



Major Challenges Facing the South Sudan Economy

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1.1 The Setting

The Republic of South Sudan is a land-locked country that is bordered by Ethiopia to the East, Kenya to the South-East, Uganda to the South, the Democratic Republic of Congo to the South-West, the Central African Republic to the West, and Sudan to the North (see Map 1.1). It has a land area of 644,329 km² and a population that is currently estimated to be about 10 million after taking account of large influx of returnees and refugees in recent years. The average number of people per km² is only 13, making South Sudan one of the least densely populated countries in Sub-Saharan Africa¹. The terrain gradually rises from plains in the north and center to southern highlands along the border with Uganda and Kenya. The White Nile, which flows out of Central Africa, is the major geographic feature of the country. It supports agriculture and extensive wild animal populations. South Sudan is divided into ten states which correspond to the three historical regions of Sudan: Bahr el Ghazal, Equatoria and Greater Upper Nile (see Map 1.2). The ten states are further divided into 86 counties and several Payams and Bomas.

South Sudan and Sudan were part of Egypt under the Muhammad Ali Dynasty, and then later governed as an Anglo-Egyptian condominium until Sudanese independence was achieved in 1956. Shortly after independence civil war broke out. A prolonged period of conflict followed. Following the first civil war (1955-1972), the Southern Sudan Autonomous Region was formed in 1972. That arrangement lasted until 1983 when a second period of civil war erupted. This war ended with the Comprehensive Peace Agreement (CPA) which was signed in January 2005. Later that year, southern autonomy was restored when an Autonomous Government of Southern Sudan (GOSS) was formed. As part of that agreement, the south was granted a six-year period of autonomy to be followed by a referendum on its final status. The result of the referendum, held in January 2011, was a vote by 98.8% of the population in favor of secession. The Republic of South Sudan (RSS) became an independent state on July 9, 2011.

The now defunct Southern Sudan Legislative Assembly ratified a Transitional Constitution shortly before independence in July 2011. The Constitution, which came into force on Independence Day, is the supreme law of the land, superseding the Interim constitution of 2005. It provides for establishment of a mixed presidential system of government headed by a President who is Head of State, Head of government and Commander-in-Chief of the armed forces. It also provides for establishment of the national Legislature comprising two houses: a directly elected assembly, the National Legislative Assembly; and a second chamber of representatives of the States, the Council of States. The Constitution also provides for an independent judiciary, the highest body being the Supreme Court.

1.2 Major Development Challenges Confronted by South Sudan

1.2.1 What are the Major Challenges?

The land, water and mineral resource base of South Sudan are substantial in relation to the relatively small population of the country. Effective management and development of these resources offers the prospect of sustained strong economic growth for an extended period of time. International experience with development of low income economies such as South Sudan indicate that the essential ingredients for a successful transition to middle income with reduced poverty and improved livelihoods depends on the following: (i) well-functioning public and private institutions; (ii) well developed basic infrastructure; (iii) a stable macroeconomic framework; and (iv) a healthy and literate labor force.

¹ Other countries in Sub-Saharan Africa with low population densities include: Angola, Botswana, Central African Republic, Chad, Gabon, Mali, Mauritania, Namibia, Niger, Somalia, Sudan and Zambia.

Full realization of this very considerable potential will require concerted action to address a somewhat daunting array of challenges that currently confront this newly independent country. These include the following:

- Ensuring adequate internal security that is required for sustained strong economic development and improved well-being of citizens throughout the country.
- Responding to the challenges that stem from current and continued rapid growth in population and the labor force.
- Promoting a broad-based economic growth to reduce the current heavy dependence on the oil economy.
- Developing targeted programs that will result in a sustained reduction in the current very high levels of poverty in the country.
- Crafting a major program of infrastructure development to overcome the current major bottlenecks to business activity and cost-effective delivery of basic services throughout the country.

- Providing a stable macroeconomic environment that will create an attractive operating environment for domestic and international business and ensure economic stability for the people of South Sudan.
- Addressing a range of issues related to the gradual adjustments in public expenditure policies that will be required in the medium- and long-term in response to changing domestic needs and requirements for public service provision.
- Designing and implementing programs that will address the current institutional and human capacity constraints that confront South Sudan.

The discussion that follows provides an overview of the main issues that arise in each of these areas, except for infrastructure. Section 1.3 provides a more detailed assessment of the current status of the country's infrastructure and related provision of infrastructure services. The recently completed South Sudan Development Plan (SSDP) provides more detailed information on the ways in which the Government intends to address these concerns².

