserves, the budget deficit in the 2007 budget has jumped to 3 percent of GDP, from 1.8 percent of GDP in 2005 and surplus in the preceding three fiscal years. The situation was further aggravated when Sudan was exposed to a shock of a sudden drop in oil prices in 2009, and thus the country was not able to fulfill its obligations towards its creditors—both internal and external. The projected 2009 budget deficit exceeded 4 percent of GDP. The majority of deficit financing has been domestic, two-thirds in 2009, including government securities and net borrowing from the Central Bank. Foreign financing has increased significantly, reaching over $1 billion dollar in 2009, compared to an annual average of $45 million from 2000–2003.

FIGURE 1-4: GoNU Expenditure, Revenue and Sudan Oil Price



Sources: World Bank staff estimates using data from MoFNE and IMF staff reports.

Increased borrowing under expansionary fiscal policy has added to an already massive external debt overhang and domestic arrears build up. The country's external debt overhang contin-

BOX 1-2: Impact of Past Oil Booms and Busts on Other Oil Exporters

The experiences of Nigeria, Saudi Arabia, and the UAE illustrate the costs of macroeconomic volatility brought on by sharp changes in oil prices. In response to a substantial increase in oil prices in the mid-1970s and then again in the late 1970s, these countries significantly increased their expenditures. In Saudi Arabia, annual changes in primary spending peaked at 133 percent during the first oil boom, while in Nigeria and the UAE primary spending went up by 114 and 102 percent respectively. These spending increases fueled inflation that reached 36 percent during the oil peak in Nigeria and Saudi Arabia, and over 20 percent in the UAE. While in Saudi Arabia and the UAE, inflation gradually came down as spending increases were unwound, in Nigeria high inflation persisted reflecting continued loose fiscal policy.

The quality of spending made a difference for growth outcomes. While both the UAE and Saudi Arabia enjoyed very high real non-oil GDP growth rates during the oil boom partly owing to an effective expenditure management, Nigeria saw more modest non-oil GDP growth, as poor management of its investment program and a ballooning wage bill intensified the negative impact of Dutch disease on agriculture. But as oil prices declined in the early 1980s, both Saudi Arabia and the UAE experienced a prolonged period of low growth as public expenditure increases were reversed following a drop in oil revenues.

Source: Medas and Zakharova 2009.

ues to be a major concern, and the level of non-concessional borrowing needs careful monitoring. The stock of public and publicly guaranteed debt as of 2008 is estimated at $33.5 billion, a more than double increase from its level in 2000. This increase has been in part due to the rapid build-up of arrears to both Paris and non-Paris Club creditors and included the new drawings from Arab multilateral and bilateral creditors as well as from China and India. Another emerging concern is the accumulation of non-concessional borrowing. In 2008, the government contracted about $426 million non-concessional debt. The IMF set a limit of $700 million in its SMP programs, however this limit may however be easily breached if the fiscal space and limited access to concessional financing leave little maneuver to finance commitments on needed investment and development spending. Judicious settlement of arrears and accrual of non-concessional debt must thus be undertaken to prevent build up and worsening of the debt situation. There is a need to minimize the contracting of non-concessional debt and the accumulation of arrears as both weakens debt sustainability and could delay creditors' participation in a potential debt-relief operation, which could substantially improve inflow of required financing into the economy.

Pro-cyclical and volatile spending have been particularly harmful. Greater volatility in oil prices, when transmitted through oil revenue volatility and then expenditure volatility, tends to harm innovation and economic growth, particularly if financial development in a country is weak as is the case in Sudan.[16] The high degree of correlation between revenues and expenditure essentially transmits the underlying volatility in oil prices—evident from the collapse in world oil markets in 2008—to government expenditure and public investment in the country. In addition, because oil earnings enter the Sudanese economy predominantly through public finance channels, fiscal policy faces significant volatility in the absence of an effective expenditure-smoothing framework. The lack of public expenditure smoothing has led to two worrying fiscal results: substantial increases in non-discretionary expenditures (e.g., wages and benefits) that are difficult to reduce in a downturn,[17] and declines in the efficiency of public investments, with budget execution on large investment projects that is considerably above planned allocations, and erratic funding/ underfunding of the rest of the portfolio.[18] Hence, difficult fiscal adjustments have been required following the recent sharp decline in oil revenues.

The oil revenue boom of 2008 was a missed opportunity for the country. In spite of record revenues associated with the run up in world oil prices in 2008, Sudan has managed to spend all of its windfall oil profits to-date. While the country could have begun building up a prudent level of reserves and comfortably adopting measures to better manage oil resources in future, it chose not to. The GoSS chose to spend the majority of the $1.5 billion in oil revenue that came in above budgeted levels. If it had instead saved those funds, the 2009 budget could have been implemented as planned and the current painful fiscal adjustment largely avoided.

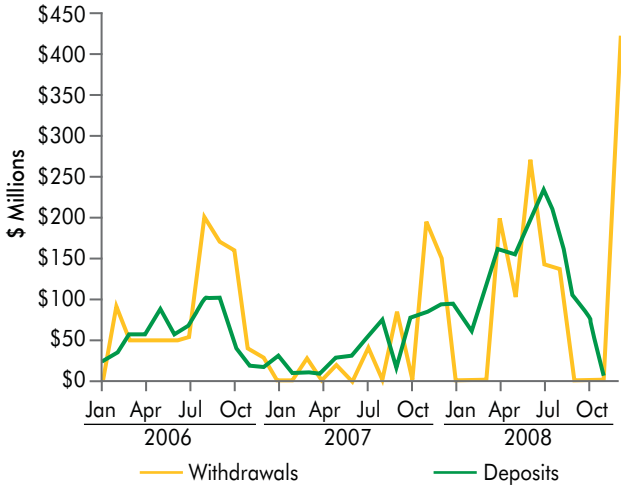
While Sudan had the foresight of creating the Oil Revenue Stabilization Account (ORSA) to help smooth expenditure, management has been poor. The ORSA[19] has not yet functioned as a disciplined mechanism to promote either fiscal or macroeconomic goals in the country.[20] As seen below

[16] Van der Ploeg and Poelhekke 2009.
[17] The federal public sector wage bill increased nearly four-fold from 2000 to 2006.
[18] For more details on the composition of the expansionary fiscal policy, see World Bank 2007, Chapter 3.
[19] The ORSA is a locked sub-account for the GoNU at the Bank of Sudan, controlled by the MoFNE. At the start of the fiscal year, a benchmark production figure and oil price is agreed by the GoNU and GoSS. Any revenues accruing from production or price above the benchmark are deposited in the ORSA, and withdrawals are distributed to both GoNU and GoSS in proportion to their share of total oil revenue.
[20] The account accumulated to more than $300 million by early 2006, but there were substantial draw-downs from the account later that year to finance government expenditures in light of shortfalls from delayed new

in Figure 1-5, withdrawals from the account have been highly volatile and nearly equal to deposits on net—highlighting its mismanagement and lack of effectiveness in stabilizing expenditure. More importantly, there were heavy withdrawals when oil revenue was well above budgeted levels.[21] In addition, the process of oil price reference budgeting only applies to revenues from Nile blend which currently accounts for less than half of total oil revenues.

Revenue diversification can also help decouple the fiscal account from oil earnings. Non-oil revenues must be tapped, and tax reforms must be undertaken to expand and diversify the revenue base. The annual revenues in 2009–12 are forecasted to be lower than in 2005–08 by 6 percentage points of GDP. To avoid large imbalances in the fiscal position, the resource gap will have to be bridged by tax and expenditure measures. A recent initiative is the comprehensive tax policy review, which is aimed to identify concrete measures to cut Value Added Tax (VAT) exemptions, increase personal income tax collections, resolve tax jurisdiction issues vis-à-vis sub-national governments and maximize the net take from the oil sector. The streamlining of tax exemptions is expected to yield additional revenues of at least 2 to 3 percent of GDP over 2009–12. Reforms are also envisioned in revenue administration, which consist of widening the use of unique taxpayer identification number across revenue agencies, introducing a VAT refund system for large business tax payers, and adopting WTO consistent valuation principles for questionable customs assessments. Other areas of reforms that the authorities are embarking on include public financial management (PFM) and expenditure policy involving most notably the reorganization/modernization of the Ministry of Finance and National Economy, the extension of the GFSM 2001 budget classification to Northern states, strengthening of the tax collections, and the modification of the petroleum pricing regime toward an automatic adjustment formula. New revenue measures are also targeted on beverages and cigarettes.

FIGURE 1-5: ORSA Account Withdrawals and Deposits



Source: Various monthly reports of the GoNU/GoSS Technical Committee on "GoSS Share From Crude Oil Revenues".

Toward a More Reliable and Sustainable Fiscal Framework

More effective volatility management within a fiscally sustainable framework requires a medium-term outlook on oil revenues. In order to break the link between current expenditures and current oil revenues, especially in the South where the dependence on oil revenues is extreme, fiscal planners need to take a medium-term approach to oil revenue. This section looks at estimate of long-term oil revenues and an example of a useful framework to benchmark natural resource management.

Estimates of Longer Run Oil Revenue

At presently known oil reserve levels and production plans, revenues from oil in Sudan will

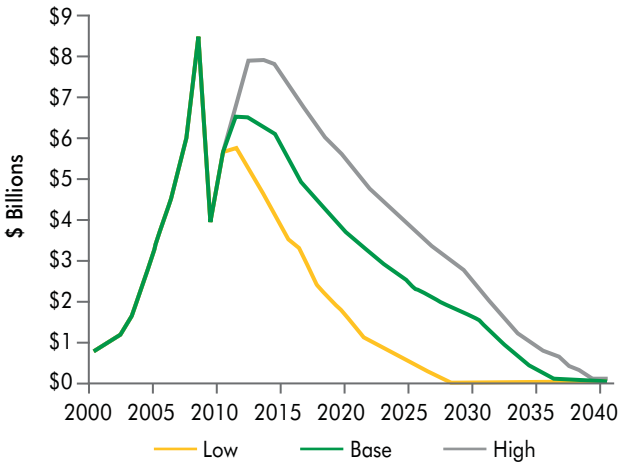
fields, and by end-December 2006 the account was virtually depleted. The ORSA was again built up during 2007 and early 2008, but substantial draw-downs over the course of 2008—both before the collapse in oil prices and after—have left it nearly depleted yet again.

[21] ORSA withdrawals between April-August 2008 totaled $849 million, when oil prices were above $100/barrel relative to a budget reference price of $63/barrel for Nile blend.

run out in 20 to 30 years, with oil production peaking by 2012 in the most optimistic scenario.[22] The major challenge for oil reserve management is therefore how to effectively manage the fleeting nature of its oil windfall. Figure 1-6 shows expected government fiscal receipts from oil in Sudan for three production scenarios, valued at recent oil price forecasts by the IMF.[23] The net present value of government fiscal receipts from oil for 2009–2040 are estimated at $41 billion for the base production scenario, $29 billion for the low production scenario, and $51 billion for the high production scenario (all in 2008 dollars).[24]

The oil revenue forecasts carry idiosyncratic risks from volatile world oil prices. Sudan's actual fiscal revenues from oil may be higher or lower than currently expected. While future extraction volumes are relatively well known in the short run, they could change significantly depending on actual extraction rates or new oil discoveries. However, volatility of oil revenues is typically driven more by volatility in oil prices. Oil prices are inherently unpredictable, with several major shocks to the world oil market in recent decades (see Figure 1-7, left panel). After the oil shocks of 1973–79, nominal oil prices hovered around their long-term average of $22 per barrel. However, the

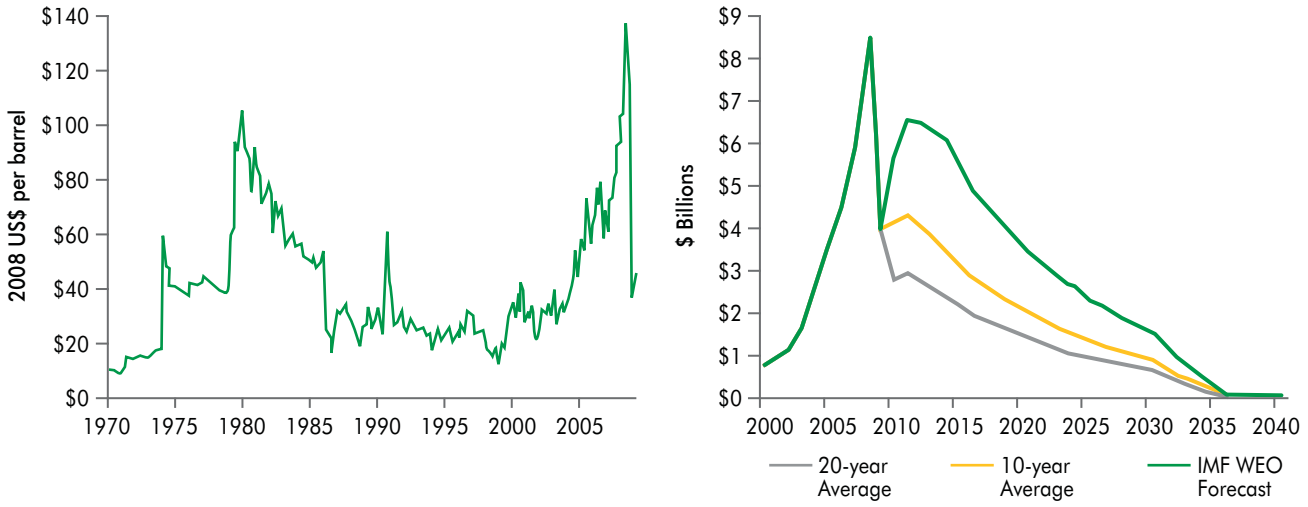
FIGURE 1-6: Expected Government Oil Revenues, by Production Scenario



Sources: World Bank staff estimates based on IMF and Wood Mackenzie data.

[22] As explained in Chapter 3, these forecasts are based on the limited information available on oil sector exploration and investment in current projects. Thus oil sector forecasts in Sudan should be taken as indicative.
[23] IMF 2009.
[24] Calculating the net present value of expected fiscal receipts requires discount assumptions that are subjective and can vary over time. See Box 1–3 for details on discounts used in the current estimates.

FIGURE 1-7: Volatility in Oil Prices and Effects on Revenue Forecasts



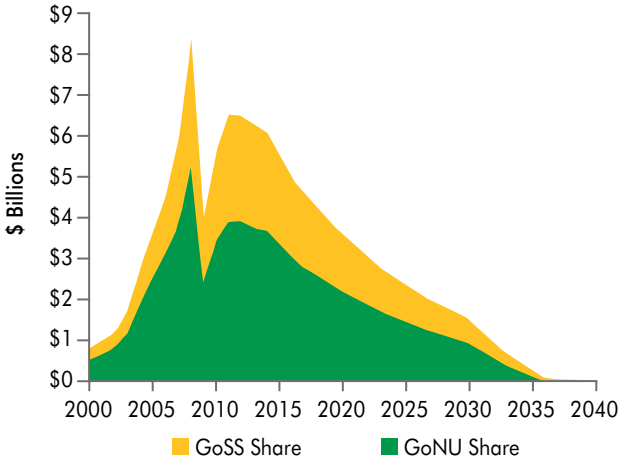
Sources: World Bank staff estimates using data from U.S. Bureau of Economic Analysis and IMF 2009.

world oil price started a dramatic rise beginning in late 2002, and by July 2008 had reached $145 per barrel. The subsequent months saw a spectacular collapse in the world oil price, falling 75 percent from its record high to $36 per barrel at the end of 2008. By June 2009, the world oil price had risen above $60 per barrel. This significant volatility of oil prices suggest that revenue forecasts must weigh heavily on the side of prudence when identifying a medium-term oil price against which to budget.

Assuming some reversion back to historical oil price averages implies significantly lower forecasts. Using the baseline production volume estimates identified above, with oil price levels that return to their historical average over the past 10 years ($49.44 per barrel in 2008 dollars) or past 20 years ($37.65 per barrel in 2008 dollars) starting in 2010, Sudan could face markedly lower revenues as seen in Figure 1-7, right panel. Under these oil price scenarios and base production expectations, the net present value of Sudan's oil revenues for 2009–2040 would fall from $41 billion for the base IMF price forecast to $27 billion for a return to the 10-year average oil price, and $19 billion for a return to the 20-year average oil price (all in 2008 dollars). In any of these plausible scenarios, the oil revenues will never reach levels seen last year and will start a steady decline in the next 3–5 years.

Sharing of revenues between GoNU and GoSS has added risks because of the limited transparency in the oil sector and the political uncertainty facing the country. Projecting future oil revenues is a highly uncertain exercise in any country, but the uncertain political future of Sudan further complicates this. Specifically, it is uncertain how oil revenues generated from the fields that lie within and across the South Sudan border region will be apportioned if the South opts for independence in 2011. We have assumed that the status-quo concerning oil revenue sharing will not change.[25] Figure 1-8 shows the oil revenue profile for the base production forecast and recent IMF oil price forecast, with specific discounts applied to the various Sudanese oil blends and estimates made for production costs. In addition, further estimates of the division of oil resources between GoNU and GoSS have been made based on historical reports of the joint GoNU/GoSS Technical Committee. In this scenario, the $41 billion net present value of Sudan's oil wealth from 2009–2040 is estimated to be split $25 billion to GoNU (61 percent) and $16 billion to GoSS (39 percent).

FIGURE 1-8: Split in Government Oil Revenues, Base Revenue Scenario



Sources: World Bank staff estimates based on IMF and Wood Mackenzie data.
Note: The GoNU share (~61 percent) and GoSS share (~39 percent) exclude oil revenues shared with states and other oil-producing regions.

Examples of longer-term frameworks of oil revenue management

Examples of long term frameworks can help Sudanese fiscal planners better manage volatility, especially in the South, including through more medium term budgets. The examples provided in Box 1-3 could be used to derive and disseminate a

[25] The wealth sharing provisions in the CPA and historical revenue sharing as reported in the Sudan Technical Committee reports have been used to compute the forecasted division between GoNU and GoSS oil revenues.

BOX 1-3: Calculating a Permanent Income Equivalent for Sudan's Oil Revenues

The Permanent Income Equivalent approach translates a nominal expected oil revenue flow into a constant annuity value in real terms. The calculation consists of two steps, expressed in the equations below: first, compute the discounted or net present value (NPV) of the projected oil revenues, and second, calculate an annual revenue level that gives exactly the same discounted value while being constant in real terms in perpetuity. Assumptions on key discounting parameters are required for the calculation. The assumptions here are one option. The authorities are encouraged to consider alternatives, for example using a declining discount rate would favor future generations. The calculations used in this section assume that a reasonable starting point is to take an equity risk premium of 5 percent, a risk-free rate of return of 3 percent, a country risk premium of 500 basis points for Sudan, and world long-term inflation rate of 3 percent. The resulting discount rate is 10.3 percent, while the permanent income "yield" on the NPV of Sudan's oil wealth is 5 percent. Following the two steps described above, and using oil revenue assumptions described in this section, the estimated permanent income equivalent is $1.24 billion for GoNU and $0.80 billion for GoSS, in constant 2008 dollars.

Step 1:

$$NPV_0 = \sum_{t=0}^{T} \frac{P_t^{oil} O_t}{(1+i_R)^t}$$

Step 2:

$$PI_0 = r_S * NPV_0$$

$$PI_t = r_S * NPV_0 * (1 + \hat{p})^t$$

with

$$r_S = i_S - \hat{p}$$

$$i_R = r_S + \hat{p} + risk\ premium$$

Where:

NPV_0 = net present value from future oil revenues,
P_t^{oil} = price of oil in current dollars per barrel
O_t = production volume in year t
i_R = discount rate integrating a risk premium
$\hat{p}$ = long term inflation rate
r_S = real interest rate in the absence of uncertainty
T is the year in which oil reserves are exhausted

three-year envelope for expected oil revenues at the federal and GoSS levels. This would improve the robustness of the budget macroeconomic framework, and provide a more reliable resource envelope. Importantly, fiscal planning using these longer term approaches should be accompanied by monitoring of the NOPD—the difference between non-oil revenue and total government expenditure, excluding interest payments—otherwise what may be set aside on the one hand can be spent with the other, thereby making the approach fiscally ineffective.

Fiscal sustainability frameworks can provide useful benchmarks or starting points for a medium term approach to oil revenues. The Permanent Income Equivalent approach,[26] in principle, guarantees a permanent flow of resources that will contribute to a country's economic development even after its oil resources have been depleted. In addition, it significantly reduces volatility in government expenditure and lead to much more effective macroeconomic management. As a tool for improving the consistency of public expenditures over time, the PI approach provides a framework for thinking about how a resource-rich country can achieve some degree of macroeconomic stability. The PI approach also serves as a means for ensuring a reliable source of revenues for critical public investment that is particularly relevant for enhancing economic growth in a post-conflict state like Sudan.

The emphasis here is on using the PI approach to introduce relevant concepts to more medium term natural resource management and as a possible benchmark against which a country can judge its natural resource management efforts. The precise numbers of the PI analysis are less relevant than their order of magnitude, and

[26] Under the Permanent Income Equivalent approach, real government consumption is set at the level of the interest income on the net present value of the total oil windfall. This approach is implemented by saving in high revenue years through allocation to a dedicated stabilization fund, and drawing down the oil fund in low-income years.

the extent to which the PI approach—as a framework—helps a government adopt a longer term perspective on natural resource management. This purpose is particularly strong in Sudan, where a rational and consistent management of its natural resource wealth has not existed in the country's eleven years of oil production. A policy of maintaining and updating estimates of the NPV and permanent income equivalent of Sudan's oil wealth is a reminder that these resources are finite and must be managed with care. Such a policy also places the inherent revenue volatility observed by policymakers month-to-month, day-by-day, in a larger context and reinforces the value of expenditure smoothing and consistency of public investment, and improves macroeconomic fundamentals as a byproduct.

Estimates for the permanent income equivalent applied to Sudan can be found in Table 1-1 for two different oil-price forecast scenarios, both of which use the base production estimates described above. These calculations suggest permanent income levels of $1,239 million for GoNU and $798 million for GoSS under the baseline IMF WEO 2009 oil price forecast (all in constant 2008 dollars).[27] This baseline scenario can also be seen graphically in Figure 1-9 (left panel). The second scenario represents the possibility that oil prices revert to their 10-year historical average of $49 in constant 2008 dollar terms. Under this scenario, the permanent income levels are $807 million for GoNU and $521 million for GoSS.

A "Frontloaded" Approach

The high political uncertainty and other factors in Sudan make application of a pure PI approach unlikely. Given the uncertainties of the remaining Interim Period, discount rates of the future are high for policy makers, and the incentive to save is low. In addition, recent research has supported the idea that increased and temporary spending above the permanent income level—for productive domestic investments with high marginal returns in a capital-scarce developing country—can be an optimal use of natural resource revenues.[28] This can be a compelling argument for current public investment that exceeds the permanent income level in the Sudan, especially in areas

[27] The IMF WEO 2009 oil price forecast assumes an average price of $52 per barrel for 2009, which may appear to be low given the recent uptick in world oil prices. However, a hypothetical 25 percent increase in the assumed average price for 2009 to $65 per barrel increases the baseline permanent income figures by just 3.3 percent, or $40 million per year, for GoNU to $1.28 billion and by 3.1 percent, or $25 million per year, for GoSS to $0.82 billion.

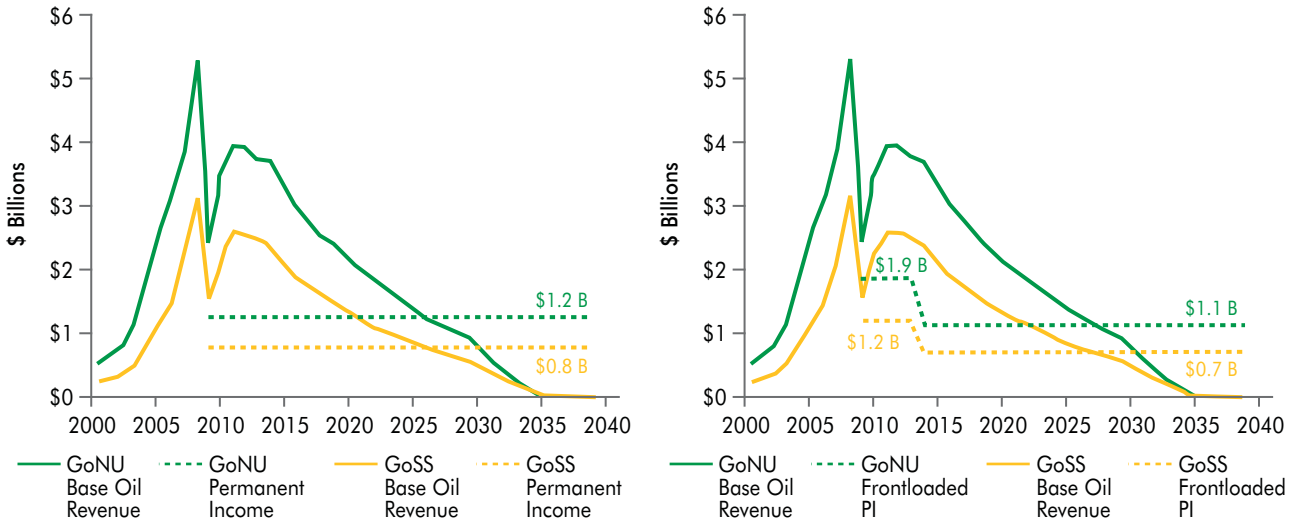
[28] Collier, van der Ploeg and Venables 2009.

TABLE 1-1: Permanent Income Scenarios (2008 $ millions)

Oil Price Scenario	Permanent Income	2009	2010	2011	2012	2020	2030
IMF WEO forecast	—	$52.00	$62.50	$67.50	$70.50	$74.75	$74.75
GoNU Share	1,239	2,409	3,456	3,953	3,925	2,192	920
GoSS Share	798	1,525	2,224	2,613	2,582	1,380	574
Revert to 10-year average	—	52.00	49.44	49.44	49.44	49.44	49.44
GoNU Share	807	2,409	2,508	2,610	2,448	1,277	550
GoSS Share	521	1,525	1,611	1,729	1,615	812	348

Source: World Bank staff estimates using IMF and Wood Mackenzie data.

FIGURE 1-9: Permanent Income and "Frontloaded" Revenue Scenarios, Base Case



Source: World Bank staff estimates using IMF and Wood Mackenzie data.
Note: The permanent income levels were calculated using the base production estimate and IMF WEO oil price forecasts. Expenditure was "frontloaded" by 50 percent of the permanent income level for a period of five years, and then reduced to a level that can be sustained indefinitely.

where basic infrastructure needs to be rebuilt like the South. However this will be constrained by the quality of public expenditure, the extent to which such investment is truly productivity enhancing, and inevitable political tradeoffs in the alternative use of scarce resources.

Estimates of a "frontloaded" permanent income level were calculated by increasing acceptable expenditures by 50 percent of the permanent income level for a period of five years, and then reduced to a level that can be sustained indefinitely. Using the base production estimates and the recent IMF oil price forecast, the "frontloaded" permanent income levels are $1,859 million for GoNU and $1,197 million for GoSS for 2009–2013, falling to $1,125 million for GoNU and $724 million for GoSS in subsequent years (all in constant 2008 dollars). See Figure 1-9 right panel for a graphic representation.

Chapter 2

BROADENING PRIVATE SECTOR-LED GROWTH[29]

A. The Importance of the Investment Climate

A stronger private sector base is a key for building broad-based growth in the post-conflict Sudanese economy. International experience assigns a critical role to the private sector to create meaningful employment, revenue for the state, and to sustain peace. In conflict affected settings, international experience suggests an important role for the private sector in promoting peace through creating sustainable sources of employment, which becomes critically important as donor flows decline as initial stabilization efforts are completed. As Elbadawi, Collier and others have documented, economic distress is a precursor to conflict. As such, breaking the cycle of conflict requires cementing peace through broad-based growth.[30] This is an essential part of the peace dividend expected by citizens.

Over three decades, Sudan's policymakers have increasingly recognized the importance of the enterprise sector to its development. In the early 1980s, the private sector was called upon to create urban employment and ameliorate the impact of rural-urban migration[31] resulting from desertification and drought. The Government of Sudan's twenty-five year (2002–2027) strategy focused on restructuring the Sudanese economy with a major emphasis on agriculture and industry with special attention to small- and medium-scale industries.[32] The 2005 Joint Assessment Mission (JAM) similarly had a key focus on the Productive Sector (the private sector and agriculture) and proposed initiatives both at the policy and institutional level to improve the investment climate, and actions to catalyze specific value chains.[33] Sudan's Five-Year Plan (2007–2011) seeks: "Sustainable development through building the infrastructure, modernizing and developing agriculture, increase production and productivity, enabling the private sector to guide the economic development and building an economy of equitable supply of basic services."

Enhancing productivity growth and improving competitiveness is essential to fulfilling these developmental mandates. Periods of peace following negotiated settlements of Sudan's conflicts have led to increased investment and private sector activity. But in the past this growth has been fragile and not sustained. To ensure that investment serves to catalyze broader growth as envisaged by policymakers and donors alike, international experience suggests that efforts are needed to remove barriers to productivity growth, competitiveness and economic integration. Countries in Africa that have improved their investment climates grow faster and become more competitive. For the private sector in Africa, as a recent study explains, "the most important determinant of performance will be the business environment in which firms operate." [34]

[29] The chapter has been prepared by Magdi Amin with inputs from Yutaka Yoshino and Tilahun Temesgen. The Sudan Productivity and Investment Climate Survey (Sudan PICS 2008) was carried out by H&H Consultants.
[30] World Bank 2003.
[31] USAID 1980.
[32] UNIDO 2003.
[33] GoS, SPLM, WB and UNDP 2005.
[34] Ramachandran, Gelb and Shah 2008.

Productivity results from investment in people, institutions and infrastructure. The contribution firms make to society through investment, production, employment and service delivery is determined by their productivity, which in turn is influenced by the investment climate: location specific factors that create opportunities and incentives for firms to invest and trade. The investment climate encompasses a range of specific attributes of the ecosystem within which firms operate, including the functioning of factor markets (land, finance, and labor), product markets, the predictable regulatory environment, and efficient compliance with administrative requirements. It has been well established that investment climates characterized by high costs and high risks result in lower levels of firm creation, formalization, investment, trade, and employment. Other work clearly demonstrates that the level of corruption, and the rule of law are strongly associated with growth.[35]

B. From Investment to Broad–Based Growth

Investment Is Creating Pockets of Growth But Also Driving Up Costs

As in past peace agreements, the 2005 CPA led to a substantial increase in investment. In the two years after signing the CPA, Sudan became the fourth largest destination for FDI in Africa in 2005, attracting $2.3 billion, before reaching a peak of $3.5 billion in 2006. While much of this was directed to the exploitation of energy resources, there were substantial investments in other sectors including financial services, telecommunications, agriculture, and manufacturing. Much of this investment originated in Asia and the Gulf.

Despite these considerable achievements in attracting investment, much of the increase in economic activity has been limited to the central core of the country, whereas the development strategies as articulated by the government call for the private sector to play a role in lagging regions. The key question is to use these advantages to create an environment more conducive to the productivity growth not only of foreign and large firms, but also small firms, and that is more geographically broad based.

The manufacturing sector can be crucial to broad-based growth, but is currently thin and located in areas relatively close to the capital. During 2007, the manufacturing sector contributed to only 6.1 percent of GDP. In better-performing countries in Sub-Saharan Africa, the value-added of the manufacturing sector accounts for 20 to 40 percent of GDP. The value-added of the sector did not significantly increase in real terms over the past four decades.

The manufacturing sector is associated with high capital intensity and high production costs that work against the competitiveness of the country. The influx of investment has translated into high asset values of Sudanese manufacturing firms, but the high capital intensity has been associated with high labor costs. According to the Investment Climate report, the machinery and equipment per worker in Sudan is worth $16,118 compared to less than $6,000 in comparator countries. This high capital intensity provides the firms' scarce labor force with a high capital endowment, enabling it to be productive. Median value-added per worker as measured in the survey is $6,700, higher than the value-added per worker of median firms in Uganda, Egypt and Ethiopia and slightly lower than the value added per worker in median firms in Kenya and Morocco. Labor has become costly at approximately $500 per month, far exceeding those of its comparators. Other things being equal, firms with higher labor costs are less competitive. A proper indicator of labor competitiveness is therefore the unit labor costs, which measures the ratio of labor cost per worker to value

[35] Kaufmann and Kraay 2002.

added per worker; the higher the unit labor cost, the lower the competitiveness of the firm. Sudan's median unit labor cost is 0.19, one of the highest among comparator countries.

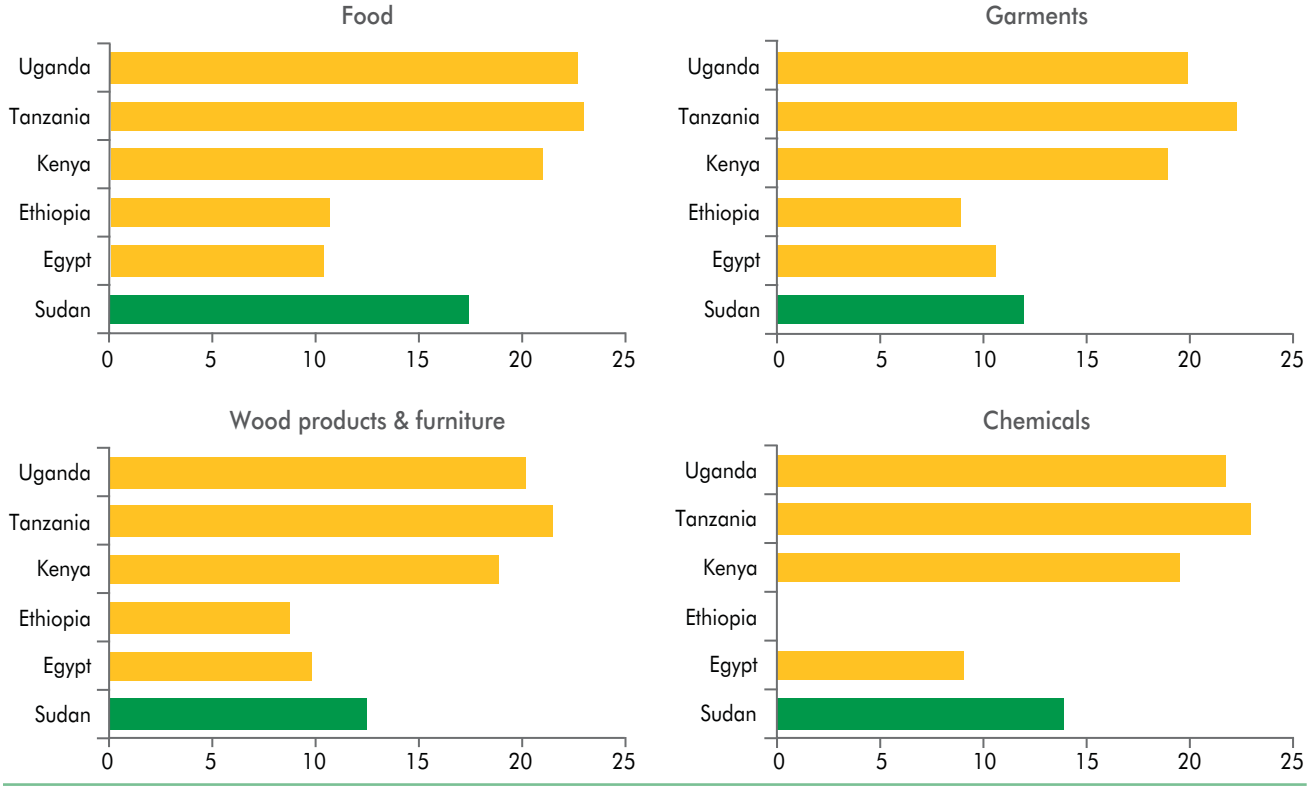
Manufacturing firms operate below their full capacity. The capacity utilization rate, which is the firm's output in comparison to maximum possible, is only at 65 percent. Capacity utilization for

TABLE 2-1: Productivity Measures for Manufacturing in Sudan and Comparators

	Value Added per Worker (2006 US$)	Capital per Worker (2006 US$)	Labor Cost per Worker (2006 US$)	Unit labor Cost
Kenya	8,707	11,558	2,149	0.13
Morocco	7,947	5,438	3,809	0.19
Sudan	6,682	16,118	6,280	0.19
Tanzania	3,268	1,680	899	0.15
Uganda	1,975	1,863	880	0.22
Egypt	1,657	5,447	797	0.16
Ethiopia	1,509	2,588	493	0.14

Source: Sudan PICS 2008.

FIGURE 2-1: Total Factor Productivity Growth of Manufacturing Industries



Source: Sudan PICS 2008.

comparator countries Uganda, Tanzania, Egypt, Morocco and Kenya range around 70 to 75 percent. The low capacity utilization may indicate that the investment and capital may have not been properly or fully integrated or utilized in production and, more generally, is a sign of a lack of competitiveness.

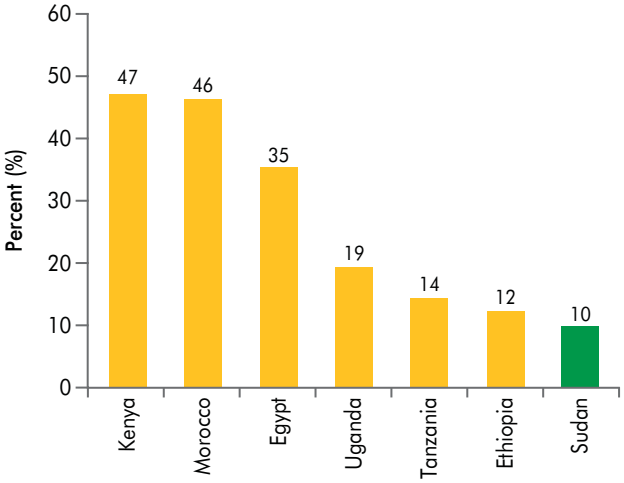
Total factor productivity is low relative to comparators. Total factor productivity (TFP), which captures the efficiency with which all factors of production are converted to output, is an indicator of international and market competitiveness.[36] Only food manufacturing firms have levels of TFP close to their international competitors. Firms engaged in food, garments, wood products and furniture and chemicals in Sudan perform better in terms of TFP than those in Ethiopia and Egypt but not to those in Uganda, Tanzania and Kenya. To raise aggregate productivity, Sudan has to raise total factor productivity at the firm level and ensure that markets allocate resources to the most productive firms at the sector level.

Low Competitiveness Has Contributed to Poor Economic Integration

High labor costs led to low economic integration. The high costs of labor in the manufacturing sector has rendered it difficult for the country to compete either in foreign markets or at home as trade barriers come down, without higher levels of productivity. The low economic integration is manifested in the poor share of the country's exports to the world market. It is also reflected in the influx of immigrant workers in the country.

Sudan's private sector is isolated from international markets with only 10 percent of manufacturing firms in the Productivity and Investment Climate Survey (PICS) survey able to export their products (Figure 2-2)**.** This is a particularly dramatic figure relative to comparative countries Kenya, Morocco and Egypt in which more than 30 percent of manufacturing firms export. The 2008 Diagnostic Trade and Integration Study (DTIS) identified the reduction of trade costs, including modernizing customs, the development of a trade logistics service, the need to build capacity in food and plant safety regulations, and the need to reduce bottlenecks, fees and charges at Port Sudan as priorities. The DTIS, like the Investment Climate Assessment, identifies the poor competitiveness of manufacturing as the most pressing concern.

FIGURE 2-2: Share of Surveyed Firms that Export



Source: Sudan PICS 2008.

PICS respondents identified the profitability of the domestic market relative to foreign markets as a key cause of low exports, as well as the inability to match foreign prices. The relative profitability of domestic markets is in part a result of exchange rate appreciation that occurred during the survey period, which changed relative prices in favor of serving domestic customers. At the same time, well over half of respondents failed to export for other reasons: high shipping and transport costs or inability to match foreign prices. These factors

[36] The international competitiveness of manufacturing firms can be assessed in terms of firm-level TFP. TFP growth can be achieved by greater firm level productivity and reallocation of market shares to more productive players even while within firm productivity remains constant. Allocative efficiency is therefore a measure of a market's competitiveness.

reflect a poor business environment and, in combination with poor firm-level productivity, add up to Sudan's low competitiveness.

Characteristics of the Enterprise Sector

To better understand the factors underpinning the poor competitiveness of manufacturing industries, it is useful to better understand the basic characteristics of the enterprise sector. The enterprise sector is diverse, including a traditional base of sectors linked to the agricultural base of the economy, and an increasing number of firms linked to increasing domestic demand for goods and services. According to the 2003 United Nations Industrial Development Organization (UNIDO) industrial survey, the largest industrial sectors were food processing, followed by metalworking and wood processing. More traditional subsectors have been the sugar industry, leather, textiles, pharmaceuticals, oilseed processing, soap, and cement. More recently, in addition to oil refining, automotive assembly, plastics, cable, and pipe manufacturing have been developed primarily for domestic consumption. The enterprise sector as a whole consists largely of small firms, structured as private limited companies (60 percent) and sole proprietorships (37 percent) arrayed over a wide range of sectors. Of the sample of formal manufacturing firms in the PICS only 8 percent of firms were partnerships, 2 percent state-owned, and 3 percent listed.

The enterprise sector is predominantly private, but a strong legacy of state participation remains. The 2003 UNIDO industrial survey found that private ownership accounts for 96 percent in 2002, and the Sudan PICS 2008 found only 2 percent of surveyed firms to be government owned. Yet the enterprise sector in Sudan emerges from a deep historical legacy of state participation in many forms. At independence, British colonial administrators turned over control of the economic apparatus supporting production and supply of cotton and other commodities of the government to manage. Large parastatals dominated the economy for decades following Independence. Along with Egypt, Sudan reverted to an "Infitah" policy in the 1970s that welcomed foreign investment but maintained a large state role in enterprise ownership as well as industrial policy with features of import-substituting industrialization. In the 1980s, the Sudan's financial crisis precipitated a policy of privatization, particularly focused on enterprises that created substantial losses or contingent liabilities. This was carried out with minimal international financial support, such that only seventeen enterprises were initially privatized. More recently, the government has sought to revive the program for remaining firms.[37]

The evidence suggests that a more fundamental reorientation of the State's role in the productive sector is needed. In addition to direct ownership of enterprises by all levels of government (National, GoSS, and State), the state indirectly owns enterprises through government officials and political parties. In Southern Sudan, the SPLM owns Nile Commercial Bank and the telecommunications firm GEMTEL. The broad range of activities in which the state participates as direct or indirect owners of enterprises distorts competition in those markets, as the presence of state firms provides a strong disincentive to private entry. This undermines policies both at the national level and in Southern Sudan to allow greater entry of the private sector. On the other hand, there is a need for a more effective and stronger state role in provision of public goods such as infrastructure, and in establishing institutions that support fair competition.