MAP 1.1: South Sudan and the Northeast Region of Africa

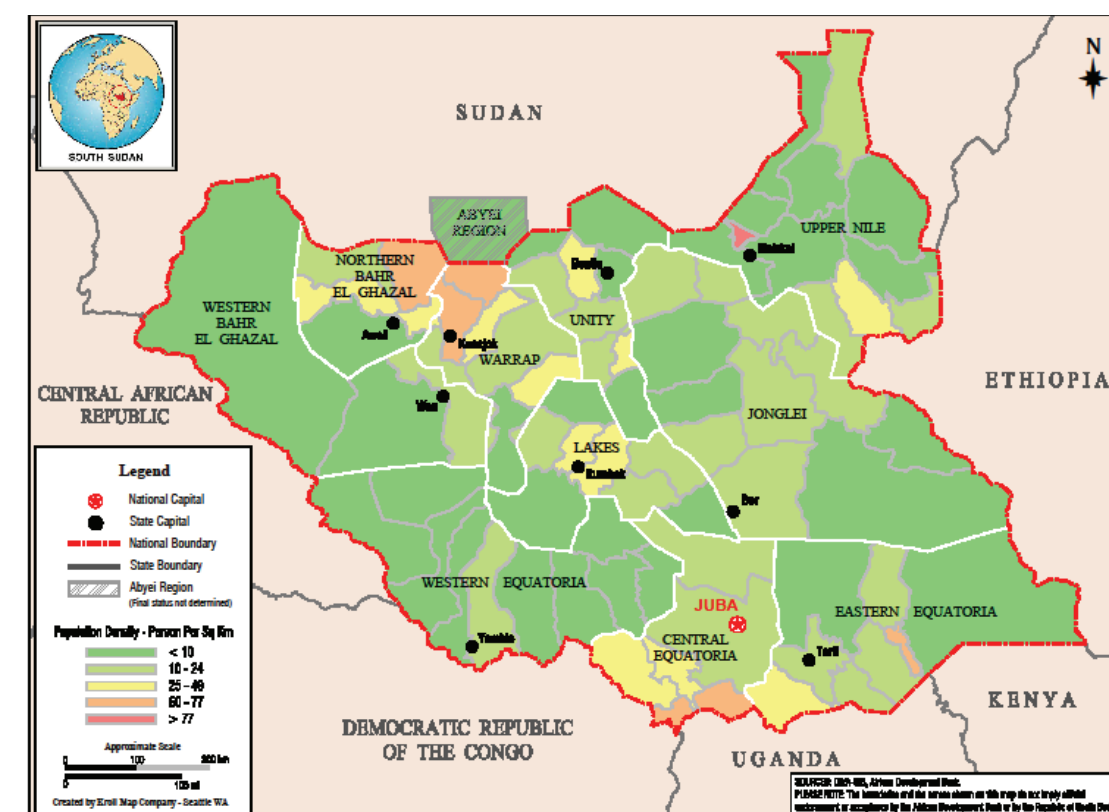


² See Government of South Sudan (2011), South Sudan Development Plan 2011-2013: Realizing Freedom, Equality, Justice, Peace and Prosperity for All. Council of Minister's Draft, Juba, July 5, 2011.

MAP 1.2: Administrative map of the Republic of South Sudan



MAP 1.3: Population Densities in South Sudan



1.2.2 Importance of Internal Security

The Government has taken discernible measures to improve national security. As the SSDP indicates, improved security and deepening peace will be critical for the direct wellbeing of citizens throughout the country and for achieving sustained poverty reduction. A comprehensive approach will be required, including dealing with the causes of conflict, ensuring improved security within communities and improving access to conflict resolution systems and justice. An adequate level of security is also an essential prerequisite for a business environment that will attract the large amounts of private investment capital required for broad-based and sustained strong economic growth. Programs for improved internal security will need to be sensitive to a number of issues, including:

- Interventions related to the large number of Internally Displaced Persons (IDPs) within the country. The prolonged period on conflict led to serious neglect in the south, lack of infrastructure development, and major destruction and displacement. Informal estimates put the number killed by conflict and starvation at more than 2 million, with more than 4 million people that became IDPs or became refugees as a result of civil war and war-related impacts.
- Moreover, there is continuing uncertainty about the future inflow of South Sudanese from Sudan. South Sudan has passed a new law that allows for recognition of citizenship for all South Sudanese. At the time this Report was prepared, there was continued uncertainty about the legal status of those South Sudanese who were still resident in Sudan. Estimates vary, but most refer to about 1 to 1½ million South Sudanese that were displaced by the almost 50 years of conflict, or are the children of those who were displaced, who still live in Sudan.
- Continued internal conflict among ethnic and tribal groups. Historically, clashes among tribes revolved largely around cattle, but in more recent years conflict has been associated with the activities of armed groups, including the Lord’s Resistance Army (LRA)

that is reported to be a continuing threat to civilians in Western Equatoria and some other states of South Sudan. To escape the activities of the LRA, refugees from Democratic Republic of the Congo (DRC) and Central African Republic have sought safety in South Sudan³.

- Continued development of the capacities of the South Sudan Armed Forces which consists primarily of Sudan People’s Liberation Army (SPLA) that was previously the armed wing of the Sudan People’s Liberation Movement (SPLM) and that is now in the process of becoming a regular army. Budget allocations to the SPLA currently account for about 28% of National Budget outlays, the single largest expenditure in the Budget.
- Land tenure and ownership is central to the task of ensuring adequate internal security. The SSDP makes reference to the existence of unclear land tenure policies, rules and practices and the territorial and symbolic role of land in disputes among communities within South Sudan. There is anecdotal evidence that claims over land in some locations have intensified in recent years because of speculation about its future value and the possible presence of mineral deposits⁴. The issue of access to land is detailed in Chapters 5 and 6 in the context of developing the very substantial agricultural potential of the country.

1.2.3 Rapid Growth of Population and the Labor Force

The 2008 census estimated the population of South Sudan to be at 8.26 million (Table 1.1). However, the census results are thought to have underestimated the total population resident in the country. Following the signing of the Comprehensive Peace Agreement (CPA) in 2005, and referendum and declaration of independence in 2011, there has been a substantial inflow of returnees, the precise number of which is not known with certainty. Annex 1 provides a detailed discussion about the available data on the number of returnees to South Sudan and hence the population of the country. The 2011 mid-year population is estimated by authors of this Report to be 10.05 million.

Table 1.1: Demographic Charateristics of South Sudan (As of mid-2008 population census)

State	Population	Households	Persons per household	Area (km²)	Population density
Upper Nile	964 353	149 267	6.5	7 7 283	12
Jonglei	1 358 602	204 352	6.6	122 581	11
Unity	585 801	91 577	6.4	3 7 837	15
Warrap	972 928	177 776	5.5	4 5 567	21
Northern Bahr El Ghazal	720 989	139 963	5.2	3 0 543	24
Western Bahr El Ghazal	3 33 431	62 290	5.4	9 1 076	4
Lakes	695 730	100 076	7.0	4 3 595	16
Western Equatoria	619 029	120 247	5.1	7 9 343	8
Central Equatoria	1 103 557	189 057	5.8	4 3 033	26
Eestern Equatoria	906 161	162 407	5.6	7 3 472	12
South Sudan	8 260 581	1 397 012	5.9	6 44 330	13

Source:Southern Sudan Centre for Census, Statistics and Evalution (2011), Statistical Yearbook for Southern Sudan 2010. Juba. 2011.

According to the census, there were 1.397 million households in South Sudan in 2008, which translates into six persons per household. Although the average population density in South Sudan is low, there is substantial variation among the states, ranging from a low of 4 persons per km² in Western Bahr el Ghazal to a high of 26 in Central Equatoria where the capital, Juba, is located. The total fertility of women of child bearing age in South Sudan is high; it is estimated at 6.2 compared with an average of about 5 for Sub-Saharan Africa as a whole. For the purposes of this Report, crude birth and death rates are estimated at 46 and 11 per 1,000 people respectively. As a result, the natural rate of increase in population (i.e., excluding the continuing inflow of returnees) is estimated by the authors of this Report to be about 3.5 % a year at the present time. The implication is that the population of South Sudan is young. The Census further indicates that as of 2008 about 51% of the population was under the age 18 years and 72% was under the age of 30 years.

As Annex 1 indicates, the urban population of the country is estimated to have been about 1.98 million as of mid-2011. Although the urbanization rate is relatively low at 20% of the total population, a critical feature of

demographic trends in South Sudan is that the urban population has been growing very rapidly and will very likely continue to do so for several more years.

According to the analysis in Annex 1 of this Report, the urban population increased from an estimated 1.125 million in mid-2007 to 1.980 million in mid-2011 – an average increase of 15% a year. This very rapid increase in the urban population stems primarily from three sources: (i) the very large number of returnees to the country that take up residence in urban areas; (ii) a substantial number of IDPs who are also located in urban camps; and (iii) voluntary movement of rural residents to urban centers to escape violence in their rural communities, and seek employment and access to basic services. Based on estimates of the growth in the population of the ten state capitals in Annex 1, it would appear that these centers have accounted for almost 50% of the increase in the urban population. The rapid urbanization of the country poses major challenges for provision of basic services to these population centers. In many cases, this urban expansion is exacerbating the problem of informal, unplanned settlements that lack basic infrastructure such as roads, water and sanitation services, and drainage systems.

3 See United Nations High Commission for Refugees (2011), 2011 UNHCR Country Operations Profile: Sudan. UNHCR website: www.unhcr.org/pages/49e483b76.html.
4 For a more detailed discussion of land policy issues see Pantuliano, Sara (2007), The Land Question: Sudan’s Peace Nemesis. Overseas Development Institute, United Kingdom. March 2007.

Table 1.2: Projection of Population and Labor force

Indicator	2007	2008	2009	2010	2015	2020	Growth rate (% p.a.)	
							2007-2010	2010-2020
Total population, mid-year ('000)								
Urban	1 125	1 289	1 497	1 737	2 776	3 656	15.6	7.7
Rural	6 578	6 972	7 362	7 757	9 235	10 422	5.7	3.0
Total	7 702	8 260	8 859	9 494	12 01	214 079	7.2	4.0
Population 15-64 years	4 021	4 332	4 664	5 019	6 569	8 073	7.7	4.9
Labor force ('000)	3 390	3 652	3 931	4 231	5 537	6 805	7.7	4.9
Memo items:								
Urban population as % of total	14.6	15.6	16,9	18.3	23.1	26.0		
Labor force participation rate (%)	84.3	84,3	84,3	84.3	84.3	84.3		
Population 15-64 years (% of total)	52.2	52.4	52.6	52.9	54.7	57.3		

Source: Southern Sudan Centre for Census, Statistics and Evaluation (2011), Statistical Yearbook for Southern Sudan 2010. Juba. 2011.