Regional Variations in Performance

Within Sudan, productivity varies significantly by region and by size of firm. Labor productivity

[37] The Public Sector Enterprises Disposition Bill (1990) and the State Corporation Act (1992) codified the privatization program, and the High Council for the Disposition of Public Enterprises was established to carry out the policy.

measured as value added per worker is one of the basic measures of establishment level productivity. Differences in labor productivity so measured, however, can be the results of differences in technology used, skills of workers including managerial quality as well as differences in the intensity of capital used. Gezira and Khartoum regions appear to have relatively high labor productivity on average, which is due primarily to far higher productivity of large firms. West and South regions as well as North regions other than Khartoum and Gezira (e.g., Red Sea and River Nile states) have very low productivity levels, including large firms. Interestingly, microenterprises in the West outperform those of Khartoum and the national average.

Larger firms, which are more intensive in the use of formal institutions and benefit from economies of scale, are located primarily in Khartoum. Small firms can be found everywhere, but larger firms are located primarily in Khartoum and to a lesser extent El Gezira, Nyala, Port Sudan and North Kordofan (Figure 2-3). Few parts of Sudan offer infrastructure and factor markets necessary to support large-scale, formalized manufacturing. As such, most of the country is endowed with a large number of smaller or informal enterprises.

The distribution of average sales revenue per worker and value added per worker for the manufacturing industries in Sudan shows that businesses in Juba, Malakal, and Red Sea perform relatively worse than those in Khartoum and other bigger cities (Figure 2-4). This can be due to a number of positive factors in the larger cities such as capital intensity, access to markets (for inputs and products), better infrastructure facilities, as well as better access to technology. The following chart shows the kernel density distribution for value added and sales per worker in Sudan by geographic location. In both cases, establishments in Khartoum perform better than those in Southern Sudan and other states.

Firms operating in Khartoum have higher propensity to assimilate technology and to gain market competitiveness than those in other areas. The TFP growth of manufacturing firms in food, textile, wood and wood products, chemical and non-metallic products located in Khartoum is

FIGURE 2-3: Distribution of Manufacturing Enterprises by State

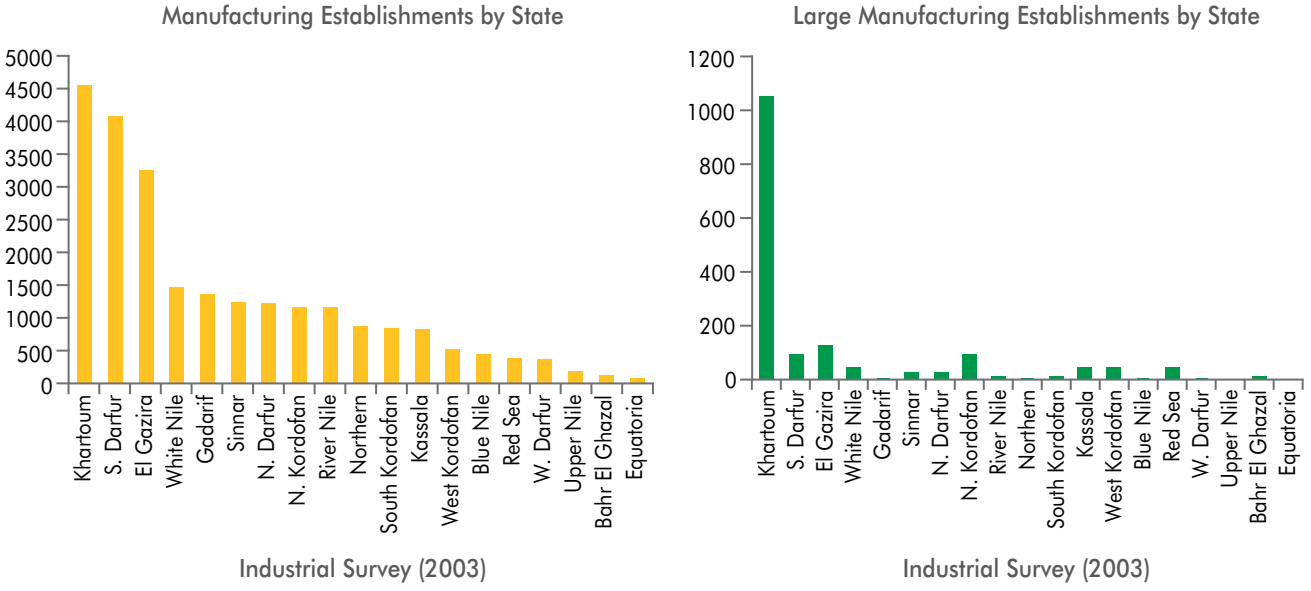
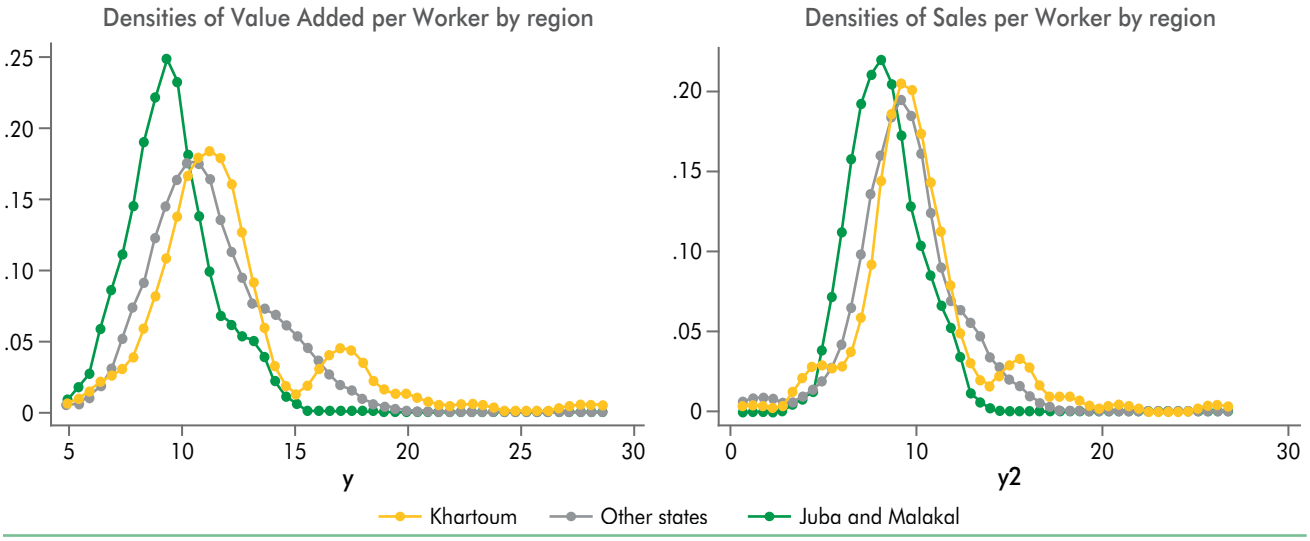


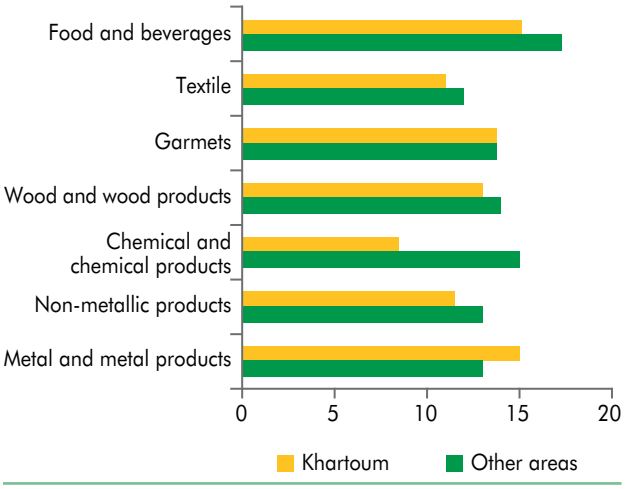
FIGURE 2-4: Densities of Manufacturing Value Added and Sales Per Work



Source: Sudan PICS 2008.

higher compared to those operating in other areas (Figure 2-5). Only the firms outside Khartoum engaged in metal and metal products have higher TFP growth than those in the main city. This indicates that there is a big disparity in the productivity and competitiveness of firms operating in and outside the city center of Khartoum.

FIGURE 2-5: Total Factor Productivity Growth in Khartoum and Other Areas



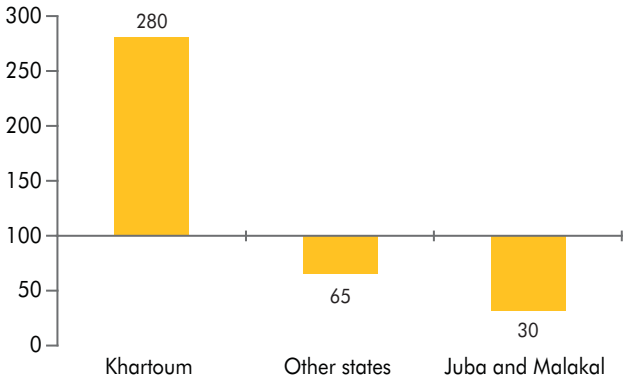
Regional Differences in Firm Size, Capital Intensity, and Skills

The PICS 2008 data reveals that enterprises in Khartoum, Red Sea and Gezira are, in terms of employment, bigger on average than those in the South, are more capital intensive, and have better educated managers and work force (Figure 2-5). Non-managerial skilled human capital is lacking in some states, particularly those in the South more so than in others.

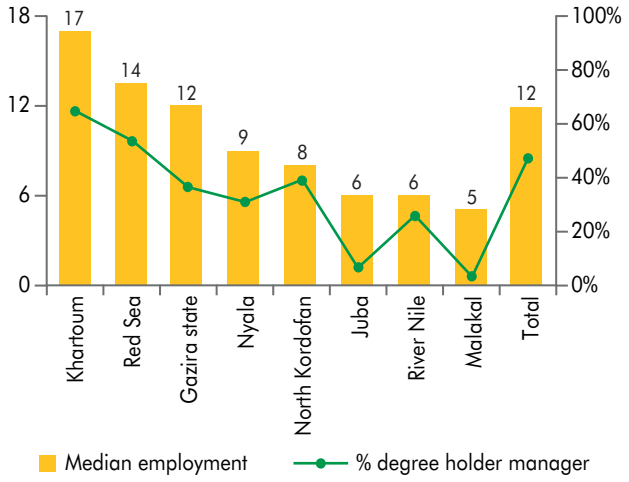
Lack of skilled manpower was cited as a serious business obstacle by close to 40 percent of respondents to the PICS 2008 manufacturing survey for the whole of Sudan. However, the labor skills related constraints are more pronounced in two areas—Malakal and Nyala, where 53 percent and 56 percent of respondents cited it as major to severe business constraints. The majority of Sudanese educated labor force is concentrated in the capital and other large cities. Similarly, the entrepreneurship skill gap is also enormous from one region (state) to another as, for example, indicated by the share of business managers with university degree.

FIGURE 2-6: Regional Differences in Firm Inputs

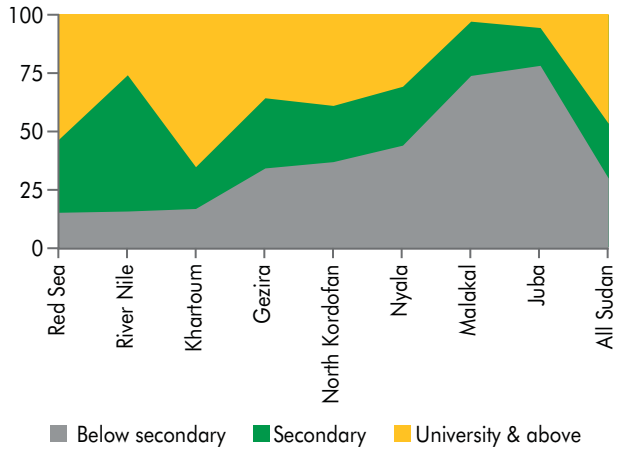
(A) Average book value of machinery by region as percent of the national average



(B) Median Employment Level and percent of Managers with University Degree by Region



(C) Education Level of Workers



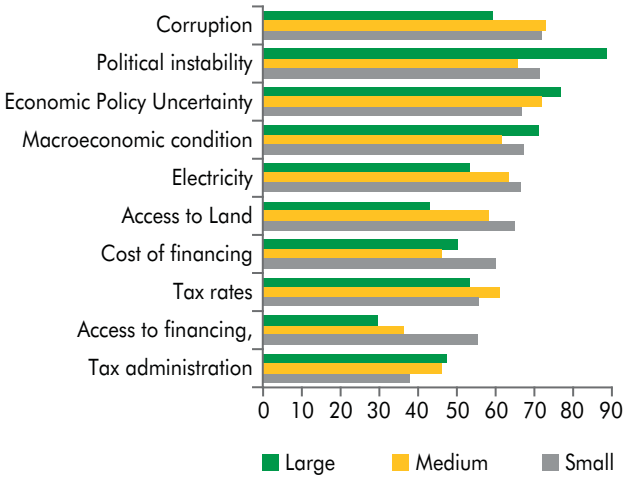
Source: Sudan PICS 2008.

Manager Perceptions of Constraints

The perception of managers of the investment climate is important, since the decision making process of investors is ultimately an estimation of risk and reward for undertaking an activity. Perceptions of high costs and risks of investment will serve to deter investment. The "Major" or "Severe" constraints perceived by managers are political instability, corruption, macroeconomic conditions, economic policy uncertainty, electricity, tax rates, and the cost of finance.

Perceptions of key challenges to the investment climate vary by firm size. A survey of manufacturing firms suggests corruption imposes a substantially greater constraint on small and medium enterprises (SMEs) than on large enterprises. It is the leading constraint identified by SMEs but only the fourth leading constraint identified by large enterprises (Figure 2-7). SMEs are also more likely to find a number of other factors seriously constraining: electricity, access to land, access to financing (especially for small firms), anti-competitive practices, and crime. For

FIGURE 2-7: Top 10 Constraints to Sudanese Firms, by Size (percent identifying constraint as "major" or "very severe")



Source: Sudan PICS 2008.

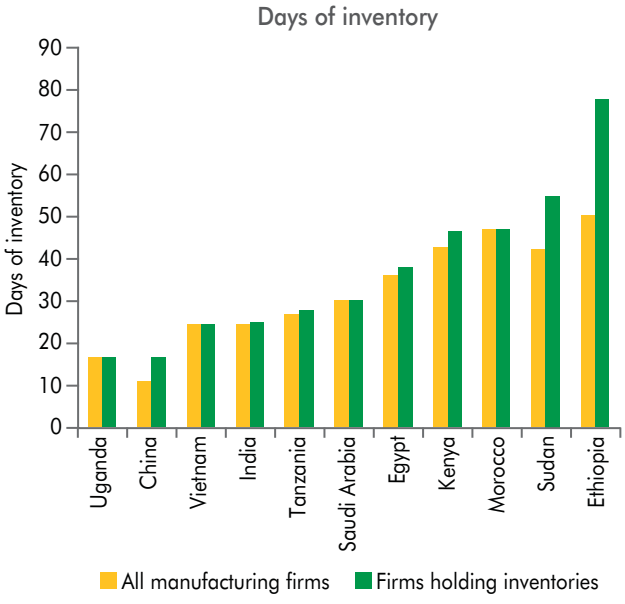
larger firms, political stability is the most significant concern. However, other constraints suggest a lack of confidence in government as well—including high rankings of political instability, economic policy uncertainty, and macroeconomic conditions.

The absence of reliable infrastructure emerges as a key constraint both in the perception of managers and in objective measures of infrastructure availability. While all of Sudan has limited infrastructure, including the lowest road densities in Africa and among the lowest in the world, those regions that report lower productivity have particularly acute infrastructure gaps. For Southern and Western Sudan, the war has destroyed basic infrastructure and disrupted maintenance (see Chapter 5). As a result of mass urbanization which resulted from rural insecurity as well as land degradation, over two-thirds of citizens of Nyala, Gineina and El Fasher are not served by water or electricity. Power outages cause many up to 100 percent of firms to self-generate power, particularly in Red Sea, Kordofan, and Central Equatoria.

Poor Market Integration

The private sector maintains inventories as a buffer against disruptions of supply. As such, high inventories are an indication that firms lack confidence in market functioning, and a reliable indicator of weaknesses in market-supporting institutions. Aside from Ethiopia, Sudanese firms hold the largest level of inventories in the region (Figure 2-8). Given the size of the country and the logistical issues associated with transporting raw materials to all regions, this is maybe not be surprising. But it undoubtedly penalizes Sudanese manufacturers. For the firms that accumulate large inventories, these inventories immobilize valuable working capital and are a symptom of serious stocking-out concerns among manufacturers and artisans. Delays in import deliveries are long and common. A reduction in delays at the port of entry would reduce the need for inventories, thereby freeing capital for more productive investment.

FIGURE 2-8: Days of Inventory held by Manufacturers



Source: Sudan PICS 2008.

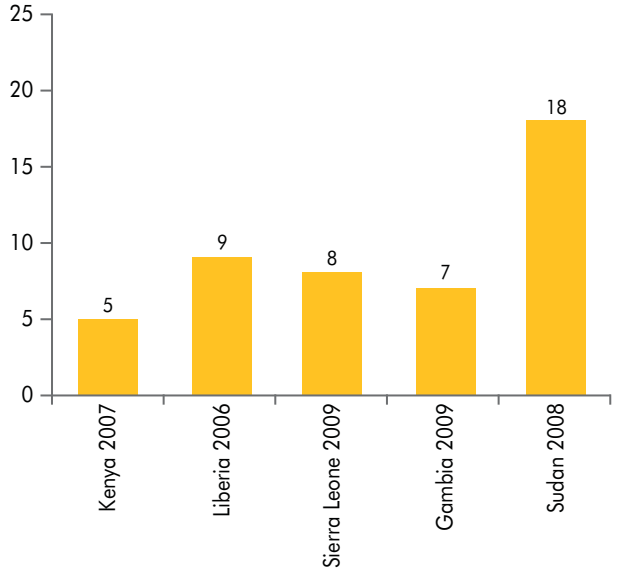
Administrative Barriers

While Sudan has few restrictions on foreign investment, there are high administrative barriers that the government has moved to reform. Since the mid 1990s, Sudan's national government has made remarkable legal and institutional changes to promote domestic and foreign investments and economic growth. Few sectors are not open to full foreign ownership: import and export trade, security, civil aviation, and energy and mining. Unlike many developing countries, Sudan has also opened its service sectors, such as banking and telecommunications, to foreign investment. The Investment Encouragement Act of 1999 and its amendments, the "one-stop-shop" of the Ministry of Investment, and the reduction in the corporate tax rate to 10 percent demonstrate a commitment to pro-investment policies. National data suggest

that business start-up has been facilitated as a result of these measures. However, many administrative barriers still make the business entry process cumbersome and costly for investors particularly at the state level.

In the first year Sudan was ranked, it ranked 151 out of 155 countries in the World Bank's Doing Business Report (2005). Through a series of reforms, it has risen to 147th out of 181 countries. Although business start-up is relatively smooth in Sudan (ranked 107 out of 181) and registering property is efficient (35), it is extremely difficult to enforce contracts (143), to employ workers (144), to close down a business (181), to trade across borders (139), and to get credit (131). These problems are all considerably more complex at the state level particularly outside of Khartoum. A recent interviewee in Foreign Investment Advisory Service (FIAS) suggested that a medium-sized soft drink firm requires some 22 licenses and fee payments for the operation of its business. The share of management time required to deal with regulatory issues is 18 percent, significantly higher than other countries (Figure 2-9) The Presidentially-mandated Administrative Barriers Reform Program,[38] implemented with technical support from the World Bank Group has begun to make substantial progress on reducing the barriers.

FIGURE 2-9: Percentage of Management Time Dealing with Regulation



Source: Sudan PICS 2008.

Formalizing the Informal Sector

The informal sector is a large source of employment. Economists have emphasized the heterogeneity of the informal sector, both in the nature of the informality—the degree to which firms are in full compliance with regulations concerning wage employment, taxation, registration or licensing—and in the range of activities undertaken. As early as 1982, the International Labor Organization estimated that the informal sector provided employment to up to 25 percent of the labor force in Khartoum. According to the International Fund for Agricultural Development (IFAD), almost 36 percent of surveyed households in South Kordofan in 2005 reported trade (mostly petty trading) as a second occupation.

The informal sector provides an alternative service delivery mechanism. In a country with the distance characteristics of Sudan, it is not surprising that a large informal sector has expanded to provide services and employment in areas where the public or formal private sector has failed to reach. Much of the informal sector has emerged to fill service delivery gaps, particularly in larger urban areas. In more rural settings, since few formal institutions have emerged to reduce the risks of trade, the informal sector has developed resilient and sometimes elaborate mechanisms to provide credit, wholesaling, and marketing and distribution services throughout the country. Nizam el Sheil, the traditional merchant-form of agricultural credit, has continued where formal and microfinance schemes have failed, due to the ability of

[38] Presidential Decree of May 2007.

merchants to more effectively supervise borrowers they interact with frequently. In the peri-urban centers of Darfur and Southern Sudan, the informal sector provides water services where the public grid has failed to extend.

The informal sector, while offering important services and a critical employment buffer for new urban residents, presents a challenge both to the formal sector and in terms of Sudan's aggregate productivity. The formal sector perceives that the informal sector creates major obstacles by not observing duties or regulations and avoiding taxation.

Informal firms are affected differently by the investment climate than larger firms. We find that the reported severity of constraints differs quite significantly by status, even after controlling for size and managerial capacity. Our most striking results concern access to land and inadequacies in the functioning of the judiciary. Informal firms also report greater concern over corruption and economic policy uncertainty than do formal firms. On the other hand, they tend to worry less about electricity.[39] There seems to be no significant difference in how they view other infrastructure obstacles such as telecommunications and transport.

The incentives currently do not reward formalization and the overall investment climate needs to be improved for formalization. With the possible exception of finance, there are few requirements for operating a business in Sudan that cannot be met as easily by informal as by registered firms. Indeed some markets— notably for labor— appear to be more flexible for informal than for formal firms. Similarly, while there are costs and risks associated with informality, but these seem manageable compared to the larger and perhaps less predictable risks associated with paying taxes formally. The main implication of this analysis is that achieving significant reductions in informality will require actions to increase aggregate productivity in the economy. This calls mainly for general policy initiatives to improve the functioning of markets for finance, skills, and other inputs.

Private Sector Development in Conflict-Affected Regions: Southern and Western Sudan

Southern Sudan presents a particularly difficult challenge, in that the two decades of conflict not only destroyed lives, property and institutions, it also severely limited the emergence of an entrepreneurial class. Few formal businesses initiated by Southern Sudanese exist even four years after the end of war. The challenge for Southern Sudan is to simultaneously develop policies and institutions that typically emerge over long periods of time while at the same time working to catalyze private investment and job growth.

In most post-conflict environments, informal and micro enterprises are the first to emerge, as they respond to gaps in availability of basic goods and services. They are also more tolerant of risk than larger capital investment projects, and are less demanding of public institutions and infrastructure. At early stages, this is likely to involve basic retail services such as small trade, repair, and construction. The dual challenge is to create the enabling conditions for these micro-entrepreneurs to grow, while at the same time preparing the environment for development of larger, formal clusters of activity. Attracting larger domestic and foreign investments depends on: reducing costs and risks of investment through the policy framework and infrastructure; competitive access to finance; adequate technical and managerial skills; and efficient markets for the inputs and products of firms.

Growth will depend on a better investment climate. Market failures in South Sudan include a lack of market information, unchecked negative externalities, imperfect competition, and an absence of public goods due to the early stage of governance. Constraints include unpredictable administrative costs and difficulty obtaining

[39] This is possibly because almost 80 percent of them are involved in trade and services rather than manufacturing.

operating inputs. South Sudan's legal and institutional framework is undeveloped, and has not fully emerged from clear articulation of policies in dialogue with the private sector. The FIAS conducted a diagnostic assessment of the investment climate in May 2006. The study found that the current legal system is based on multiple sources of authority, which causes confusion. FIAS has subsequently supported the GoSS in developing a set of baseline commercial laws.

The GoSS and GoNU have yet to establish effective mechanisms to coordinate policy toward private sector development. Some efforts at coordination were made in the areas of investment and trade policy, but these efforts were not institutionalized. Similarly, border control has not been fully established, and instances of overlapping fees, taxes and customs tariffs have begun to appear. Establishing uniform, consistent border control has been difficult. Under the CPA, customs is a national function, but the customs services on many borders were controlled by SPLA somewhat autonomously, without full reporting to GoSS or GoNU. Tariffs different from the national tariff schedule are applied, notwithstanding Sudan´s membership in the Common Market for Eastern and Southern Africa (COMESA) Free Trade Area, which has precise schedules and prescriptions for tariff reduction. Some states have begun to apply cross-state tariffs in order to supplement their revenues, despite the CPA's provision that inter-state trade will be free of restrictions. A Tax Bill, which calls for low, simple income tax and value added tax, has been passed by the Southern Sudan Legislative Assembly SSLA and is awaiting presidential signing.

Land policies have not been established, and land acquisition is haphazard and risky. The Land Commission is undertaking important work in defining policies and frameworks for allocation of land consistent with the CPA and the Interim Constitution. In the absence of an overarching land policy and specific land legislation at GoSS level, government land continues to be allocated in some states but not others. Outside of Juba town land is being seized arbitrarily, by force, by simple marking, and by negotiating with local tribes. It is unlikely that these methods will deliver distribution of land at its highest and best economic use.

Input and product markets are undeveloped. There can be no investment in scaling up production without improved markets. The period of civil disorder has largely destroyed the traditional market linkages and channels—including the complex set of social and economic relationship between intermediaries necessary for markets to work. The present system of fresh supplies to retail markets in urban areas is dominated by imports—in the case of Juba by supplies from Uganda. Apart from these imports, inter-regional trade flows only really exist at present for livestock marketing. There are current moves to try to re-establish former production levels of fruits and vegetables. New or improved assembly market centers in key production areas will be required to supply the evolving wholesaling system.

Whereas the conflict in Southern Sudan prevented the establishment of an indigenous private sector, in Darfur the conflict has had a profound impact on what had been one of the most established areas of private activity outside of the country's economic center. Based on field interviews in 2006, we estimate that only 10–20 percent of the 5,530 enterprises measured in the Industrial Survey of 2002 were operational by late 2006, meaning that the manufacturing sector has declined to between 500 and 1,000, and mostly very small manufacturing shops like blacksmiths. This suggests maximum formal industrial employment of 10,000 (less than 1 percent of the population in Nyala). The Nyala Chamber of Commerce estimates that those factories that have remained open operate at only around 30 percent of capacity.

Trade patterns have been disrupted in Darfur. Violence along trade routes has raised transport costs, and is believed to have contributed to fuel

BOX 2-1: The Southern Sudan Private Sector Development Project

In 2007 the Multi-Donor Trust Fund for Southern Sudan approved the Southern Sudan PSD Project. The project, focused on early-stage private sector development in a post-conflict setting, integrates key inputs required for micro- and small-enterprises to grow.

The project focuses on building capacity among South Sudanese policy makers and the private sector to develop the policy and regulatory framework for trade and investment through open consultation. It supports establishment of monitoring frameworks to feed back into the policy dialogue, and broad participation in private sector development by mobilizing grassroots support for entrepreneurship as a livelihood choice, particularly for women and ex-combatants.

Secondly, the project provides policy support to the Bank of South Sudan, and a South Sudan operation of the Sudan Microfinance Development Facility funded by Multi-Donor Trust Fund National (MDTF N). The Facility will deliver technical and financial support to new microfinance institutions in South Sudan.

Third, the project supports the development of a strategy for the development of key industrial sectors, as well as capacity building of the public and private sector necessary to realize growth in those industrial sectors.

Finally, the project establishes a wholesale market in order to create an efficient flow of product into rapidly growing Juba, as well as backward linkages into the rural economy.

The interplay of these four factors—the policy framework, finance, skills, and efficient markets—are intended to contribute to a favorable enabling environment for the growth micro and small enterprises now emerging in South Sudan, while providing a policy and strategic foundation for the emergence of larger economic sectors in the medium-term.

shortages and increased isolation of rural markets. The cost of renting a truck to ship from El Gineina to Omdurman rose 150 percent between 2004 and 2005.[40] Insecurity on travel routes has also contributed to increased input costs. For example, the cost of cement is 75 percent higher in Nyala than in Khartoum due to distance and en route payments for security.

The longer-term impacts of the conflict on the private sector include the loss of confidence in institutions, both formal and informal. This includes a loss of confidence in government, as well as a loss of social capital and trust within and between different groups in Darfur. Informal institutions included sophisticated arrangements for marketing as well as land tenure. Key institutions, such as a rotating market that provided a "market day" for different towns in a rotational pattern, have ceased. Some towns that depended on border trade with Libya, such as Mellit in North Darfur, have ceased to exist as market towns at all, with most businesses simply boarded up.[41]

At the same time, the rapidly growing urban centers have created some new markets in Darfur. Markets in the central cities of El Fasher and Nyala, fueled by a combination of increased international presence and urbanization, appeared to be thriving in 2006. A private sector strategy for post-conflict Darfur will inevitably need to build on these newer service delivery needs, while overcoming the lack of market-supporting services in the financial sector.

Summary and Agenda for Policy Reform

Since the 1990s, the country has made substantial progress in privatization, establishing macroeconomic stability, investing substantially in infrastructure, and liberalized much of the economy including dismantling price and foreign exchange controls. The CPA was greeted by the private sector warmly, and Sudan quickly became one of the largest destinations for foreign investment in Africa.

[40] Hamid et al 2005.
[41] Young et al 2005.

Four years after the CPA, the extent to which this increase in private sector activity will lead to the desired developmental gains remains questionable. The 2008 PICS demonstrated clearly that productivity of the private sector remains alarmingly low, due to a combination of high transaction costs, poor market institutions, a lack of infrastructure, and high administrative barriers and transaction costs. The private sector perceives substantial risks in the investment climate, and perceives that political stability, corruption and economic uncertainty are major or severe constraints, followed by infrastructure, finance and taxation.

A program to help translate investment into sustainable development must address the key constraints faced by the private sector by increasing economic certainty and predictability, lowering costs, building basic infrastructure, and building institutions that may help integrate disparate markets. In this context, the following areas are particularly important in formulating policy reforms to strengthen the private sector as the basis of broad-based growth in Sudan.

- **Continuation of key efforts will likely address some of the more substantial problems raised by the private sector.** Continuation of the governance reform processes mandated by the CPA will result in a system through which legislative authority is vested in an elected Parliament. This will reduce reliance on executive decrees and the resulting overlaps, gaps and unpredictability in the legislative framework. This will need to be complemented by more compelling legislative and institution building efforts in areas such as the streamlining of administrative procedures in ways that provide more predictability and reduce the areas for discretion in the interface between the private sector and government. The proposed Public-Private Dialogue Forum is intended to support this process at both the Southern Sudan and National levels, and can be a vehicle for discussion between the private sector and government to identify and address concerns regarding specific forms of administrative barriers including the possibility of corruption. For Southern Sudan, the effort must remain centrally about building strong institutions of governance.
- **To raise aggregate productivity, focus on lagging regions.** The low average productivity for Sudan as a whole is the result of extremely low productivity performance for firms outside of the Gezira and Khartoum areas. The productivity performance of lagging regions should be a core focus of efforts to raise productivity as a whole, and the emphasis of efforts in these lagging regions should be on access to finance, infrastructure, and governance.
- **Reduce the cost structure for manufacturing and agribusiness.** Continuing progress on infrastructure development, particularly electricity and transport, and efforts to improve efficiency of infrastructure services will reduce the cost and raise the productivity of manufacturing and agribusiness. The substantial progress made in telecommunications through private participation can be replicated in other sectors. But high administrative barriers, the cost of corruption, and the cost of holding excessive inventories can also lead to a high cost structure.
- **Build institutions and infrastructure to integrate producers and markets.** The rollout of transport infrastructure, especially rural roads and connectivity of economically lagging areas, is a fundamental requirement for reducing costs and allowing improved access to markets. In addition, a basic rural roads network could be an important initiative to strengthen the infrastructure network, along with telecommunications and rural electrification.
- **Leverage urban dynamism.** Due to the successive waves of conflict and drought/desertification, as well as the lure of growth in major cities, accelerated urbanization is likely to be

a permanent phenomenon. Given the power of agglomeration economies and returns to scale, this can be a driver of growth with sufficient focus on reforms to increase the return on investment, including reforms to reduce administrative costs, provide access to finance, and building adequate transport infrastructure. Secondary cities throughout the country, including Juba, Nyala, Port Sudan, Malakal, Ed Obeid and others, can raise productivity levels to that of Khartoum or higher. Key mechanisms may include focusing on the business-enabling environment, introducing microfinance and other financial services, incorporating the private sector in housing and infrastructure provision, and skill development.

- **Minimize regional disparities in the investment climate through strengthening connectivity and more balanced delivery of basic services, but allow for flexibility in deployment of resources.** For sustainable and equitable growth dynamics in the country, therefore, creating a stronger link of the coastal and relatively undeveloped cities and regions in the country with the center is an important priority. This calls for an increased investment on infrastructure and improvement of its efficiency, especially on transport linking the different regions of the country and investments in power and telecommunications as well as schools in the lagging areas. In order to fully address the concerns of the private sector, however, these should be accompanied by an attempt to find a lasting solution to the political instability and improving governance in the country by curbing corrupt practices.
- **An ongoing examination of export competitiveness and diversification.** It is clear from the survey that the food sector—agro-industry and food processing, including oilseeds, milling, and juice processing—is relatively competitive within Sudan and has a good chance to be competitive outside of Sudan. Diversification within the food sector is the natural place to start for Sudan. This will include new or upgraded products, and new markets for existing products. This is taking place in Southern Sudan, where a team is considering potential sources of future growth: timber, forest products, fisheries, cereals, livestock/hides, and skins. Sudan lacks current information and feedback on potential markets for its products. An investment in timely market intelligence, undertaken in partnership with the International Trade Center of WTO/UNCTAD would be of great use to those considering new markets.

Chapter 3

EFFECTIVE MANAGEMENT OF THE OIL SECTOR[42]

A. Overview of the Sudanese Oil Sector

Over the past decade Sudan has developed into the third largest oil producer in sub-Saharan Africa and its economic dependence on oil has correspondingly increased. The oil sector currently accounts for around 60 percent of total government revenues. The growth of the oil sector has taken place amidst civil conflict; however, with the signing of the CPA in January 2005, the oil sector was able to work under less onerous security restrictions. As a consequence of the CPA, oil revenues have been shared between the central government and the GoSS. The final settlement regarding oil resources and revenues will depend upon political developments to 2011 and beyond. Whatever the developments beyond 2011, both GoNU and GoSS need to address serious institutional and capacity shortcomings in the sector so as to capture the benefits of oil more effectively.

Exploration in Sudan over the past 30 years has yielded significant discoveries. Fields discovered in the 1970 and 1980s were slow to be put into production, primarily because of the civil conflict in the area. Since full development started in the late-1990s, estimated reserves have increased, reaching 2.35 billion barrels in January 2008, according to the MoEM. Sudan's remaining exploration potential is likely to be large.•[43]

Petroleum exploration and production in Sudan are dominated by national oil companies (NOCs) from China, India and Malaysia.[44] Because of its history of civil unrest, coupled with official sanctions and international political disapproval, the "Western" (especially North American) companies that have had a presence in Sudan have mostly been forced to sell out and leave the country.[45]

In allocating petroleum licenses, Sudan has not used open bid-rounds reflecting the difficulties caused by the conflict. Instead, the government has negotiated with companies deemed able to undertake the work, and ready to work in Sudan without restriction. Although Sudan has been applying standard "production sharing agreements (PSAs)"[46] for exploration and production, these PSAs were negotiated based on model agreements common before the mid-1990s, and fall short of present best international standards. For example, there is no mechanism by which the government's share is adjusted in line with oil price fluctuations.

Petroleum sector operations in Sudan are conducted by joint operating companies

[42] This chapter has been prepared by Michael Levitsky, with input from Yadviga Semikolenova and Ji-Young Choi.

[43] The success rate of Sudanese oil wells is relatively high. Among around 400 exploration and appraisal wells, 58 percent encountered hydrocarbons as of end-2007.

[44] The state oil company of China (China National Petroleum Corporation – CNPC) is the largest holder of reserves and production in Sudan, followed by the state companies of Malaysia (Petronas) and India (Oil and Natural Gas Corporation – ONGC). Shares of Sudan's oil reserves by company are following: CNPC (47.3 percent), Petronas (28.3 percent), ONGC (14.5 percent), Sudapet (6.2 percent), and other companies (3.7 percent).

[45] The only remaining Western interests in Sudan are represented by Lundin Petroleum, a medium sized publicly-listed Swedish independent. In addition there are many smaller companies present from the Gulf, Pakistan and Sudan itself.

[46] In PSAs, oil companies recover their costs, and receive their share of profits, through obtaining ownership of share of oil production at the wellhead.

(JOCs).[47] These companies are owned by all stakeholders in producing projects commensurate with their share of licenses. JOC arrangements can bring benefits in terms of easier consensus between parties, but can cause higher administrative costs.

The quality of Sudanese crude varies substantially between fields, and a significant proportion of production is of relatively low quality.[48] Exported crude is of two standard qualities: Nile Blend (from Blocks, 1, 2, 4 and 5A) and Dar Blend (Blocks 3 and 7). Nile Blend is a good quality crude, readily saleable on international markets. By contrast Dar Blend has characteristics that make it difficult to sell readily to most refineries. Nile Blend usually sells at a discount of $2–3/bbl to Indonesian Minas crude widely traded crude of similar quality). Nile Blend's main drawback is that it is waxy (highly viscous), and requires heating during handling. Dar Blend, while also waxy, suffers from an exceptionally high acid content ("high-TAN"). The very low prices received for Dar Blend have caused government revenues to grow by much less than the rise in crude output since 2006. The marketing of Dar crude has been hampered by the U.S. economic embargo on Sudan that prevented sales to the U.S. and also restricted the development of new markets for this crude in Europe. Until recently, there was very limited refining capacity for high-TAN crudes outside of the U.S. and Europe. A third crude blend, Fula, is produced in Block 6 and is only used domestically. It is of lower quality than Dar Blend.

Sudan has a substantial and relatively modern refining sector in comparison with most African countries. However, the country faces considerable challenges in coping with future demand for oil products. This is likely to require continued heavy investment in the medium term. The government has been developing the refining sector on the basis of joint ventures with foreign investors (to date with CNPC). A new expansion to the Khartoum refinery has been built specifically to deal with Fula blend oil, which is an effective means of adding value to this very low quality crude.

Sudan is heavily dependent on long distance oil pipelines. The two main pipelines are the longest in Africa, extending from the production centers in the South to the Northern coast around Port Sudan.[49] These major oil pipelines were constructed and are now owned by the respective joint operation companies.

The environmental and social challenges confronted by oil production in Sudan have been considerable. Exploration and production involve disruption of large areas for seismic investigation, drilling of wells, and construction of supporting infrastructure. The government has in place a comprehensive set of provisions to deal these impacts; these provisions are primarily overseen by the MoEM. To address concerns about the past impacts of the oil industry,

[47] It is much more common for petroleum projects to be operated (i.e. managed) by the company with the largest share of the license (the "Operator"), with the other companies covering their share of the costs.

[48]

Comparison of Qualities between Sudanese and International Crude Oil Blends

	Nile Blend (Sudan)	**Dar Blend** (Sudan)	**Fula Blend** (Sudan)	**Doba Blend** (Chad)	**Minas Crude** (Indonesia)	**Brent Crude** (U.K)
API Gravity	34.5	26.4	21.6	21.1	35.3	38.3
Sulfur (percent)	0.06	0.12	0.12	0.10	0.09	0.37
TAN	0.27	2.40	5.62	4.78	0.06	0.09

[49] The "Greater Nile Oil Pipeline" is 1,610 Km long and serves to bring Nile blend crude from the production centers both for export from Port Sudan and to the Khartoum refinery. The "Petrodar Oil Pipeline" is 1,400 km long and takes Dar crude from the Melut Basin fields to Port Sudan.

the CPA included mechanisms for retrospective investigation of the effects of oil industry activities in Southern Sudan. At the request of GoSS, in late-2007 the Norwegian government sent a team of experts to evaluate the status of environmental and social situation in the oil areas, focusing on past impacts. The team's findings were that the environmental impacts of the industry have in general been consistent with experience in similar environmental circumstances elsewhere. Public consultation and disclosure were areas that could be considerably improved. The team stressed that many aspects of the "baseline" data are not yet well understood, particularly regarding biodiversity, flora and fauna. It recommended that a full "Strategic Environmental Assessment" be carried out as soon as possible.

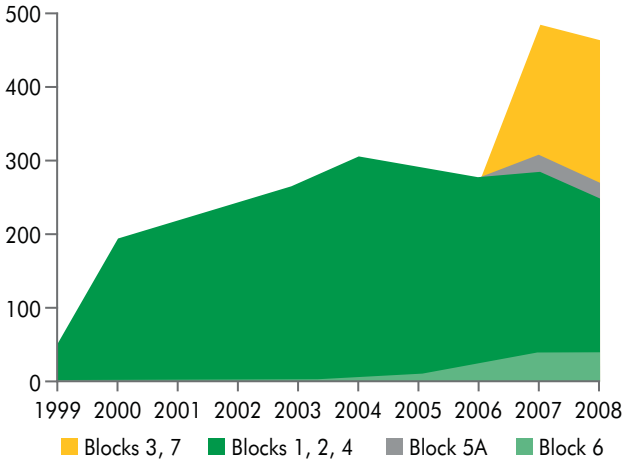
With regard to the social impact of the oil industry, it is important to engage with communities to ensure that they benefit from local oil operations, and cooperate with the industry within the agreed framework. Although the terms of the CPA called for an assessment of both environmental and social impacts of oil production, the Norwegian team was only able to address the environmental aspects. It noted the considerable practical difficulties in judging social impacts in a large area with complex social patterns that has been affected by conflict over decades. Therefore, the provisions of the CPA for possible compensation for harm caused to local communities by oil activities remain to be enacted. The authorities note a committee for consideration of social compensation has been established and that communities are involved in discussing the level and coverage of social compensation.

In 2008, Sudan's oil production has reached about 475,000 barrels per day (bpd). Production started at a very low level in 1992 from Block 6, and built up rapidly following the start-up of the Greater Nile Petroleum Operating Company (GNPOC) in 1999. Production reached 305,000 bpd in 2004, and grew slowly until the start up of the Petrodar project[50] in September 2006, after which it reached a high of almost 500,000 bpd in mid-2007 (Figure 3-1).

In the medium term (to around 2012), total production is expected to increase moderately. According to the forecast of the MoEM, it would reach 527,000 bpd in 2012. However, production increases will depend on the ability of GNPOC to contain a decline in Blocks 1, 2, 4 and on the ability of PDOC to increase output in Blocks 3 and 7.