The analysis of demographic trends in Annex 1 suggests that the population of South Sudan will continue to increase rapidly to about 14 million by 2020, at which time the urban population may be about 3.66 million, an equivalent to 26% of the total population. The projected doubling of the urban population in the decade ahead will continue to put a strain on the provision of health, education and infrastructure services. There is, of course, a degree of uncertainty about these projected trends, largely because of uncertainty about the extent to which there are more returnees from Sudan and neighboring countries, and the South Sudanese Diaspora, estimated at more than 2 million, returns to South Sudan.

The combination of a high population rate, continued in-migration, and a very young population means that there will be rapid growth in the labor force for at least another decade. As Table 1.2 indicates, based on the analysis of demographic trends in annex 1, the labor force is estimated to have grown by almost 8% a year during 2007-2010 and is projected to grow at an average of 5% a year for the next decade. One of the biggest challenges facing the country is the creation of substantial amounts of productive employment for a labor force that currently includes a significant number of people with limited education and skills. South Sudan will require a decade or

more of sustained strong economic growth, well in excess of the labor force growth rate of 5% a year, to meet these employment requirements. As the discussion in Section 1.3 of this Chapter indicates, lack of infrastructure is a major obstacle to sustained strong economic growth. The implication is that a substantial program of investment in infrastructure and related services will be a necessary, but not sufficient condition for a strong economic performance in the decade ahead.

1.2.4 Need for Broad-Based Economic Growth

There are no national income accounts for South Sudan for years prior to 2008. During the past three years, the Gross Domestic Product (GDP) of South Sudan has fluctuated because of changes in oil prices and so has the value added by the petroleum sector. For the period as a whole, GDP has averaged about \$12.7 billion at current prices (Table 1.3). Gross national income per capita has fluctuated, but has averaged about \$1,050 during this period. South Sudan is therefore at the low end of the Lower Middle Income Country category as defined by the World Bank.

Table 1.3: Gross Domestic Product by Expenditure (SDG millions at current prices)

Expenditure category	(SDG millions)			Composition (% of GDP)		
	2008	2009	2010	2008	2009	2010
Consumption						
Public	4 595.6	3 813.5	4 855.4	15.4	15.8	15.3
Private	9 574.7	10 952.7	12 198.5	32.1	45.3	38.4
Total	14 170.4	14 766.2	7 054.0	47.5	61.1	53.7
Gross investment						
Public	1 927.1	1 339.1	1 456.0	6.5	5.5	4.6
Private non-oil	77.5	563.7	952.1	0.3	2.3	3.0
Sub-total	2 004.6	1 902.8	2 408.1	6.7	7.9	7.6
Private oil	2 845.0	2 714.3	2 529.3	9.5	11.2	8.0
Total	4 849.6	4 617.1	4 937.4	16.3	19.1	15.5
Exports (goods & services)	22 812.6	16 364.3	21 823.8	76.5	67.7	68.7
Imports (goods and services)	(12 021.9)	(11 577.5)	(12 047.3)	(40.3)	(47.9)	(37.9)
GDP	29 810.7	24 170.1	31 767.9	100.0	100.0	100.0
Petroleum sector	20 303.9	13 812.6	18 963.0	68.1	57.1	59.7
Non-oil GDP	9 506.8	10 357.5	12 804.9	31.9	42.9	40.3
Memo items:						
GDP (\$ millions)	14 263.5	10 463.3	13 347.8			
Gross national income (\$ millions)	9 153.7	7 510.9	9 076.4			
Exchange rate (SDG=\$1.00)	2. 090	2.310	2.380			

Source: Annex 2

The GDP of the country is dominated by the oil sector, the value added of which accounts for about 60% of total GDP. Value added by the petroleum sector has averaged about \$7.9 billion a year in the past three years. Non-oil GDP increased from \$4.55 billion in 2008 to about \$5.38 billion in 2010 (both at current prices) – an average rate of increase of about 16% a year. There are no firm estimates for non-oil GDP growth in real terms; however, the International Monetary Fund (IMF) puts domestic inflation at about 2.5% a year during 2009-10, which suggests that real non-oil GDP may have grown quite strongly in real terms during this period.

Official estimates of the composition of non-oil GDP are not yet available. For the purposes of this Report, a

rough estimate of the sectoral composition of non-oil GDP has been made for 2010, the details of which are set out in Annex 2. In 2010, about 37% of non-oil GDP was accounted for by agriculture, forestry and fisheries, 15% by industry, 36% by government services, with the remaining 12% accounted for by other services. The structure of the economy that emerges is therefore one in which oil accounts for 60% of total GDP, with the remainder of GDP accounted for primarily by subsistence agriculture and animal husbandry, and government services, mainly in the form of salaries and benefits to a relatively small number of civil servants (Table 1.4). Private sector activities in commercial agriculture, industry and services are a relatively small part of overall economic activity.

Table 1.4: GDP by Industrial Origin ,2010 (SDG millions current prices)

Sector	Value	Share (%)
Petroleum value added	18 963	59.7
Non-oil GDP		
Agriculture, forestry & fisheries	4 604	14.5
Manufacturing & mining	723	2.3
Construction	444	1.4
Transport & communications	604	1.9
Trade, hotels, tourism	1 033	3.3
Other services		
Government services	4 855	15.3
Other private services	542	1.7
Sub-total	5 398	17.0
Total non-oil GDP	1 2 805	40.3
Total GDP	3 1 768	100.0

Source: Annex 2.

1.2.5 High Incidence of Poverty in South Sudan

In South Sudan, despite the end of the war eight years ago, its negative impact continues to be felt on the lives and livelihoods of the people that will ultimately determine the country’s future and ability to emerge from its history of armed conflict. For instance, the non-oil GDP per capita is estimated at \$625 in 2010, with value added in agriculture estimated at about \$320 per person living in rural areas. As to be expected, at these low levels of productivity the incidence of poverty in South Sudan is high. According to a recent survey undertaken by the Government of South Sudan, 50.5% of the population lives below the national poverty line which was defined as a level of consumption of less than SDG 73 per month (\$31.60 per month, or about \$1 a day). In rural areas, the incidence of poverty is about 55%, compared with about 24% in urban areas (see Table 1.5). The much lower level of poverty in urban areas, to a considerable extent, reflects the presence of relatively well paid government employees and people employed under international aid programs. Map 1.4 provides an overview of the spatial distribution of poverty in South Sudan. The incidence of poverty is highest in the states of Northern Bahr el Ghazal with 76% of the population below the poverty line, Unity with 68% below the poverty line, and Warrap with 64% below the poverty line. The lowest incidence of poverty is in the Upper Nile with 26% of the population below the poverty line.

Recent surveys in South Sudan indicate that food accounts for 79% of average household expenditures. With such a large share of expenditures allocated to food, many households are vulnerable to food price inflation and food shortages. According to a recent SSCSE report, 47% of the population is undernourished. These vulnerabilities point to the importance of expanding domestic food production to supply domestic markets and lowering the costs of imported food items. As the subsequent discussion indicates, improved infrastructure will play an important role in achieving these objectives.

However, the problem of poverty in South Sudan extends well beyond concerns about income and expenditures. Many of the social indicators for the country are among the lowest in the world. The indicators reported for South Sudan in Table 1.5, highlight the extent to which the country lags behind comparator countries in Sub-Saharan Africa and Low and Lower Middle Income countries in general. Only 16% of females and 40% of males are literate, compared with 53% and 70% for Sub-Saharan Africa. Less than half of the 6-13 year old children are enrolled in primary school. Inequality in access to education among boys and girls is high: the ratio of girls to boys in primary school is only 59%, compared with an average of 86% for Sub-Saharan countries as a whole and 87% for all low income developing countries. Child mortality and undernourishment rates among children are roughly comparable to the average for Sub-Saharan countries,

but maternal mortality rates exceed 2,000 per 100,000 live births – more than twice the average for Sub-Saharan Africa, and more than three times the average for Low

Income developing countries. Access to improved water and sanitation is also very low and less than half the average for Sub-Saharan countries.