In the long term (beyond 2012), estimates of production depend upon a combination of factors. Output will depend upon the extent of new discoveries around the producing areas, and in new blocks close to infrastructure, such as 5B.[51] Beyond 2015 there is the possibility of large new fields to be discovered in areas such as Block B coming on stream. A further factor that will influence production beyond 2012 is the ability of domestic refineries to take more crude from Blocks such as 6 and

FIGURE 3-1: Oil Production by Project (thousand bpd)



Source: World Bank staff estimates based on MoEM data.

[50] The Petrodar project is operated by the Petrodar Development and Operating Company (PDOC).

[51] Five exploration wells drilled on Block 5B in 2007 and 2008 failed to find oil despite promising indications, illustrating the considerable uncertainties remaining in assessing Sudan's oil prospects.

BOX 3-1: Production Trends of Major Projects

- **Blocks 1, 2, 4 (GNPOC)**: These "older" fields have shown falling production in 2007 and 2008, due to the decline of the main fields.
- **Blocks 3, 7 (PDOC)**: Start-up of the Petrodar project was delayed from its original target in late-2005 to September 2006. Production reached 190,000 bpd within a year, but has since remained relatively constant. Production has fallen far short of targets, which were initially about 360,000 bpd for 2008, although PDOC still plans to raise it to 300,000 bpd.
- **Block 5A**: This block accounts for only 5 percent of production. Facilities are sized for 40,000 bpd, but output is limited to about 20,000 bpd because GNPOC will not accept more into the Nile Blend mix, as more 5A crude would make the Blend too heavy for the Khartoum refinery.[52]
- **Block 6**: The production from this Block is primarily determined by the capacity of the Khartoum refinery. A possible expansion of the refinery could permit an increase in crude production, from 40,000 bpd to 60,000 bpd.

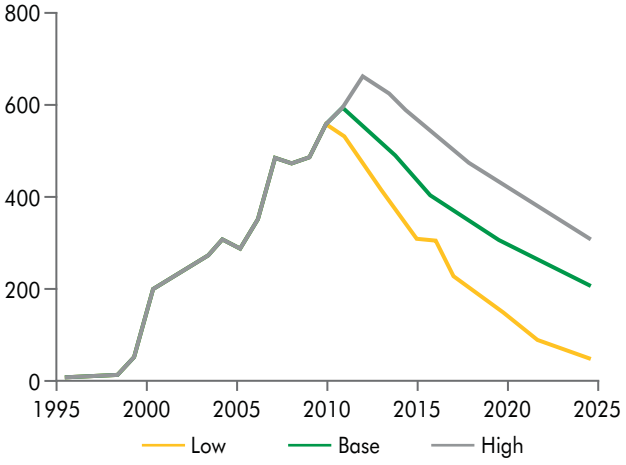
5A, which are at present constrained by refinery capacity. Moreover, forecasting of the long-run output is dependent upon the assumption of certain recovery factors.[53]

The recovery factors assumed by the government appear to be relatively low; there is thus a good chance that they could be increased. The government expects the average recovery factor to be 26 percent but the global average is around 35 percent. Even a small increase in the recovery factor can have a big impact on remaining reserves. Based on the government data, an increase of 5 percent in recovery factors would increase Sudan's remaining proven reserves by 30 percent.

Considering the factors affecting output, long-term production scenarios can be summarized by the following three cases (Figure 3-2)**:**[54]

- **Low Case**: a conservative outlook, as determined by the MoEM. Production in mature areas continues to decline, Blocks 3, 7 increase modestly but then decline from 2012.
- **Base Case**: assumes stable production in the older areas, and substantial expansion in PDOC. Recovery factors increase modestly in all fields.
- **High Case**: adds to the Base Case an increase in recovery factors, and exploration bringing large new fields on stream from 2012 onwards.

FIGURE 3-2: Oil Production Scenarios (thousand bpd)



Source: World Bank staff estimates based on MoEM data.

[52] Crude from Block 5A is considerably heavier (lower API number) than Nile Blend.

[53] A recovery factor is the proportion of the total oil contained the reservoir (field) that is expected to be produced commercially using current technology. Oil is held in pore spaces in reservoir rocks, and whatever mechanism is used to bring it to the surface most of it will usually remain trapped in the rock matrix.

[54] It must be kept in mind that the range of production levels beyond 2015 is extremely uncertain. While the Base and Low cases reflect reasonably likely patterns of production if no very large new discoveries are made, the High case cannot capture all the consequences of such very large discoveries. The scenarios are designed to capture a range of outcomes upon which prudent economic decisions can be made. They do not reflect the full uncertainty associated with continued oil exploration in a country like Sudan.

A major uncertainty affecting the production outlook is the security situation. In 2008 an increasing number of incidents were reported in which local communities disrupted company operations, claiming compensation for oil development. If production is to increase in future, security will have to be restored to oil producing areas. The security environment in the years up to the key CPA date of 2011, and after that, will determine the level of investment by oil companies, and hence the trend of future production.

Sudan's consumption of oil products has been growing rapidly and this trend is expected to continue if strong economic growth persists. Consumption in 2006 was estimated at approximately 83,000 bpd, with growth of 13 percent per annum since 2000 (Table 3-1). Consumption is heavily concentrated on gasoil (diesel), which accounts for about 55 percent of consumption. Transport use is heavily biased to towards diesel, although gasoline use is also growing rapidly. Use of oil in power is relatively low with most electricity generated from hydro following commissioning of the Merowe dam in 2008.

Sudan's consumption of oil is roughly in line with its income level at present. In future much will depend upon product pricing and the availability of alternative fuels (especially in power and industry). Oil prices in Sudan are not as heavily subsidized as in most of the largest oil-surplus countries, which may prevent the most wasteful forms of consumption.

The main alternative fuel to oil in power and industry should be natural gas, which is the major fuel for power generation in most oil producing countries. In Sudan, where gas is not presently available, the lowest cost option for power may be hydro, but if this cannot meet all requirements, the next best option may be to use fuel oil. A crucial problem is that Sudan's main refinery (Khartoum) is so sophisticated that it produces almost no fuel oil. Without substantial gas or fuel oil supplies, Sudan's options for power generation are very limited.

Oil demand in the South is currently quite small, which reflects low income levels and the lack of infrastructure. The South is poorly connected to the national oil products distribution

TABLE 3-1: Oil Consumption (thousand tons)

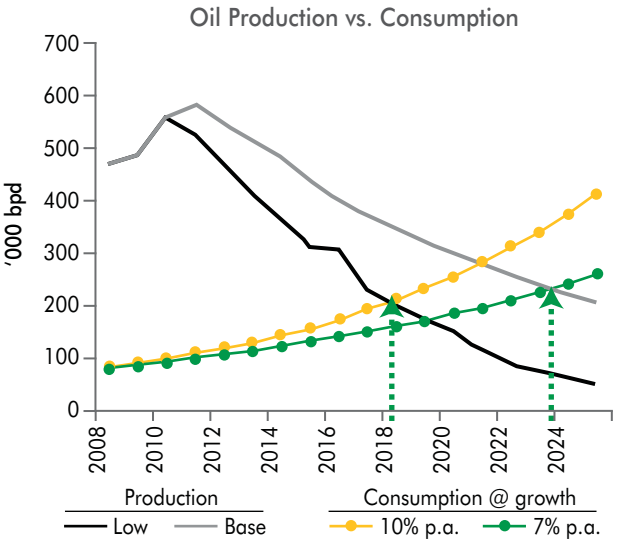
	1998	1999	2000	2001	2002	2003	2004	2005	2006
NGL/LPG/ethane	33	33	33	55	93	103	126	148	170
Naphtha	23	14	32	5	10	9	11	11	23
Motor Gasoline	219	240	271	350	390	435	485	541	677
Aviation fuels	32	91	107	120	126	149	172	195	219
Kerosene	62	20	4	7	9	11	13	15	18
Gas diesel	795	997	998	1164	1456	1671	1897	1954	2092
Heavy fuel oil	352	305	332	308	417	531	655	517	577
Other	106	108	110	112	114	116	118	120	138
Refinery fuel	3	3	3	3	3	3	3	3	3
Sub-total	**1625**	**1811**	**1890**	**2124**	**2618**	**3028**	**3480**	**3504**	**3917**
Bunkers	8	8	8	8	8	8	8	8	8
Total	**1633**	**1819**	**1898**	**2132**	**2626**	**3036**	**3488**	**3512**	**3925**

Source: International Energy Agency (IEA). www.iea.org.

system, with most of the supplies of diesel and gasoline being imported from Kenya. Given the high cost of transport over long distances, improving the logistics of oil product supply to Southern Sudan is clearly a priority.

In the medium and longer term, continued large scale growth in demand could have a large impact on net oil exports. Figure 3-3 shows that exports would cease at around 2018 where High demand growth (at 10 percent per annum) is combined with Low Case production. Where Base case production is combined with Low demand growth (7 percent per annum) exports would cease at around 2024. Official projections show demand growing at about 8.5 percent per annum.

FIGURE 3-3: Oil Production and Consumption



Source: World Bank staff estimates.

B. Institutional Structure

Transparency in the petroleum the sector is limited in comparison with many oil exporting developing countries. This is closely related to the monopolistic and direct role of government in all phases of the oil industry (Box 3-2).

Nearly all aspects of petroleum policy and administration are centralized in the Ministry of Energy and Mines.[55] **The MoEM in turn "owns" the Sudan Petroleum Corporation (SPC), which controls the state's operations in the sector. This centralization is accompanied by limited transparency.** SPC accounts are audited annually by the General Auditor. However, the Company does not publish an annual report, and it provides accounts to Parliament based upon a government budget accounting system (i.e., as if it was a Ministry) rather that a company. Moreover, accounts for SPC's subsidiaries are also not available.

The state's equity share in petroleum licenses is held through the national oil company Suda-

[55] In comments to the discussion draft of this report, the GoSS Ministry of Energy and Mining expressed that the centralized management of oil resources by the federal government is an area where they have strong grievance and views the CPA as authorizing GoSS to share responsibility for oil management.

BOX 3-2: State Involvement in the Oil Sector

The Ministry of Energy and Mines (MoEM) works in the sector mainly through the Sudanese Petroleum Corporation (SPC), which is a fully government-owned entity. The Ministry and SPC appear to be effectively one and the same. A number of other state-owned companies deal in exploration and production, oil services, refining, and distribution. Until the formation of the National Petroleum Commission (NPC) in 2006, as provided for in the CPA, the Ministry had authority to award exploration and production licenses. It currently supervises the implementation of PSAs, including monitoring of costs and tax payments. The Ministry also maintains technical sections that analyze Sudan's petroleum reserves and production, and maintain the national database on geology, exploration, and reserves. Although some environmental functions are nominally vested in the Ministry of Environment, in practice environmental compliance functions remain with the Ministry of Energy and Mines.

pet, which the SPC appears to control. Sudapet owns shares in all licenses, ranging from 5 percent to 30 percent, and receives a pro-rata share of company cost recovery and profit oil. Following the development of the Petrodar project, Sudapet has become a substantial upstream oil company. Sudapet does not publish any financial data or an annual report, and no financial data is issued for the state's operations in the Khartoum refinery or other downstream businesses.

C. The Petroleum Sector and the CPA

Based on the Wealth Sharing Protocol of the CPA, petroleum revenues are to be shared between the GoNU and the GoSS. The CPA also provided for a wide range of other measures in the oil sector (Box 3-3). However, the implementation of elements of these provisions has been incomplete. For instance, establishment of the NPC was considerably delayed, and in the first two years after establishment (in November 2005), it met only a few times with little result. More regular NPC operations started during 2008, focusing on discussions and review of social problems in the oil producing regions that have been disrupting petroleum operations. It is still not clear that the NPC has a meaningful strategic and policy role. Also, the GoSS did not take full and prompt advantage of all the opportunities offered by the CPA to analyze existing oil contracts and to assess the extent of any associated social problems.

Specific revenue sharing procedures provided for the Abyei area have been difficult to implement due to difficulties on border demarcation that have only recently been settled. Under the Agreement on Abyei, revenues from oil production within the Abyei area was to be divided 50 percent for the National Government, 42 percent for GoSS, and 2 percent to local authorities and groups in the region (Box 3-4). The boundaries of the Abyei area were to be determined by a commission of five international experts (i.e., the Abyei Boundaries Commission or ABC). The Commission presented their report in July 2005, but it was not accepted by GoNU. Both sides agreed the case be decided by an Abyei Arbitration Tribunal, sitting at the Permanent Court of Arbitration in The Hague. The Tribunal rendered its final ruling in July 2009, redrawing the boundaries relative to the original

BOX 3-3: Key Elements of the Wealth Sharing Protocol of the CPA

The Protocol provided for the following key elements:

1. Creating a National Petroleum Commission (NPC): The NPC is chaired jointly by the National President and First Vice President (President of GoSS), and comprises four permanent representatives each from the National Government and GoSS, and up to three non-permanent representatives of producing states (to be present when issues relating to the states are discussed). The NPC has several roles:
   a. Formulate, monitor and assess policies and guidelines for management of the petroleum sector (in accordance with the basic principles set forth in the CPA),
   b. Develop strategies and programs for the petroleum sector, and
   c. Negotiate and approve all exploration and production contracts.
2. Establishing the right of GoSS to have access to all existing oil contracts, subject to appropriate confidentiality provisions.
3. Asserting the validity of all existing contracts (signed before the signature of the CPA).
4. Determining any social and environmental problems with the oil contracts, and the need for their remediation by the Central Government, and granting of compensation to persons adversely affected by the contracts, through due legal process.
5. Setting a formula for the sharing of oil revenues, the primary feature of which is that GoSS receives 50 percent of the net government revenue derived from producing oil wells in Southern Sudan, after deduction of 2 percent of revenue allocated to the producing states.

BOX 3-4: The Abyei Area

Blocks 1, 2 and 4 are located (in whole or in part) in the area considered for definition as the Abyei area. For the purposes of Wealth Sharing, in the monthly calculation of GoSS revenues until June 2008 Block 1 was considered as being located entirely in the South, while Blocks 2 and 4 were deemed to be located in the North. Since Block 1 accounts for the majority of production of GNPOC, the volume of total production from Blocks 1, 2 and 4 deemed to be located in the South averaged between 60 percent and 70 percent.

The Abyei area as defined by the report of the international experts (of July 2005) would place all of the producing areas of Blocks 2 and 4 inside Abyei (the producing area of Block 1 would remain in the South). Under this definition of the Abyei area, the North would be entitled to only 50 percent of production from Blocks 2 and 4. However, the National Government did not accept the recommendations of the experts, and both sides agreed the case be decided by an Abyei Arbitration Tribunal, sitting at the Permanent Court of Arbitration in The Hague. The Tribunal rendered its final ruling on July 22, 2009, redrawing the boundaries relative to the original ABC ruling and ceding key oilfields and grazing lands to the North.

In June 2008, the monthly calculation of revenue sharing for GoSS was altered to allow revenues to flow to the Abyei region, in general accordance with the CPA. The production deemed to be in Abyei is shared 50 percent to the North, 42 percent to the South and 8 percent to local authorities and groups inside the Abyei region.

ABC ruling and ceding key oilfields and grazing lands to the North.

If the long term trend of decline in the major producing areas of Blocks 1, 2 and 4 continues, the revenues subject to determination of the final border will also decrease. However, all of these blocks contain modest undeveloped discoveries, requiring further investment. Moreover, exploration drilling outside the main producing areas has been very limited, making it possible that further reserves will be discovered throughout this area. Production in these blocks will thus continue for decades to come.

An important aspect of the post-CPA structure of GoSS is its very low capacity in the petroleum sector. When the GoSS was initially formed, there was no "Ministry of Energy and Mines" (or "Petroleum") that was responsible for oil sector activities most relevant to the South. Oil issues in the South were mostly handled outside the Ministerial framework. A Ministry of Energy and Mines was formed in 2008, but it remains very weak in terms of expertise. This lack of expertise and governance experience extends also to Nile Petroleum, the state-owned oil company formed by GoSS, though training with counterparts at Sudapet is currently underway. If the current situation persists, then by 2011, if a referendum results in independence for Southern Sudan, GoSS would not be prepared to take over the management of a world-scale upstream oil industry such as Sudan's.

D. Key Policy Issues

To ensure further efficient development of Sudan's oil sector and its proper contribution to the sustainable growth of the Sudanese economy, the following policy issues should be considered.

Exploration and Production

Identifying gas reserves is critical. Unlike other oil producing countries, Sudan has only modest natural gas reserves. The absence of large gas reserves greatly limits the energy supply options available. If gas reserves could be developed they would provide a low cost and relatively low-carbon fuel for power generation, industry and households. To encourage companies to explore for gas, the government will need to develop contracts including specific terms for gas discoveries, such as prices and guarantees of markets.

Encouraging competitive bidding in exploration rights allocation will produce the best results. Given the civil conflict in the country and the perceived high risk, direct negotiations for allocating licenses are understandable. However, as the security situation normalizes and political risk is reduced, allocation of future exploration rights through bid rounds would produce more efficient results.[56]

The introduction of contracts that allow for varying terms would be beneficial to the government. Sudan's production-sharing contracts function well when oil prices remain within a narrow band generally anticipated at the time of negotiation. However, the contracts do not contain many of the mechanisms now widely used to allow the contracts to vary the shares of the governments and the companies at much higher or lower prices. It would be advantageous to the government to consider incorporating such terms in future production-sharing contracts.

The burden of pipeline transport costs needs to be reduced for the government. In order to capture as much of the resource rent as possible for the government, it is important to ensure that transport takes place at least cost. Close attention needs to be paid to the costs created by pipeline contracts, the terms on which new users can access existing pipelines, and the amount of equity that the government takes in new pipelines.

Make it a priority to maintain production from existing fields through increasing recovery factors. While increasing recovery is a technical challenge, and involves considerable investment, it is important to make this a priority. It may be worth considering whether existing contracts and fiscal terms provide sufficient incentive for producers to maximize recovery over the long term.

The evaluation of new prospects and basins must be accelerated. If no major new fields are discovered in the near future, a decline in production will occur rapidly from around 2012. Areas around existing discoveries need to be explored more intensively, and new regions should be assessed as matter of priority.

Addressing the environmental and social provisions of the CPA and improving management of the social impact of oil activities are necessary steps. The CPA provides for the evaluation and resolution of past environmental and social problems caused by oil exploration and production during the period of civil conflict. These provisions began to be implemented at the end of 2007 with the assistance of the Norwegian Government. However, much remains to be done, particularly in respect of social assessments. Going forward, a key area for improvement is in consultation with local communities and provision of public information about oil activities and their impact. The social issues that have arisen from oil activities over many years have not yet been fully addressed, and this should be a key policy priority for both the Central Government and GoSS. Local resentment about the relationship between communities and oil companies can disrupt production operations and lead to a loss of potential local and national benefits. It is important that these matters are resolved for large-scale investment in the oil areas to continue, while applying the best environmental and social practice.

Marketing efforts of "difficult" crudes need to be enhanced. It is possible that better prices could be achieved for Dar blend in the future if a suitable relationship is built up with dedicated refiners. It may be worth comparing Sudan's experience with Dar blend to Chad's marketing of Doba crude though, as mentioned earlier, the current economic sanctions limit marketing options including those to the United States which has refining capacity to process lower quality crudes. Internal refining capacity also needs to be able to add value

[56] However, bid rounds would be limited under the current situation of economic sanctions. The Sudanese authorities also note that current economic sanctions limit overall investment opportunities including for increasing recovery factors.

to crude as much as possible. Further investments to utilize a greater amount of Fula Blend and crude from Block 5A locally could help to release valuable light Nile Blend for export.

Domestic Consumption

Excise taxes and other methods can help control the growth of domestic oil consumption. Rapid growth of domestic consumption due to vigorous economic growth can be limited by a policy of not subsidizing consumer prices for gasoline and diesel, and in general ensuring efficiency in the transport fleet and infrastructure (e.g., development of railways, encouragement of efficient diesel cars, maintenance of highways, etc.). Excise taxes on transport fuels can reflect user-costs (road maintenance, pollution externalities, etc.), which further helps to improve efficiency.

Refining capacity maintenance should not be neglected. Sudan has installed a high quality refinery that meets current demands. However, as demand increases further it is important for Sudan to avoid the mistake made by many oil exporting developing countries of paying too little attention to refinery investments.[57] In the South, the GoSS Ministry of Energy and Mining has expressed the view that there should be refinery capacity in the South to supply local demand.

Oil supplies to the South need improvement. Although most oil production is in Southern Sudan, refining is located in the North, and crude oil is transported about 800 km to be refined in Khartoum. To supply the South from Khartoum, products need to be brought over 1,000 km Southwards again to the South's demand centers. As a result the South usually imports products from neighboring countries (Kenya and Uganda), where it lies at the end of a long supply chain with very high transport costs. Costs to Southern consumers have at times been four times the subsidized price available to consumers in the North. The improvement of product supplies to the South is clearly an important part of downstream investment planning.

Institutional Structure

Data transparency about the oil industry must be more transparent. While there has been improvement in the publication of oil sector statistics, information about the oil sector, including reserves, production, consumption and trade is still not published in a comprehensive, regular and consistent manner. Given the importance of the oil sector to the economy, the government should consider how it can best make accurate information publicly available in a timely manner.

Revenue transparency will increase public trust. While the government does make data about aggregate oil revenues available to international financial institutions, the public at large is not served by fully verified and well-presented information. This can foster lack of trust in the government's handling of the country's most valuable natural resource. The government should consider adopting the principles of the Extractive Industries Transparency Initiative (EITI), and implementing its procedures, as has been done in many other resource exporting countries.

Institutional reform of the Ministry of Energy and Mines along with related agencies will reduce conflicts of interest and improve governance. The continued centralization of all roles in the Ministry of Energy and Mines and the SPC leads to conflicts of interest that adversely affect the state's governance of the petroleum sector. An unbundling of the MoEM's roles needs to be considered, with oil sector policy, regulation and operations placed within separate agencies (Figure 3-4). The creation of the NPC is a first step towards institutional reform that could be built on.

[57] An agreement had been reached with the Malaysians to build a new refinery for Dar blend, but was later abandoned due to high cost (around US$ 6 billion).

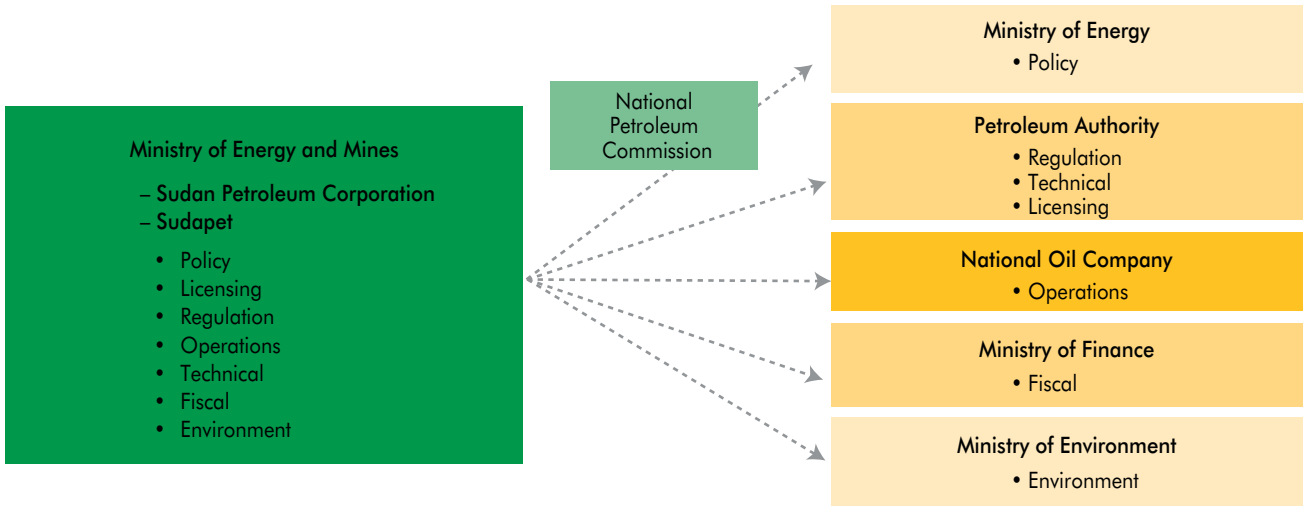
Further capacity building to deal with petroleum issues across the public sector is an immediate priority. Commercialization and gradual privatization of some of the state-owned companies in the petroleum sector could be considered, particularly downstream and oil services. The possible "unbundling" of the government's activities in the petroleum sector is illustrated in Figure 3-4.

Strengthen environmental and social governance of the oil industry. The central government has in place a comprehensive range of environmental and social standards that oil companies are required to follow. These critical areas are currently administered by MoEM, but it would be preferable to apply them through an independent agency or through the Ministry of Environment.

Reposition Sudapet for greater accountablility and transparency. At present Sudapet functions as an apparently unaccountable and non-transparent entity with rapidly rising revenues. The role of this company is unclear: is it a state company with an operating role or a holding company for the state share of licenses? It is also unclear where the net income of this company is channeled. As a state-owned company it should pay dividends and taxes to the central government that will usually count as part of the government's overall revenues from oil production. Moreover, even while remaining state-owned the company should operate as much as possible on a commercial basis, separate from the government's policy and regulatory arms. The company may also have a more explicit role in improving the technical capacity of Sudanese staff, and encouraging development of oil-related activities in Sudan.

Strengthen the Capacity of GoSS in the Oil Sector. GoSS has considerable responsibilities for oil sector management at present, and these could grow very rapidly if the South moves towards independence after 2011. Yet the capacity of GoSS in the oil sector is currently extremely limited. Capacity strengthening to enable proper governance is an urgent priority. This should include selection of a core team of staff to be trained in oil sector issues, and provision of extensive education and practical training. In the interim, GoSS could benefit from hosting in-house expert international advisers. Similar considerations apply to Nile Petroleum, the state oil company owned by GoSS.

FIGURE 3-4: Diagram of Basic Petroleum Institutional Reform Principles



CHAPTER 4

RECOVERY AND GROWTH IN THE AGRICULTURE SECTOR[58]

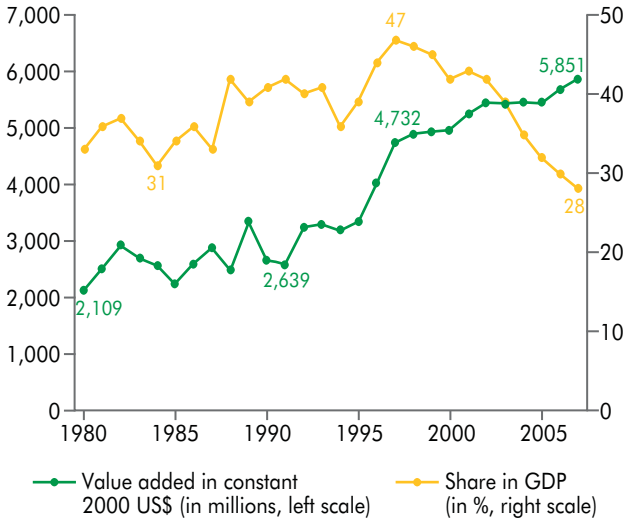
A. Introduction

Sudan is naturally endowed to be a large producer and exporter of agriculture products. It is the largest country in Sub-Saharan Africa (SSA) and is a riparian country for the Nile. It also has the largest irrigated area as well as large herds of sheep, goats and camels comparable with other large countries in Sub-Saharan Africa. Northern Sudan has three major agricultural production systems, namely irrigated, rainfed semi-mechanized, and rainfed traditional agriculture. Southern Sudan also has three production systems classified as central rain lands, flood plains and the equatorial zone. These farming systems are used for both crop and livestock production. Increasingly these production activities are integrated. Other important rural production systems are forestry and fisheries, which are concentrated in Southern Sudan.

In spite of the country's rich natural resources, the agriculture sector in Sudan has performed poorly in the past decade. While it remains an important sector, its share of GDP in the economy has declined, the rate of growth of rural incomes has decreased and poverty in rural areas remains high. The average annual growth rate of the agricultural sector between 2000 and 2008 was 3.6 percent, substantially lower than the 10.8 percent during the previous decade.

The high agricultural growth of the 1990s was not sustained after 2000, largely due to low productivity and reduced exports. The sector grew at 10.8 percent per annum in the 1990s due to a rebound effect from the low growth period of the drought-affected 1980s and the introduction of a major economic reform program in 1992 that decontrolled most markets. There were, however, wide variations in the growth rates across the subsectors (Table 4-1). Crop and livestock production have both grown at 3.6 percent per annum since 2000, compared to 8.5 and 15.9 percent respectively during the 1990s. Among the three main farming systems, the traditional farming areas that produce a wide variety of products recorded the largest decline in performance. The average annual

FIGURE 4-1: Trend in GDP from Agriculture in Sudan



Source: World Bank World Development Indicators

[58] This chapter has been prepared by Jack van Holst Pellekaan, with input from Yutaka Yoshino, Derek Byerlee, Shawki Barghouti, Ali Salih and Ahmed Mina.

growth rate for this system fell from a solid 24.6 percent in the 1990s, due to increased production of oilseeds, to 2.4 percent during the 2000 to 2008 period due to lower yields (sorghum), weak markets (gum arabic, sesame and groundnuts) and drought. Another important cause for the low average growth of the agricultural sector during this decade was the ban on imports of Sudanese sheep by Saudi Arabia in 2000 and 2001 and again in 2007, which led to the value of livestock exports dropping to almost zero in 2001 and by about one third in 2000 and 2007 (see Table 4-1).

Although agriculture continues to provide the majority of export revenue outside of the oil sector, growth in recent years has been tepid. The sector suffers from low productivity and high marketing costs that reduce competitiveness and results in lower prices for farmers. Also exports of most goods are concentrated in a few foreign markets, making them vulnerable to disruptions such as the import bans mentioned for sheep sales in Saudi Arabia.[59] These factors exacerbated the loss of export competitiveness caused by currency appreciation from 2005 to 2007.[60] Addressing these constraints will require investments and policy change in research and extension, rationalization of taxes and fees, more efficient marketing chains, continued improvements in export inspection, as well as improved trade promotion to make agriculture more competitive in a broader range of international markets.

The policy environment in the agriculture sector in Sudan has not been conducive to

[59] The major exports are directed at only a few Gulf countries. Almost all livestock and meat go to Saudi Arabia with some cattle to Egypt, Uganda and Kenya. Cotton is currently sold mainly to Egypt. Sales of sesame are more diversified going mainly to Egypt, Saudi Arabia, China, Jordan, Mexico, Turkey, as well as a few European countries. Gum arabic is sold to a small number of traders in Europe, Japan, India and some other Asian countries, as well as the United States. An important shift in agricultural trade over the last five years has been the increased exports to China of agricultural products such as sorghum and sesame. In Southern Sudan, partly because of decades of conflict and lack of infrastructure, export trade is only with adjacent neighbors (e.g., Uganda and Kenya).

[60] Following the start of substantial oil exports from Sudan in 2000 the value of oil increased at an annual rate of 26.8 percent, while agricultural exports increased by 7.8 percent over the whole period but declined at an annual rate of 15.9 percent from 2005 to 2007.

TABLE 4-1: Growth of Production (Value Added) and Share in Agriculture GDP by Farming System

	1991/92–1999		2000–2008[a/]	
	Growth Rate (% per annum)	Share in Agric GDP (%)	Growth Rate (% per annum)	Share in Agric GDP (%)
Irrigated	6.6	21.1	4.4	28.2
Rainfed semi-mechanized	–6.7	6.3	5.2	3.1
Rainfed traditional	24.6	12.5	2.4	14.9
Minor crops	–1.4	1.2	na[b/]	na[b/]
By-products	2.4	5.9	na[b/]	na[b/]
Total Crops	8.5	47.0	3.6	46.3
Livestock	15.9	46.9	3.6	47.2
Forestry	–21.5	4.8	2.5	6.5
Fisheries	9.0	1.3	na[b/]	na[b/]
Total Agriculture	10.8	100.0	3.6	100.0

Source: Central Bureau of Statistics. a/ preliminary; b/ not separately available – included with forestry.

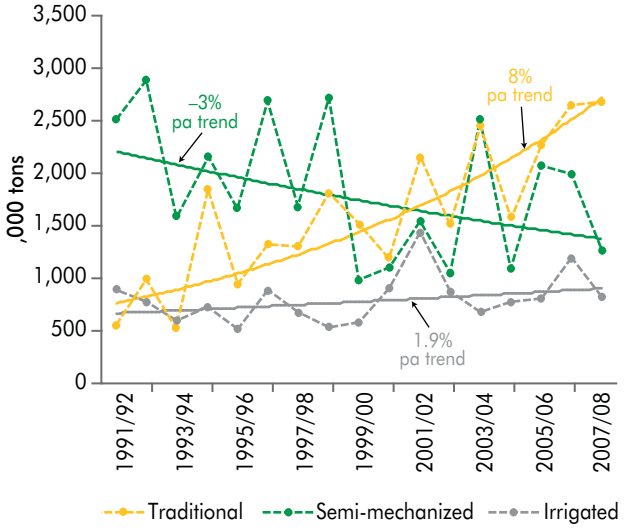
growth, but is improving. In the past the government has intervened in agricultural markets through a variety of instruments that altered incentives to producers relative to border prices. Interventions were *ad hoc* and inconsistent over time and included distorted exchange rates, export taxation, tariff policies, incentive payments, and trading monopolies. Since the early 1990s, following the introduction of major economic reforms, distortions have been reduced but some taxes on gum arabic exports remained. Given the progress already made on agricultural policy, the major priority at this stage is to eliminate those taxes and charges in the marketing of agricultural products for which no services are provided.

B. Sub-Sector Performance and Cross-Cutting Issues

Crops: Irrigated, Semi-Mechanized Rainfed, and Traditional Rainfed Systems

Over the past decade, the volume of foodgrain production (sorghum, millet, wheat and groundnuts) produced in the traditional rainfed farming system has grown, while production from semi-mechanized rainfed farming has shrunk and that from irrigated farming remains stagnant at a low level.[61] Figure 4-2 shows food crop production from traditional rainfed farming system has grown since the early 1990s, surpassing the level of semi-mechanized farming; in contrast, the latter has shrunk during the same period. The semi-mechanized farming system has ceased to be the dominant source of food (sorghum) for Sudan. The contribution of the irrigated sector has, apart from its surge in production in response to drought and locusts attacks in 2001/2002 and again in 2006/07 when wheat prices increased, remained relatively stagnant. This production system clearly has the capacity to make a major contribution to food production as a result of increased area harvested

FIGURE 4-2: Trends in Food Crop Production in the Three Farming Systems (1991/92 to 2007/08)



Source: Data are from the Ministry of Agriculture and Forestry and the Central Bureau of Statistics.

by replacing non-food crops such as cotton and increasing the intensity of land use in Sudan's large irrigation systems.

Irrigated farming has been characterized by low irrigation intensity and low productivity. With about 4.8 million feddans of mainly gravity irrigation land, Sudan has the largest area of irrigated land in Sub-Saharan Africa. It accounts for

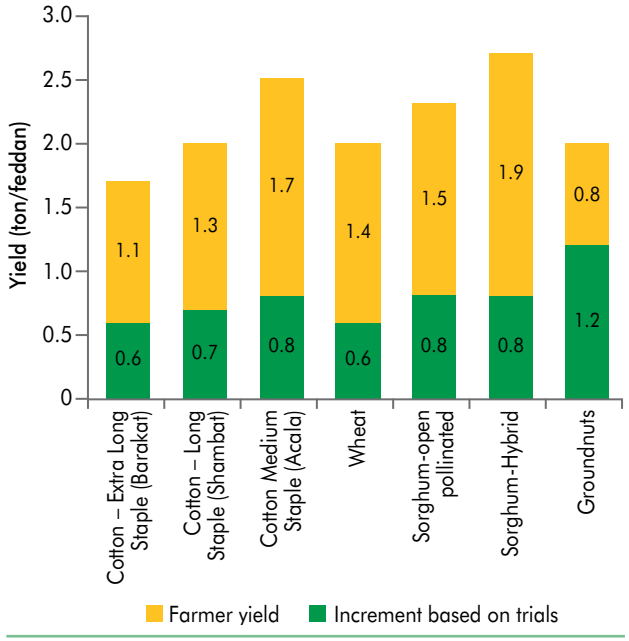
[61] Note that this is not a contradiction of the previous analysis in this chapter of a declining growth of the total value of production in the traditional farming system because numerous other crops and agricultural products are produced in this production system. They have either continued to decline since the early 1990s (e.g., gum arabic), or declined since the early 2000s (e.g., oilseeds).

[62] Cropping pattern changes affect livestock marketing. Increased production of winter wheat in the Gezira scheme in response to high international prices in 2006–2008, for example, has become a source of conflict between farmers and nomadic herdsmen. Traditionally, herdsmen were able to feed their cattle and sheep on summer crop residues in the Gezira on their way to markets in Wad Medani and Omdurman, but access to this source of feed has been drastically reduced because farmers in irrigated areas are using up to 500,000 feddan (20 percent of irrigated area) and any remaining crop residues to feed their own animals. Lack of clear demarcation of public stock routes and inadequate livestock services accentuate the conflict over feed supplies for livestock in irrigation areas but this is also an issue in other farming systems.

28 percent of the total GDP from the agricultural sector since 2000. It also contributes to the livestock sector.[62] The large irrigation schemes, owned by the central government account for about 50 percent of all irrigated land.[63] While the infrastructure in government-managed schemes is old and often technically outdated, water is still effectively delivered to most command areas. Nevertheless, irrigation intensity, i.e., cropped area as a percent of irrigable area, in most years is less than 50 percent and average crop yields are much lower than their potential.

Yields under irrigation have generally not improved over recent decades. While sorghum yields improved, those of other crops (wheat, groundnuts, cotton) stagnated, and even declined over the last 5 years. Figure 4-3 compares the potential research and farmer yields for the major crops grown under irrigation in the Gezira Irrigation Scheme. Yield gaps between research and farmers' yields illustrate the substantial possibilities of approximately doubling yields for cotton, wheat and sorghum and raising those of groundnuts by two-thirds.

FIGURE 4-3: Yield Gaps between On-farm Research Trials and Farmers' Average Yields in the Gezira Irrigation Scheme



Source: Agricultural Research Corporation (various years).

Poor management of the irrigation schemes has been the main reason for stagnant yield levels. Weak management typically results in high costs for operation and maintenance and therefore high costs for water, which is often not efficiently distributed to all farms. In the Gezira Scheme a management and institutional reform program is underway and if successfully completed will be a model for similar reforms in other large irrigation schemes (Box 4-1). Management reforms and technological advances in government irrigation areas should have spillover effects in the numerous small irrigation schemes.

Low yields have driven the decline in sorghum production in the *semi-mechanized* farming system for decades. Production has grown slightly since 2000, primarily driven by growth in the extensive margin without an increase in productivity. Productivity is obviously influenced by technology, location and seasonal conditions. Delayed credit, which delays planting, which in turn usually results in low yield, is another cause for low productivity. On the other hand, low productivity is not a recent phenomenon. Since the early 1990s sorghum production in semi-mechanized farming areas declined at a rate of 3.4 percent per annum due to negative growth of area and yield of 2.1 and 1.3 percent per annum respectively. Figure 4-4 (left panel) shows the trend in sorghum and sesame yields in semi-mechanized farming areas. Yields of sorghum in Sudan (about 80 percent of which is rain-fed) are well below those in other countries with broadly similar production conditions. One such comparison is illustrated in Figure

[63] Budget allocations for irrigation have absorbed up to 41 percent of GoNU's total development expenditures in recent years. The Agricultural Rehabilitation Program proposes to allocate over 30 percent of its budget to irrigation and water resources, which may indicate a reallocation way from irrigated to rainfed agriculture.

BOX 4-1: Reforms in the Gezira Irrigation Scheme

Background. Established in 1925, the 880,000 ha Gezira Scheme is one of the largest irrigation projects in the world under single management. It is managed by the Gezira Board of Directors with day to day management by Sudan Gezira Board (SGB). It can contribute 3 to 4 percent to national GDP and generate considerable employment. On the other hand the Gezira with its controlled rotations and requirements to grow fixed quantities of cotton performed poorly despite considerable central government budget support. Yields, cropping intensities, and irrigation efficiencies were chronically low, operation and maintenance (O&M) were poorly executed, and cost recovery for water delivery and O&M was weak. While the government wrote off the Scheme's and farmers' debts in 1982 and 1992, accumulated debt rose again to $95 million in 2008.

New Gezira Act. In response to weak performance and unsustainable budget support the Ministry of Finance and National Economy (MoFNE) launched a review of Gezira's management in 1999. After a year of analysis, a joint Government/World Bank report recommended a reform program which was followed by four years of debate among all stakeholders and, eventually, the adoption by Parliament of a new Gezira Act in July 2005. On the basis of worldwide evidence of Water Users' Associations (WUAs) as efficient water management institutions at the farm level and a successful pilot in Gezira, the Act gives greater responsibility to WUAs and reduced responsibilities to the Ministry of Irrigation and Water Resources (MOIWR) and the SGB for water management within the Scheme. The Act also guarantees free crop choice for farmers, transfers titles and tradable long-term leases to farmers replacing short term land rental arrangements, substitutes farmers' credit accounts with the SGB with commercial banking, privatizes railways, ginneries and workshops, and refocuses the SGB's responsibilities on agricultural research, technology transfer, market information services and farmer training. The Act requires that, before responsibility for the minor canals is handed over to the WUAs, the canals be rehabilitated by the MOIWR. The Ministry is also required to establish a separate department for Gezira to foster the reforms. Implementation of the full and integrated package of reforms is expected to lead to substantial improvements in the Scheme's efficiency, productivity, farm incomes and employment, as well as lower government budget allocations.