MAP 1.4: Incidence of Poverty by State in South Sudan

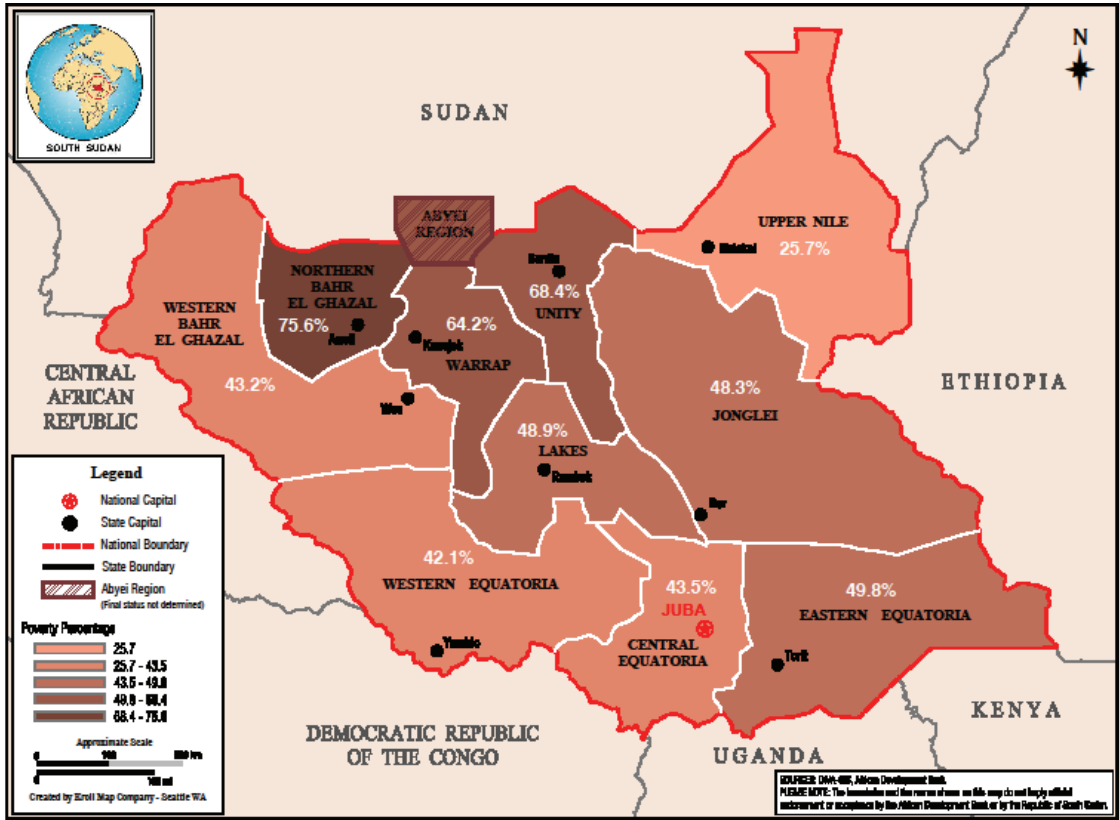


Table 1.5: Selected Socio-economic Indicators

Indicator	South Sudan	Low income income countries	Lower middle income countries	Sub-Saharan Africa
Population (millions)	8,615	2 352	2 475	743
Gross national income per capita (\$)	1 050	585 1	923	746
Population density (persons per km²)	13	83	63	31
Incidence of poverty (% of population)				
National average	50.6			41.1
Urban average	24.4			
Rural average	55.4			
Demographic indicators				
Total fertility (births per woman)	6.2	3.6	2.1	5.3
Crude birth rate (per 1 000 people)	46	29	16	40
Crude death rate (per 1 000 people)	11	10	7	17
Life expectancy at birth (years)	59	59	71	47

Indicator	South Sudan	Low income income countries	Lower middle income countries	Sub-Saharan Africa
Education				
Adult literacy rate (% of 15 years and above)				
Female	16	50	93	53
Male	40	71	85	70
Net primary enrollment ratio (%)	48	78	93	66
Ratio of girls to boys in primary school (%)	59	87	99	86
Students per teacher	52	42	22	48
Health status				
Under five mortality rate (per 1,000)	135	114	39	163
Infant mortality rate (per 1,000)	102	75	31	96
Underweight children under 5 years (%)	34		13	30
Maternal mortality rate (per 100,000 live births)	2 054	684	163	921
Access to improved water and sanitation				
% of population with access	27	75	82	56
% of population with access	16	38	57	37

Source: World Bank, World Development Indicators, various issues. SSCCSE, Key Indicators for Southern Sudan, February 2011.

1.2.6 Need for a Stable Macroeconomic Environment

Oil export income finances about 70% of the total public development and humanitarian programs of the country, with the international donor community funding most of the balance of the program (Table 1.6). Government revenues from non-oil sources of revenues finance less than 2% of the programs. This heavy dependence on oil revenues and donor assistance raises a number of basic issues for macroeconomic management and for key development programs in the country⁵. Some of these concerns also have important implications for the design of the proposed Infrastructure Action Plan outlined in the Report and for its implementation in the decade ahead.

The first concern is the effect of changes in oil prices on government revenues and the ability of the government

to ensure sustainable programs for development and humanitarian support. In recent years, large movements in international oil prices have had a significant impact on these revenues and hence public programs. The surge in oil prices in 2008 was largely responsible for the doubling of oil revenues that year. As a result, government spending rose from \$1.45 billion in 2007 to \$2.73 billion in 2008. Programs in almost all sectors were expanded. The sudden drop in oil prices in early 2009 led to a fiscal crisis in South Sudan as revenues fell below planned levels and expenditure commitments could not be realized. The decline in oil prices led to a \$1.4 billion decline in oil revenues. The major expansion in development and humanitarian programs of the government in 2008 was then followed by a major contraction in spending. As a result, budget expenditures declined by almost \$1 billion to \$1.8 billion in 2009. In the case of the infrastructure sector, for example, total disbursements in the national budget rose from about \$85 million in 2007 to \$390 million in 2008 and were then cut back to \$230 million in 2009.

Table 1.6: Sources of Funding for Public Development Programs in South Sudan, 2010

Funding source	Amount (\$ mill)	Share (%)
Oil revenues	2 365.7	69.7
Non-oil revenues	53.2	1.6
Donor assistance	973.9	28.7
Total funding	3 392.7	100.0
Less budget operating surplus	75.9	2.2
Total expenditures	3 316.8	97.8

Source: Annex Table 2.5 and Annex Table 2.8.

This recent volatility in oil prices has brought considerable uncertainty to the management of public finances and the macroeconomic policy environment in South Sudan and as a consequence the government has focused on short-term interventions. In these circumstances, the risk is that there may be less emphasis on long-term projects that have potentially high returns, especially in the infrastructure sector where large projects typically have long lead times to completion. The experience of recent years underscores the importance of building up domestic non-oil sources of revenue from the current negligible base – a task that will span the next decade or more. Moreover, revenues from oil production are expected to decline rapidly in the decade ahead. In the absence of a strong program to development alternative sources of budget revenues, the risk is that the Government will have difficulty in maintaining the current levels of spending. It is therefore imperative that the non-oil economy is developed as quickly as possible in the next 10 years to ensure that economic growth, job creation for a rapidly growing labor force, and broad-based improved access to services can be sustained in the face of declining oil revenues. Given the widespread lack of basic infrastructure in the economy, sustained strong growth in the non-oil economy will require a major program of infrastructure development in the decade ahead.

The second concern about the current financing arrangements for the development and humanitarian programs of the country is the risk of so-called “Dutch disease.”⁶ As Table 1.6 indicates, 98% of the funding for public sector development and humanitarian programs comes from offshore. The inflow of \$3.34 billion in 2010

(oil revenues plus donor assistance) was 62 times the size of the non-oil GDP of the country. The large size of these inflows relative to the size of the non-oil economy means that there is a real risk that they could put upward pressure on the exchange rate of the country. Real exchange rate appreciation may then weaken the competitiveness of the country’s exports. The risk of “Dutch disease” is a matter for concern in South Sudan because the heavy dependence on financial inflows from abroad is not temporary, and will likely persist for some years. Continued upward pressure on the exchange rate will weaken the prospects for the large scale development of South Sudan’s land resources that are suitable for production of food and raw material exports to regional and global markets. Development of a well coordinated macroeconomic policy, in combination with the use of some form of sovereign wealth fund to save a portion of boom revenues for later use, can provide mechanisms for dealing with the potential effects of “Dutch disease.”⁷

1.2.7 Issues Related to Public Expenditure Policies

The prevailing pattern of spending on public services by Government and the donor community provides further insight into the challenges that must be addressed in the decade ahead if South Sudan is to have an extended period of sustained strong economic growth. As Table 1.6 indicates, non-oil revenues stagnated at about SDG120 million during 2008-2011. The share of non-oil revenues

5 For a recent assessment of measures needed to develop the non-oil revenue tax base see Zeru Gebre Selassie (2009), Non-Oil Revenue Study: Southern Sudan. Report to Ministry of Finance and Economic Planning, Juba, in two volumes: Volume I: Summary Final Report, and Volume II: Final Report. October 2009.

6 In the 1960s, the Netherlands experienced a large increase in its wealth after discovering substantial natural gas deposits in the North Sea. The development of this resource had serious repercussions on important segments of the Dutch economy. As a result, the Dutch guildler became stronger, making Dutch non-oil exports less competitive. This syndrome became known as “Dutch disease.” It is generally associated with discovery and development of natural resources such as oil, copper or other minerals, but it can occur as a result of any very large inflow of foreign currency, including those stemming from price surges for crops such as coffee or cocoa, or from large inflows of foreign direct investment or foreign aid.

7 There is an extensive literature on the “Dutch disease” problem. See, for example, Buiter, Willem H., and Douglas D. Purvis “Oil, Disinflation and Export Competitiveness: A Model of the “Dutch disease”” in Bhandari, Jagdeep and Bluford H. Putnam (1983), Economic Interdependence and Flexible Exchange Rates. Cambridge. MIT Press. Also, Calvalcanti, Tiago, Kamiar Mohaddes, and Medhi Raissi (2011), “Commodity Price Volatility and the Sources of Growth.” Cambridge Working Papers in Economics. <http://econ.cam.ac.uk/postgrad/km418/RMC.pdf>.

to GDP has steadily declined in these four years and is projected to be at 0.7% in 2011. Given the importance of building these revenue sources, these recent trends are not encouraging. Success in building these alternative sources will require an extended period of sustained strong growth in the non-oil economy that is led by domestic and international private investment. Creating the conditions for such investment and growth is one of

the major challenges for the government in the decade ahead. Central to this effort will be a major build-up in investment in the basic infrastructure of the country, which, as the discussion later in the Chapter indicates, is seriously deficient at this time and cannot provide the basis for an extended period of strong economic growth needed to create jobs for a labor force growing at 5% a year and reduce the high incidence of poverty in the country.