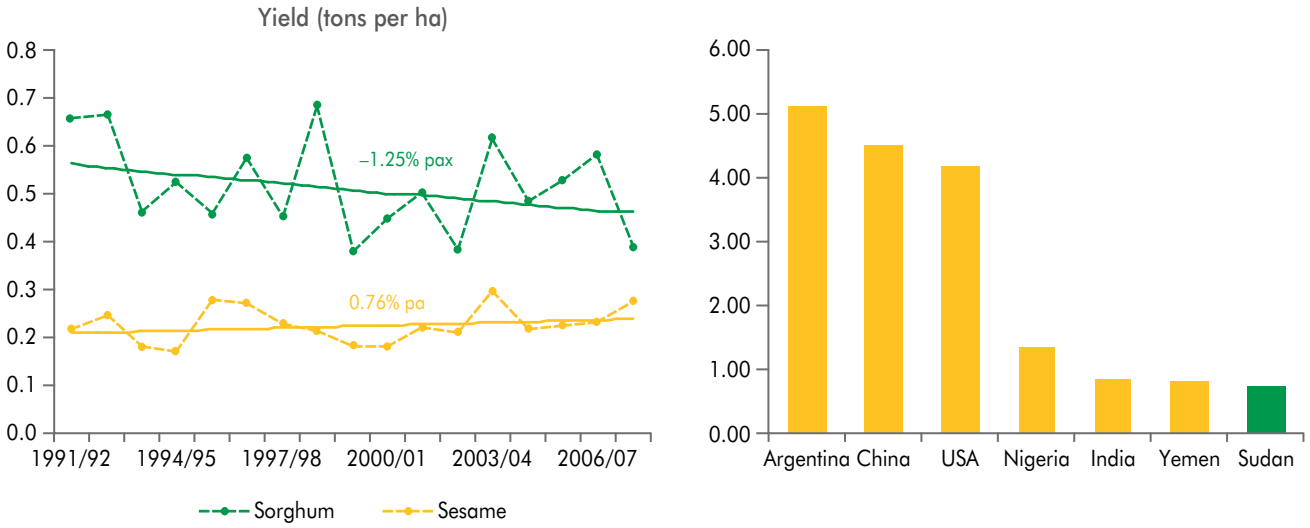
Implementation Achieved. Freedom of crop choice, payment upon delivery of cotton to ginneries, and credit from the Agricultural Bank and private commercial banks are now a reality and have led to substantial crop diversification and higher incomes in response to market demand. Some 1,575 WUAs have been established. In November 2009, under the direction of the Board of Directors, the SGB terminated (with compensation provided by the government) 2,500 employees whose roles were no longer consistent with the future responsibilities of the SGB. This action was based on an MDTF-funded study. The World Bank assisted in drafting legal agreements for water purchases and water management.

Implementation not Achieved. The MOIWR retains management responsibility for the Sennar dam and main canals and has taken back the responsibility for O&M of the minor and tertiary canals, which it performed ineffectively for many years in the past before being relieved of that responsibility by the SGB. The MOIWR has also not established a department for Gezira. Its annual budget is devoted to O&M and not to the rehabilitation of minor canals. As a result, the management of the minor canals has not been transferred to WUAs. Training of WUA managers was not started because it needed coordination with the transfer of water management to the WUAs. Land policy issues have not yet been resolved.

Time for Leadership and Action. The Board of Directors of the Gezira Scheme is responsible for implementing the new Gezira Act. It took action to reduce SGB staff numbers and should also ensure that the SGB trains WUAs and brings the SGB, WUAs, and researchers together to verify that free crop choice is not exercised at the cost of spreading crop diseases and parasites. The Board has, however, been unable to ensure that the MOIWR fulfils its responsibilities for integrated reform under the Act and it may need support from MoFNE to monitor that the MOIWR budget is used for rehabilitation of minors as well as O&M. The Gezira Farmers' Union supports the reform program but it should confirm that the majority of farmers support the program. The Union also needs to convince the Board of Directors that (after training) farmers will be ready to manage WUAs, in contrast to MOIWR contention that farmers are incapable of managing WUAs. In conclusion, the Board of Directors should complete implementation of the full Gezira Act package. If it fails, a high level commission could be formed to complete the task to prevent the collapse of a $4–6 billion investment capable of very large and efficient production and employment growth.

4-4 (right panel) which shows that Sudan's overall national average sorghum yield of about 0.73 tons per hectare (306 kg per feddan) which includes irrigated production for the period 2000–2007 was only 14–18 percent of that in some high-yielding competitive countries such as Argentina, the United States and China, and was about a half of some African countries like Nigeria.

FIGURE 4-4: Relative Sorghum and Sesame Yields, and Comparison of Average Sorghum Yields With Other Countries: 2005–2007



Source: Central Bureau of Statistics and FAOSTAT.

Yield growth under the semi-mechanized farming is constrained by inadequate public management of areas at the state level and weak incentives to use improved technology. Weakness in management includes low land rentals, weak enforcement of soil management covenants in land leases, land policy that excludes a market for land rights, land use disputes between farmers and nomads, and lack of enforcement of environmental standards in the leases. On the technical side there is clear upside potential. A recent report prepared for the Ministry of Agriculture and Forests identified a technological package based on improved soil moisture management through judicious cultivation that would lead to higher yields than at present and can be achieved with current equipment used by most farmers. A more sophisticated approach would be movement to modern machinery and zero tillage technology, which would require more purchased inputs but would achieve much higher and more sustainable yields. As that report points out, different crop rotations could be applied for the different agro-ecological zones, but a leguminous crop (for either grain/seed or fodder) would be included in all rotations. Gum arabic in about 10 percent of the area would be a feature of rotations in areas suitable for this crop.[64] International examples of similar achievements are discussed in Box 4-2.

While the government plays an important role in sorghum marketing through its purchases for the national food reserve, its powers over export licenses exacerbate sorghum production problems. When the government perceives the high probability of low annual production due to seasonal conditions, it places controls on export licenses for sorghum. Decisions about export license controls, however, typically come late in the planting season, which in turn has a negative impact on yields.[65] The price paid by the government after harvest for purchases to replenish the food security stock is typically inversely related to the size of the crop. With few other price signals, because the government's involvement in the

[64] GoNU Ministry of Agriculture and Forests 2009.
[65] Over the past 15 years the government banned exports of sorghum for several years including 1991/92, 2000/01, 2004/05 and in 2007/08.

BOX 4-2: Investing for Competitive Rainfed Agriculture: Experiences of Brazil's Cerrado and Northeast Thailand

The Guinea Savannah region of Africa, which includes most of Southern Sudan, is a huge underexploited area with enormous agricultural potential. A recent World Bank study concluded that similar regions in Latin America (the Cerrado of Brazil), and Asia (Northeast Thailand) have become breadbaskets to the world, with highly competitive export agricultural sectors.

The agricultural commercialization experiences of the *Cerrado* region of Brazil and the Northeast Region of Thailand share a number of striking commonalities. Both regions started out with low productivity agriculture and poor infrastructure, and until quite recently both were characterized as economically "backward." Yet they showed remarkable, sustained growth over a 40-year period, allowing them to become highly competitive in world markets. Producers in both regions initially concentrated on a small number of commodities that are traded internationally in large quantities and for which quality standards are relatively unimportant. In Brazil, soybeans, production of which jumped from 250,000 metric tons in 1961 to over 30 million metric tons in 2000, led the transformation. In the Northeast Region of Thailand, cassava led the export takeoff, with the country's production (heavily concentrated in the Northeast) rising from 1.7 million metric tons in 1961 to 20.7 million metric tons in 1996. Successes were achieved later in other commodities (e.g., rice in Brazil, rice and maize in Thailand).

In both cases, international competitiveness was achieved in stages: only after competitiveness had been established in low-value commodities was it also achieved in higher value commodities, including processed commodities (e.g., sugar, soybean oil, cotton lint, cassava starch, and cattle).

Supply-side factors as well as demand-side factors contributed to the success in both cases. In the *Cerrado,* the supply-side factors included (i) improved agricultural technology developed by EMBRAPA, the national agricultural research organization (especially locally adapted high-yielding soybean varieties and improved management techniques tailored to the *Cerrado*'s acidic soils); (ii) publicly financed infrastructure, rural credit, and business development services; (iii) entrepreneurial know-how of highly skilled farmers from the southern part of the country who migrated to the *Cerrado* in response to the government's colonization strategy, and (iv) a supportive policy environment, brought about by a series of economic and political reforms enacted during the mid-1990s that improved the investment climate and permitted the direct transmission of international market signals to farmers in the *Cerrado*. These supply-side factors, combined with strong growth in global demand for soybeans and soybean-derived products beginning in the 1970s, resulted in the spectacular transformation of the *Cerrado* into a leading global supplier of soybeans.

In the Northeast Region of Thailand, the export revolution was similarly driven by a combination of supply-side and demand-side factors. Supply-side factors included: (i) improved agricultural technologies (especially short-duration cassava varieties are resistant to common pests and diseases, and feature high improved root quality, as well as improved crop management practices for soil nutrient conservation and erosion control to combat declining soil fertility); (ii) availability of previously uncultivated land, combined with permissive government land policies, that allowed farmers to expand cultivated area rapidly in response to market opportunities; (iii) government investment in rail and road infrastructure, which reduced costs of market access; and (iv) a dynamic private sector that was able to respond quickly to market signals, paving the way for rapid supply response. The resulting spectacular expansion of cassava production in Northeast Thailand sparked broader agricultural and economic growth extending throughout the region.

Source: World Bank 2009b.

market is so substantial, farmers usually assume that next season price will equal the price during the current season, which means that after a plentiful season farmers expect low prices during the next season which acts as a disincentive to sorghum production and farmers reduce sorghum plantings and turn to other crops such as sesame or sun flower. These policies and the reactions of farmers to them result in a classical cobweb type cycle of low production in response to the previous season's low prices, and vice versa. In addition delays in announcing export licenses for sorghum cause farmers to delay their planting decisions and reduces yields.

Since the early 1990s, an expansion of harvested area has been the primary source of production growth for traditional rainfed crop production. Area increases (extensive margin) have

been the main source of higher production for most of the food crops under the traditional farming system (6.4 and 3.1 percent per annum for sorghum and millet since 1991/92). More recently sorghum has started to lead the growth in food crop production due to a substantial improvement in yield (4.4 percent per annum since 2000/01 compared with 3.6 percent per annum since 1991/92), although since 2001/2002 there was a substantial drop in average groundnut yields. Yields and area harvested for sesame, however, declined considerably from the mid 1990s. These trends for crop production in the traditional farming areas confirm a strong incentive to produce staple food crops and a declining incentive to produce cash crops such as groundnuts and sesame for export (see Table 4-2).

Yield gaps between potential levels and yields achieved in traditional farming areas in Sudan are even more dramatic than those for semi-mechanized farming areas. In North Kordofan state where rainfall is both low and erratic, farmers obtain meager yields that represent small proportions of the yields reported by research even under difficult crop growing conditions. Table 4-2 shows that the proportions were in the order of 8 to 9 percent for sorghum, millet and sesame, and about 34 percent for groundnuts. Here the potential for improved yields is clearly substantial, even if the recorded research yields may not be fully realized.

TABLE 4-2: Research and Farmers' Crop Yields in Marginal Rainfed Areas in North Kordofan

Crop	Research Yields (kg/fed)	Farmer Yields (kg/fed)	Farmer Yields as Percent of Research Yields (percent)
Sorghum	540	42	8
Groundnuts	546	186	34
Sesame	180	17	9

Source: Dukheri (2006).

Small-scale farms in Southern Sudan, face a low-level productivity trap. As a group, small-scale farmers are not prepared to risk the cost of improved technology and the associated cost of inputs in the face of uncertainty about markets for additional output because of distorted prices in an uncompetitive, isolated market due to poor infrastructure and an almost complete absence of market information. This is particularly true for farmers in Equatoria and the flood plains of Southern Sudan. Farmers are trapped in a system of shifting agriculture and subsistence farming. For most rural families there is no escape because neither farm households nor landless labor are able to move out of their traditional areas to more advantageous areas within Southern Sudan because of the inability to settle on land or work as laborers in locations outside their customary communities.

Breaking free of the low level trap requires improved technology, better support services including credit, and efficient markets for land, labor and surplus production. Since the inter-regional movement of families and labor is severely constrained, households have had few options but to rely on their existing farms as their source of sustenance and as a basis for barter trade for non-farm products. There are many potential avenues for increasing productivity for traditional crops such as sorghum, millet, and groundnuts, but there are also realistic opportunities to produce less traditional crops such as upland rice in the South.

Forestry

Management of forestry resources has been sub-optimal, in aggregate economic terms as well as with respect to environmental sustainability and poverty reduction efforts, and demand more attention through policy reform, budgetary allocations and investment incentives. Gum Arabic, as discussed below, is a prominent exam-

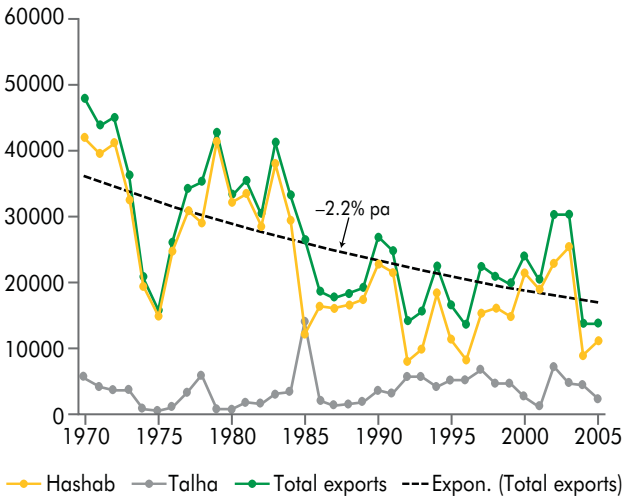
ple of mismanagement resulting in outcomes well below potential in economic terms, and also directly in poverty reduction efforts given growers are largely in poor rural areas. Official estimates show a very modest 1–2 percent of GDP contribution from forestry as a whole to the national economy, which is likely underestimated due to lack of data on different forestry products beyond the registered value of wood produced from government forest reserves. For example, the government estimates that shelterbelts of forest trees established to protect agricultural plots can increase crop productivity by as much as 15 percent. The Forest Law (2002) stipulates that trees should be left standing on 5% of lands mechanically cropped and 10 percent on rainfed lands. The effect of these tree belts on reducing evaporation losses, decreasing wind and water erosion and generally mitigating desertification effects led to increased crop productivity and significantly contributed towards food security. However, mismanagement has led to desertification and destruction of watersheds, especially in central and northern Sudan. Scanty tree cover has been removed in many places exposing the surface soil to all agents of erosion. Contributing factors include the expansion of agriculture (mainly mechanized) on forestlands, uncontrolled tree felling, overgrazing, forest fires, prolonged drought periods and erratic rainfall.

The role of forestry in poverty alleviation in the Sudan, which has generally been underplayed, is realized through its direct support to rural communities, provision of energy and through its contribution to food security. Forestry activities support the rural communities through provision of employment in forestry operations (planting, thinning, guarding and harvesting of tree crops), as well as supply of non-wood forest products and community support to establish village forests for fuelwood production, shelter and recreational purposes. The poor rural communities largely depend on wood fuel as source of energy. The government estimates 78 percent of the energy consumption in the country is in the form of firewood and charcoal. The remainder of the energy budget is met by petroleum products, hydroelectric power and agricultural residues. Forestry has also contributed to food security in the past, particularly in drought years when the rural poor depended entirely or partly on fruits and tree leaves as a source of food.

Sudan is the world's leading exporter of gum arabic, a crop that is especially important to the livelihoods of poor farmers in marginal environments. Despite large increases in cultivation of gum arabic, its exports have declined at an average rate of 2.2 percent per annum between 1970 and 2005 (Figure 4-5). The decline in exports has been due to weak incentives for small scale farmers, who produce the bulk of Sudan's gum arabic, coupled with some serious droughts. Since 2005, increased domestic processing of gum arabic has stimulated domestic production and a higher volume and value of exports (also see Table 4-2).

The monopoly export concession granted to the GAC to export raw gum arabic drove a wedge between world and domestic prices. Sudan

FIGURE 4-5: Trends in Gum Arabic Exports (1970 to 2005)



Source: Data from the Gum Arabic Company (GAC).

controlled the lion's share of world gum arabic production for decades and a number of attempts were made in the early-1960s to stabilize prices for producers and consumers by establishing buffer stocks, but they were generally unsuccessful because of the lack of reliable financing. But in 1969, on the basis of accusations that foreign speculators had manipulated domestic gum prices, the government decided to give one company the sole concession to export raw gum arabic. Since then, except for a few years in the late 1990s, the GAC in which the government has a major share, has had a monopoly over the export of raw gum arabic. GAC has implemented a floor price system for gum at buying centers (referred to as auctions). Floor prices have typically been about 20 percent of the freight-on-board (FOB) price in Port Sudan, and for a period of about 5 years between 1998 and 2003 this percentage hovered around 10 percent. After 2003–2004, auction prices were again influenced by an investment surge by processors.[66] Prices paid at auctions increased to higher levels than in the past although prices were also erratic because of uncertainty about the likely disposition of the large stock that the GAC accumulated in 2003 and 2004.[67]

The floor price system reduced producers' earnings, lowering their incentive to produce. There was considerable controversy around the justification for one company having an export monopoly of raw gum arabic. On the other hand, GAC insisted that by providing a floor price, supporting producers with extension advice, and monitoring the quality of raw gum arabic exports, it has ensured reliable supply of high quality, hand-picked, and selected gum arabic. However, in practice the floor price was very low and provided no incentive for producers, and extension support was very weak. The Sudanese Standards and Metrology Organization was established and authorized to verify the quality of all types of gum arabic exports. In the meantime, gum arabic planting and production expanded in countries such as Chad and Nigeria, which have no controls on marketing but benefited from the pre-arranged price levels between the GAC and foreign buyers.[68]

There has been a new development, renewing the prospect of gum arabic export liberalization. Recently the Gum Arabic Commodity Council formed four technical committees to study different policy options needed for the revitalization of the gum arabic sector. They made recommendations for change to the Agricultural Revival High Council (ARHC). The ARHC have endorsed the recommendations and submitted them for the meeting of the Ministerial Cabinet for consideration. The Council of Ministers, chaired by the President of the Republic, issued decrees at the end of April 2009 declaring the liberalization of the gum arabic trade, cancellation of the exclusive concession on raw gum arabic export granted to the GAC in 1969 and removal of all taxes imposed on gum production, similar to other agricultural products. The Ministry of Finance and National Economy issued the relevant rules and regulations necessary for implementing the decrees, and a technical committee has been formed by the Ministry of Foreign Trade to ensure that the liberalization move will not harm gum arabic exports.

Beyond gum arabic, there is potential for a sound timber industry given the exotic forest species that grow in Southern Sudan. It is estimated that forests and natural woodlands cover

[66] In 2003 the Ministry of International Investment issued 12 additional licenses to gum arabic processors including the four international agents who worked for GAC to sell raw gum and process it in Europe, but who then established processing facilities (crushing facilities to make "cleaned grade") in Sudan in order to ensure their own supply of gum for their processing lines in Europe.

[67] On August 9, 2006 the Minister of Foreign Trade signed a Ministeral Order (No. 7/2006) stipulating "except for the GAC, all permits for the export of gum arabic in all its forms are hereby suspended until further notice." This order, which undermined the profitability of all private gum arabic trading and processing had a major detrimental impact on the international reputation of Sudan's gum arabic industry. This order was subsequently rescinded following representations from the processors.

[68] Synthetic substitutes were also developed which, because of their regularity of supply, became very attractive to consumers compared with supplies of natural gum arabic which were unreliable as a result of the weak incentives to produce on a regular basis which in turn led to fluctuations in quantity and price on world markets.

about 192,000 square miles, which is about 30 percent of the area of Southern Sudan. Of this area about 17,500 square miles are said to be taken up by reservations under formal management. These reservations are owned and managed by communities, or they are part of an official government forest reserve. The remaining forests are under an "open forest management regime," and are currently outside the jurisdiction of the public forestry administration, which makes them prone to many abuses such as uncontrolled charcoal production and indiscriminate harvesting of lumber. The GoSS is acutely aware of the need to guard against the destruction of its forest resources and has therefore taken a number of steps since 2005 to establish a forest policy. In 2007 it introduced a Forest Policy Framework and subsequently a new Land Act was approved in 2009. A land policy is under preparation and a forest law has yet to be drafted. No doubt guidelines on effective forestry management will also be developed. However, it is understood that in the interim a moratorium has been established by the GoSS on any extraction of major forest products. International experience suggests that while there is non-oil revenue potential from traditional forestry, it may be prudent to emphasize the institutional and transparency building blocks of a forestry policy rather than immediate revenue generation.

Livestock[69]

Livestock is the leading agricultural export product of Sudan. There are some 90 million sheep and goats in Northern Sudan, with most exported sheep and goats coming from Kordofan and Darfur.[70] Typically about 1.5 million sheep equivalents are shipped to Saudi Arabia each year of which about 1.4 million are live sheep and the balance is made up of chilled or frozen carcasses and meat. Despite the high profile of live sheep exports from Sudan, about 20 million sheep are slaughtered for domestic consumption in Sudan each year and this number is increasing because domestic prices are generally more attractive to traders than export prices. Marketing costs, including deaths, for live sheep transported by rail from western Sudan (Nyala) through Port Sudan and Sawakin for export represent about 30 percent of the fob price. For this route just over 50 percent of the total cost is for transportation. Traders complain about taxes and other charges that are not related to any services which reduce their marketing margins. An analysis of sheep marketing prepared for this report concluded that reductions in death rates, improvements in credit arrangements for livestock marketing, improvements in the efficiency of veterinary inspections and the introduction of auctions could result in considerable improvements sheep marketing efficiency in Sudan.[71] There are no significant exports of sheep from Southern Sudan. On the other hand a substantial number of cattle have in the past been exported from Southern Sudan to Kenya and Uganda, where they compete with cattle produced in Kenya and Somalia.

Livestock productivity is low and highly variable but potential exists for productivity growth. Livestock productivity varies significantly because production is predominantly under natural rangeland systems, which are subject to erratic climate and influenced by stocking rates that are not under the control of any individual. The fertility rates of sheep, defined as the ratio of pregnant to total adult females, are in the order of 60–83 percent under pastoral systems, indicating modest growth potential. The lambing rates, defined as the number of lambs born per ewes mated, vary from 102 percent to 170 percent, indicating high variation in twinning incidence. Mutasim estimated a

[69] The section draws on the CEM background paper: "Value Chains for Sheep, Cattle and Mutton Marketing from Western Sudan" by Ahmed Abaker Mohamed Mina and Jack van Holst Pellekaan.

[70] Sudan has 140 million livestock (sheep, goats, cattle and camels) of which 102 million are in Northern Sudan and 38 million in Southern Sudan

[71] Mina and van Holst Pellekaan 2009.

potential 112 percent for lambing rate in good seasons.[72] The high variability revealed by these figures is indicative of variable production management and hence highly uncertain herd growth prospects. Estimates of annual off-take rates for sheep are from 15 percent to as high as 50 percent. Nevertheless, typical off-take rates in Sudan are low by African standards and this is in part due to a continued preference by traditional pastoralists to increase the size of flocks. It is unlikely that this approach to herd management can be sustained because excessive stocking rates, destruction of tree cover to harvest firewood because of civil conflict, increased areas used for crop production, soil erosion and periodic droughts have all contributed to a serious deterioration of carrying capacity of the rangelands in Sudan. This destruction is not totally irreversible and there is therefore considerable potential for productivity growth if pastoral conditions and flock management can be improved through regulation of grazing intensity of the common rangelands in regions such as North Darfur and North Kordofan. An alternative approach is through changes in land policy such as transferring long term responsibility for sustainable land use to farmers and pastoralists through arrangements such as long term tradable leases with covenants on land and forest management. Many of these actions require intervention by public institutions to establish sustainable management practices and to monitor and regulate natural resource use, but the institutions are usually inexperienced to undertake the professional aspects of these tasks and if experienced then usually ill equipped to act with adequate authority. Table 5-4 shows how low public expenditures have been in support of the livestock sub-sector with only 0.3 percent of development expenditures.

Another constraint to the profitable production of livestock is the more severe taxation of this sub-sector compared with crop production. The central government eliminated state taxes on sales of agricultural commodities sold by farmers because it was regarded as a disincentive to produce a surplus. States are compensated by the central government for reduced revenues through special budget allocations. Whether the states are receiving adequate compensation is not addressed here, but the policy issue for the livestock sector is that removal of sales taxes changed the relative profitability of the livestock and crop sub-sectors. Box 4-3 analyzes environmental degradation and reduced livestock production and exports that may have resulted from the impact of the elimination of sales taxes of crops.

Key Agro-Industries: Sugar, Leather, and Vegetable Oil

Sudan has the ability to significantly expand its sugar production because of available fertile land along the Nile and irrigation water from the Nile. This potential is not unlimited because much of the water rights to the Nile are shared with Egypt as part of the Nile Waters Agreement. However, there is enough water allocated to Sudan to allow the White Nile project to be built and allow other sugar companies to expand production. Sugar production costs in Sudan are generally relatively low compared with costs in other exporting countries. At present, the industry is regulated through controls on both imports and domestic sales that in effect subsidize Sudan's sugar exports. The net effect is that domestic consumers and sugar-using industries currently pay among the highest sugar prices in the world. Government protection for producers should not be necessary, and the government's direct involvement in the industry could be reduced.

Sudan has a unique opportunity to create a more export-oriented sugar industry because of opportunities offered by European Union (EU) preferences and the regional market through COMESA. Preferential access under EU's Every-

[72] El-Rasheed 2005.

BOX 4-3: Impact of the Elimination of Agricultural Sales Taxes on the Competitiveness of the Crop and Livestock Sectors and on the Environment in Traditional Farming Areas

The decision in 1999 by the then Government of Sudan that the states should no longer require the payment of sales taxes by farmers selling their crops in local markets had fiscal implications for the states which the government has addressed through a mechanism for compensation for the lost state revenues. But the elimination of sales taxes is also likely to have had significant impacts on crop and livestock producers as well as a negative impact on the environment. The impacts have been direct and indirect.

Direct Impact

While crop producers had their sales taxes eliminated they still pay local government taxes in primary markets near production areas and traders pay taxes at points of final sale which get passed back to the producers. Livestock producers continue to pay taxes on the value of sales in local markets as well as other taxes and mandatory fees levied for various public causes such as the martyr's tax as well as a 10 percent Zakat tax on the value of sales. In addition livestock traders also pay taxes on final sales, which are inevitably passed back to producers as lower prices. Analysis of marketing cost for livestock for this report and for the earlier Diagnostic Trade Integration Study show that government taxes and mandatory fees for public causes paid by sesame and groundnut producers/exporters account for about 16 percent of total marketing costs, whereas the cost of these charges for sheep producers/exporters ranges between 17 and 27 percent of marketing costs depending on the marketing system used. This difference is the direct impact of the elimination of a sales tax on crop producers. In addition, livestock herders pay an annual head tax for which there is no equivalent tax on crop producers' assets, and annual charges for the use of arable land are miniscule. As a result there is little doubt that livestock producers are more heavily taxed than crop producers even though the precise differences will vary according to location, types of land, and crops.

Indirect Impact

The sales tax elimination for crop producers would have raised the profitability of crop production (which was the objective) compared to livestock production assuming no other changes took place. While the improved profitability should have provided an incentive to raise productivity on existing farm land, crop statistics indicate that farmers have enlarged their cultivated areas, which in the traditional rain-fed farming system in Sudan means an expansion of cropping into pastoral areas. Such additional cropping areas are usually marginal for sustained crop production. Customary land policy allows increases in farming areas but it usually occurs without consultation with nomads who are typically not part of the community that manages customary land rights. Continued rights to farming areas are dependent on farmers regularly cultivating these areas. This practice has, however, resulted in severe land degradation in mixed farming areas like Kordofan and Darfur. Such an outcome not only destroys the quality of pastoral areas, it inevitably raises costs for livestock producers as they search for alternative grazing and, in the process, generate friction with crop producers.

The conclusion is that a policy originally intended to stimulate food production has resulted in expansion of cropping to marginal areas resulting in increased land degradation, a continued decline in average yields, more intensive stocking on the residual pastoral areas and irreversible destruction of the land resources and the environment in the traditional rain-fed farming areas.

thing But Arms (EBA) Initiative to Europe's otherwise highly protected domestic market gives Sudan the opportunity to export potentially all its production to the protected EU market at prices about double those of the world market, while meeting domestic demand with sugar imported at the world price. There is a risk that the EU market will be restricted if sugar imports surge, however. COMESA is another important market: even without access to the EU, some sugar producers such as the Kenana and the White Nile companies can export profitably to the region. Sudan can export sugar to COMESA FTA countries duty-free and quota-free.[73] In addition to the opportunities provided the EU and COMESA, the rest of

[73] Not all sugar exported to Kenya receives preferential treatment, due to a safeguard provision negotiated by the Kenyan Government with COMESA in 2003, which was scheduled to expire in February 2008 but which was recently extended for an additional four years.

the regional market is growing rapidly and export competition within the region will decline because several regional exporters (Malawi and Zambia) qualify as LDCs for EBA and will divert their exports from the regional market to the EU.

Sudan could seize this unique opportunity to expand its sugar industry through following reforms by: (i) liberalizing sugar imports subject only to the VAT and eliminating the excise duty on sugar to benefit consumers and industrial users of sugar; (ii) reducing government involvement in the four sugar companies owned and operated by the government by either privatizing them or allowing them greater autonomy in managing and investing their resources; and (iii) encouraging the continuation of services provided to local communities by sugar companies by allowing the sugar companies a credit against the sugar export tax for the cost of such services up to a specified limit.

The leather industry in Sudan holds great potential thanks to the country's vast number of livestock, which is one of the largest in Africa. Output is concentrated in intermediate leather products, much of which is sold to international manufacturers of leather garments. There is severe excess capacity: most plants are closed, and those that remain open are operating well below their capacity. Unlike other manufactured products, leather is produced largely for exports.[74] The EU (primarily Italy) and the United States were the main buyers of Sudanese leather in the early 1990s. Exports to the U.S. ceased with the imposition of its economic embargo. Pakistan and China (mostly Hong Kong) are now the two largest buyers of Sudanese leather, followed by Europe and India.

However, exports of hides and skins have been declining, in part due to their low quality relative to competitors. Exporters lost their markets in Italy, Spain, and Portugal because of the poor quality of Sudan's hides and skins. Sudan receives only about 50 percent of the international price for wet blue product because of its low quality. The use of chemicals and their disposal has environmental consequences. Scarcity of high-quality hides and skins is also a chief constraint to boosting leather production and exports. Poor animal husbandry and outdated slaughtering techniques limit the supply of high-quality hides and skins. Foreign tanneries are able to outbid Sudanese tanneries for the quality skins that are produced. The government introduced an export tax on hides and skins in 2000.[75] Tanneries are particularly affected by the numerous charges and local taxes levied on hides and skins, such as veterinary tax, market authority tax, and transport tax (Table 4-3).

[74] The 2003 UNIDO Industrial Survey reports that 73 percent of output was exported (in value terms).

[75] An export tax shifts income to owners of tanneries from those raising livestock. It may help shift the flow of hides to local tanneries in the short run but not address factors undermining the leather industry's competitiveness.

TABLE 4-3: Share of Production Cost for Medium-Size Tannery

Component	Share of costs (in %)	Comments
Raw Material	70	transport costs: 20–22 percent fees and other taxes on raw materials: 10–12 percent
Imported Chemicals: Chroming ($600/ton)	8–12	import duty: 3 percent other charges: 20 percent
Utilities ($0.12/Kwh)	5–10	high cost of electricity
Labor + overheads	15	low productivity and few skilled workers

Source: World Bank 2008a.

Tanneries complain that these taxes are paid several times every time they cross a state.

Sudan has the potential to revitalize vegetable oil exports. Sudan has been exporting vegetable oil for many decades, primarily to the EU with steady, albeit smaller, quantities to countries in the region. Exporters could do more to diversify into new markets but quality standards will need to be strictly maintained. Sudan's groundnut oil exports have gone overwhelmingly to Italy. Sudan has not penetrated the markets of major sesame oil importing countries such as the U.S., Japan, Hong Kong and Malaysia, although even before the U.S. imposed its current trade embargo, it did not import from Sudan. None of the East Asian countries identified as potential buyers report importing from Sudan during the past 15 years. Imports by Sudan are made up mostly of refined palm oil from Malaysia, Singapore, and Indonesia, and total imports have grown rapidly since 2000 (Figure 4-6). Much of the increase in the past three years can be attributed to food aid. Local producers argue that dumping (selling below cost) accounts for some of the increase as well.

FIGURE 4-6: Exports and Imports of Vegetable Oils, 1990–2005

Source: UN Commodity Trade Statistics Database.
Notes: Mirror statistics for 1990–1992, average of reporter and mirror statistics for subsequent years.

The shortage of domestic oil seeds and the Government's restriction on imports constrain oil producers. Oil seeds are the major expense in producing vegetable oils (95.4 percent of total cost), and oil producers report that the most critical constraint affecting the edible oil industry is the shortage of oil seeds. Much the groundnut production used for oil has historically been located in Darfur, and the ongoing conflict in that region has disrupted the supply of oil seeds. Moreover, irrigation farmers have been shifting from groundnut into wheat, in the past encouraged by government subsidies for wheat production that were designed to reduce the import bill on wheat, and now encouraged by higher import parity prices. At the same time, vegetable oil producers report that, despite the shortage of raw materials, the government does not allow importation of oil seeds for further processing. Government authorities dispute this claim, stating that there are no prohibitions or other policies (other than tariffs) that restrict imports. Whatever the reason, published trade data show negligible imports of oilseeds into Sudan until recently, and in 2006 oilseed imports reached only around $5 million. Given the seasonality of oilseed production, it will be difficult for oil processors to compete internationally unless they import oilseeds during the off-season in order to fully utilize processing machinery throughout the year.[76]

Impacts of Productivity and Marketing Costs on Export Competitiveness of Agriculture

The low and declining productivity and the high cost of marketing appear to be the major factor explaining the declining competitiveness of traditional agricultural exports. As discussed above, there are large gaps between yields achieved in field trials and those typically achieved

[76] India's success as the global leader in cashew processing is instructive. By importing cashews from around the world, India is able to process cashews year-round, not just when locally-grown cashews are on the market.

by farmers in Sudan. The high cost of bringing agricultural products to world markets compounds the problem of low productivity. In Southern Sudan, the high cost of moving goods from farms to urban areas prevents the region from exploiting its considerable export potential (Box 4-4). Livestock and crops grown in remote areas face high transportation costs. Even when distances are short, marketing chains can be long: multiple intermediaries take advantage of market inefficiencies to raise prices without adding value to the product. Analysis of value chain data shows numerous, even if not individually large, taxes and other charges; it is not always clear what services the taxes and charges are paying for. Table 4-4 shows that, for some products, costs incurred at Port Sudan are the largest of these marketing costs, frequently accounting for 7–9 percent of the FOB export price.[77]

[77] See World Bank 2008a for a discussion of factors explaining the high cost of using Port Sudan.

BOX 4-4: Agriculture and Export Potential in Southern Sudan

The available information suggests that, although Southern Sudan has historically been a net importer of agricultural products, the region has an outstanding natural resource base for the production of livestock and a wide range of annual crops (grains, fruit and vegetables), tree crops (coffee and tea), and forest products. But taking advantage of this potential will depend on making major improvements in productivity and marketing infrastructure such as roads, river transport, and airports.

Livestock: In the past cattle were sold to Uganda and Kenya and this continues, but insecurity within Southern Sudan and along the borders sometimes put a stop to these market outlets. Southern Sudan currently imports meat from Uganda but also sells cattle to markets in northern Sudan such as Kosti and Omdurman. But regardless of the final market location, prices received are discounted because animals are usually in poor condition and at risk of carrying serious diseases. These constraints on livestock marketing need to be urgently addressed. Future prospects for larger incomes from the cattle industry in Southern Sudan requires improving animal nutrition, controlling chronic diseases, reducing the age of turn-off, and making more efficient use of rangelands. Prospects for crop exports will also depend on substantial increases in productivity and better infrastructure (such as transportation and communications) so that domestic producers can first increase production to compete against imports in domestic markets and then later expand to export markets. Generally, these conditions for growth in exports depend on public sector investment in infrastructure, investment in research and support services to the agricultural and livestock producers (by both public and private sectors). It will be some years before these pre-conditions exist in Southern Sudan and a comparative advantage for agricultural products has been achieved.

Food crops: Rising populations and incomes in major cities and towns have resulted in a steady increase in the demand for food in Southern Sudan. High marketing costs caused by very poor, often non-existent, infrastructure within Sudan has meant that much of the increased demand for food crops in the growing urban markets have been met by imports from countries nearby. For example, supplies of basic grains and flour, sugar, vegetables and fruit, as well as some fish, are sold in markets such as Juba and Yei are typically imported from Uganda and Kenya.

Forest products: As mentioned, timber and forest products were exported in the past. Continued exports of logs to Uganda and other COMESA countries is a possibility, but domestic demand—for lumber such as teak and mahogany from northern Sudanese furniture makers and for construction purposes in the South—has outstripped foreign demand. Therefore, unless there is more domestic processing into high-value export products (such as wood flooring) large export volumes from Southern Sudan are unlikely.

Conclusion: There is an urgent need to increase investment in agricultural production and forestry. This will require increased government services in research and extension, dissemination of technologies, and provision of inputs that can increase agricultural output, such as seeds, fertilizers, and irrigation. Feeder roads and other physical infrastructure are needed to connect farms to urban markets. These efforts can help move traditional agriculture above subsistence levels and establish production in new areas and in new products. The GoSS, MDTF-South, and several bilateral donors are providing funds for programs to improve the institutions that will need to provide the leadership for agricultural and rural development. For forestry, GoSS is developing policies and laws aimed at more sustainable use of the considerable forest resources in Southern Sudan.

Source: Based on World Bank 2008a.

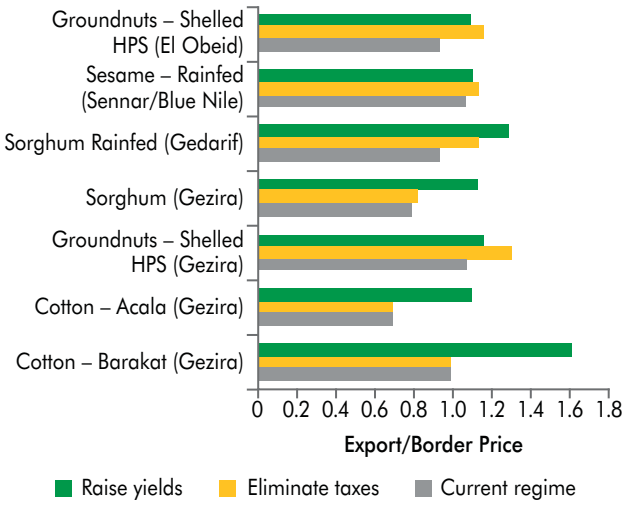
TABLE 4-4: Costs Incurred at Port Sudan

Product	Costs at Port Sudan as share of FOB price
Sheep from Kordofan	14.6
Groundnut	8.9
Sesame	8.4
Sheep from Nyala	7.4
Acala cotton	6.5
Gum arabic	5.9

Source: World Bank 2008a.

There are likely to be substantial positive impacts on competitiveness arising from increased productivity and removing marketing constraints. Figure 4-7 illustrates simulated effects of policy interventions on the exportability of major agricultural commodities to help understand how important these constraints are for different crops. For example the export to border price ratio increases to above unity for all crops (i.e., all these crops could be profitably exported) if a yield as high as 70 percent of research levels can be achieved on farms. It is sufficient to state here that yield increases to 70 percent of research levels in 2006 have been achieved commercially in the past and are feasible under field conditions in Sudan. Another scenario is a removal of all taxes and fees related to marketing. Again, competitiveness would improve for most of the cases, except for cotton and sorghum in Gezira.

FIGURE 4-7: Simulated Impacts of Yield Increases and Elimination of Marketing Taxes and Fees on Export Price/Border Price Ratio



Source: World Bank 2008a.

Cross-cutting Issues: Agricultural Credit, Land Use, and Research and Extension

Government policies regarding agricultural credit, land use, and research tend to undermine the competitiveness of agricultural exports.

- *Agricultural credit* for improving productivity favors those in the semi-mechanized farming areas (with extraordinarily large farms) as well as farms in irrigation schemes. At the same time credit systems discriminate against small-scale farmers in the traditional farming areas who have no collateral because land policies do not provide formal tenancy for the majority of farmers.
- *Land policy* fails to provide most farmers with long-term leases and hence a formal security of tenure. Customary law provide farmers with long-term user rights if they continue to cultivate the land, but in practice this has led to serious land degradation.
- *Agricultural research* in Sudan has for decades received much lower shares of public expenditures than in neighboring Arab countries.

Despite the relatively high contribution of the agriculture sector to total GDP in Sudan, access to credit in the sector is limited. By the turn of 1990, the Bank of Sudan declared a credit ceiling policy allocating the highest share reaching 40 percent of the total pledged credit to the three

sectors, namely agriculture, industry and services. However, the bank credit supply to the agricultural sector has been fluctuating during 1995–2006, and despite its recent increases during 2001–2005, its relative weight had been declining compared to total credit supplied to all the sectors (Table 4-5). One of the reasons suggested by the Bank of Sudan is the weak absorptive capacity of the agricultural sector for credit. Therefore, the CBoS began reforming the credit policy in favor of the sectors with the greater absorptive capacities (also see Chapter 5).

An effective agricultural investment program requires a land policy that transfers the wealth inherent in land from the state to the people on the basis of efficient long-term leasing—be it through statutory or customary law. In accordance with the 1972 Land Act, all land in Sudan, except for a relatively small area of freehold land in the Nile river valley, is government land and farmers/herders have usufruct rights to this land through traditional communal land policy. The extent and type of land use has been delegated to community leaders who are responsible for the allocation of land use rights. The land area involved is vast and, although the land use conventions vary considerably between states and within states, one aspect is consistent, namely the value of land cannot be used as collateral for loans because it remains the government's land. Hence land has no value as security for additional investment in that land—this is a severe constraint on investment and growth in the agricultural sector.

General lack of tradability of land in Sudan limits the functioning of market economy in the agriculture sector. Apart from the limited agricultural land area that is freehold, land cannot be

TABLE 4-5: Volume and Percentage of Credit to Agriculture Compared to Other Sectors (1995–2006, million Sudanese Dinars and percent)

Years	Agriculture (SD millions)	Total (SD millions)	Percentage (percent)
1995	3.6	14.5	24.7
1996	9.0	40.0	26.5
1997	12.5	41.6	30.1
1998	15.8	47.3	33.3
1999	14.8	48.7	30.4
2000	17.8	79.2	22.5
Average	12.3	44.2	27.9
2001	19.6	111.3	17.6
2002	22.8	160.0	14.3
2003	23.9	216.0	11.0
2004	46.1	429.1	10.7
2005	57.1	695.4	8.2
2006	78.6	1041.5	7.6
Average	41.4	442.2	11.6

Source: Central Bank of Sudan.

traded.[78] This means that one major factor of production is removed from the market which in a market economy is a major constraint to the flexibility of production. In principle, if there is a market for labor and capital there should be a market for land—even if it is only lease hold land. If the Government were to allow land to be held as a long term tradable lease hold this could result in a large capital injection into the rural economy which could be leveraged and used as security for loans to make investment on farms. These investments could be an enormous stimulus for growth.[79]

Agricultural research and extension in Sudan have become weaker. Achieving a more focused research effort requires a closer connection between the problems faced by farmers (particularly those in the rainfed traditional farming areas) and the work done by researchers. Second making good on the potential shown by research trials will require a large expansion of agricultural extension programs and access to relevant inputs. As indicated earlier, the productivity of Sudan's agriculture will be the major determinant of the sector's future export competitiveness, its ability to withstand exchange rate appreciation, and the source of improved incomes and welfare for rural households. Sudanese agricultural research (established in 1904), has achieved very high standards in the past but its capacity for sustained research has been weakened by serious funding reductions. Research is woefully underfunded in Sudan as demonstrated by the following comparison with Brazil, a similar large tropical country that has become a world leader in agricultural markets for several commodities (Table 4-6).

C. Policies, Investments and Actions[80]

In response to the agriculture sector's poor performance, the Government of National Unity has launched the Green Mobilization Program (GMP) with a proposed budget of SDG10.1 billion for 2008 to 2011. The GMP has been defined more precisely in the Agricultural Revival Program (2008–2012). This strategic initiative is aimed at diversification of production and markets leading to increased growth of the agricultural sector with the ultimate goal of poverty reduction.

The main elements of the ARP initiatives are listed in Box 4-5. ARP's targets are reflected in eight key success-indicators, namely: (a) the creation of an appropriate atmosphere for sustainable development of agricultural production; (b) capacity building of producers and institutions; (c) reforming agricultural land-tenure system; (d) developing support services and modernizing agricultural systems; (e) protecting and developing natural resources; (f) achieving agricultural industrialization; (g) implementing quality control and safety measures; and (h) establishing international strategic partnerships. These are important

[78] In contrast, the land policy in the Gezira Irrigation Scheme under the new Gezira Act provides for the tradability of leases, which then allows land to be used as collateral for investments. While the details of land tradability still need to be worked out, farmers are already able to obtain credit more readily for their farm operations than before the approval of the new Gezira Act in the expectation that land will ultimately be available as collateral for loans.

[79] As part of the CPA, land commissions have been established but have not come to conclusions on future land policy for Sudan.

[80] The section draws on the CEM background paper: "*Assessment of the Agricultural Revitalization Strategy*" by Shawki Barghouti and Ali Salih, with financial support from the African Development Bank.

TABLE 4-6: Comparison of Agricultural R&D spending in Sudan and Brazil

	Sudan	Brazil	Ratio Sudan to Brazil
Agricultural research spending as percent of agriculture GDP	0.17	1.73	0.10
Expenditure per scientist (PPP in 2000 $)	10	110	0.09

Source: Agriculture Science and Technology Indicators (*www.asti.cgiar.org*). Data are reported for the most recent year available.

qualitative targets, but they do not measure results precisely. While the ARP emphasizes strengthening the prospects for greater commercialization of the traditional farming sub-sector, it also envisages substantial private and public investments to stimulate growth in the irrigation and semi-mechanized farming areas. The ARP is overseen by a Higher Council under the chairmanship of the Second Vice President of the Republic. While the overall objectives of the ARP and its emphasis on achieving commercial enterprises in the traditional farming areas are laudable, it is not clear to what extent the line ministries in Northern Sudan responsible for agriculture, forests, livestock and fisheries have administrative jurisdiction over policies that would make the objectives achievable. For example land policy would need to change.

In Southern Sudan the government has chosen to focus on stimulating growth in the small-scale farming sector. Clearly the physical circumstances and technologies are different. There are, however, three important differences between the South and the North: (a) the isolation of farmers in some parts of Southern Sudan, where infrastructure is very poor, is even more severe than in the North; (b) the stock of technologies for improving productivity in the South is not nearly as well developed as in the North; and (c) the number of trained personnel in line ministries or in the private sector are not as many in Southern Sudan as in Northern Sudan. The South therefore faces considerable challenges although for technology development there is potential support from neighboring countries with similar agro-climatic conditions.

Strategy for Competitiveness and Poverty Reduction

In the short term, there are four initiatives that could be taken by the GoNU in the irrigated and semi-mechanized farming areas in collaboration with the private sector, as well as actions for the livestock and gum arabic sub-sectors, which could lead to higher growth. In the medium to longer term there is a comprehensive strategy for the traditional farming sub-sector. There is a need to have a package of time-bound actions with designated funding and accountabilities for each of these four initiatives with reporting functions to the executive heads of the relevant ministries in the GoNU and the GoSS. The ARP programs would contribute to each of these initiatives and the agricultural commodity development councils could regularly review and provide advice on these initiatives.

Short Term Actions for Northern Sudan

Increase Efficiency of Irrigation Schemes.

The basis for achieving this objective is already being implemented in the Gezira Scheme reform program, and the ARP has indicated that this could be a model for similar reforms elsewhere aimed at making major improvements in the efficiency of irrigation systems. The pace of reform, however, has stalled in the Gezira because the primary canals are not being rehabilitated and the water users associations are not being mobilized and trained. These and other bottlenecks need to be removed. There already exist fairly good infrastructure and services, so the major elements to hasten and deepen reforms of all irrigation schemes, and revamp research, extension and rural finance to accelerate technology uptake are present. Box 4-1 examined the issues facing the reform program in the Gezira Scheme.

Improve Productivity of Rain-fed Semi-Mechanized Farming.

A recent study (financed by the Multi-Donor Trust Fund – National)[81] has shown that simple adaptations to the current destructive farming methods

[81] Barghouti and Salih 2009.

BOX 4-5: Main Programs in the Agricultural Revitalization Program (ARP)

The following is a summary of the programs proposed for the ARP

- To define the macroeconomic and sector policies, and relevant infrastructures, laws and regulations to create an appropriate conducive atmosphere for implementation.
- To build and strengthen the institutional capacity of producers raising their productive efficiency through use of modern technologies and development of managerial skills.
- To reform the complicated and sensitive issue of land tenure (land registration and equity of distribution).
- To develop and strengthen supporting sectors (research, technology transfer, agricultural education, supply of inputs, reforming market structures and services, collecting and dissemination of statistics and information).
- To upgrade the agricultural systems (the irrigated, mechanized and traditional rainfed, livestock and fisheries, and agro-based industries, and protection against pests and diseases).
- To rehabilitate and conserve natural resources (desertification, gum-Arabic belt, reserves and wild life).
- To encourage community based organizations to take more positive and active role in implementation of the ARP.
- To establish the agricultural commodity development councils (plants and animals) to integrate different commodity production and marketing activities (research, training, production, marketing, manufacturing, consumption and export).
- To realize self-sufficiency in basic staple food commodities, especially wheat being the major challenge for the ARP.

can pay handsome dividends in terms of incomes and the sustainability of sorghum and sesame production, along with integration of livestock in the farming systems in appropriate geographical areas. Specifically, the study proposed a two-phase strategy for the rehabilitation of the semi-mechanized farming areas:

- The first is to focus on an initial revival of the semi-mechanized farming areas through technical packages aimed at better soil moisture management. This strategy (referred to as the "tillage" approach) would be based on an improved timeliness of cultural practices such as plowing, fallowing, crop rotations and seeding. This strategy would result in higher yields and could be implemented using currently available machinery on farms.
- The second phase of the strategy (referred to as the "zero-tillage" approach) would be aimed at achieving a more sustainable impact with a more modern technology based on zero or minimal cultivation, fertilizers, weedicides in some cases, and more advanced rotations that would include fodder crops for livestock in areas suitable for livestock production. This technology is well known to be successful in similar physical environments in countries such as Australia and South Africa and would result in much higher yields.

Cultivation in the semi-mechanized farming areas should be planned in areas that have reasonable agricultural potential including rainfall above 700 mm and manageable soils. The focus should be on getting the existing large semi-mechanized farms on a more productive and sustainable footing but there should also be attention given to providing assistance to the small scale producers who have large enough holdings to make the improved technology profitable. The areas involved in these improvements could be substantial (between 10 and 15 million feddan) with considerable improvements in growth over the short and longer term. Growth in both the irrigated and semi-mechanized farming areas will have a major impact on employment and poverty reduction in rural areas. These are some of the issues but changes in the semi-mechanized farming system could start with a policy decision by GoNU that substantial

changes are urgently needed. Once the policy decision has been made a high level group could be appointed by the Ministry of Agriculture and Forestry, in collaboration with other appropriate arms of government, with the authority to design a process for achieving change with a wide range of stakeholders.

Improve Efficiency of Production and Livestock Marketing.

In order to improve livestock marketing the government could consider the following measures:

- Regulate stocking rates in Sudan's most vulnerable grazing environments such as North Darfur and North Kordofan with the aim of regenerating the pasture and other forage vegetation.
- Consider introducing a land policy that transfers the responsibility for the sustained management of Sudan's rangelands from communities to individuals or small groups of individuals.
- Improve the quality of stock routes and a few strategic highways and rail tracks to facilitate efficient transport of livestock over long distances.
- Rehabilitate unloading and loading infrastructure for road transport associated with the movement of livestock.
- Regulate (with enforcement) the handling and transport of livestock to improve animal welfare, reduce deaths and weight loss, and hence improve marketing efficiency.
- Improve livestock traders' access to credit facilities to all commercial banks in Sudan by preparing (with government guarantees) model credit contracts for various types of livestock trading.
- Introduce auctions in livestock markets in Omdurman along with making commercial banking facilities available in the market—an action for the public authorities in Khartoum state.
- Improve the quality of livestock handling facilities at veterinary inspection and vaccination points to reduce weight loss for animals awaiting inspection.
- Increase the areas in Sudan which can be declared disease free and consider financing an expanded program for achieving this with a small targeted levy on livestock marketing at export locations—in return for a more streamlined export inspection system in Port Sudan and Sawakin.

Increase gum arabic production and promote its trade.

If the recent decision by the government in May 2009 to withdraw the concession for raw exports of gum arabic from the Gum Arabic Company is implemented, then there are prospects for Sudan to regain its historical role in the international market for gum arabic. It should also provide a boost for gum arabic producers who should see some improvement in prices and hence production incentives. To improve incentives for producers it is suggested that there should be programs to provide producers with support services to cultivate and market gum arabic at a high standard, and to improve the public export inspection of all forms of gum arabic.

In Southern Sudan a similar short-term strategy will be more difficult to achieve because, as already indicated, isolation, available technology and human capital are major constraints to the short term development of agriculture. On the other hand, with judicious planning and some financial resources some of these constraints can be overcome. One issue for the GoSS is that the natural resources and the agricultural sector are far more varied in Northern Sudan. There is therefore substantial potential for the production of many temperate and tropical products for markets in Northern Sudan. These opportunities need to be investigated and it may be useful to have a full scale review of not only the constraints for increas-

ing growth of food crops and fisheries but also to explore the long term prospects for crops such as coffee, fruit, and lumber. This discussion now turns to the medium to longer term.

Medium- to Long-Term Actions

Structural Transformation in the Traditional Farming Areas

In the medium to longer term it will be vital to focus on a third priority, namely to achieve the structural transformation of the traditional farming sub-sector to achieve growth and poverty reduction. Activities should focus on improved livestock management and marketing, better incentives for gum arabic production, increased resilience to crop failure through improved crop varieties, sustainable soil and water management, water harvesting, and other low risk technologies. Major bottlenecks in the way of achieving this objective are current land policy, more appropriate technology, support services to farmers, and infrastructure such as more efficient marketing facilities and roads. All these issues will need to be addressed to improve the competitiveness and incomes of the traditional farming sub-sector.

Establishing economically viable units which would provide an adequate annual income to sustain a farm household in the traditional rain-fed farming areas in Northern and Southern Sudan compared with the predominantly subsistence farms would allow the establishment of sustainable mixed crop and livestock producing farm units. This structural reform leading to sustained mixed, commercial farming in the traditional farming system as proposed in the ARP and the GoSS policy will only be possible if land policy reform makes it feasible for farmers/herders to have long-term tradable leases of specific areas which they can call their "farm." Farmers should also be allowed to sell all or part of their farm if they wish to do so or buy other farms to increase the scale of their enterprises. Such sales would lead to more structural change converting the traditional rainfed farming areas to a mixed farming and rangeland system. Experiences gained from similar efforts in Ghana, Brazil, and India confirm that successful commercialization of agriculture requires active participation of small farmers.

Structural change in the traditional farming system would improve its efficiency and enhance the likelihood of diversification of production, improved productivity, and poverty reduction. The main constraint to the short and longer-term perspectives on the development of the traditional rainfed farming sector is current land policy.

Land Policy in Northern Sudan

Current customary land policy leaves the allocation of land use rights to customary law but this fails to provide farmers with legal security for land use. Customary law does, however, provide farmers with long-term user rights if they continue to cultivate the land but, unfortunately, in most regions in Sudan pressure to justify usufruct rights through continued cultivation has resulted in serious land degradation because farmers of herders have no vested interest in sustaining the value of the land they use. Until there is a land policy that transfers the wealth inherent in land from the state (the government) to the people on the basis of long-term tradable leases, be it through statutory or customary law, incentives to invest in agricultural and pastoral land will remain negligible. The consequences of low investment in arable land and rangelands are low productivity and hence high costs for domestic consumers and low competitiveness for agricultural exports and inevitably slow growth of the economy.

Under current customary land policy there is no legal way for farmers to increase or reduce the scale of their operations by buying or selling their rights to land because there are no tradable land rights and hence no formal land market. The structural transformation of these production systems into economically viable and sustainable farming enterprises will not take place until there

is a land policy that provides for tradable long term leases in a competitive market. Until land policy is changed it will remain a bottleneck to the adoption of improved technology and structural transformation and growth in the agricultural sector. With the new Gezira Act land policy provided irrigation farmers tradable and transferable long term leases which has stimulated the entry of commercial banking providing farmers with credit based on the collateral value of their long term leases.

Constraints and Strategies

The current land policy established under the Land Act of 1972 stipulates that all land in Sudan (with some largely historical freehold land in the Nile Basin) is government land. Decisions on the use of this land have generally been delegated to community leaders who provide farmers with usufruct rights. There are also large areas of rangelands to which communities have uncontrolled access for grazing. It is acknowledged that crafting changes in land policies will be difficult because the history of intense conflict over land cannot be overlooked. Nevertheless, it is extremely urgent that the Land Commissions (established under the CPA) explore possibilities such as long term tradable and transferable government leases for agricultural and pastoral areas. Unless some such option can be found it is unlikely that structural transformation and commercialization in the traditional farming system will occur. If this does not occur, the government's revitalization policy for the agricultural sector will be unsuccessful and farmers in the traditional rainfed farming areas will remain locked into chronic poverty without the option of selling their small subsistence farms or purchasing additional land to increase their farm size.

Land Policy in Southern Sudan

The Interim Constitution of Southern Sudan (ICSS) pays significant attention to Land and Natural Resources in Southern Sudan.[82] This focus is appropriate since land, more than any other commodity, is of paramount significance to the largely rural communities of Southern Sudan. The ICSS gives the government the power to regulate land tenure, rights and use of land, to the appropriate level of government but recognizes that customary land rights shall be recognized and all land traditionally and historically held or used by local communities shall be protected by law; customary seasonal rights of access to land shall be protected; the development of subterranean natural resources is permitted only after consultation with the communities enjoying rights in that land and only after assuring them a share in the resultant benefits and persons enjoying rights in land are assured equitable compensation in the event of acquisition of land in the public interest.

The Land Commission has accordingly been constituted and is functional and the Land Act has been approved in 2009. However, effective land policies have yet to be framed and applied. From the perspective of investment and growth there are three key issues in land policy: (i) ownership and tenure; (ii) land records and registration; and (iii) effective property rights. Most of the land in Southern Sudan is owned by communities. Members of the community enjoy traditional rights in land and can even transfer these rights without any problems, although in some communities transfer rights do not exist. However, customary law governs such transactions and no easily verifiable record is maintained. Private investors therefore find it difficult to verify ownership. For the same reason, land cannot be mortgaged, which inhibits the capacity of the private investors to leverage their assets. Some land in cities has been plotted by the government and leased to investors. These urban areas are relatively more secure in terms of land title and land records and

[82] Government of Southern Sudan 2005, Chapter II.

registration of transfers are more easily established. However the supply of such plotted land is limited against the rapid increase in the urban population estimated at around 25 percent of the total population in 2008.

Attempts by the government to get additional land from communities for plotting and sale to investors are generally not popular with communities who perceive a threat of a potential change in the cultural ethos with the settlement of strangers and also because of the perceived lack of any direct benefits for the community.[83] In Yei the efforts of the County to raise additional revenue by plotting and selling land is not supported by the local communities though in Unity state the government has succeeded in plotting and selling land along with affordable housing.

Tensions within and between communities contribute to low public investment in land. The dispute between the government of Central Equatoria and the GoSS with respect to ownership of the assets of the Coordinating Council of Southern Sudan is still not resolved and the right of the GoSS to appropriate these real estate assets is contested by the state of Central Equatoria. In Juba, despite the huge shortfall in housing, there has not been significant investment in the formal real estate sector because land ownership is unclear; the process of accessing community land is uncertain and ownership or lease hold rights remain uncertified and based on mutual trust and informal agreement. With the approval of the Land Act in 2009 and the operationalization of the Land Commission it is expected that a comprehensive land policy will soon be in place.

Competitiveness of Agricultural Exports

In the past, the government has intervened in agricultural markets through a variety of instruments that altered incentives to producers relative to border prices. These included distorted exchange rates, export taxation, tariff policies, incentive payments, and monopolies. These interventions were, to a large extent, removed in 1992. Nevertheless, some exports such as gum arabic have been consistently taxed (explicitly and implicitly) and the "behind the border" costs in livestock marketing have been substantial resulting in considerable problems for exporters. Incentives for imports (wheat and sugar) have varied from negative to strongly positive, but higher international food prices since 2004 have undoubtedly reduced the protection of imports to near zero.

Despite the reduction in explicit and implicit taxation of exports, standard measures of comparative advantage for recent years indicate a substantial weakening of Sudan's export competitiveness for agricultural exports. At the current low yields achieved only irrigated Barakat cotton, irrigated groundnuts and rainfed sorghum are marginally competitive in international markets.

More generally the **reasons for this lack of competitiveness** are appreciation of the exchange rate of about 20 percent over two years to February 2007, high internal costs of transport and handling products moving to points of export, the imposition of high charges and taxes in the marketing chain for which no services are provided, and chronic low productivity in agricultural and pastoral production have resulted in increased border prices for agricultural exports at Port Sudan. In addition, inadequate attention to the quality of agricultural exports such as cotton and sesame has reduced prices paid by the international market.

The core constraint to improved competitiveness is low and declining productivity although the causes for cost increases also need to be addressed. As a result traders of agricultural commodities now face serious difficulties finding sustained export markets for many of Sudan's core export commodities such as sesame, groundnuts, cotton and livestock. Both the availability of

[83] Okuk 2008.

improved technology, as well as access to markets to provide incentives to use the technology, are necessary to make progress on any of the priority strategies outlined above.

Improved Technology and Extension

Sudan's agricultural sector is much less productive than either its potential as defined by research and field trials in Sudan, or the productivity of agriculture in neighboring countries with similar physical conditions of production.

The weak support and low rewards for agricultural research have forced agricultural research professionals to work for private industry and international development agencies but seldom on issues of direct interest to producers such as production technology, which is the public good that an efficient national research organization should deliver. Agricultural research in Sudan to increase productivity has for decades received much lower shares of public expenditures than in neighboring Arab countries—apparently on the basis that the private sector should finance agricultural research. A specific comparison with research expenditures for Brazil was also provided in an earlier section of this chapter.

The extension service in Sudan is seriously underdeveloped except in irrigation schemes. The role of the private sector in seed production, modern irrigation technology and the provision of fertilizers and farm inputs can compensate for the limited public financing resources currently available. Government should enhance its role in ensuring safety and environmental sustainability of such partnership. Close attention is needed to ensure that modern technology is tested, adapted and carefully monitored in Sudan and then made available to producers.

The major constraint to an intensification of crop and livestock research by the public sector is the allocation of increased budget funds and the fostering of public-private research partnerships. It is time to revitalize agricultural research, bring its work closer to the challenges faced by farmers, and improve extension as important public goods while at the same time exploring contributions from the private sector according to the distribution of benefits from research and extension.

Rural Finance

Agricultural credit should be used as a tool to assist farmers interested in adopting modern technology and associated cropping systems based on high value crops (again, there are good lessons from India and Egypt). Large scale financing for big projects requires careful division of responsibilities between private investment and the financial contribution of public funds. The government should clarify priority areas where public funds could be allocated for modernization of production and can provide stimulus for private lending to farmers who are willing to modernize their operations. These issues should be addressed in all the schemes that have been proposed for modernization with a timetable for spending by the government and for rural lending to farmers by local banks.

Access to credit is an important issue for small-scale farmers who could become partners with large schemes as out-growers in the production of export commodities. These farmers require advances for seeds, labor, and agronomic inputs. The relationship between corporate investors and out growers should be clarified as part of the government drive to invite FDI in the sector.

Agricultural credit for improving productivity currently favors those in the semi-mechanized farming areas (where farmers have large farms and medium-term leases) as well as farms in government irrigation schemes where (except for the soon to be reformed Gezira Scheme) farm inputs have been subsidized through special credit arrangements. This suggests a strategy for credit to enterprises in the traditional farming areas to redress the apparent imbalance. This would also entail a change to land policy, as the current system does not recognize even formal government tenancy.

The main constraint to a successful resolution of a *sustainable* credit system is a land policy that provides farmers and pastoralists with the equivalent of long-term tradable leases which can be used as collateral to stimulate commercialization of the traditional rainfed farming system. A strategy towards a changed land policy and improved credit institutions are likely to result in a greater participation of the private sector in the financing of the agricultural sector.

Lack of Diversification of Markets for Agricultural Exports

Agricultural exports from Northern Sudan are diverse, but Sudan's export markets are not diversified. With the exception of gum arabic, which is sold in Europe, Japan, India and other South Asian countries, as well as the U.S., most of Sudan's three other major agricultural exports are sold to Egypt (cotton), Saudi Arabia and to a small extent Uganda and Kenya (livestock and meat), or predominantly Gulf countries plus a range of other countries including China, Mexico, Turkey and a range of European countries (sesame).

The main reason for this regional focus on trade is that Northern Sudanese traders established, and then maintained, traditional relationships within the Gulf region and Egypt. Another important factor cementing the regional relationships has been the common language and banking systems that facilitate negotiation, transactions and the resolution of disputes. In recent years U.S. trade sanctions have reinforced a preference for regional trade that is independent of American banks or their affiliates. Another change over the last five years has been an increased trade with China in agricultural products such as sorghum and sesame.

In Southern Sudan, partly because of decades of conflict and lack of infrastructure, trade has been localized—focused predominantly on Uganda and Kenya—occurring when security conditions allow.

The dependence of Sudan on an undiversified market for its agricultural exports is a constraint because it limits marketing opportunities and raises the risks if trading conditions in the Gulf region were to deteriorate. A major effort is therefore needed to increase trade promotion of Sudan's products in other regions. A related task is to improve the quality of export inspections.

Government Partnerships with the Private Sector

Investment in irrigation

To achieve this partnership, **government should assist in modernizing the irrigation systems and technology at the scheme and farm level.** Much of the technology of modern irrigation systems is in the domain of the private sector. Egypt and India, for example, have successful lessons in modernizing their irrigation system in partnership with the private sector (mostly in the form of WUAs). A key to their success has been an efficient division of responsibilities between of the private and the public sector.

Marketing, supply chains and producers' organizations.

The government would benefit from working closely with the private sector to assist farmers to improve their access to both domestic and foreign markets. Demand for agricultural commodities is increasing in the domestic market, which could allow for reliable outlets when external demand declines. Foreign investors should be encouraged to allocate investment to support value added activities to ensure added benefits to the local economy. This issue is significant when dealing with cotton to be converted into textiles, oil seeds to be converted into oil processing, or animal feed to be used for more efficient livestock production. The agricultural sector should increase its

attention to production quality and standards so as to meet universally accepted regulations. An important role for the government is to support is the building of marketing infrastructure to assist small-scale farmers to transport commodities to markets within Sudan and for export.[84] Also needed are cooperative or government/private partnerships to establish cold storage for export of perishable agricultural products for which there is a potential market in the Gulf region.

Sustainable Natural Resource Management

As has been indicated earlier, Sudan is well endowed in natural resources especially land and water. They have been the basis for all agricultural development and growth, but these resources are limited and under severe threat. For example, water availability under rainfed conditions is extremely variable, causing high risk of crop failure. Early studies in Sudan of the impact of rainfall variability indicate that crop failure is about 30 percent (a crop failure once every three years), based on historical rainfall data throughout Sudan over more than five decades.[85]

In the semi-mechanized farming areas large tracts of forest and rangeland were destroyed by the encroachment and expansion of this type of farming. Most soil resources have been degraded through indiscriminate, short-sighted farming practices resulting in the exhaustion of soil nutrients or compaction which severely limits the ability of these naturally fertile soils to absorb moisture and respond to rainfall.[86]

Farmers in the semi-mechanized farming areas have had medium term leases (typically 10 to 20 years) with land use covenants but, as mentioned already, they have engaged in continuous mono cropping with detrimental effects on soil structure and productivity because these covenants have almost never been enforced. In the traditional rainfed farming system there is weak or ineffective enforcement of regulations on stocking rates, tree removal for charcoal production and cultivation unless part of a long-term rotation. The chronic land degradation resulting from these practices has been another cause for low and declining productivity and often desertification. It is extremely urgent that the government stops the destructive use of Sudan's natural resources as a cheap, but unsustainable source of growth. As mentioned earlier, a policy decision by the GoNU that urgent measures are needed to reverse the degradation of the semi-mechanized farming areas could be followed by the establishment of a Commission or similar body to formulate a process for collaborative action by all stakeholders.

The current absence of regulations is a major constraint to the enforcement of the Environment Protection Act of 2001. As emphasized already above, it is crucial for the government to establish regulations and strategies to manage sustainable management of Sudan's natural resources.

[84] A National Transport Master Plan is currently being prepared with financing from the MDTF-National. The results of this study should be available soon and should assist to establish transport investment priorities.
[85] World Bank 1987.
[86] Ministry of Agriculture and Farming 2009, page ii.

Chapter 5

MAKING SERVICES COMPETITIVE: THE CATALYST OF NON-OIL GROWTH[87]

A. Introduction

In any economy, services provide critical inputs to productive activities such as agriculture and manufacturing by facilitating allocation of necessary resources to such activities. Earlier chapters have highlighted the significance of services in promoting non-oil growth, particularly in the agriculture sector. This chapter will assess the performance of the financial sector and infrastructure services as catalysts for broad-based shared growth beyond the oil sector. The Diagnostic Trade Integration Study for Sudan (World Bank 2008a) presented a convincing case of weak domestic financial sector and infrastructure services in Sudan being the behind-the-border constraints for the country to promote trade. Quality of basic infrastructure is essential in facilitating trade, promoting domestic investment and attracting foreign investors.[88]

This chapter assesses both access and efficiency conditions of financial and infrastructure services in Sudan. Sudan faces significant challenges on both fronts. As a post-conflict country, Sudan is in dire need to improve access to basic services in many areas of the country. Ensuring access to a minimal level of infrastructure services and connectivity is essential to support basic livelihoods of the population in the post-conflict environment. Accessibility to services is relatively fair in the North, particularly in the economic centers of Khartoum and Gezira areas. Areas outside of these economic centers, particularly the South and Darfur, as well as rural areas in general, lag substantially and this is where there is an urgent need for improvements. On the other hand, inefficiency of services is relevant nationwide.

While services facilitate growth in other real sectors, the growth patterns of the latter also influence the development of the former. The recent growth of oil production and export has led to improvements in infrastructure in certain geographical areas including oil sector related facilities, pipelines, and port facilities at specialized terminals that allow the increasing crude oil production to be exported. The oil-led economic growth has increased the volume of transportation between Khartoum, where economic activity is concentrated, and Port Sudan, the gateway of Sudan's exports and imports. A new road segment was completed in 2007, which shortened the travel distance between the two cities considerably.[89]

Finance, transport, and other infrastructure services considered in this chapter have a catalytic role in such agglomeration economies. A challenge is how benefits from agglomeration can spill over to other areas and sectors at the same time. Without such spillovers, agglomeration forces could lock in wealth in certain areas or sectors and leave others trapped in a low-end equilibrium. Sufficient connectivity in services, in particular for lagging areas, and efficiency of systems as a whole are crucial for

[87] This chapter has been prepared by Yutaka Yoshino, with input from Alwaleed Alatabani and Maisoun Badawi.

[88] This chapter focuses on financial and infrastructure services that provide inputs to productive sectors, given their relevance to a broad range of economic activities and the supply side constraints they currently pose. There are also stand-alone services that can contribute directly to economic growth and have significant potential for export (e.g., tourism). Development of such potentials should be pursued in the context of longer-term enhancement to the competitiveness and efficiency of the sector.

[89] There are plans to upgrade the rail service between the two cities by installing a standard gauge to improve operational efficiency in the rail service.

such spillover effects to take place and provide the basis for broad-based growth in Sudan.

B. Finance

Sudan has a dual banking system with an Islamic banking system in the North and a conventional banking system in the South. Following the signing of the CPA, it was agreed that there would be a dual banking system in Sudan during the interim period (2005–2011), with an Islamic banking system in Northern Sudan and a conventional banking system in Southern Sudan.

The financial sector in Sudan is largely dominated by the banking sector, which at the beginning of 2009 comprised 31 banks registered nationally and three licensed by the Bank of Southern Sudan (BoSS). While both deposits and bank investments have been growing rapidly, the sector is recovering from the collapse in savings and financing during the 1990s but continues to experience problems with performance. Nonbank financial institutions and markets are relatively small, but have the potential to develop and contribute to the mobilization of savings for longer term financing, the allocation of investments, and economic opportunities available to the poorer sections of society.

Since the 2005 Financial Sector Assessment Program, the Central Bank has made considerable progress in recent years on several fronts. In 2005, the IMF and World Bank conducted a Financial Sector Assessment Program (FSAP). Following the outcome of the FSAP, the Central Bank embarked on several reform measures designed to improve the stability and performance of the banking sector. Significant progress has been made in banking regulation and supervision in recent years. These measures included enhanced supervision, consolidation in the banking sector, mergers/acquisitions in the banking sector and opening up the sector for foreign banks. Regulatory oversight improvements include increasing the reserve requirement, the capital adequacy requirements, and the minimum capital requirement but compliance with the new prudential regulations requires stronger enforcement.

Notwithstanding recent progress, the size and depth of Sudan's financial sector remain lower than most comparator developing countries. As shown in Figure 5-1, M2 to GDP stood at around 18 percent in 2008, well below the regional average of 38 percent. Likewise, intermediation is weak; only 11 percent of domestic credit as a percentage of GDP is directed at the private sector, compared to 40 percent for low-income countries.

Access to Service

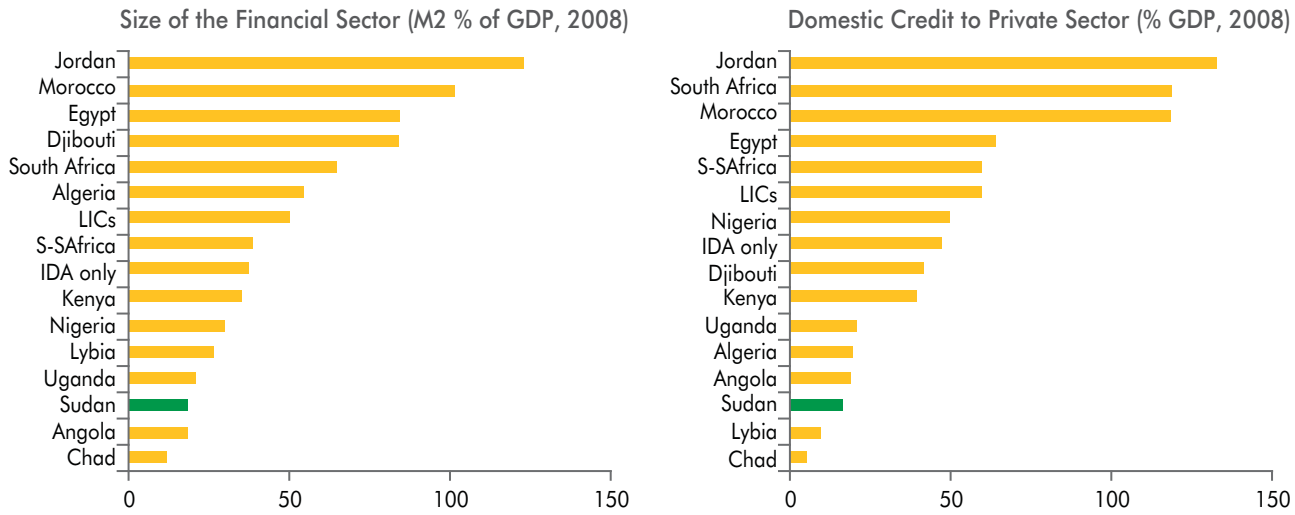
Access to finance remains one of the major constraints faced by businesses throughout Sudan. Sudan ranks 131st out of the 181 countries in the *Doing Business 2009* report in the ease of obtaining credit. Data from the World Bank Productivity and Investment Climate Survey (PICS) in 2008 indicates that 47 percent of firms surveyed considered access to finance a major obstacle to doing business while 52 percent considered the cost of finance as a major obstacle for doing business (Figure 5-2). Access to credit markets is also limited—only 15 percent of Sudanese firms have loans from formal financial institutions. This represents one of the lowest rates of financial intermediation in the developing world.

Banking infrastructure is also relatively weak and may curtail access to financial services. The geographic distribution of bank branches (0.21 per 1000 sq km) is lower than neighbors, in spite of Sudan being the largest country in Africa. This may however partly be explained by the fact that a significant proportion of Sudan's land mass is not inhabited. Nevertheless, access to financial services in Sudan is on the most part limited to the larger cities.

Southern Sudan

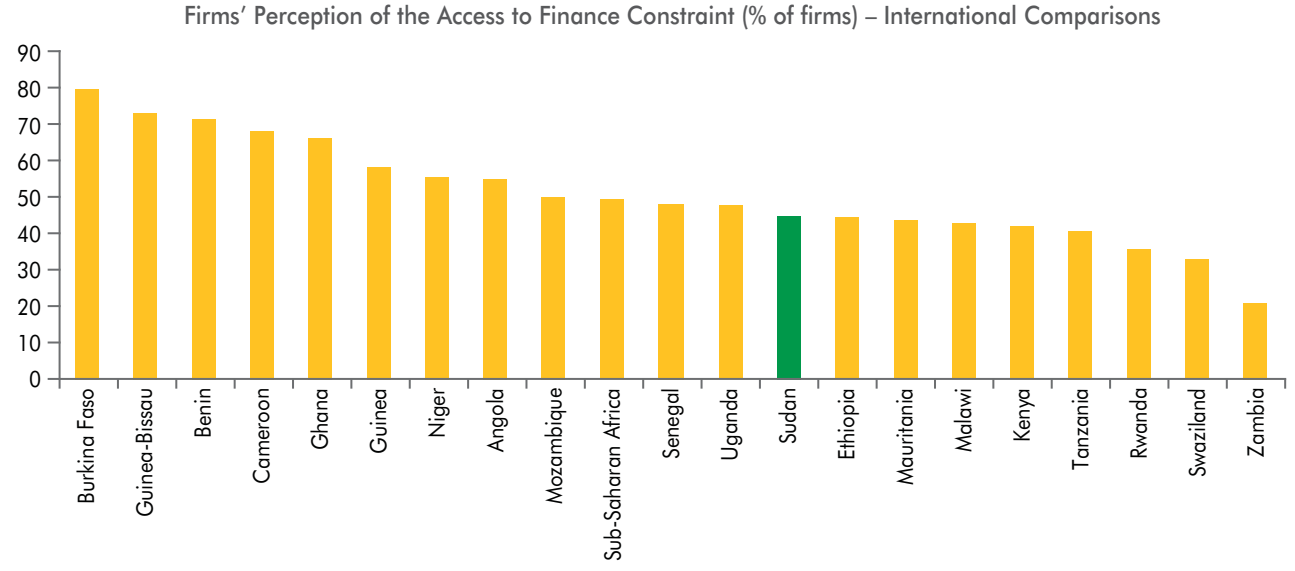
Southern Sudan, where only conventional banking is in operation, remains heavily underbanked. In February 2008, Islamic banks left the

FIGURE 5-1: Size and Depth of Financial Sector in Sudan



Source: World Bank World Development Indicators.

FIGURE 5-2: Firms' Perception of the Access to Finance Constraint (percent of firms)



Source: Sudan PICS 2008, and Enterprise Surveys (others).

South since BoSS enforced conventional banking in Southern Sudan as the only form of banking. The removal of Islamic banks has contributed to the huge gap between supply and demand for finance in Southern Sudan.[90] Despite the increased number of financial institutions, competition is still limited, margins are correspondingly high and services are mainly concentrated in the urban hubs.

[90] There are currently five commercial banks operating in Southern Sudan including one foreign subsidiary from Kenya. Since end-2008, several banks from neighboring countries, Ethiopia, Kenya, and Tanzania, have been issued licenses to operate in Southern Sudan.

Access to finance remains a major constraint for businesses and individuals in Southern Sudan. Most lending is short-term (3–6 months maturity) with high interest rates (15–18 percent). The commercial banks' lending portfolio is small, covering only a small percentage of the estimated market.[91] Bank loans mostly finance working capital for large firms in the commerce, trade, and service sectors (60 percent), which have significant short term cash flows and turnover that banks use to determine creditworthiness, and are the sectors of government procurement and guarantees. There is a significant amount of individual loans (30 percent) that covers both the finance of vehicles as well as home improvement financing. Only 10 percent of loans cover the SME sector and all lending is concentrated in the main urban hub (Juba).

Rural Finance

Despite the relatively high contribution of the agriculture sector to GDP in Sudan, access to credit in the sector is limited. The ratio of formal agricultural credit to GDP in Sudan is very low compared with other countries (Table 5-1). Financing for the agricultural sector increased from SDG 16.5 billion in 1999 to SDG 78.6 billion in 2006, however, the share of financing to the agricultural sector as a percentage of the total banking credit has decreased from 22.4 percent to 7.4 percent (Table 5-2).[92]

TABLE 5-1: Ratio of Agricultural Credit to GDP in 2005

Country	Credit as percent of GDP
Oman	0.3
Sudan	0.3
Jordan	2.5
Tunisia	2.5
Pakistan	4.3
Egypt	4.7
Morocco	4.7
Syria	8.0
India	8.4
Bangladesh	14.1
Thailand	15.0
Philippines	17.0
Republic of Korea	24.0

Source: FAO 2006.

[91] Seven percent of the approx. 6000 registered firms and less than 1 percent of GoSS's revenue.

[92] The main sources of agricultural credit in Sudan include the Ministry of Finance and National Economy, the Agricultural Bank of Sudan (ABS) and a consortium of commercial banks. Other sources include the Sudan Cotton Company (SCC), and the Sudan Gezira Board.

TABLE 5-2: Flow of Banking Finance by Sector (million SDG)

Sector	1999	2000	2001	2002	2003	2004	2005	2006
Agriculture	16,541	18,284	22,745	32,730	45,021	46,092	57,111	78,609
percent of Total	22.4	18.0	15.5	15.8	16.0	10.7	8.2	7.4
Industry	14,330	17,986	22,986	28,001	29,914	47,727	83,049	84,852
Export	14,453	24,591	20,550	34,308	34,033	45,734	33,949	35,130
Social Development	5,563	7,266	9,655	9,143	12,293	19,643	24,739	33,431
Domestic Trade	7,009	11,656	31,386	40,562	65,100	104,087	149,361	182,108
Others	15,825	21,541	39,060	62,038	95,565	165,788	347,159	627,399
Total	73,720	101,325	146,382	206,781	281,926	429,070	695,368	1,041,529

Source: Central Bank of Sudan.

The overall shortage of credit for agriculture has limited the amount of finance available to small-scale producers throughout the country. The sub-sector obtained roughly 3 percent of all formal agricultural credit in 2001 and received few other support services such as research and extension.[93] This has undoubtedly contributed to the lower yields in rain-fed rural areas in Sudan.

Traditional farmers are risky clients for banks due to high transactions costs, high information costs, lack of collateral, low yields, remote locations, and inadequate infrastructure. Providing financial services to rural households and agribusiness in poor and marginal rural areas remains a challenge throughout the country. The lack of transport and telecommunication infrastructure lowers the returns to rural farmers and restricts their ability to service and repay loans. Infrastructure constraints increase the costs of providing financial services and banks compensate by imposing higher service rates.

Despite the long history of agriculture and rural finance initiatives in Sudan, reforms have not resulted in sustainable access to rural finance because of a lack of a comprehensive approach. Increasing the volume of finance allocated to the agricultural sector from national and foreign sources for the implementation of the rural sector is one of the priorities of the Agriculture Revival Strategy. However a rural finance strategy for Sudan will require more than additional financial resources and should be based on a comprehensive approach including the identification of the financial needs of rural communities, linkages between mainstream and specialized financial institutions and training of rural consumers of financial services to increase awareness and consumer protection. Increasingly, microfinance is considered as a panacea for rural finance.

Microfinance

Increasingly, microfinance is considered as a panacea for rural finance but demand for small-scale financial services in Sudan far outweighs the supply in both the North and the South. A recent market research survey on microfinance demand among micro entrepreneurs in Khartoum State revealed that the number of potential clients in urban areas of Khartoum State is estimated at 1.5 million (21 percent of total state population) and the estimated potential market size for micro-lending services amounts to $1.5 billion in Khartoum State alone.[94] The market penetration of formal microfinance lenders is still low at only 8 percent of the total demand.[95] In the South, only one bank provides microfinance credit, while there are several specialized MFIs that have been operating since 2000, in addition to a number of small cooperatives/ rotating savings and credit associations (ROSCA's). The MFIs in Southern Sudan estimate that they cover only 5 percent of the available clients in the greater Juba region, and less than 1 percent of the potential market in Southern Sudan.

The development of the microfinance sector in Sudan has been constrained by a number of factors. The government is addressing several areas to promote the microfinance sector, including the policy and regulatory framework, encouraging bank entrants and the creation of microfinance providers at the individual state level (Box 5-1). However, the development of the microfinance sector is constrained both in the North and South by the lack of scale in the market, the absence of a clear positive repayment culture, the lack of loan capital and other resources for reaching sustainability. Other key constraints include the lack of experienced professionals, poor infrastructure in rural areas that inhibit outreach and the paucity of statistical information. In the south, the high cost of operation is an added challenge for microfinance

[93] The Saving and Social Development Bank (SSDB) has a leading role in mobilizing savings and extending loans to small produces.
[94] PlaNet Finance Group 2007.
[95] Sudan Microfinance Development Facility (SMDF) Business Plan.

BOX 5-1: The National Vision for Microfinance in Sudan and the Role of the MDTFs

The CBoS has undertaken an initiative to formulate a National Vision for developing and expanding the microfinance sector. The strategy is to maximize the learning exposure and to consult with local and international experts and solicit best practices from international and regional experiences in the pursuit of its microfinance initiative. The major components of the Action Plan for to develop the microfinance industry include:

- Building on the existing system and/or developing a reformed financial system for the poor with solid infrastructure and efficient financial intermediaries that having the required outreach to meet the financial needs of the poor;
- Creating the legislative and regulatory frameworks that enhances the performance of the microfinance industry;
- Adopting mechanisms that support transparency among microfinance lending institutions;
- Applying "best practices" and setting distinct performance standards for the sector;
- Creating an efficient information network that includes access to reliable, up-to-date, market information on the financial needs of the poor and MSEs, of gender and geographical imbalances;
- Increasing coordination among various stakeholders including Microfinance Institutions (MFI), government, NGO, practitioners, donors, etc.

The strategy to promote microfinance is through both banks and non-bank financial institutions and will facilitate the use of both government and non-government financial and technical resources. In 2007, CBoS mandated commercial banks to lend 12 percent of their lending portfolio to microfinance.

The Multi-Donor Trust Funds have supported this vision in both the North and South. Funding was approved in May 2007 for a microfinance project in the amount of $20 million. The facility is designed to support the establishment of new and existing microfinance institutions and providers through dissemination of best practices, technical assistance, training, financing, and managing donor resources. The development objective is to increase the availability of affordable financial services to 200,000 households by supporting the emergence of commercially sustainable microfinance service providers. The project will serve locations throughout Sudan including the Three Areas, marginalized parts of western, eastern and northern Sudan, as well as focusing on the urban working poor. The project is aligned with a microfinance component of the South Sudan Private Sector Development Project funded out of the MDTF-S, The microfinance component will establish the South Sudan Microfinance Development Facility. Both projects have components that will also build the regulatory capacity of the CBoS and the BoSS to regulate both deposit taking and non-deposit taking MFI's.

institutions. The experience of other countries that developed large microfinance sectors such as Bangladesh suggests that the expansion of a few well-managed microfinance institutions in commercial centers that grow to other parts of the country organically, generate the demonstration effect necessary to attract other entrants in to the sector.

Improving Efficiency of the Financial Sector

Constraints in Financial Intermediation

Islamic banks face a challenge in raising longer-term financing. Conventional banking allows banks to manage their liquidity through borrowing on an inter-bank money market. Inter-bank money markets facilitate borrowing in order to manage bank's assets and liabilities and ensure that there is no risk of a mismatch between the durations of assets and liabilities. Islamic banking requires all transactions to be based on underlying tangible assets such as commodities, physical assets and services. As such, inter-bank money markets in the conventional sense, are not permissible in accordance with Islamic banking principles.[96] While this ensures that banks will not invest in high risk financial products and any securitization will have an underlying physical asset, mismatches between

[96] An Inter-Bank Market can be established through a consortium of investment funds established by Islamic banks. Refer to the Central Bank of Sudan policies for the Year 2009.

the durations of banks' liabilities and assets often present a management challenge because of reliance on short-term deposit funding. This limits the extent to which deposits can be used for longer term financing and a challenge for Islamic banks to raise longer term financing.

To finance longer-term infrastructure investments, the government is issuing government certificates, which are highly liquid and with high returns, against underlying infrastructure assets/projects. Sudan's infrastructure developmental needs are vast and private capital can be tapped for longer-term investment opportunities in infrastructure. Currently the domestic private sector contributes to the financing of infrastructure development through investments in government certificates. Banks are allowed to invest up to 30 percent of their overall investment portfolios in liquid assets.[97] Both GIC's and GMC's are characterized as highly liquid, secure and low risk securities that yield a high return.[98] Banks have managed their liquidity using GIC's and GMC's.

While providing an important source of funding for infrastructure investments, the government certificates are crowding out bank financing to the private sector and opportunities for investment in more productive activities. This is further amplified by the fact that given the attractive returns on government certificates, liquidity in the market is further reduced since the private sector invests directly in these certificates, thus reducing the liquidity available for equity (*Musharaka*) financing. In addition to crowding out the private sector, the high yields on government certificates raise budgetary expenditures and widen the fiscal deficit.

Accumulation of government arrears to the private suppliers and contractors, which has impaired capacity to service their loans to commercial banks and generated substantial non-performing loans (NPLs) and negatively affected the health of the financial sector. Banks are reluctant to extend new credit to the private sector as they repair their balance sheets and also fear non-servicing in the future. In response, the banks have increased their loan loss reserves, further stifling financial intermediation to the private sector. The Central Bank has recognized the impact of these arrears on the banking sector and the importance of resolving these arrears and has started to address this issue. Progress was made in 2008, but full resolution of the arrears is contingent upon the evolution of oil prices, since 50 percent of government revenues are from oil. The product range offered by the banks is also limited and large corporate businesses, government enterprises and a few high net worth individuals are the main beneficiaries of bank financing while agriculture, SME's, housing and infrastructure finance account for insignificant proportions of bank's financing. Concentration risks have been aggravated and NPLs have risen to the point that they have driven the real cost of financing to very high levels.

The high level of NPLs has hindered the capacity of banks to act as effective financial intermediaries. A fifth of bank's lending portfolio was classified as non-performing in December 2008.[99] NPLs increased significantly in 2006–2007 when fiscal problems prevented several government departments from paying contractors, resulting in serious liquidity difficulties, especially at one of the largest state-owned banks, Omdurman National Bank.[100]

The constraints for financial intermediation are reflected in weaknesses in the lending environment and supporting institutions such as collateral legislation and the judicial system, creditor rights, and lack of reliable financial

[97] Including the government *Ijara* (leasing) certificates (GIC's) (known as *Shihab*) and government *Musharaka* certificates (GMC's) (known as *Shihama*) and other government and non-government *sukuk*.
[98] The average return on Shihama (GMC) certificates was 16 percent in 2007. (Source: CBoS Annual Report 2007)
[99] Central Bank of Sudan.
[100] The Central Bank is addressing the NPLs in the sector and although still high, NPLs have declined from 24 percent in 2007 to 22 percent in 2008.

information and credit information infrastructure. These weaknesses affect small and medium enterprises more than large enterprises since micro, small, and medium enterprises (MSME) often rely on secured and cash flow lending for access to finance and depend on a lending environment that supports these modes of financing.

The lack of proper credit analysis, due diligence and risk management skills has also contributed to weaknesses in the banking sector, insufficient internal controls and concentration risk. Efficient financial intermediation to the private sector requires bank staff to be trained in modern credit management techniques and risk assessment tools to enable them to assess, price, and manage risks in order to lend prudently. However this also requires representative and standardized statements of borrowers to reflect their financial standing that can be verified and certified by qualified auditors. The banks capacity to evaluate risk, particularly the risk associated with small firms is also weak—a significant proportion of approved loans are based on relationship lending in many instances without conducting the proper due diligence and the focus on the securities provided rather than on the soundness of the project proposals.

The development of a reliable and comprehensive credit information system is essential for the proper functioning of the credit market and for diversifying the scope of lending to SMEs. A fully functional credit information system will allow banks to evaluate risks on clients rather than on individual transactions. This will reduce the information asymmetries that exist between banks and clients and allow banks to price risks or manage credit limits per client. Since SME's are inherently more risky than corporate borrowers, one option could be allowing different ranges to different types of borrowers and manage financing rates on a portfolio basis rather than on an individual transaction basis.[101] Difficulty in obtaining information about financial standing, credit history/ worthiness and identity of prospective clients discourages financial institutions from expanding their lending business to new market segments.

Inefficient land and property registries limit the ability of banks to offer secured lending products and longer-term finance. This is particularly acute in the case of Southern Sudan. Protection of creditor rights and insolvency systems are necessary for greater confidence in commercial contracts and facilitating the management and resolution of default risk. Financial institutions rely on effective creditor rights to reduce deterioration of asset values and promote access to finance. Partly due to a lack of a credit bureau in Sudan, most banks assess risk using a transaction-based rather than a client-based perspective.

Most of the issues faced by the banking sector in the North apply to the South, but are more severe in the latter. Given the level of development in Southern Sudan, these issues are more severe due to the lack of competition in the sector, the poor capacity of local banks (in terms of credit analysis skills, controls, systems, management capacity, and corporate governance), the lack of collateral due to the frail structures for land registry, and a nascent legal, regulatory, and enforcement framework, and the characteristics of the businesses in Southern Sudan. NPLs are also a major concern for one of the local banks.

Agenda for Policy Reforms

Following the outcome and recommendations of the 2005 FSAP, the Central Bank embarked on a number of reforms that aimed at strengthening the institutions, infrastructure and markets underpinning the financial sector and enhancing its own capacity to regulate and supervise the

[101] Usually, banks respond to high-risk demand for credit by charging higher rates of return. However, due to several incidences in the past, the CBoS provides limits to lending rates, further curtailing the attractiveness of SME lending.

banks. These measures were designed to improve the stability and performance of the banking sector. The Central Bank should be commended on their efforts and should continue with such reform programs in the banking sector especially with regards to NPLs. There are several challenges facing the financial sector in attaining the intended objectives that have been set out by the Central Bank, chief among which is the high level of NPLs in the sector. The Central Bank remains committed to restructuring the banking system to reduce systemic risks and improve the efficiency of the financial sector. The government is also working towards clearing the domestic arrears in order to strengthen the banks' balance sheets. CBoS has also recognized the importance of improving the financial infrastructure necessary to promote efficient financial intermediation and initiated the establishment of a credit information bureau. CBoS is also considering the possibility of further consolidation in the banking sector through mergers and/or acquisitions. The privatization of state-owned commercial banks, including the Bank of Khartoum in 2005 has proven successful. Moreover, several banks from the Middle East have entered the market since 2006.

Despite recent progress, a few concerns remain in improving financial intermediation such as asset quality as well as oversight and regulatory enforcement. There is a continued concern about asset quality and a recent legal challenge to the constitutionality of the law allowing mortgaged assets to be sold has limited progress in the protection of creditor's rights. There is also ongoing concern regarding oversight, particularly the enforcement of prudential regulation of the banking sector. In addition to weaknesses in the legal and judicial framework, lack of proper accounting standards and disclosure practices, and the scarcity of banking and financial skills remain as impediments to channeling savings to productive investment, particularly for SME's.

The operational environment for the banking sector needs to be improved, particularly in light of the global financial crisis. The financial sector cannot be considered in isolation. The low levels of savings, uncertainty regarding economic policy, dependence on oil revenues, and a high-return monetary environment that crowds out private sector activity, have all contributed to the inefficiency of the banking sector.[102] Unlike South Africa, which is more integrated with the global financial system, the direct impact of financial contagion as a consequence of the current global financial crisis will be minimal in Sudan. However, Sudan has been affected indirectly through the impact of slower global demand that has led to lower demand for commodities (such as oil) and lower commodity prices.

The key recommendations for improving the performance of the financial sector include:

- Strengthening the monitoring, supervision, and enforcement functions of the Central Bank to maintain the integrity of the financial sector;
- Minimizing the crowding out of the private sector, especially SMEs in the credit markets—reducing commercial banks' investment in government certificates, and promote a policy that enables banks to deploy a proportion of their lending portfolio's to MSMEs. The government has mandated commercial banks to allocate 12 percent of their lending to microfinance. A similar policy geared towards SMEs may prove beneficial. One option would be to extend a line of credit to banks dedicated to the SME sector and/or the introduction of a loan guarantee schemes to encourage intermediation, particularly in Southern Sudan;
- Reforming collateral and securities legislation and promoting its enforcement through the establishment of specialized economic courts to ensure speedy foreclosure of pledged collateral,

[102] According to the Sudan PICS 2008, 65 percent of businesses cited economic policy uncertainty as one of the 10 major business obstacles in Sudan

especially in Southern Sudan, and to allow for the collateralization of more types of assets, in particular movables. This would strengthen recourse of creditors to improve bank loan recovery;

- Reviewing the standards and codes of the accounting and auditing profession and assessing the state of financial reporting in order to improve access to credit for SME's. The World Bank is assisting in undertaking a Review of Standards and Codes (ROSC). This will prove useful in identifying the areas necessary to improve financial reporting;
- Drawing on corporate governance best practice principles, including OECD, as well as good practices in developing countries to improve the corporate governance structure of banks to ensure an effective oversight function of the banks;
- Current efforts to strengthen financial sector development and the new microfinance policy provide an important overall framework in which rural finance initiatives should operate. However, particular attention to the specific issues surrounding the demand and supply of rural finance is necessary. This is essential since rural finance often extends beyond the formal regulated banking sector into semi-formal and informal provision. More analysis on the requirements of rural financing would inform policymakers on the needs of rural farmers and contribute towards improving access to finance;
- The CPA has validated two separate banking systems, conventional banking in the South and Islamic Banking in the North without pursuing clearly defined cross-regional linkages between the two systems. The absence of adequate banking services and outlets that facilitate trade finance raises transaction cost of doing business as well as rigidities and distortions the free flow of goods and services, particularly in regions along the border between North and South.

C. Infrastructure Services

Coming out of the decades of internal conflicts, Sudan faces immense infrastructure needs, especially to ensure that the population has access to a minimum level of basic services. The lack of infrastructure constrains both growth and access to basic social services, especially in the lagged regions such as the South, the Three Areas, and disadvantaged areas in the North including rural areas at large. The JAM conducted in 2005 laid out needs and plans for infrastructure rehabilitation and expansion in the country. It estimated that over $2 billion would be required to implement its two-phased Infrastructure Action Plan to close the infrastructure deficit in the post-CPA period.

However, given the enormity of the challenge, progress to date has been limited. Availability of financial resources is yet short of meeting the level of the infrastructure needs. Poor implementation capacity and human resources as well as difficulty in coordinating policies among different levels of government further challenge the country in addressing this issue and establishing clear priorities. A national transport master plan has yet to be completed four years after the JAM assessment was made.

The World Development Report 2009 demonstrates that economic growth is seldom spatially balanced, suggesting infrastructure investment focus on growth areas. Two centuries of economic development show that spatial disparities in income and production are inevitable and there is no good reason to expect economic growth to spread smoothly across space. The experience of successful developers shows that production becomes more concentrated spatially. The most successful nations also institute policies that make basic living standards more uniform across space. Economic production concentrates, while living standards converge.

For Sudan's post-conflict context, ensuring access to a minimal basic level of infrastructure

services and connectivity is essential to support basic livelihoods of the population. Most areas in Sudan, including conflict-affected areas and rural areas, lack access to affordable basic services and connectivity between regions. To ensure these basic services to all parts of population, there is a priority need for some level of investment in infrastructure, particularly in those lagging regions with acute infrastructure deficiencies.

Beyond providing life sustaining infrastructure in all areas of the country, there is a need to address areas where infrastructure weaknesses present constraints to growth in areas with high potential for economic activity, particularly in non-oil sectors. Infrastructure investments in Sudan today have the following three main purposes: (i) increasing access to basic human services such as water, electricity, and health and education services; (ii) contributing to job creation by providing basic infrastructure such as roads, ports, river transport, as well as power and telecommunications, which are needed to support industry and trade; and (iii) employing people directly in their implementation which generates important multiplier effects locally and nationally.[103] Internal connectivity is crucial for achieving economic growth through tightening economic integration throughout the country—between different states and provinces as well as between rural and urban areas. Rural infrastructure needs to be enhanced to support the agricultural sector throughout the country.

Decentralization to Boost Basic Infrastructure

Achieving a basic level of infrastructure across the periphery in Sudan will require sub-national capacity and resources. The CPA and Interim Constitution define the vision for a decentralized structure of governance with states and lower levels exercising considerable revenue and expenditure management powers. These responsibilities include development activities at the state and lower levels, and thus effective decentralization will need to play a significant role in increasing access to basic human services. These sub-national levels of government must have adequate capacity and revenues to undertake basic infrastructure efforts, in addition to their primary expenditure responsibilities including health and education service provision.

These capacities and resources are especially lacking in lagging regions like the South. Enhancing state resources in the South is a priority, especially for the eight states that do not have the benefit of a direct share in the oil revenue. Property taxes, taxes on trade and cattle wealth, and user fees for markets and urban public property are the available sources of revenue. A systematic study of the potential for non-oil sources of revenues of the states is now being undertaken[104] on a pilot basis in two states; Central Equatoria and Lakes. Compared to a 6 percent share in Uganda and a 14 percent share in Tanzania the current share of own-source non-oil revenue ranges from negligible levels in Jonglei to around 30 percent in Central Equatoria, Upper Nile, Northern Bahr El Ghazal and Unity. This is a significant achievement for nascent governments, and it is expected that additional resources in training and institutional development can enhance this share. However the high share of own-source non-oil revenue of states also highlights the low level of transfers from the GoSS which continues to keep 70 percent of central revenues for itself. This is not congruent with the scheme of decentralization and even compared to comparator countries seems too high a retention ratio for central revenues.[105]

A policy of providing incentives to states that develop their own resource endowments would be useful by allocating a larger share of federal

[103] GoS, SPLM, WB and UNDP 2005.
[104] World Bank 2009e.
[105] The post transfer share of the central government is as follows: Nigeria 40%; India 42%; Canada 36%; United States 44%; South Africa 36%; Brazil 55%; Australia 56%. *(Source:* Shah, Anwar 2007.)

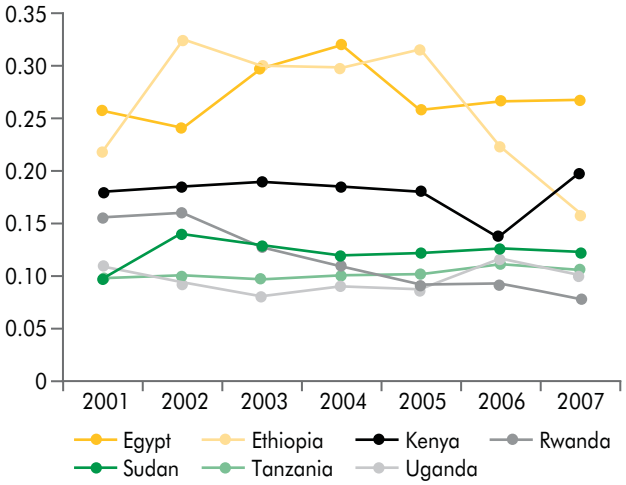
revenues on both a "needs" basis and efficiency criterion coupled with the transfer of administrative control over functional areas to states and counties. This would be consistent with the decentralization agenda and beneficial for trade and industry with GoSS restricting its role to tax and revenue policy issues, such as the avoidance of multiple taxation and ensuring that the tax incidence and benefits are harmonized.

High Cost of Services in Sudan

Growth of oil exports and associated investments have lowered the relative size of cross-border transport costs for Sudan's international trade, which are now lower than its neighboring countries. Figure 5-3 shows the freight transport rates of Sudan and its neighbors between 2001 and 2007. As discussed in the recent DTIS, the decline in the freight transport rate is largely due to Sudan's growing oil exports. Transport infrastructure including roads, pipelines and port facilities at specialized terminals are being built to allow the increasing crude oil production to be exported. The rising world oil price during the period also led to a higher rate of export growth (compounded average annual growth of exports between 2001 and 2007 is 30 percent) than the rate of increase in freight cost (15 percent).

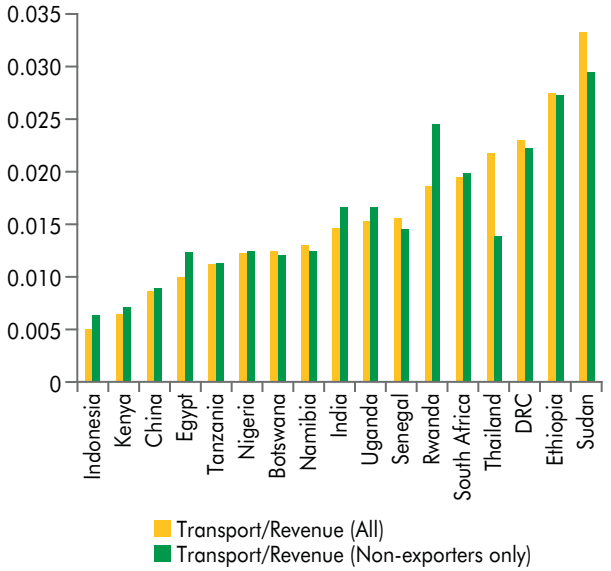
In sharp contrast, domestic transport costs remain high for non-oil sectors and higher than the neighboring countries, limiting Sudanese firms' geographical scope of market transactions. The World Bank Investment Climate Survey data of manufacturing enterprises show that, on average, over 3 percent of sales revenue is spent for transportation costs (Figure 5-4).[106] This is significantly higher than the numbers obtained in neighboring countries based on similar survey data in those countries. The high transport cost is a binding constraint for firms in Sudan to market their products and source their inputs from wider geographical areas. Figure 5-5 below illustrates the correlation between firms' perceptions on the severity of the

FIGURE 5-3: Freight Transport Rates for International Trade



Data Source: IMF Balance of Payment Statistics.
Note: Freight transport rate is the ratio of the sum of absolute values of freight credit and debit, other transportation services credit and debit, freight-related insurance credit and debit) from balance of payments statistics to the total merchandise trade volume (exports + imports).

FIGURE 5-4: Median Ratio of Transport Cost to Sales Revenue among Manufacturing Firms

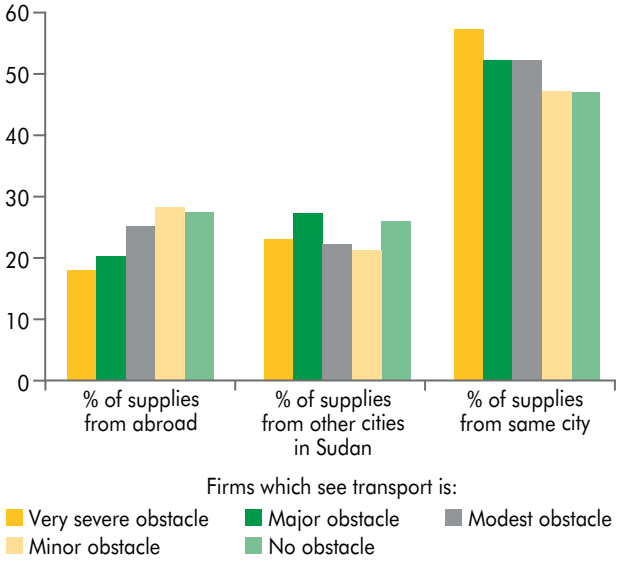


Source: World Bank Enterprise Surveys and Sudan PICS 2008.
Note: Transport cost excludes fuel cost for transport using own transport equipment.

[106] Only firms that explicitly made payments for such costs are considered for Sudan and other countries due to lack of data.

transport problem they face and the geographical scope of sourcing their inputs.

FIGURE 5-5: Geographical Spread in Input Supplier Locations and Firm's Perception on Transport in Sudan



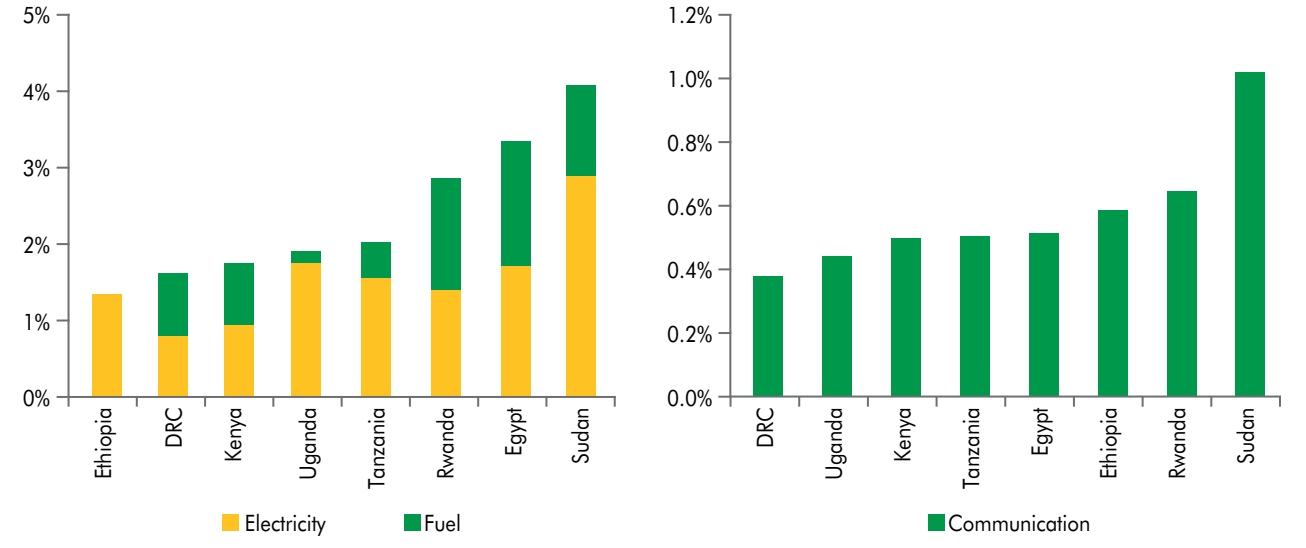
Source: World Bank Enterprise Surveys and Sudan PICS 2008.
Note: Transport cost excludes fuel cost for transport using own transport equipment.

Costs of electricity and communication are also high. Electricity is perceived as one of the most serious constraints for doing business by Sudanese enterprises based on the recent World Bank investment climate survey in 2007. Among the manufacturing firms surveyed, 42 percent cited electricity is the first most serious constraint among 19 different pre-identified business constraints. In fact, the cost of electricity from public grids as a ratio of sales revenue is higher in Sudan (close to 3 percent) than its neighboring comparator countries (Figure 5-6). The pattern is unchanged even when adding fuel, which substitutes and complements electricity from public grids. The cost of telecommunications is also relatively high, compared to neighbors.

Access and Efficiency

A major factor behind the high cost of services in Sudan is the lack of sufficient access to infrastructure and related facilities, which have not been adequately provided particularly in lagging areas. The vastness of the land and the decades of internal conflict have made it difficult to provide an adequate

FIGURE 5-6: Fuel and Electricity Cost and Telecommunication Cost as Ratio to Sales Revenue



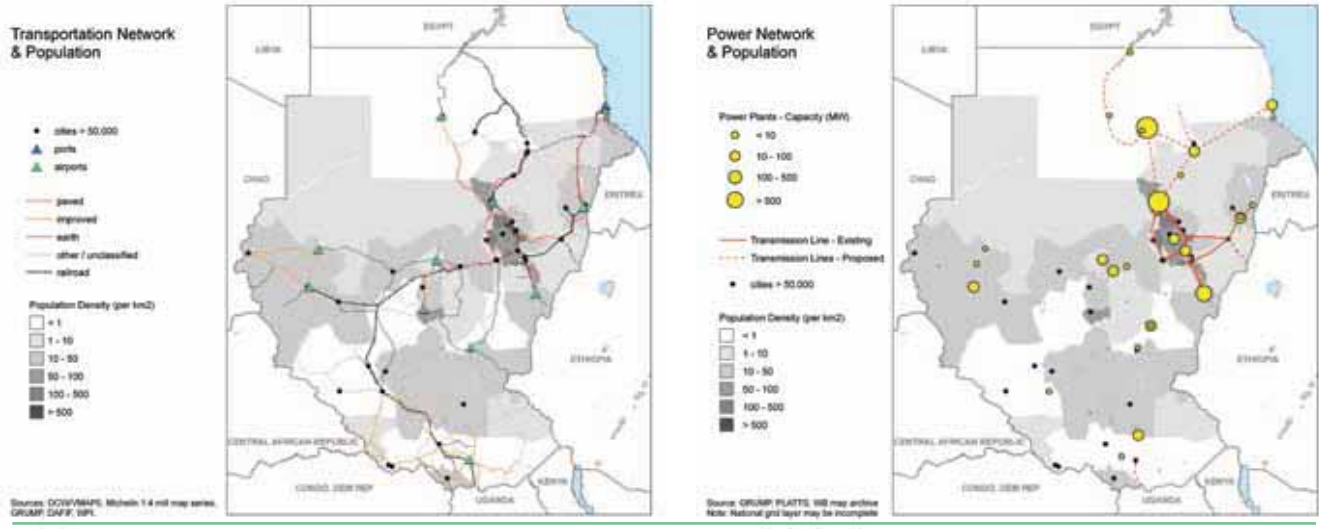
Source: World Bank Enterprise Surveys and Sudan PICS 2008.

level of services across the country. As can be seen in the maps in Figure 5-7, the physical coverage of transport and power infrastructure is concentrated in the specific areas in the Northern states. Access to services is substantially limited in the South as well as lagging areas in the North such as Darfur and rural areas. Inadequate infrastructure services, such as transport, are binding constraints for productive sectors in those regions (see Chapter 6).

- ***Roads.*** Road transport provides over 90 percent of inland transport services in Sudan.[107] The total road network in Sudan is estimated to be 32,425 km, including both paved and unpaved roads for all types of roads (national highways, state roads, and urban roads) except for tracks in rural areas. This translates to road density of 1.3 km per hundred square kilometer, which is lower than some of its neighbors.[108] There are 7,200 kilometers of paved roads in the Northern states, while only 225 kilometers of roads are paved in the South. The vast majority of roads in the South are unpaved and impassable during the rainy season. Providing adequate road coverage in the lagged regions such as South and the rural areas by rehabilitating destroyed road assets, upgrading some key roads to all-season roads, and developing rural feeder roads, are crucial for the development of those areas. Even in the North, the extreme low density of roads in war-affected areas causes isolation of such areas.
- ***Electricity.*** Only 22 percent of the population of Sudan has access to electricity, either the national grid or isolated electricity networks. The existing national grid covers only nine of Sudan's 26 states. Most of these consumers are in Khartoum where 57 percent of the available electricity is consumed. Southern Sudan has particularly poor access to electricity services. Only three towns in the South (Juba, Malakal and Wau) have partial access to diesel stations. In the medium term, Southern Sudan is foreseen to remain isolated from the national grid,

[107] World Bank 2008a.
[108] Egypt 9.3 km, Ethiopia 3.6 km, and Kenya 11.1 km. (*Source*: World Development Indicators 2008). It has to be noted that Sudan is much larger than those countries in terms of area.

FIGURE 5-7: Maps of Transport and Power Infrastructure Coverage in Sudan



Source: Data are from the Africa Infrastructure Country Diagnostic (AICD) project, being implemented by the World Bank (http://www.infrastructureafrica.org/aicd/).
Note: The railroad between Wau and Juba is only planned.

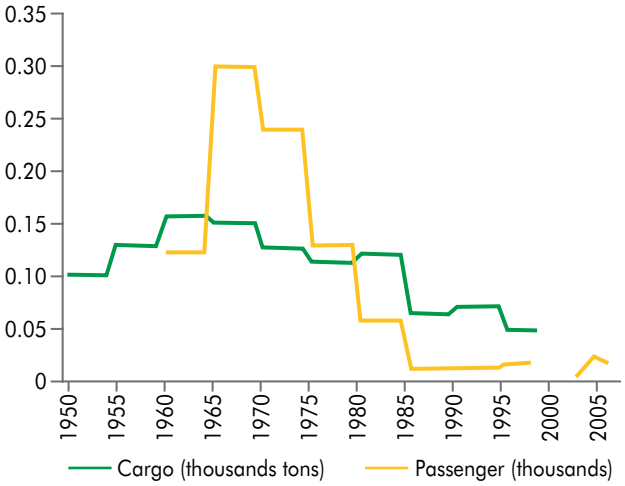
and would rely on diesel-based thermal generation. Sudan ranks low in terms of electricity consumption when compared to other neighboring countries, although the aggregate consumption at the national level is expected to be improved with the newly built Merowe Dam once it reaches full capacity.

- ***Water.*** An estimated eight million people in rural areas need to access to water supply and sanitation facilities. After decades of war, access to safe and adequate water supply and sanitation services is extremely constrained, especially in Southern Sudan. Around 75 percent of the rural population lacks access to safe water.[109] UNICEF records indicate that of the 6,500 rural water points that have been recorded on the national database, only 35 percent of these may currently be operational.
- ***Telecommunications.*** There remain many areas of the country lacking mobile access and advanced ICT services. In the North, there are extensive mobile networks, but they are largely limited to urban areas with relatively sparse network coverage in small towns and rural areas. In the South, network coverage and service quality are poor, though the entry of new companies (e.g., Vivacell) should lead to improvements. Prices of ICT services in general remain high. Data services are currently limited and expensive. The market has focused almost exclusively on voice services.

Improved regional connectivity by long-distance transport services is also an important accessibility of the transport infrastructure and services in Sudan. In particular, reconstruction of inland water transport (IWT) is crucial in connecting the North and the South.

- ***Inland water transport.*** A well-functioning, container capable IWT is critical for providing a transport route integrating the national economy and providing Southern Sudan with an alternative route to Port of Sudan.[110] The traditional IWT link between Kosti and Malakal, Bor, and Juba on the White Nile (Southern Reach) was significantly disrupted during the civil war. Since the CPA was signed in 2005, the service has resumed but is mainly limited to carrying goods and the overall volume of traffic is not yet back to earlier levels (Figure 5-8).
- ***Rail.*** Rehabilitation of the railway system to connect Darfur (and a part of the South) with Khartoum and Port Sudan is also important. The Sudan Railway Corporation (SRC), owned by the GoNU, is managing and operating a railway network of about 4,578 kilometers, which is one of the oldest and largest in Africa. The branch line from Babanusa to Wau (446km), which is the only part of the Southern Sudan region covered by rail and was heavily damaged during the conflict, ceased commercial operations in 1991 but is currently

FIGURE 5-8: Historical Traffic Volumes of Internal Water Transport in Sudan



Source: GoNU, NRTC.
Note: Data is not available between 1999 and 2003 for both cargo and passengers. Passenger data is also not available before 1961. From 1951 to 1999, five year annual averages are shown.

[109] GoS, SPLM, WB and UNDP 2005.
[110] World Bank 2008a.

BOX 5-2: National Emergency Transport Rehabilitation Project (NETREP)

NETREP, approved on August 2006, is one of the projects conceived within the framework of the Multi-Donor Trust Fund – National (MDTF-N) to improve selected transport infrastructure critical to enhancing the benefits of the peace agreement. The objective of NETREP is to improve physical access to goods, markets, and administrative and social services by rehabilitating critical rail infrastructure and services, and improving river transport services and roads. The project focuses on key trade routes linking the North and the South with Port Sudan, and addressing the isolation of communities in the Three Areas, a major impediment to recovery and development. Specifically, the project comprises three components: (1) rehabilitation of critical rail infrastructure and services, in particular, rehabilitating the Babanusa to Wau rail line damaged during the civil war, as well as constructing minor rail line links at Port Sudan and Kosti; (2) institutional developments and improvements to river transport services focused on: (i) supporting the establishment of environmental and social assessment unit, including the preparation of an environmental and social assessment framework, (ii) strengthening the Inland River Transport Regulatory Body, (iii) Port Sudan trade facilitation, and (iv) promoting private public partnership (PPP) in rail transport; (3) road improvements and design, especially in the Three Areas, including: (i) the improvement of Gadamai-Hamashkoreib, Damazin-Kurmuk, and Kadugli-Kaouda roads, about 280 km in total and (ii) a detailed engineering design for about 1,125 km of national and rural roads. The latter component encapsulates establishing a pavement management system in NHA and building its institutional capacity.

being rehabilitated (Box 5-2). There is a plan to extend the Wau branch to Juba and connect it with the Ugandan rail network so as to gain access to the interconnected Eastern African rail system including Kenya.[111]

One leading bottleneck for expanding infrastructure coverage in the South as well as in rural areas is the high unit cost of construction in Sudan. Table 5-3 compares unit costs of inter-urban road rehabilitation and reconstruction across several African countries, where Sudan (South) appears to be significantly higher than others. A boom in construction is a typical phenomenon in a post-conflict economy like Sudan. As elaborated in Collier (2007), this high demand for construction is often met by inelastic supply in a post-conflict economy due to a limited supply base for construction work and limited tradability of construction services. This drives up the cost of construction work. In Southern Sudan in particular, construction materials are normally not available locally and are costly due to the high transport cost of shipping materials to construction sites.

TABLE 5-3: Cost of Rehabilitation and Reconstruction Two-Lane Inter-Urban Roads

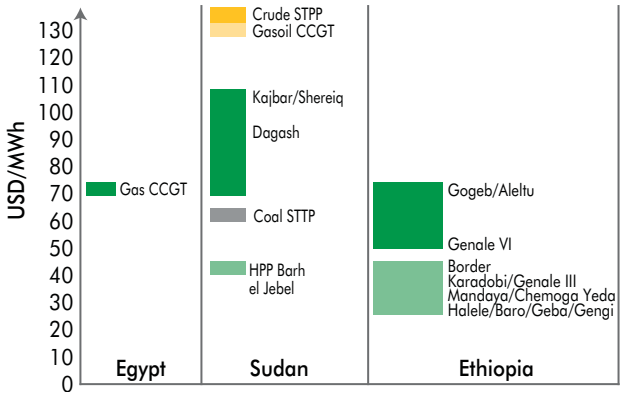
Country	Average Unit Cost ($/km)
DRC	228,872
Ethiopia	388,207
Ghana	261,052
Malawi	420,838
Mozambique	278,661
Nigeria	329,909
Sudan (South)	760,000 ~ 1,000,000

Source: Alexeeva, Padam and Queiroz 2008, and World Bank staff estimates.
Note: For countries other than Sudan, the average unit cost is computed based on the contract amounts of the WB funded procurement contracts. Sudan (South) estimate is based on extrapolation of a cost estimate from the existing project in South Sudan.

The cost of generating electricity is also high in Sudan relative to its neighbors, and trade in power could bring significant gains. Figure 5-9 shows a range of projected generation costs for different generation systems in Sudan as well as in Egypt and Ethiopia, and the scope for positive gain to Sudan from power trading with neighbor-

[111] The Sudan is an observer at the Northern Corridor Transit Transport Coordination Authority (TTCA). Uganda and Sudan have also signed a Memorandum of Understanding to extend the railway link from the northernmost town of Gulu to Juba, a distance of 274 km (104 km of which would be in Uganda); and then onward to Wau.

FIGURE 5-9: Location of Power Network



Source: World Bank 2008b.
Note: Comparison of economic generation costs in the different generation mixes (6,000 hours/year) – Year 2030 – Medium fuel price scenario ($60/bbl)—10 percent discount rate.

ing countries. Under the Nile Basin Initiative—administered by the World Bank and underway since 1999—these countries are embarking on an identification of a first joint multipurpose program of water-related investments in the Eastern Nile. The potential package of investments could include an "anchor project" (a large multipurpose storage structure and hydropower facility on the Blue Nile in Ethiopia) and "non anchor projects" (associated national projects in irrigation, watershed and floodplain management, and other ancillary growth-enhancing investments). Beyond the substantial regional benefits from hydropower generation and trade, a multipurpose storage structure on the Blue Nile in Ethiopia could generate significant downstream benefits in Sudan, including flood control, increased navigation, and power uplift. Importantly, the downstream impact of improved flow regulation (allowing for a summer crops) and reduced sedimentation in the Gezira scheme could be substantial. The World Bank is currently conducting a study to estimate the economic benefits and costs to Gezira, in addition to other impacts in Sudan, of a first joint multipurpose program.

In addition to inadequate access to services, poor efficiency and reliability of **infrastructure services are also behind the high service cost nationwide**. Low efficiency often comes from poor quality and liability of transport infrastructure as well as institutional inefficiencies and lack of competition.

- ***Roads.*** The poor quality of the existing roads, mostly located in the North, is lowering the efficiency of road transport services. About half of paved roads require rehabilitation or overlay. Inadequate funding for road maintenance and lack of cost recovery is causing rapid deterioration of the quality of the existing roads. The revenue collected by the National Highway Authority (NHA) from tolls covers only 100 km of overlay and rehabilitation per year. However, the backlog of preventive maintenance needs have accumulated to the extent that between 400 and 500 km of rehabilitation and overlay per year would now be required. Inadequate enforcement of restrictions on axle loads is further accelerating road deterioration.
- ***IWT.*** While the privatization is expected to scale up the overall transport capacity, many hardware problems continue to constrain the full recovery of the Nile river transport. For example, Juba Port continues to suffer from siltation at its entrance. Navigational aids on the river need to be refurbished or re-installed. Dredging will be required to address the effects of two decades of neglect during the conflict. There is a general shortage of equipment for operating river transport services, including the lack of handling equipment for containers, and many non-operating vessels that require rehabilitation.
- ***Rail.*** SRC's operations have steadily declined since the 1960s due to competition from the trucking industry and SRC's inability to improve its operational efficiency. Truck transportation, although generally more expensive, is used increasingly for low-volume, high-value

goods because it delivers more rapidly.[112] Over the years, managerial and operating inefficiencies, poor locomotive maintenance, labor union inflexibility, and internal conflicts have exacerbated the situation by reducing rail transport capabilities. In addition, U.S. economic sanctions on Sudan since 1997 affected SRC locomotive availability adversely and the railway's throughput and revenues then reduced further.[113] Repair of locomotives was so slow that only about a third to a half of the total numbers is usually operational.[114]

- ***Electricity.*** The reliability of the public grid service is low and varies widely across the country. Compared with neighboring countries, Figure 5-10 shows the high frequency of power outages and simultaneously low usage of electricity from the grid in Sudan and reliance on self generators. Not only is access to the power service a problem, but also efficiency of the service has spatial variation within Sudan. The South and the West (Darfur, Kordofan) have high frequency of power outage.

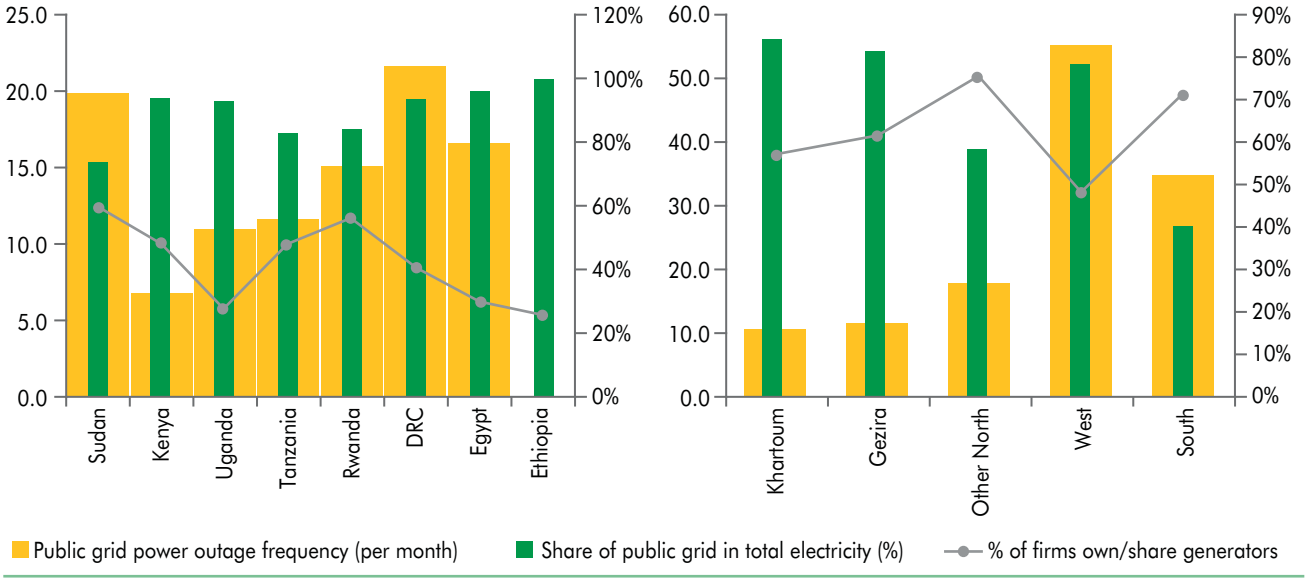
Inter-modal competition provides downward pressure on transport rates but needs to be associated with improvements in efficiency. The rail service between Port Sudan and Khartoum route is subject to competition from the road transport, particularly since the new parallel road was opened in 2007. The competition keeps downward pressure on the rail tariff. Trucks make the trip in eight to twelve hours, while rail service takes two to three days between the two cities. As a consequence, SRC tariffs for high volume traffic between Port Sudan and Khartoum was equivalent to 4.25 U.S. cents per ton km (tkm) for general cargo as of March 2006. On the other hand, 8.9 U.S. cents per tkm

[112] Delivery by truck takes two or three days from Port Sudan to Khartoum, compared with 7 or 8 days for express rail freight and up to two weeks for ordinary freight.

[113] This has had an impact on SRC's ability to procure needed spare parts and equipment directly from the U.S., and thereby affecting its carrying capacity.

[114] In the last few years, SRC has been constrained by low availability of rolling stock attributable in large part to age (about 60 percent of locomotives are between 20 and 25 years old and most of the wagon fleet are 60 years old) and inadequate maintenance due to the multiple effects of sanctions, low revenue base, and a high overhead cost.

FIGURE 5-10: Quality of Electricity Service



Data Source: World Bank Enterprise Surveys and Sudan PICS 2008.
Note: Power outage data for Ethiopia are not available.

was charged between Port Sudan and Nyala, where SRC is a virtual monopoly of long-haul transport particularly during the rainy season. While intermodal competition works to reduce the tariff rates, unless it is accompanied with service efficiency improvements, financial sustainability of such competition would be in question.

Public Investment and Private Sector Participation

To scale up the volume of infrastructure services, the government (GoNU) has been pursing various large-scale public investment programs for infrastructure. The public investment portfolio is heavily concentrated on irrigation (mostly Merowe Dam), transportation, and energy. Those are the top-three sectors in terms of the aggregate volume of public investment projects, taking as much as 80 percent of the total national development projects between 2005 and 2008 (Table 5-4). The single most sizable project is the recently inaugurated Merowe Dam project, taking up 38 percent of the total investment amount. The new dam is expected to double the country's generation capacity (Box 5-3). Energy (power plants) and roads (national highways in the North) are also quite significant also.

Domestic borrowing from the Sudanese private sector to finance public investment projects has led to the recent private credit market crunch due to inefficiency in the financial sector. About 73 percent of the total expenditure for the national development projects is funded by domestic sources, with the rest funded by foreign investments. As discussed in the previous section, the domestic borrowing through government certificates to finance infrastructure projects implemented by the government and provide medium

TABLE 5-4: Sector Shares of National Development Projects (percent)

Sector	2000	2001	2002	2003	2004	2000–04 Average	2005	2006	2007	2008	2005–08 Average
Irrigation	18.3	14.7	7.3	30.3	35.5	21.2	44.9	34.7	46.3	39.1	41.3
(Merowe Dam)	0.1	2.9	3.0	20.5	31.1	11.5	40.6	32.9	44.0	37.2	38.7
Agriculture	16.5	5.0	2.2	4.6	4.5	6.6	5.4	8.4	5.1	0.7	4.9
Livestock	0.4	0.5	0.3	1.2	0.5	0.6	0.3	0.2	0.2	0.4	0.3
Industry	17.9	17.2	12.2	10.4	8.2	13.2	4.0	12.6	3.5	2.5	5.7
Transport	12.6	7.1	3.3	8.2	9.3	8.1	18.7	13.1	9.2	25.0	16.5
(Roads and Bridges)	12.6	7.1	3.3	7.8	9.3	8.0	18.7	23.3	15.9	19.5	19.4
(Rail)	0.0	0.4	0.4	1.3	2.2	0.9	8.3	2.5	1.3	15.1	6.8
(Inland Water)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.1	0.0	0.1
(Airport)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.61	5.52	1.53
Energy	14.9	18.5	16.7	15.9	17.0	16.6	17.4	16.0	26.4	27.7	21.9
Social Development	7.6	12.9	1.2	5.2	5.8	6.5	7.5	13.5	8.1	4.5	8.4
Water	5.1	2.7	0.9	1.2	3.2	2.6	0.3	0.0	0.1	0.1	0.1
Other	6.8	21.3	55.9	22.9	16.0	24.6	1.5	1.4	1.1	0.0	1.0
Total Amount (million SDG)	*369*	*567*	*1,155*	*1,074*	*2,210*	*1,075*	*1,859*	*2,561*	*3,156*	*2,923*	*2,625*

Source: WB staff estimates based on data from MoFNE.

term funding for State Owned Enterprises (SOE's) for their expansion plans has led to the accumulation of NPL and the credit shortage for the domestic private sector.

More direct participation of the private sector in infrastructure services through public private partnership (PPP) in construction and operation should be encouraged from the perspective of improving efficiency. The government (GoNU) is recently taking steps to liberalize service in transport and telecommunication and encourage private sector participation (PSP), including foreign investors, which have led to some improvements in the capacity and the efficiency of service delivery in these sectors.

- ***IWT.*** Government-owned River Transport Corporation (RTC) was a monopoly by law in river transport services as the owner and operator of the IWT infrastructure in Sudan and has been the dominant operator even after a number of private operators have started providing services. In 2007, two companies, Nile River Transport Corporation (NTRC) and the Sudan River Transport Corporation (SRTC), were established as the result of privatization with 70 percent shared by the private sector and the remaining 30 percent shared by the public sector (GoNU and GoSS).[115] Since the privatization of RTC, other private operators have entered the White Nile (South Reach) market.[116] As of February 2009, there are six private operators of vessels. The privatization is also anticipated to improve efficiency in on-shore services (loading, unloading, and warehousing) and port management.[117]
- ***Rail.*** While SRC continues its ownership of the railway infrastructure, it allows PSP in railway operations. Presently only private operators provide passenger services.[118] There are seven PSP entities in rail freight as of 2007, carrying about 20 percent of all originating tonnage on the system. Private operators' wagons have a turnaround time of six days in comparison to fifteen days for SRC wagons.[119] The private operators can accept a reduced profit margin for their operations because their costs are significantly low due to their higher operational efficiency than SRC.
- ***Telecommunications.*** Liberalization of the sector started in the early nineties as part of the national privatization policy. The aim was to overcome the persistent shortfalls in sector efficiency and performance and to modernize the country's communication network locally and globally by shifting sector ownership and facilitating private sector ownership of the sector. The National Telecommunication Authority has since been dissected into two core competencies. The regulatory and supervision function undertaken by the National Telecommunication Corporation (NTC), and the service provision function through private operators. The private sector has become the leader in technology, network equipments, and maintenance provision, while the government took on the supervision and regulatory responsibilities of the sector. Several operators entered the mobile telephone market. By the end of 2007, the market recorded 8.5 million mobile subscribers and 345,000 fixed subscribers as the market continues to expand. These posi-

[115] The new entities began operations on July 1, 2008. Both companies have the same general manager and offices, headquartered in Khartoum. The new companies also created an entity in Southern Sudan, the Southern Sudan Trans-Nile Company (SSTC) located in Juba.

[116] For example, KEERMISC/KEER Marine and Agility Logistics/Tri-Star.

[117] NTRC-SRTC bought all the assets of RTC, including the fleet and spare parts, and obtained the right to continue to operate its ports through a 50-year lease. So far, NTRC-SRTC as well as some other operators own private ports in Kosti with plan to open private ports in Juba. The private ports in Kosti are relatively well equipped with mechanized loading and unloading facilities that are already in place or will be installed in near future.

[118] The private operators market the services, sell tickets, maintain and operate the trains. However, all of them use SRC staff for these activities and the SRC operations centre controls train movements (for logical reasons connected with safety).

[119] Based on 2003 data.

tive developments in the ICT sector have led to a rapid growth in the market in the past couple of years, including in the South (Figure 5-11).

Foreign private sector participation in infrastructure services has increased. While Merowe Dam Project has a significant share of funds provided by foreign governments (China and Gulf countries), foreign private companies have started participating with transport operations in Sudan through PPP schemes. The majority shareholder in the new venture is the KGL Group in Kuwait.

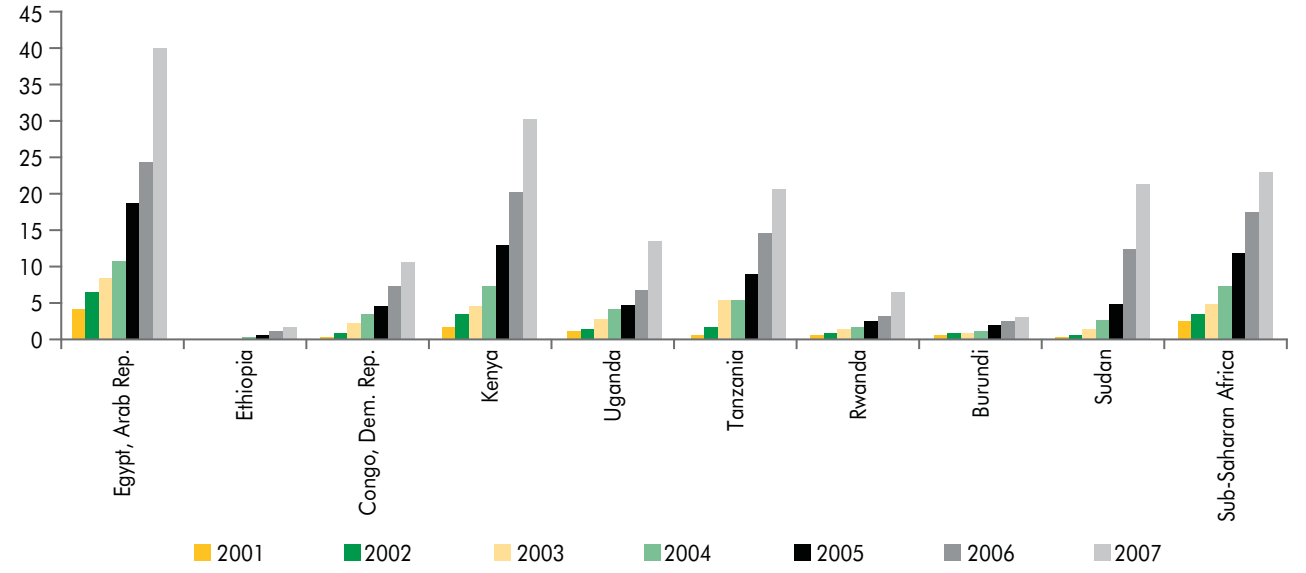
Productivity of state-owned enterprises (SOEs) in infrastructure services remains a challenge. Currently, Sudan Shipping Lines (SSL) in maritime transport is the only SOE monopoly as a transport service operator. Other SOEs operate in more liberalized market environment with competition from private operators. They continue to face the challenge of lower efficiency. Staff productivity of SRC, for example, has have been very low by African standards and only about a half to a third of the levels in Tanzania for example.[120] Continued poor financial performance of SRC is caused by the proportion of revenue spent on staff salaries, which is at very high levels.[121] Lack of financial and human resources constrain NHA. The government is taking steps to rationalize some SOEs to improve efficiency. National Electric Company (NEC) is the vertically integrated state-owned corporation responsible for expanding the power sector. NEC was restructured several years ago to better equip it to meet Sudan's electricity sector challenges. A considerable downsizing in personnel has taken place in NEC in the past years, reducing the staff from 20,000 to 7,000.

So far, benefits from efficiency improvement in the deregulated rail freight service may likely be concentrated in limited areas and sectors. The resurgence of economic growth and peace keeping

[120] Current SRC figures are one half of recent productivity outputs in Tanzania Railways Corporation (a comparable railway in terms of traffic, age and quality of infrastructure, etc.), one third of TAZARA's and 5 per cent of Spoornet's general freight business.

[121] Wages were 86 and 90 percent of costs in 2005 and 2004, respectively. SRC is bound by practice to follow the wage norms of the civil service. As a result, wage or pay scale revisions of the government almost automatically get replicated in the railway, irrespective of whether such changes are affordable.

FIGURE 5-11: Mobile Cellular Density (number of subscriptions per 100 people)



Source: World Bank World Development Indicators 2009.

and humanitarian operations in the post-CPA period has led to significant increases in long distance traffic. At the same time, the rail freight service is yet to provide significant support to non-oil productive sectors such as agriculture. In fact, there is no discount for long distance moves in the current ruling tariff by SRC, while a 10 percent discount is made for heavier cargo above 10,000 tons. This benefits sectors handling heavy materials but not lighter materials that still need to be carried long distance such as crops.

Agenda for Policy Reforms

Lack of clear division of labor and weak policy coordination among different levels of governments—GoNU, GoSS, and states—hinder effective planning to improve access and efficiency of transport services. In the case of roads, for example, NHA (GoNU) is responsible for the development and management of national highway network (inter-state roads). The intra-state roads are under the responsibility of the 26 states. The roads in the South fall under the jurisdiction of GoSS and the southern state governments. There is some ambiguity in the division of labor among GoNU, GoSS, and state governments. The role of NHA in managing the highway road network in Southern Sudan is not clear either. The lack of a detailed road classification system adds further ambiguity to who manages what. In addition, increasing private sector participation in various modes of transportation (river and rail in particular) increases the need to come up with a clearly defined role of the government both in the North and in the South.

Institutional capacity and human resources need to be strengthened to improve infrastructure service delivery in Sudan. Institutional strengthening is needed for governmental regulatory agencies in GoNU, GoSS, and state governments for them to function effectively in managing infrastructure services. Lack of technical skills in contract management, information technology management and planning is particularly binding. Staff skills and human resource management need to be improved for SOEs to improve staff performance.

Further private sector participation should also target the maintenance of the infrastructure to increase the quality of services. Sudan has been fairly successful in privatizing transport operations. However, with respect to management of infrastructure assets, further scope of private sector participation exists. In the case of rail, the current ruling tariff structure does not compensate SRC to cover the cost of asset depreciation sufficiently. Presently PSP is not being used in SRC for other outsourcing activities such as the maintenance of infrastructure or in maintaining the rest of the rolling stock fleet. Further all new rail construction or rehabilitation is undertaken in-house, for example the reconstruction of the rail line to Wau. The next logical step forward is to strengthen PSP in infrastructure maintenance.

There is a need for strengthening the institutional and legal frameworks for promoting PSP and public private partnership (PPP) in infrastructure. Without proper frameworks being in place, privatizations in infrastructure services in Sudan have had some haphazard elements. International experiences of infrastructure reforms for greater PPP points to a number of success factors, which include: (i) a legal system that safeguards private property from state or regulatory seizure without fair compensation; (ii) strong contract laws and mechanisms for resolving contract dispute; and (iii) norms and laws—supported by institutions—that delegate authority to a bureaucracy and enable it to act relatively independently within clearly prescribed and published legislation.

Given the high construction costs in Sudan and current fiscal constraints, new investments in infrastructure should be considered more holistically in the context of overall cost effi-

ciency and be strategically prioritized. With no large investments in linear infrastructure needed, IWT has its potential as a low-cost mode of domestic transportation. To build a paved road in Sudan costs at least $ 350,000 per kilometer. Preliminary studies suggest that rehabilitation of the Southern Reach (a 1,436 kilometer stretch of the White Nile from Kosti to Juba) will cost in the order of $100 million (exclusive of tugboats and barges). This would be equivalent for constructing only about 300 km of paved road in those parts of South Sudan.

Chapter 6

TOWARD A COMPREHENSIVE GROWTH STRATEGY IN SOUTHERN SUDAN[122]

A. Motivation

Nowhere in the country is the gap between economic reality and unrealized potential greater than in Southern Sudan. GoSS has autonomy over roughly 25 percent of the country's land area, which is 648,000 km^2 (larger than France). This area contains the majority of proven oil reserves and the best quality agricultural land. GoSS has received more than $6 billion in oil revenues since 2005, including more than half this amount during the 2008 oil price spike. Thus Southern Sudan has a major advantage over most emerging post-conflict governments, with large resources available for development. Yet indicators of human well-being—economic and non-economic—for the Southern region are among the lowest in the world. The challenge for the South is to translate the peace and resources into better lives for the people of Southern Sudan.

The CPA ended a long civil war that was fought largely in Southern Sudan and left it with virtually no infrastructure.[123] However, in the short period since the signing of the CPA, visible progress has been made. A substantial number of refugees and internally displaced persons (IDPs) have been repatriated with most of the former militia integrated into the SPLA. A functional central government with ten state governments and numerous counties has been formed and relative peace has been maintained. On the physical side, substantial rebuilding has taken place with rehabilitation and construction of key structures. A significant number of roads have been built and/or repaired. Education and health facilities have been established across the region. Essential institutions have been established such as modern banks, court assemblies, and civil society groups. In addition, important legislature has been passed, including the Investment Promotion Act that supports a conducive environment for private sector development. While these achievements are substantial, more needs to be done to improve the lives of Southern Sudanese people. Raising living standards through rapid growth is the most visible peace dividend that GoSS can give to its citizens.

Why focus on growth in a post-conflict environment? To deliver a peace dividend and increase the likelihood of continued peace for the country, development of a medium-term growth strategy is a high priority for the South. Economic growth results in and from higher productivity and incomes, and a true peace dividend results in the transition from crisis and relief to sustained development. Growth will contribute to all targets of GoSS' mandate—security and avoidance of conflict, higher employment, and the

[122] This chapter is based on background state case study work by Yutaka Yoshino, Lant Pritchett, Dirk Omtzigt, Greg Snyders, Peter Ajak, Elias Leonardo and Jiji Beauty, with financial support from the Department of International Development, United Kingdom.

[123] The CPA was signed in January 2005 between the Government of Sudan (GoS) based in Khartoum and the Sudanese People's Liberation Movement in the South, ending one of Africa's longest civil wars. The CPA addressed some of the long-standing causes of North-South conflict by institutionalizing autonomy for Southern Sudan and by sharing resources. The peace agreement led to the establishment of the regional GoSS in Juba and the federal GoNU in Khartoum, with the latter including 30 percent representation from the South. This started a six-year interim period of peace, including planned national elections and a referendum on succession of the South in 2011.

well-being of its population. Furthermore, achieving rapid, sustained, and shared growth is within Southern Sudan's reach given its immense natural resource potential. What is missing is a vision and plan for growth and development that builds on Southern Sudan's strengths and exploits the available opportunities to bring prosperity to all its citizens. Consequently, GoSS is currently developing a growth strategy to stimulate private sector activities and leverage its considerable non-oil resources; this chapter discusses an approach for such a strategy.

Southern Sudan is starting from a point of near complete reliance on oil wealth, which is intrinsically temporary with an inherently unpredictable revenue flow. Already known oil reserves are declining, putting in danger this source of growth. Furthermore, the enclave nature of the oil sector makes it difficult for the growth to be sufficiently inclusive and therefore unlikely to benefit the majority of the people. One of the root causes of the conflict in Sudan has been the centric-focused growth, and GoSS understands that development of the non-oil sectors in the South is paramount to transition from conflict to a viable and integrated economic unit. Planning for non-oil economic growth in the South is relevant regardless of the outcome of the 2011 referendum, to further development in the autonomous South under a united Sudan or as a new country.

The growth strategy envisaged is a dynamic staged sequence of prioritized actions that will effectively support a sustained structural transformation to higher productivity. Unlike other approaches that emphasize policy and institutional frameworks for growth, the approach proposed here emphasizes a growth process that is characterized by growth accelerations from very low to very high levels. This type of process is particularly relevant in fragile situations where a major concern is relapsing into conflict, making fast delivery of visible peace dividends critical. While not negating the importance of strengthening institutions and policies, Southern Sudan needs a strategy that creates a consistent focus on achieving the few things that are considered critical for the current situation while creating the preconditions for the next stages. This strategy will have to address the following:

- Where will the growth come from (sectors and activities)?
- What are the binding constraints in the identified areas?
- How will the government use its limited levers to alleviate the constraints?

The rest of the chapter is organized as follows. Section B presents a brief description of the growth diagnostic framework and its four steps. Section C reviews the application of the first two steps of the framework—identification of existing growth conditions and identification of binding constraints—to derive the main constraints in Upper Nile and Eastern Equatoria states. Section D extends the findings of the previous section to discuss the last two steps of the framework—syndrome characteristics and implementation diagnostic—and implications that are most relevant for GoSS to consider in formulating its growth strategy.

B. Growth Diagnostic

The following analysis is based on the recent growth diagnostic approach outlined in Hausman, Rodrik and Velesco (2005, hence HRV). It provides a framework for the analysis that can enable an economy like Southern Sudan to assess its comparative advantages and identify essential policies and programs to unleash its growth potential. The approach helps answer some questions that are key for shaping the formulation of GoSS' growth strategy. Specifically, *What is a realistic goal for the income level for Southern Sudan in 10 years? What are the main binding constraints to achieving this goal? What can be done in the near term to put the South on the right path?*

A growth diagnostic exercise consists of four steps: (i) identification of the existing growth conditions, (ii) use of a growth diagnostic decision tree to identify the "binding constraints" to growth, (iii) identification of overlapping "growth syndromes," if possible and (iv) an implementation diagnostic to examine which of the binding constraints the government is capable of addressing.

The HRV approach is used for several reasons. First and foremost, the approach is conceptually straightforward. With the dearth of medium-term development planning in the South and limited capacity of the nascent government at all levels, the approach fits the need for a diagnostic that can be easily and readily understood to promote broad dialogue and ownership. Second, the diagnostic emphasizes a particular country's (or in this case, sub-national) situation. There is no preassumed agenda. Third, the approach aims to provide prioritized recommendations that fit the capacity constraints of the country. This is particularly important given GoSS has only recently celebrated its third anniversary of moving from running a military campaign against the North to trying to manage service delivery and economic policy-making in a dynamic post-conflict region.

One of the keys of growth diagnostics, and which distinguishes it from other processes for prioritizing growth policies is the notion that growth is *episodic,* as a country's economic progress consists of quite distinct episodes. A goal is to make a transition from one "phase" or "state" to a more favorable growth process. This requires first an examination of the current level of income and productivity and of the (recent) history of the growth process.

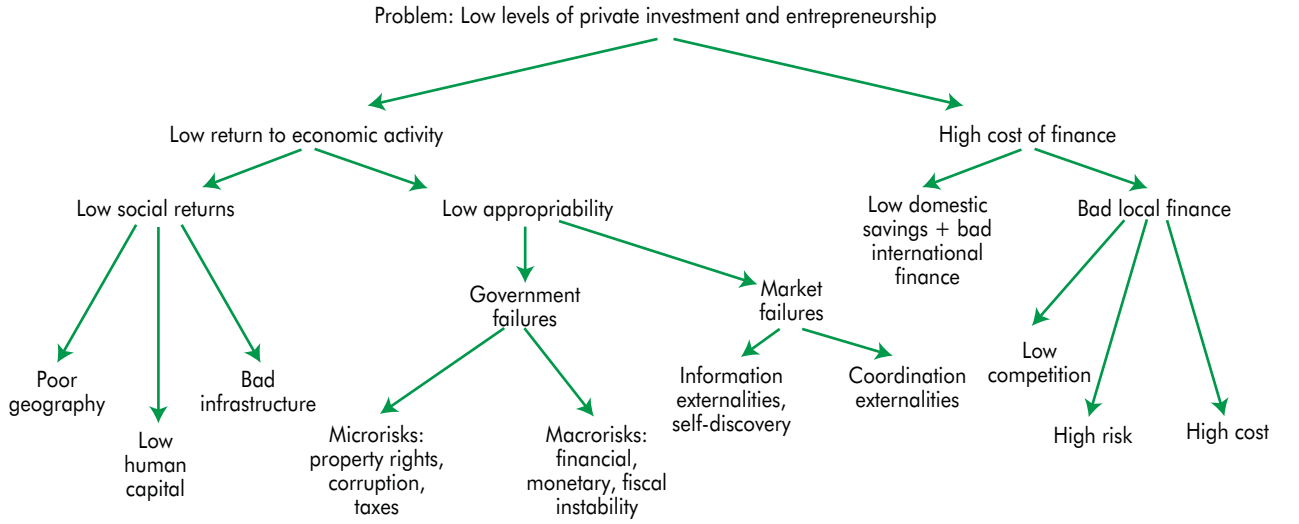
This is particularly important as it provides the first indications of feasible growth targets and levels of achievable income from a growth episode. This is a useful antidote to growth analyses that focus on either growth rates or income levels but not both. So for instance, one might ask, if the states in Southern Sudan were to grow at a very rapid pace (say that of China or India) for the next 7 to 10 years, what would be their income (and in particular, non-oil income and/or productivity) after that growth episode. That helps fix the idea of what the target rates of growth and feasible economic transformations will be.

The essence of sustainable, broad based economic growth is a transition from a lower to a higher level of labor productivity. Getting to higher levels of income requires that the individual actors in an economy (governments, firms, individuals) undertake greater levels of investment and innovation—where both are broadly conceived. Investment includes not large physical investments like roads and factories but also clearing new lands, planting larger acreages, acquiring new skills. Innovation is not just pushing the frontiers of knowledge but also opening new businesses, growing new crops, linking markets by moving goods. The very simple foundation of growth diagnostics is that private sector actors—from individual farmers to small and medium firms to huge industries—will invest and innovate when the benefits exceed the costs. The standard growth diagnostic decision tree from HRV is just a way of organizing the determinants of the private benefits of investment and innovation (profitability) and the private costs of finance for investment (Figure 6-1).

The following section uses an application of the HRV approach to two Southern states—Upper Nile and Eastern Equatoria—to provide an illustration of the type of analysis that is needed for Southern Sudan in its entirety. The objective is to inform and shape the formulation of GoSS' growth strategy and it is in no way intended to deliver a comprehensive growth strategy for the South and further is not meant to promote a state-by-state approach.

In applying the standard growth diagnostic framework to the two states we found it useful to distinguish the analysis by the size and the sector as discussions of whether "appropriability" or "infrastructure" are "binding constraints" depend heavily

FIGURE 6-1: A Growth Diagnostic Framework



on whether one is considering the choices of a small scale farmer or a large international investor. In Figure 6-2 we illustrate the three standard sectors (agriculture, services, and manufacturing) and the three sizes (small, medium, and large) that we discuss. This overlaps with the identification of the current state of the economy discussed above, as one needs to know the relative sizes of these sectors. Often it is attractive to focus on high profile investments in modern sectors—but no matter how rapid the growth in these sectors are, since they are starting from a very small base they will not in the short to medium run, be able to sustain rapid growth (and much less growth with broad benefits).

FIGURE 6-2: Sectoral Size of Economic Activity

	Small	Medium	Large
Agriculture	Subsistence farming	Medium size cattle herding	Large scale commercial farming
Manufacturing	Small metal work, carpentry	Milk factory	Commercial mining, manufacturing for export
Services	Market trader, hair dresser	Retailer, Wholesaler and Construction	Big tourist business, telecoms

C. Binding Constraints to State-Level Growth

Upper Nile State

Upper Nile State (UNS) is located in the northernmost part of Southern Sudan, bordering with Ethiopia and several states in the North. The terrain is relatively flat with the White Nile River flowing across the state. The state is endowed with rich natural resources comprising significant oil reserves, vast fertile land, and abundant water sources. The estimated total population of UNS is approximately 1.9 million, half of which are internally displaced persons (IDPs) and refugees residing outside of the state mainly in Khartoum and Ethiopia, Kenya, and Uganda.[124] The demography in the state is rapidly changing due to massive returns of IDPs and refugees. In 2008, a total of 38,686

[124] Upper Nile State 2007.

IDPs and refugees returned to the state.[125] UNS is a multi-ethnic state. The major ethnic groups consist of Dinka (36.3 percent), Shilluk (20.7 percent), and Nuer (18.4 percent) as well as Maban, Kombo, nomadic Arabs, and others.

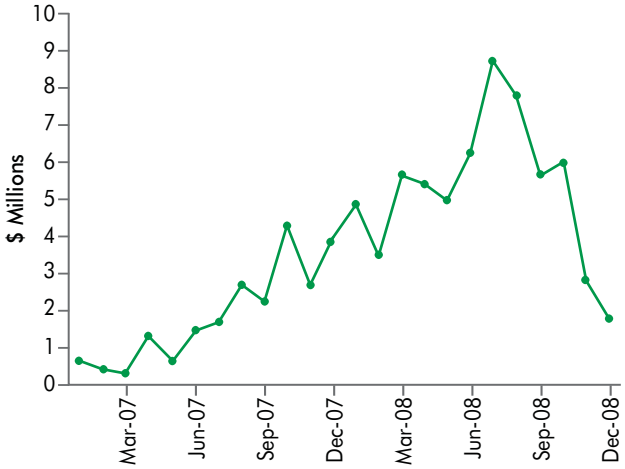
State of the Upper Nile Economy and Sectors

A unique feature of the UNS economy is the traditionally strong economic ties with the North, though this is shifting gradually as the CPA is implemented. Investors, traders and bankers from the North have played catalytic roles in facilitating commercial transactions in those linkages but are now gradually withdrawing from UNS. While UNS is still more connected to the North than other Southern states, this shift has nonetheless created a significant vacuum in the economy.

The CPA has also brought significant oil revenue to the state. While local backward and forward linkages of the oil sector are almost non-existent, the sector has a significant fiscal implication for the state's economy. Based on the Wealth Sharing Protocol made in CPA, oil-producing states receive 2 percent of the revenue from oil produced in the state. In the case of UNS, this was about half of the state budget in 2008. In addition, the states in the GoSS region receive transfers from GoSS whose budget also relies on the oil revenue share from the North. The significance of the oil revenue share in the state's budget makes the state extremely vulnerable to fluctuations in world oil prices, which is evident in the rapid contraction of its oil revenue share since July 2008 as the oil price dropped sharply in the world market (Figure 6-3). The share of direct oil revenue in the state budget is expected to decline in 2009 because of sharp increases in both block and conditional transfers from GoSS.

The fiscal impact of the oil sector, transmitted largely through the public sector, plays a major role in the economy. The government is the dominant source of income for many of the UNS population, spending the bulk of its budget for the salaries of government employees. The share of salaries in the UNS state budget increased from 2008 to 2009 (Figure 6-4).[126] The government is also involved in productive activities such as management of agricultural schemes, particularly in the Southern part of the state, with minimal private sector participation. Figure 6-4 indicates a significant share of capital expenditure in the state (above 30 percent in the budget both in 2008 and 2009), which is larger than most of other states in Southern Sudan.[127] Half of the capital expenditure is spent by the UNS Ministry of Physical Infrastructure.[128] With its oil revenue, the state can allocate more resources for investing in the development of non-oil sectors in the state including infrastructure.

FIGURE 6-3: Monthly UNS Oil Revenue Share: January 2007–December 2008



Source: Various monthly reports of the GoNU/GoSS Technical Committee on "GoSS Share From Crude Oil Revenues".

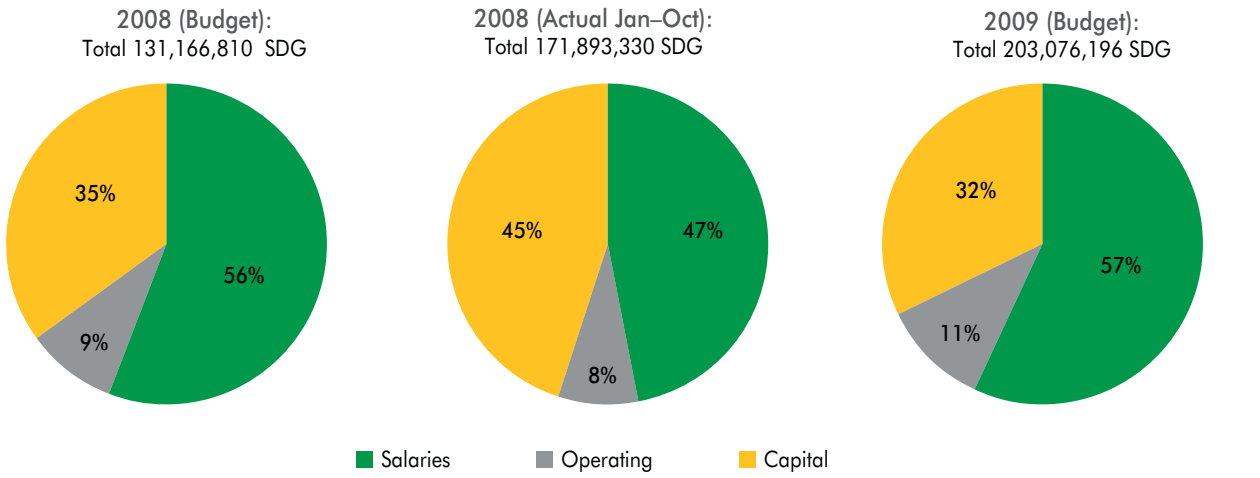
[125] UNMIS 2009. This includes organized returns of IDPs and refuges (19,212) and spontaneous returns (21,878).

[126] The increase in the share of salaries in the budget is largely due to decentralization of some public services from GoSS to the states.

[127] The state has a higher share of capital expenditure in 2008 based on actual spending due to the fourth CPA anniversary, which took place in Malakal on January 4, 2009, for which the state committed to more infrastructure projects than what was planned at the beginning of 2008.

[128] Road construction alone accounts for 25 percent of total capital expenditure of the state budget in 2009.

FIGURE 6-4: Breakdown of State Expenditure by Type of Spending: 2008 and 2009



Source: Data from UNS Ministry of Finance, Trade, and Economic Planning.

The state needs to diversify its productive activities to develop more sustainable income generating sources driven by the private sector and hence broaden the revenue mobilization basis for the state government. In what follows, we will briefly present an overview of the three non-oil productive sectors—agriculture, manufacture, and services.

UNS is one of the leading agricultural states in Southern Sudan with a total of 36.6 million feddans (15.4 million hectares) of arable land. Leading crops are sorghum, maize, and sesame. Gum arabic is the principal forestry product that has been exported abroad.[129] The White Nile is rich in potentially exportable fishery resources (Nile Perch and Tilapia). Livestock (cattle, goats, sheep and donkeys) is also a major sub-sector. Agriculture is a critical sector not only as a source of economic growth for the state's economy but also for poverty reduction among the state's population at large. About 90 percent of the total income of the indigenous population comes from the agriculture sector.[130] Most farmers are involved in smallholder crop production (cereals, legumes, fruits, and vegetables) as well as fishery, forestry, and livestock products.

UNS is unique among the Southern states in that large-scale mechanized crop farming (sorghum, sunflower, and sesame) has flourished in the Northern counties, as well as gum arabic production which is part of an organized and managed value chain linked to large-scale internationalized companies based in Khartoum. While more farmers in the state engage in small-scale traditional farming, large-scale mechanized farming dominates in terms of cultivated land and production. For cereals, mechanized farming has about 80 percent share of total area of cultivation and of production in the state. UNS has only limited scale and scope of manufacturing activities, concentrated in urban areas such as Malakal, the state capital. According to the Sudan Industrial Survey conducted in 2003, the number of manufacturing establishments in the Upper Nile Region (Upper Nile, Unity, and Jonglei States combined) was less than 500. In Malakal, there are several manufacturers of riverboats and a number of workshops that produce simple metal and wood based products such as construction materials and furniture. There are about 200 manufacturers regis-

[129] The gum arabic belt is moving south from the traditional production centers in Kordofans towards Blue Nile and Upper Nile and the southern parts of Southern Kordofan and South Darfur, which increases the share of UNS in the total gum production in Sudan.

[130] UNS Ministry of Agriculture 2007.

tered at the local chamber of commerce in Malakal, the majority of which are small in size (less than 20 workers). The market of the UNS manufacturing sector is limited to the local areas, catering to the local demand for construction materials and household durable products. The vast majority of raw materials and intermediate inputs are brought from the Northern states such as Khartoum.

The service sector in UNS is relatively large, reflecting both its nature as a post-conflict consumption-driven economy and its proximity to the North, which is the major source of finished products consumed in the state. Retail, transport, and construction services are the three major sub-sectors in terms of number of establishments.

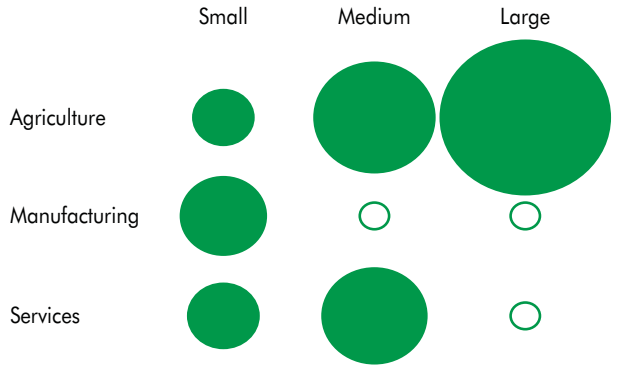
How much those three non-oil sectors potentially contribute to economic growth of the state in a short to medium timeframe? To answer this question as we move to the next section where we seek to identify constraints for growth in UNS, it is helpful to distinguish different scale groups in each sector in order to capture heterogeneity among producers, depending on their scale of activities. Given the paucity of economic data in the state, it is difficult to measure the size of potential contributions of these sector-scale groups. Nonetheless, the indicative relative share of those sectors and scale groups in the state economy is schematically presented in Figure 6-5. Large-scale agriculture has the largest impact on the growth prospect of the state, as mechanized farming occupying 70–85 percent of total cereal sub-sector both in terms of area of cultivation and production, followed by medium-scale agriculture and service.

Binding Constraints for Growth for Different Sectors and Size Groups

Agriculture-Large

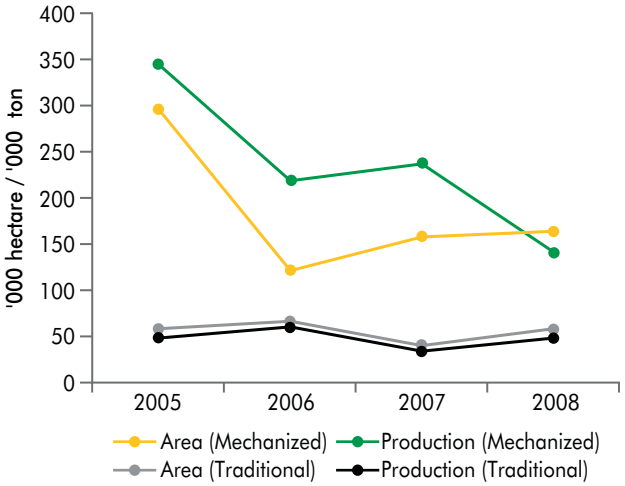
The most immediate constraint facing large-scale farmers in UNS is the lack of sufficient agricultural credits for local farmers due to the current absence of formal financial intermediation in the state.

FIGURE 6-5: Indicative Relative Share in State Economy



With the 2008 closure of 15 Islamic banks in the South, only one Islamic bank, the GoNU-owned Agricultural Bank of Sudan (ABS) remains but it suspended new lending during 2008 both in Malakal and Renk. The only other commercial bank in Malakal, Nile Commercial Bank (NCB), is also not currently providing loans. The credit constraint has seriously hit the large-scale private farmers in UNS, who face difficulty in purchasing necessary

FIGURE 6-6: UNS Cereal Production and Cultivate Area: Mechanized and Traditional Farming



Source: FAO and WFP 2008.

machinery and equipment. Due to the acuteness of the problem, the government provided emergency financing to the farmers during the 2008 farming season to fill the gap, at least temporarily. The volume, however, was limited.[131]

There are low returns to economic activities in large-scale agriculture. There is an issue of low appropriability behind the current decline in land productivity due to a lack of crop diversification. This is a result of repetitive planting of the same crops on the same plots and excessive destruction of natural plants during land clearance. One factor behind the lack of crop diversification is the distorted incentive given to farmers through the credit policy of the government-owned ABS. Based on its policy, only three crops (sorghum, sesame, and sunflower) qualify for ABS credits in Renk, which has diverted farmers' incentive from cultivating other crops.

Low returns to economic activities in large-scale agriculture also come from weak complementary factors provided by the state. Land acquisition is open to all farmers as long as they pay a SDG 200 registration fee to the government. However, the major cost associated with exploiting possibilities of extending cultivated areas is the poor complementary factor, which is transport and marketing infrastructure. The current poor condition of road networks between rural and urban areas (feeder roads) and poor marketing infrastructure such as storage facilities constrain expansion of farming areas (extensive margin). They also hamper value-added growth in existing farms by limiting their market access and by raising input costs (intensive margin).

Agriculture-Medium

The high cost of finance, due to poor local intermediation, is also an issue for medium-scale agriculture, particularly for the crop sub-sector. Lack of access to credits and poor transport and marketing infrastructure limit the growth of mid-sized crop farming as well. However, this constraint is less important than constraints on the other side of the HRV diagnostic tree, i.e., low return to economic activities.

Low returns to economic activities for medium-sized agriculture come from both a lack of complementary factors as well as low appropriability. The weak transport infrastructure network as a complementary factor to production in the state is a serious constraint. Unlike large mechanized crop farming which is concentrated in Renk County, smaller mechanized crop farms exist in other counties where inter-state connectivity is poorer than Renk, keeping the price level for agricultural inputs from the Northern states at a high level. Limited transport networks is a bottleneck for the gum arabic sub-sector in UNS to exploit its direct export market access and create an opportunity for local processing and trading. Companies from the North buy gum arabic produced in UNS for processing and exporting.[132] Although gum marketing in Sudan has become more competitive recently, the only physical marketing route from UNS is to the North—via Kosti (auctioning) and Khartoum (processors and exporters) to Port Sudan for export. The development of alternative transport routes would be essential to attracting potential investors for local processing within UNS and for direct exporting and ultimately diversifying risks related to political uncertainty.[133] The poor inter-state transport also inhibits the ability of the fishery sub-sector to expand its sales outside of the state. Nile Perch and Tilapia are sold to Khartoum and even to Egypt. However, inadequate means of transport,

[131] The total was SDG 15,000, where the majority of recipients received only SDG 200–300. Approximately 90 percent of the recipients are local farmers and those from Northern states.

[132] Since it was established in 1969 by the Government of Sudan, GAC, based in Khartoum, had had an exclusive concession to export raw gum arabic. Recently export licenses were given to other 12 companies that provide primary processing.

[133] UNS government has a vision to develop a road network linked to Ethiopia and Djibouti as an alternative to the northern route. By not relying on the north-bound route through Khartoum, UNS gum products would be outside of the economic sanction imposed on Sudan by the United States government.

in particular refrigerated trucks, limit their external sales, particularly in the absence of Northern traders who used to facilitate such transport.

Multiplicity in taxation raises transaction cost in both gum arabic and fishery sub-sectors is a clear example of low appropriability due to government failures. Fishery workers are required to pay four different fees to the UNS Fishery Department each year along with taxes and fees to other government authorities such as crop market tax and county taxes. For gum arabic, a number of taxes and fees imposed along its value chain (particularly during transit outside of UNS), raise the transaction cost of gum marketing.

The fragile security condition in rural areas is also a concern to fishery and forestry sub-sectors whose activities and access to markets are disrupted by recurring security incidents in the state. The Upper Nile is one of the seven states which experienced incidents of insecurity in the first quarter of 2009 due to activities of the remnants of the Sudan Armed Forces (SAF)-supported groups.

Another low appropriability aspect in the gum arabic is in its industrial organization characteristics. The gum arabic industry in Sudan is still largely controlled by the government. Downstream companies (exporters and processors) still maintain large market power. Consequently the gum marketing arrangements have provided producers with only a small share of export prices (from 1993 to 2005, the average floor price was only 21 percent of FOB export price). Information asymmetries between traders/processors, who know export market outlooks, and uninformed producers keeps the significant gap between the floor price and FOB, allowing Northern traders to extract rent from UNS producers.

Agriculture-Small

Among small-scale subsistence producers, cost of finance is not as serious as the problem of low returns to economic activities, in particular the lack of complementary factors both in terms of weak human capital and bad infrastructure. The lack of skills and knowledge in basic production technique, germination, marketing, and business development impedes their ability to grow out of subsistence. Also, poor transport infrastructure, especially urban-rural road network, is a major constraint for connecting with potential markets. Due to poor quality, most of the secondary roads become impassable during the rainy season. River transport to rural areas away from the White Nile (along Sobat River) takes much longer (Table 6-1) than points along the White Nile. High transaction cost of marketing of agricultural products make small-scale farmers less competitive even in local markets.

Manufacturing – Small

The high cost of finance from poor local intermediation is perceived as a serious bottleneck by the majority of micro and small manufacturers who have been rejected on their loan applications for unclear reasons or are discouraged to apply for

TABLE 6-1: Boat River Transport to and from Malakal

To/From	Average Frequency of Service per Day		Traveling Time (Days)		Fee (SDG)
	Dry	Rainy	To	From	
Renk (Hideb)	1–2	4	1	2	300 per ton
Kodok	1	1	1/4	1/3	20 per passenger*
Akobon	1/7**	1/7**	3	3	150 per passenger*

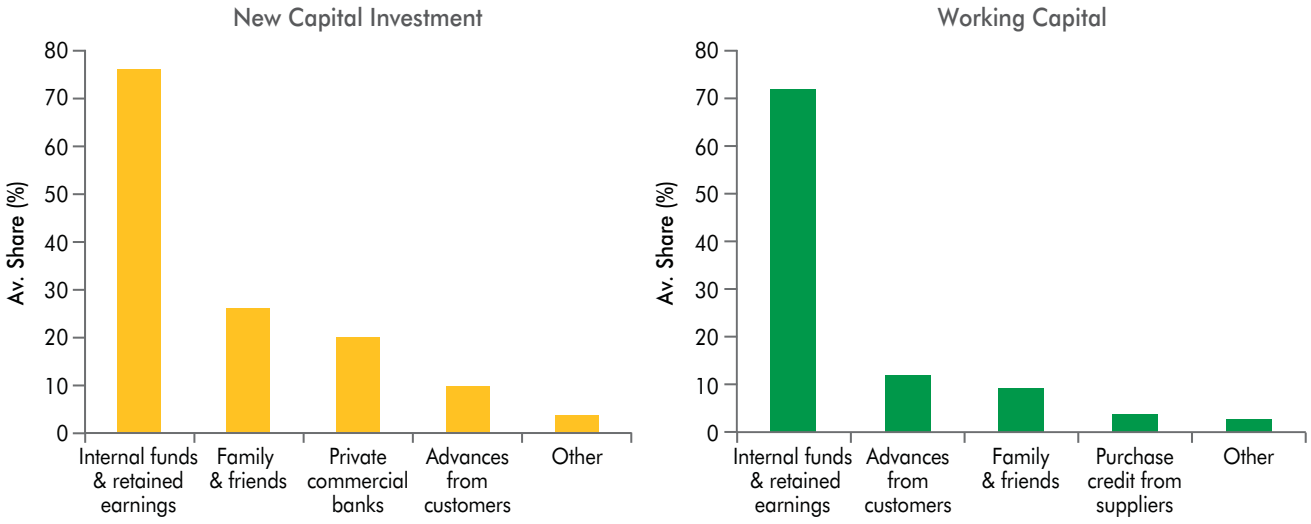
Source: Data from the Malakal River Transport Trade Union.
Note: * Passenger boats with goods carried by passengers, only charging per passenger. ** Once a week.

new loans due to demanding conditions set by the banks. While the perception is pervasive among all enterprises, a larger number of them have not applied for bank loans due to lack of clear investment plans. Thus, most enterprises depend on internal sources (i.e., retained earnings) for investment in new projects as well as borrowings from family and friends (Figure 6-7).

Lack of complementary factors, especially transport infrastructure, lowers social returns among micro and small manufacturers. The data from the World Bank Investment Climate Survey show that electricity was perceived as the most serious problem among manufacturers in Malakal in 2007, but this was not the case in January 2009. This reflects the recent improvement in the public electricity grid (acquisition of new generators). However, transportation continues to be a major problem. The vast majority of intermediate inputs for UNS manufacturers are from the North. This higher transport cost raises purchasing cost of obtaining intermediate inputs (Table 6-2).

Government's policies and regulations also constrain small enterprises. The UNS government recently set a policy to relocate manufacturing workshops from the congested Malakal city center to a newly created zone on the periphery of the city. Entrepreneurs who have relocated already have lost previous forward and backward linkages due to the increased distance from existing suppliers and

FIGURE 6-7: Sources of Funding among Manufacturers in Malakal



Source: Sudan PICS 2008

TABLE 6-2: Price Comparison of Select Intermediate Inputs: Malakal and other cities

Item	Price in Malakal	Comparator City	Price in Comparator City
Iron Sheet (per sheet)	30	Kosti	20
Water pipe (per ton)	910	Kosti	790
Tire (per piece; Yokohama Tire)	600	Juba (imports from Uganda)	300
Sand (per bag)	2,000	Rumbek	90

Source: Interviews conducted by the team.

customers. On the other hand, relocating could attract new entrants to the industry, who have been deterred from entry due to congestion and lack of access to land in the old location. This would then lead to a growth of the sector itself in a long run if sufficient agglomeration occurs at new locations. For that to happen, predictability in the government's zoning policy is important.

Services – Small and Medium

The high cost of finance from poor local financial intermediation is relevant mostly among construction services and medium-scale businesses. Currently, they have to rely on internal sources for financing of operating capital.

The small and medium service sector faces low returns to economic activities due to a lack of complementary factors as well as low appropriability. Given its nature of activities, the weak transport infrastructure network is the most serious constraint for the UNS services sector, particularly retail and construction services, which depends on supplies from other states. Transport time is as important as transport cost. Road truck transport is used almost exclusively during the dry season despite fees that are higher than those for river transport. As shown in Table 6-3, while the shipping cost using trucks is almost double the cost of using river transport, the shipping time using trucks is significantly lower. Medium-scale services such as hotels are even more constrained by the transport difficulties since their businesses are more sensitive to timely delivery of materials from the North. They sometime use air to ensure just-in-time delivery. Investing in own trucks is also being considered to minimize transaction cost through vertical integration.

There is also a significant variation in transport cost particularly for long-haul truck transport service. High transaction cost associated with transport service operations such as poor infrastructure condition (lack of complementary factors) and multiple taxes and fee payments (government failure) could be a factor for the price variation.

Eastern Equatoria State

Eastern Equatoria State (EES) was at the epicenter of the civil war, especially over the control of three Northern-controlled garrison towns of Torit, Lafon and Kapoeta and the linking road corridors. Aerial bombardment and land mines destroyed most of the existing infrastructure including roads, schools, health clinics, and water and sanitation facilities. The war also had a profound effect on the population of EES. There are varying statistics on population or returnees, however it is widely accepted that EES was one of the most severely affected states. Available population estimates range from 730,000 and 1,500,000 with about 70 percent of the population characterized as agro-pastoralists. EES currently has a low level of economic development with the majority of the population engaged in subsistence agriculture.

As hostilities ended, the EES Government Strategic Plan claims that the population tripled from

TABLE 6-3: Cost and Time of Cargo from Kosti to Malakal by Mode of Transportation

	Mode	Cost	Time
Paint cans (5 liter can x 240, 9,000 SDG sales value)	River Steamer	140 SDG /t	7 days
	Road Truck	220 SDG /t	2 days
Water pipe (530 SDG/t sales value)	River Steamer	100–120 SDG /t	5–6 days
	Road Truck	200 SDG /t	2–3 days

Source: World Bank staff estimates.

around 500,000 in 2003 to 1,500,000 in 2006. EES has a low degree of urbanization (Torit town counts an estimated 30,000 inhabitants, while Kapoeta has between 5,000–10,000 inhabitants). Poverty is increasing due to an influx of returnees, economic displacement, insecurity, and drought. Current estimates suggest a poverty range of 70–90 percent of the population.

Eastern Equatoria State enjoys significant arable land, and in the past was considered the breadbasket of Southern Sudan. Before the war, EES produced enough cereals and groundnuts for the state and excess for Juba markets. Now there are currently 108,000 people dependent on food aid.

The state is located along two major trade routes—one leading to Uganda (via Nimule) and one to Kenya (via Torit, Kapoeta and across the border to Loki.). The advantages for the state are significant. Production originating in the state has potential access to major markets in Juba, Kampala and beyond. Also, given the large dependence of Southern Sudan on imports, there is a large flow of trade that transits the state, implying potential development of service sectors geared toward trade facilitation.

State of Eastern Equatoria Economy and Sectors

Similar to other states in Southern Sudan, subsistence agriculture characterizes most economic activity in EES. The traditional livelihood systems rely on crop production, cattle-rearing, fishing and wild food collection (SSCCSE/Livelihoods Analysis Forum, 2006). Cattle are also extremely important for the majority of families in EES.

Crop production. Sixty-five percent of households in EES have planted in the last year (second only to Western Equatoria, CFSVA 2006). Crops are grown mostly for household consumption, with limited excess sold at market. Crops grown in the state include cereals (sorghum and maize); tubers (cassava, sweet potatoes, and Irish potatoes); pulses (cowpeas, beans, and green grams); oilseeds (groundnuts and sesame); vegetables (pumpkin, juice melon, cowpeas, okra); fruits (mangoes, lemons, oranges, banana, sugarcane, and pawpaw); and tea and coffee.

Livestock. Livestock, classified here as medium size agriculture, is the second most important source of income and livelihood in EES with 80 percent of people in Southern Sudan being agro-pastoralist. In Southern Sudan, livestock production is a way of life, a tradition that for centuries has shaped the thought, the culture and the socio-economic life of the majority of the people hence the need to focus and grow the sector. According to the MARF Animal Resources Sector Policy (2006), the growth of agriculture in general and the animal resources sector in particular, is essential not only to achieve self reliance at the national level but also to improve household food security and bring about equitable distribution of income and wealth for rapid reduction in poverty levels and economic growth.

According to FAO, 26.4 million hectares in Southern Sudan are marginal arable lands (MAL) that are mostly referred to as rangelands and flood plains. These are largely used for extensive livestock production and are suitable for beef cattle, small ruminants and game ranching as well as some of the game reserves/parks. The main cattle producing areas are Upper Nile, Eastern Equatoria, Jonglei, Warrap and parts of Bahr El-Ghazal states. Livestock farming is increasing rapidly as evidenced by the large increase in the numbers. For instance, between 2006 and 2008, the number of cattle quadrupled, increasing from 434,000 to 2, 500,000.

Services. There is very modest private sector activity, consisting primarily of small businesses operated mainly by foreign entrepreneurs from neighboring Kenya and Uganda. The state's chamber of commerce has 16 members consisting of petrol stations, hotels, wholesalers and retailers. The only sizable private sector business is McDowal Construction, originally from Kenya. However trading conditions are reported to be deteriorating

and some traders are closing shops in Torit.

The indicative relative share of those sectors and scale groups in the state economy is schematically presented in Figure 6-8. Small-scale crop agriculture has the largest immediate growth potential in the state, followed by medium scale agriculture (livestock) and medium-scale services. Following these sectors, there is limited potential in the near term for growth from small-scale manufacturing and services.

Identification of Binding Constraints for Growth

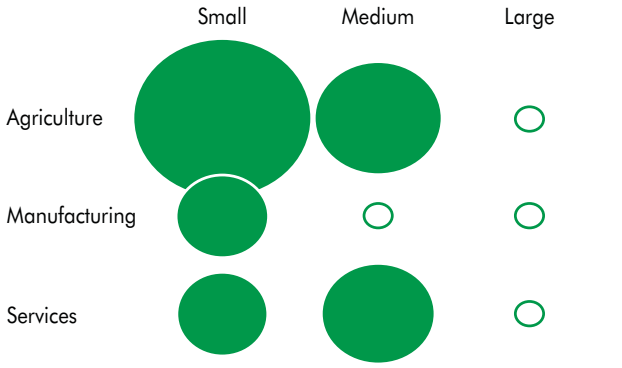
The two major contributors to employment and productivity are small (subsistence) agriculture and medium agriculture, which includes livestock. Services primarily take the form of small-scale market traders. Some construction companies are clear exceptions, not just by their sheer size but also because there appears to be considerable scope to improve the productivity of these two sectors.

Agriculture – Small

The medium-term goal for the agricultural sector in EES should be food self-sufficiency, reversing the huge cereal deficit. This is consistent with the GoSS Ministry of Agriculture's stated goal: "to transform agriculture from subsistence/traditional system to achieve food security through science-based, market oriented, competitive and profitable agricultural system, without compromising the sustainability of the natural resources for generations to come."

Yields and the average farm areas per household in Eastern Equatoria in 2006 were the lowest in Southern Sudan. Both indicators were roughly half the size of the South's best performing agricultural state of Western Equatoria. Comparisons with similar agro-environments outside the country also show large gaps between current output and potential. Yields in Uganda are 2–4 times as high for many crops, with a difference of between 1–2 tons of produce per hectare.

FIGURE 6-8: Indicative Relative Size Shares in the State Economy



There is huge variability in the profit per hectare, with cultivation primarily concentrated in low return crop. In Southern Sudan, households generally live a subsistence lifestyle in which 40 percent of food comes from own production and 10 percent from hunting, gathering and fishing. While food purchase remains an important source of food (with 39 percent of food accessed in this way), limited market access and security problems force most households to rely on own production.

Although Eastern Equatoria is located along major trade routes for Southern Sudan and has several major road connections running through the state, the feeder roads network is inadequate in terms of density and maintenance. Most roads are often impassable during rainy seasons. Some road sections are suspected to be heavily mined. In addition, ongoing insecurity has changed the human settlement pattern, with most people moving away from the main routes and rivers.

The poor condition of roads and infrastructure severely limits access to markets and restricts opportunities for exploiting natural resources and agricultural opportunities. EES has rudimentary runways that can accommodate small aircraft, but no capacity for cargo planes or commercial movement of significant produce.

Generally, there is no shortage of land and most villages have uncultivated land that can be

distributed according to future needs. However, population density is very low in EES, estimated at 11–18 persons per square kilometer. There is sufficient land, and farmers are not pushed onto marginal land yet, but the continuing threat of war has resulted in a slow return of refugees.

Micro co-ordination failures hinder investment in small-scale agriculture. In particular, due to a history of little market activity—potential sellers, traders and potential buyers are not connected, partially due to asymmetric information.

There is very little lending for agricultural activities. There are four commercial banks operating in Southern Sudan, which mainly provide transfers between Juba and their headquarters in Khartoum for pensioners. Nile Commercial Bank is the only commercial bank in EES, but it experienced liquidity problems in 2006 and has not provided loans since. Micro finance institutions are also in their infancy. Building Resources Across Communities (BRAC) started operations in Torit in March 2008 and lends exclusively to women. The Catholic Relief Services (CRS) is currently the only NGO in EES with a micro-financing program for SMEs.

Agriculture – Medium

There is a steady increase in livestock off-take, especially from the Greater Kapoeta area, which supplies livestock markets in Narus, Kapoeta, Camp 15, and Torit, which is a secondary market and Juba, which is the final market in Southern Sudan. During the war, a lot of livestock were sold in neighboring countries like Kenya and Uganda because of low prices but the trend has reversed since 2005.

The number of livestock processed through slaughter houses in Torit are indicative of the increase in livestock sales, given Torit is the secondary market for livestock from GK, Budi, and Ikotos. Table 6-4 shows the changes over time since the CPA.

Other livestock slaughtered in small numbers is pigs—35 in Ikotos and 14 in Kapoeta East, mostly consumed by returnees. It is estimated that Juba slaughters about 120 bulls and 320 sheep/goats daily in the 5 different slaughter slabs around the town. This shows the great demand for meat in Juba. Prices for livestock are rising steadily for the majority of the supply, for example the price of cattle in Juba increased from SDG 1,500 in 2008 to SDG 2,000 in 2009.

The returns to investment are significant, as prices for livestock continue to rise. Despite potential for generating high levels of income, very little trade actually takes place. Currently EES has about $1billion of wealth tied in cattle.

Infrastructure is only of marginal importance to marketability of livestock as they can be trekked. Indeed cattle could be walked from Eastern equatorial to Juba, which by its very nature is free. Few traders still trek animals from Kapoeta to Torit or Juba especially if from Kapoeta North County as it takes 2 days to get to Juba and 3 days to Torit (according to the livestock farmers in KNC during the study). Animals that are not sold in Kapoeta,

TABLE 6-4: Livestock Slaughter in Torit

Type/Year	During war	2005	2006	2007	2008
Cattle	1825	1303	1882	2821	2661
Goats		1249	282	923	19,137
Sheep		312	425	702	378

Source: EES Ministry of Agriculture, Department of Animal Resources and Fisheries, Annual Reports.

TABLE 6-5: Livestock Transport Costs for EES, SDG

	Kapoeta – Torit		Kapoeta – Juba	
Type/Route	2008	2009	2008	2009
Cattle	60	100	100	120
Goats/ Sheep	7	10	15	20

Source: Case study team estimates, and SNV Livestock Survey 2008.

are loaded on trucks to Torit or Juba markets. An average truck carries about 20–30 cattle and 50–150 goats. Table 6-5 shows what traders are paying for transporting their animals:

The absence of value chain systems has been widely reported upon by NGO's with a belief that once water-points, better slaughter facilities, and other extension services are built this will increase the trade in livestock. But analogously to the case for subsistence farming this is a consequence of lack of trade instead of a cause. Once increasing numbers of livestock are in fact traded, there is an economic incentive to provide extension services. Returns made along the value chain and the profit margins for both transporters (66–82 percent gross profit margin) and butchers (65 percent gross profit margin) are significant. This would indicate there should be scope for more people drawn into cattle transport and we would not anticipate this to be a constraining factor.

As most of the purchasing power for meat products comes from government salaries, severe fluctuations in government income might have a bearing on the price. As the price formation is transparent, and there is no lead time in production (unlike farming) the livestock herder can simply decide not to sell if the price is below his/her reserve price. But we have thus far only seen a rising price.

Security is a crucial issue as highlighted above—the frequency and severity of cattle raids are high. Cattle rustling is not only an expression of economic need but also of inter-tribal rivalry over resources and grazing.[134] In an environment of insecurity it is perhaps rational to keep one's wealth in mobile form. This allowed lot of people to leave EES with their wealth during the war, and return with their flocks after the CPA was signed, therefore explaining the immense increase in livestock in the state.

Cultural factors explain a significant part of why there is such little trade in cattle. Beyond being a vehicle of monetary wealth cattle is a source of prestige to the owner. Furthermore, cattle are the currency in which dowries are usually paid. This is indicative of the deep cultural meaning of cows as assets and cattle herding as a lifestyle.

Credit is generally not available to livestock farmers. However it is not the lack of credit that is preventing the bringing to the market, quite the reverse. Farmers use or retain livestock as a strategy to cope with the lack of other financial instruments. Both a response to insecurity and lack of reliable financial instruments that lead people to store wealth in cows. As such it can be regarded as different forms of capital: insurance capital, social capital (used for dowry), and savings capital.

Services – Medium

The current business climate was reported to be challenging. In fact many smaller traders have either closed up shop or are sitting on unsold goods. Indeed it was reported that the business climate was better during the peace in the 1970's than currently.

Infrastructure inadequacies present a significant constraint. Electricity provision to Torit is strictly for domestic consumption, and explicitly not for production use. Most businesses have their own generators. Electricity provision in Kapoeta is imminent. While electricity does not impede production, it raises operational expenditures. Roads are in poor condition, as demonstrated by the collapse of the bridge on the Juba Nimule road in February 2009, which instantly disrupted the main trading route to Uganda. The poor state of roads is also one of the main causes of high transport costs. The WFP quoted the commercial rates it is paying for the transport of food as $8.8 /km for a ton of merchandise. So a 40-ton truck (plus trailer) from Loki to Nadapal (c. 200km) costs $7,200.

Regarding human capital, as stressed above, literacy rates are low in Eastern Equatoria (only 6.7

[134] Schomerus 2008.

percent of 15–24 year old women are literate). This is not necessarily a skill shortage that would impede scaling up of production. Specific skills are lacking, such as masonry, carpentry and building. And the construction industry relies exclusively on foreign workers for these skills. Indeed it is estimated that there are approximately 100,000 foreign workers in Southern Sudan, excluding those working for NGOs. World Vision Sudan states that over 85 percent of skilled labor in Juba is provided by immigrant workers, including those from Kenya, Uganda, Ethiopia and Eritrea (WVS, 2008). It is understood from the Central Equatoria Chamber of Commerce that up to 40,000 Ugandans and 15,000 Kenyans are working in Juba alone.

Insecurity is also affecting the medium service industry, primarily wholesalers and retailers. The risk to any cargo being raided by robbers or getting caught up in a cattle raid imposes additional risks. In addition looting of premises at night presents another economic risk.

Multiplicity of taxes and lack of transparency on the part of taxing authorities is an issue. There are two levels of taxation—the state level and the county level—and three forms of taxation—license fees, personal income and business profit taxes, and trade border taxes.

There is very little credit provision to the private sector and hence availability of capital was a constraining factor. All investments were financed through own capital and retained earnings. Therefore access to finance is a key constraint to expansion in medium services, scaling up of which significantly slows investment levels and growth.

D. Toward a Comprehensive Growth Strategy for Southern Sudan

GoSS is currently developing a growth strategy for Southern Sudan, and the growth diagnostic framework is a useful framework to inform and shape this strategy. With the end of the CPA period nearing, GoSS is increasingly focusing on the transition from its initial priority of establishing peace under the CPA and immediate relief to its citizens, to the broader development agenda and facilitating broad-based growth to improve the livelihoods of the people of Southern Sudan on a sustainable basis. GoSS has committed to preparing a growth strategy to guide this transition through assessment of the South's comparative advantage and identification of the essential policies and programs to unleash its growth potential. The growth diagnostic framework can be a useful tool for GoSS as it does not begin from any preconceived notions about what the correct policies for growth are, but rather tries to approach the economy from its initial conditions and produce a prioritized and sequenced set of policy actions to get where it wants to be. This approach is appropriate to Southern Sudan in two ways. First, the situation is unique and the region faces a large number of very challenging conditions and so cannot simply rely on "conventional wisdom" to formulate policies. Second, the environment for analysis is largely free of reliable data, so a method that is based on creatively applying all available data and information to form a coherent narrative is well suited to the problem at hand.

The preceding section is meant to *illustrate* how a growth diagnostic could inform the formulation of a growth strategy for the autonomous region of Southern Sudan by carrying out a brief diagnostic of two states. Findings for the individual states are not meant to be definitive but rather just indicative of directions a fuller growth diagnostic would pursue. The remainder of this section discusses the last two steps of the growth diagnostic—syndrome characterization and implementation diagnostics—to raise relevant analysis and potential recommendations for a GoSS level growth strategy.

Syndrome Characterization

The pattern of binding constraints found in the state-level work suggests a syndrome for the

South of an under-investment state. The economies of Upper Nile and Eastern Equatoria states face many constraints that bind its productive sectors simultaneously. The degree of multiplicity in binding constraints is even more pronounced due to their post-conflict nature. Under the growth diagnostics framework, we can attempt to look at the collection of constraints to see if they fall into recognizable patterns or "syndromes." This suggests the basic syndrome of these economies is that of an under-investment state, with serious transport infrastructure bottlenecks, existence of ex-ante risks, and government failures in public policies toward the private sector through fiscal policies and other regulations.

- *Infrastructure shortcomings, particularly those related to transport structures such as inter-state and intra-state road networks, are binding constraints to almost all sectors and scale categories.* In UNS, while the state is relatively well connected with the North of the country with river and road transport, connectivity with Southern markets such as Juba as well as further south in Uganda and Kenya is very poor. The poor transport infrastructure keeps the cost of inputs high in all sectors and constrains access to local, national, and export markets for products.
- *Ex-ante risks are high.* Uncertainty over the future of the country and the state in the post-2011 phase as well as continued concerns over the local security condition, driven by the tribal conflicts and the tension between Sudan's People Liberation Army (SPLA) and Sudan Armed Force (SAF), restrain productive operations and impede long-term investments. The vacuum created by the withdrawal of Northern investors and traders has not yet been filled by the nascent and weak indigenous private sector.
- *Ex-post failures at various levels of the government are also relevant.* Multiple taxes and the lack of fiscal policy coordination among various government entities discourage production and marketing activities in various sectors. Misguided incentives are given by the government, which result in lowering agricultural productivity. The GoNU's control of the gum arabic industry has limited market competition among the processing and exporting agents of gum products at the national level. This yields a sub-optimal level of investment and allows downstream processors and exporters to extract rent from upstream UNS producers due to information asymmetry.

Access to credit is a serious constraint for virtually all sectors. This is essentially a problem of weak financial intermediation due to the policy shift away from Islamic banking in Southern Sudan and resulting withdrawal of existing banks from the state. This is a response of the banking sector to the ex-ante risks and uncertainty, which leads to under-investment in the banking services. There may be also a result of government failure in instituting a drastic shift in its policy toward the banking sector without ensuring smooth transition to the new system.

The under-investment state is a typical syndrome for post-conflict economies, which are often associated with these phenomena. In addition, there are several other characteristics of post-conflict economies.

- Being justified by the weak private sector base in the post-conflict setting, excessive involvement of the government in productive activities, either by directly operating them or through procurement, which crowds out potential private sector investment or makes investment less efficient.
- Post-conflict economies also face the problem of weak public sector implementation capacity. In implementing the CPA, administrative structures have been constituted but are still nascent. Coherence of the structures is still weak. As a post-conflict economy, a significant amount of foreign aid flows into Southern

Sudan, together with the oil revenue share. With limited institutional capacity, effective use of available budget through programming and implementing public investments efficiently is a significant challenge.

- A boom in construction is a typical phenomenon in a post-conflict economy. There is a large demand for construction work. This high demand in construction is often met by inelastic supply in a post-conflict economy due to a limited supply base for construction work and limited tradability of construction services. This drives up the cost of construction work.

Implementation Diagnostics

Upper Nile State implementation diagnostic. The UNS economy is in the fortunate situation of having significant oil and agriculture resources to exploit. For immediate growth opportunities, agriculture plays a key role particularly in the area of large-scale mechanized crop farming, gum arabic, and fisheries, but will need a set of reform policies to remove constraints that are particularly binding those opportunities. The relative proximity to the North makes the future growth path of the UNS economy more sensitive to the degree of economic integration both with the North and with the rest of the South, combined with a good security condition. There are three main areas the UNS government and GoSS could cluster their efforts to unleash non-oil growth.

Improved transport in UNS would bolster both inter-state and intra-state connectivity.

- Road infrastructure development to improve both inter-state connectivity and intra-state urban-rural connectivity is the key area for infrastructure improvement in UNS. Investments should be prioritized for upgrading existing roads particularly the most acute bottlenecks along the major North-South corridor as well as feeder roads of the key agricultural zones.[135]
- Enhance the capacity of the state-owned ports in Malakal and Renk and their port handling services to improve efficiency of river transport. No mechanized lifting is available at either port.[136] Inter-modal connectivity between road and river needs to be strengthened as well. Currently, both two ports are accessible only by dirt roads. To supplement limited public resources and to improve efficiency of port operations, the state government could consider leveraging on private sector resources for example through public-private partnership (PPP).
- Set a clearer policy framework based to create more transparent and competitive environment of transport services. The market is still underdeveloped in the sense that information asymmetry exists between buyers and sellers and pre-existing buyer-seller relations seem to govern the pricing system of transport services.
- The government can also encourage broader private sector participation in infrastructure construction work so that the supply of construction services becomes more elastic, lowering overall cost of construction.

Financial sector development

An effective policy framework to enhance local financial intermediation needs to be established. This is not simply to provide a short-term stop-gap measure to counter the credit crisis in the UNS private sector due to withdrawal of Islamic banks. More importantly, there needs to be an appropriate environment with a set of sound legal and regulatory frameworks to facilitate private sector investment in the area of banking services. Such policy framework should incorporate a strategy to support channeling of investments from existing and potential external

[135] GoNU has indicated they will finance the upgrading work for Renk-Malakal.

[136] As a result, the Malakal Port can handle only three barges a day, and Renk Port only two. (*Source*: United Nations Joint Logistics Centre 2009).

investors including remittance flows, North-based investors, and potential foreign investors.

For the UNS economy to pursue private-sector driven economic growth, it is critical to ensure transparent, predictable, and less-binding fiscal and regulatory policies toward the private sector. The government faces a challenge of balancing the two objectives. On one hand, overburdening the private sector with taxes and regulations will certainly constrain its growth and increase the incentive for firms to stay informal. On the other hand, the state needs to pursue non-oil revenue mobilization for ensuring fiscal stability in a long run. For the government to have sustainable fiscal space, the fiscal system needs to be structured in a way to increase participation of the private sector in the system.

- The state-level taxation system could be simplified with improved accountability in revenue collection. Multiplicity in taxes and other administratively assessed fees such as licenses on same products or same productive activities should be rationalized *within* individual departments/ministries as well as *between* departments/ministries.
- The inter-governmental fiscal and regulatory policy coordination needs to be strengthened between GoSS and UNS and between UNS and counties. There needs to be further harmonization of taxes and regulations across different jurisdictions to provide an incentive for freer flows of goods and services as well as capital and labor. The current *de facto* system of multiple taxes on inter-state commerce needs particular attention.
- The transparency in the implementation of the revenue collection system in the state and in the counties needs to be improved to ensure accountability. More systematic monitoring system could be introduced.

Eastern Equatoria implementation diagnostic. The growth diagnostic framework aims to identify the key constraints to investment and economic growth in the highest potential areas. What are the feasible actions in Eastern Equatoria's current circumstances that would continue or initiate an episode of sustained, broad based, rapid growth?

Unlocking Crop Potential. Agricultural potential in Southern Sudan is high with about 90 percent of its total area considered suitable for agriculture, 50 percent of which is prime agricultural land. Soil and climate conditions allow for a wide variety of food and cash crops. However, the potential for growing cash crops such as tea, coffee, cotton and sugar cane remains unexploited (JAM, 2005c). Cultivated area has historically ranged between a minimum of one percent and a maximum of two percent of the total area (i.e. 640,000–1,300,000 ha). According to FAO-WFP (Crop and Food Supply Assessment Missions-CFSAM 1996–2007), about 950,000 ha are currently cultivated under cereals (sorghum being the main cereal, followed by millet and maize), yielding less than 1 ton per hectare.

Clearly, both the yield per hectare and hectares under cultivation can increase dramatically as illustrated above. The primary policy interventions are

- Infrastructure and in particular feeder roads– which are especially important considering the effect insecurity has had on human settlement. By connecting farmers to markets they are provided with an incentive to increase production per hectare, hectares under cultivation and diversification of crops. A key policy challenge is securing sufficient funds for the continued maintenance of these roads.
- Tackle the co-ordination problem through Farmers Based Organizations (FBOs) or Community Based Originations (CBOs). Savanna Farmers Marketing Company (SFMC) in Ghana is a good example of a commercial company for the marketing of the farmers' produce of which FBOs will become shareholders. It also does not involve a big role for

the government, as frequently well-intentioned state interventions can turn into state monopolies. Relatively modest levels of seed finance are required for this.
- Skills upgrade through demonstration farmers (this was successfully done in the 1970's), and seed contracts with local farmers.

Unlock Value from Livestock

The amount of livestock is very high in EES—with an estimated total value of $3 billion. While cattle herding is clearly part of the culture and tradition of Southern Sudan, there nevertheless exists the potential to manage and market livestock in a way that unlocks part of this value for income generation. This can be aided through:

- Improved security through DDR and small arms control.
- Introducing other forms of saving and investment through expansion of bank branches.
- Collateralization of cattle by banks.

Stimulating the service sector

The service sector is primarily constrained by the absence of finance. BOSS' Conventional Banking Circular is already having the effect of regulating the banking sector and new banks, such as the Equity Bank from Kenya, are poised to enter the market. This could be supplemented by capitalization of the MFI's or mitigating risks through the establishment of a guarantee fund. Regulating and stimulating the financial sector is key to removing constraints in the service sector.

Additional Messages for GoSS

While each state analysis was particular, there are some common elements to the implementation diagnostic that will emerge from a larger growth diagnostic.

- A growth strategy must clearly identify its role and the role of other actors (e.g., private sector, NGOs, donors, etc.) with the government clearly in the lead. Without clear leadership the whole can be less than the sum of its parts since many actors each formulate their own strategies. While all of these actors provide some capabilities, none of them can, or should, play the role of setting strategy, but at the same time, any strategy should draw as much as possible on the strengths of each of the existing actors as the government need not, and cannot, do everything.
- A growth strategy needs to stipulate mechanisms for policy action consistent with existing government capabilities. There is a strong temptation to rely on direct government investment by line ministries as the default solution. However, this is not always the best option as the government may not have the capability to do many things and often direct investment by government agencies conflicts and confuses the government roles between stewards of creating the policy and regulatory climate for the overall economy and as direct agents in that economy.
- A growth strategy will need to articulate a clear delineation of roles and responsibilities among government tiers within Southern Sudan. A key issue for private investors—from small to large—is a sense of security in knowing what regulations they face and who will enforce them. The current environment often produces multiple, overlapping jurisdictions for tax and regulation such that no one is clear on who is responsible for what.
- A growth strategy will need to emphasize the issue of security, which is a GoSS responsibility. Security was raised as an issue in both state studies, and the urgency of the issue has been made more evident by recent flare-ups of conflict since the fieldwork for the studies, such as the cattle rustling in Jongei and inter-communal conflicts in Upper Nile state. While signif-

icant numbers of militia have been integrated into either the SPLA or the Joint Intelligence Units, many elements remain active, e.g., remnants of SAF supported groups in Upper Nile. There are apparently large numbers of armed soldiers who are not trained to support civilian authority type of duties and as such have become a major threat to security. GoSS will need to rationalize the employment of the militia and local police force in dealing with insecurity, with significant coordination challenges involved.

REFERENCES

Agriculture Research Corporation. Technical and Annual Reports (various years). Khartoum, Sudan.

Alexeeva, V, G. Padam and C. Queiroz. 2008. *Monitoring Road Works Contracts and Unit Costs for Enhanced Governance in Sub-Saharan Africa.* World Bank Transport Papers TP-21.

Barghouti, S. and A. Salih. 2009. "Assessment of the Agricultural Revitalization Strategy". Background paper for the Sudan CEM.

Bureau of Economic Analysis (BEA). "Global Financial Data." U.S. Department of Commerce.

Central Bank of Sudan. Annual Reports (various years). Khartoum, Sudan.

Collier, P., A. Hoeffler and M. Soderbom. 2004. *On the Duration of Civil War*. Journal of Peace Research 41 (3): 253–273. Oxford: Oxford University Press.

Collier, P., F. van der Ploeg and A. Venables. 2009. "Managing Resources Revenues in Developing Economies." Oxford Working Paper.

Elbadawi, I. 2008. *Foreign Aid, the Real Exchange Rate, and Economic Growth in the Aftermath of Civil Wars*. World Bank Economic Review (22) 1:113–40.

El-Dukheri, I. 2006. "Deliveries and the Effect/Impact of the Project – Final Report." IFAD.

El Rasheed, M. 2005. "Determinants of Market Supply of Sheep in the Sudan: Case Study of Kordofan Area." Ph.D. Thesis. University of Khartoum, Sudan.

Food and Agriculture Organization (FAO). "Statistical Database (FAOSTAT)." www.faostat.fao.org

Food and Agriculture Organization (FAO) and World Food Program (WFP). 2008. "FAO/WFP Crop and Food Security Assessment Mission to Southern Sudan."

Government of National Unity (GoNU), Ministry of Agriculture and Forests. 2008. "Study of the Sustainable Development of Semi-Mechanized Rainfed Farming."

Government of National Unity (GoNU) and Government of Southern Sudan (GoSS). 2006. *Sudan Household Health Survey (SHHS) 2006*. Khartoum/Juba: Central Bureau of Statistics and Southern Sudan Center for Census, Statistics and Evaluation.

Government of National Unity (GoNU) and Government of Southern Sudan (GoSS). 2006–09. *GoSS Share From Crude Oil Revenues* (monthly series), prepared by Joint Technical Committee.

Government of Southern Sudan (GoSS). 2005. Interim Constitution of Southern Sudan.

Government of Sudan (GoS), Sudan Peoples Liberation Movement (SPLM), World Bank (WB) and United Nations Development Program (UNDP). 2005. *Joint Assessment Mission: Framework for Sustained Peace, Development and Poverty Eradication*. Volumes I–III.

Growth Commission. 2008. *The Growth Report: Strategies for Sustained Growth and Inclusive Development*. Commission on Growth and Development.

Hamid, A., A. Salih, S. Bradley, T. Couteaudier, M. El Haj, M. Hussein and P. Steffen. 2005. "Markets, Livelihoods and Food Aid in Darfur: A Rapid Assessment and programming Recommendations." USAID, European Commission and FAO.

Hausmann, R., L. Pritchett and D. Rodrik. 2004. "Growth Accelerations." Harvard Kennedy School of Government Working Paper RWP04–030.

Hausmann, R., Rodrik D., and A. Velasco. 2005. *Growth Diagnostics*. Mimeo. Harvard Kennedy School of Government. Cambridge.

Hidalgo, C. and R. Hausmann. 2009. *The Building Blocks of Economic Complexity*. Proceedings of the National Academy of Sciences 106 (26): 10570–10575.

Hidalgo, C., B. Klinger, A. L. Barabasi and R. Hausmann. 2007. *The Product Space Conditions the Development of Nations*. Science 317: 482–487.

IMF. Sudan Staff Reports (various years). www.imf.org/external/country/SDN/index.htm

IMF. 2009. *World Economic Outlook*. Washington DC: International Monetary Fund.

Kaufmann, D., and A. Kraay. 2002. *Growth Without Governance*. Economia 3 (1): 169–229.

Medas, P. and D. Zakharova. 2009. "A Primer on Fiscal Analysis in Oil-Producing Countries." IMF Working Paper 09/56.

Mina, A. and J. Van Holst Pellekaan. 2009. "Value Chains for Sheep, Cattle and Mutton Marketing." Background paper for the Sudan CEM.

Okuk, J. 2008. "Community Land: A Critical Socio-Economic Factor to Temper with Southern Sudan." Mimeo.

PlaNet Finance Group. 2007. "Khartoum State Market Research Study." Manuscript prepared for Central Bank of Sudan.

Ramachandran, V., A. Gelb, and M. Shah. 2008. *Africa's Private Sector: What's Wrong With the Business Environment and What to Do About It*. Washington: Center for Global Development.

Schomerus, M. 2008. *Violent Legacies: Insecurity in Sudan's Central and Eastern Equatoria.* Geneva: Graduate Institute of International Studies, Geneva.

Shah, A. 2007. *The Practice of Fiscal Federalism Comparative Perspectives.* Montreal: McGill-Queen's University Press.

Sudan Microfinance Development Facility (SMDF) Business Plan.

Sudan Productivity and Investment Climate Survey (PICS). 2008. World Bank Group.

UNIDO. 2003. "Sudan Industrial Survey."

UNIDO. 2003. "An Industrial Agenda for Poverty Relief and Transition to Sustainable Development."

UNMIS. 2009. *Sudan IDP & Refugee Return and Reintegration Operations Statistical Overview*. January 2009.

United Nations. Commodity Trade Statistics Database (COMTRADE). www.comtrade.un.org.

United Nations Joint Logistics Centre. 2009. "River Cargo Transport Assessment: White Nile River, Sudan."

Upper Nile State, Ministry of Agriculture. 2007. "Environment & Rural Development Annual Report 2007."

Upper Nile State. 2007. "UNS State Strategic Plan."

USAID. 1980. "Sudan Country Development Strategy Statement." Mimeo.

Van der Ploeg, F. and S. Poelhekke. 2009. "The Volatility Curse: Revisiting the Paradox of Plenty." De Nederlandsche Bank Working Paper No. 206.

World Bank. 2008. Africa Infrastructure Country Diagnostic (AICD) Study. www.infrastructureafrica.org/aicd.

World Bank. *World Development Indicators.* Various years. Washington DC: World Bank Group.

World Bank. *Doing Business Report.* Various years. Washington DC: World Bank Group.

World Bank. 1987. "Sudan: A Strategy for Rainfed Farming – A Commentary on the Government Steering Committee Report." World Bank Report No. 6502-SU.

World Bank. 2003. *Breaking the Conflict Trap: Civil War and Development Policy*. Oxford: Oxford University Press.

World Bank. 2007. *Sudan Public Expenditure Review (PER)*. Washington DC: World Bank.

World Bank. 2008a. *Sudan Diagnostic Trade Integration Study (DTIS)*. Washington DC: World Bank.

World Bank. 2008b. "Nile Basin Power Trade Study." Washington DC: World Bank.

World Bank. 2009a. *Global Economic Prospects.* Washington DC: World Bank.

World Bank 2009b. *Awakening Africa's Sleeping Giant: Prospects for Commercial Agriculture in the Guinea Savannah Zone and Beyond*. Washington DC: World Bank.

World Bank 2009c. *World Development Report 2009: Reshaping Economic Geography*. Washington DC: World Bank.

World Bank. 2009d. *Global Economic Prospects*. Washington DC: World Bank.

World Bank, 2009e. "Assessment of the Non-Oil Revenue of Three States of Southern Sudan." (forthcoming).

Young, H., A. Osman, Y. Aklilu, R. Dale and B. Badri. 2005. *Darfur: Livelihoods Under Siege*. Tufts University and Ahfad University for Women.

Zagha, R. and G. Nankani. 2005. *Economic growth in the 1990s: Learning From a Decade of Reform*. Washington DC: World Bank.

THE WORLD BANK
1818 H St. NW
Washington, D.C. 20433