Table 1.7: National Government Revenues and Expenditures (In SDG millions)

Indicator	2005	2006	2007	2008	2009	2010	2011
Revenues							
Oil	1 869.1	2 732.9	2 964.5	6 670.9	4 121.5	5 630.3	5 656.4
Non-oil	0.6	3.2	13.3	118.7	118.3	126.6	110.7
Total	1 869.7	2 736.1	2 977.8	6 789.6	4 239.8	5 756.8	5 767.1
Expenditures							
Recurrent	437.7	2 623.9	2 538.2	4 100.7	3 232.6	4 485.2	4 508.9
Capital	14.7	957.6	398.3	1 611.9	1 002.0	1 090.9	1 258.2
Total	452.4	3 581.5	2 936.5	5 712.7	4 234.7	5 576.1	5 767.1
Overall budget balance	1 417.3	(845.5)	41.3	1 076.9	5.1	180.7	0.0
Memo items:							
Revenues as % of GDP				22.8	17.5	18.1	12.7
Non-oil revenues as % of non-oil GDP				1.2	1.1	1.0	0.8
Recurrent spending as % GDP				13.8	13.4	14.1	9.9
Capital spending as % of non-oil GDP				17.0	9.7	8.5	8.9

Source: Annex Tables 2.4 and 4.1.

On the expenditure side of the equation, recurrent outlays account for about three-quarters of total spending, with salaries accounting for more than 50% of these outlays. Capital spending, which was about 17% of non-oil GDP in 2008, has declined to an estimated 8% for 2011. Table 1.8 provides a summary of the budget and donor disbursements for each of the 11 sectors in 2010. Total spending from the combined budget and donor sources was \$3.32 billion, 71% of which came from the National Budget and the balance from donors. The largest allocations among donors were for the following budget sector categories: social and humanitarian affairs, health care, infrastructure, and public administration. These four sectors accounted for three-quarters of total donor disbursements in 2010. The National Budget accounted for 100% of the transfers to the states, and about 90% of total spending in the following sectors: accountability, rule of law and security. The social and humanitarian affairs and health care sectors received the smallest allocations in the National Budget, presumably because of the large role currently played by donors in these two sectors.



Table 1.8: Combined Sources Funding for National Development Programs, 2010
(Disbursements in \$ millions)

Sector	National budget (\$ mill)	Donor assistance (\$ mill)	Total		National (% of total)
			(\$ mill)	Share (%)	
Accountability	224.1	23.2	247.3	7.5	90.6
Economic functions	68.2	24.1	92.3	2.8	73.9
Education	117.3	57.0	174.3	5.3	67.3
Health	58.6	181.1	239.7	7.2	24.4
Infrastructure (incl. housing)	267.2	152.2	419.4	12.6	63.7
Natural resources & rural development	77.9	72.9	150.8	4.5	51.7
Public administration	354.9	109.6	464.5	14.0	76.4
Rule of law	279.7	38.1	317.8	9.6	88.0
Security	636.5	37.7	674.2	20.3	94.4
Social & humanitarian affairs	30.6	278.1	308.7	9.3	9.9
Transfers to states	228.0		228.0	6.9	100.0
Total expenditures	2 342.9	973.9 3	316.8	100.0	70.6
Memo item:					
Core program for infrastructure development	295.4	137.0	432.5	13.0	68.3
Core infrastructure program as % non-oil GDP	5.5	2.5	8.0		
Core capital expenditure as % non-oil GDP	4.4	1.9	6.3		
Exchange rate (SDG per US\$)	2.38				

Source: Annex Tables 2.5, 2.6, 3.1 and 3.2.

As illustrated in table 1.8, total spending by Government and donors on the core infrastructure program was \$433 million in 2010, two-thirds of which came from the budget and the remainder from donors. About 80% of the Government’s program was allocated to capital works with the balance allocated to recurrent expenses, the most important of which was salaries of ministry staff. There is no precise information available for the share of the donor program that is accounted for by capital spending. Informal estimates by the authors of this Report suggest that about three-quarters of the donor program is allocated to capital expenditures. The implication is that capital outlays on the core infrastructure program in 2010 were equivalent to 6.5% of non-oil GDP. As the discussion in Chapter 3 indicates, there will have to be a substantial increase in allocation of public resources for infrastructure development in the decade ahead if the basic requirements of the country are to be met.



1.2.8 Limited Institutional and Human Capacities

As noted earlier, adult literacy rates in South Sudan are low. In fact, with a national average of 28%, South Sudan – along with Burkina Faso and Chad – currently has the lowest adult literacy rate in all of Africa. This is particularly the case in rural areas where the average literacy rate is only 24%. In urban areas, it is currently about 52%. With current low enrollment rates for children of school age, the problem of illiteracy will very likely continue for an extended period. At the present time, for example, the literacy rate for 15-24 year old people is only 35% in rural areas and 65% in urban areas. The implication is that a large portion of the existing work force of the country lacks basic skills in reading and writing. Sustained strong economic growth is expected to generate large numbers of jobs within South Sudan, especially for skilled and unskilled workers in construction activities, transport and communications and commercial agriculture. The fundamental issue that confronts the Government is the need for programs that will accelerate the pace at which the skills of the labor force are expanded. Lack of progress in developing a cadre of skilled and semi-skilled South Sudanese workers may result in some combination of large inflows of foreign workers, and domestic pressures on wage rates for skilled and semi-skilled workers that, in turn, undermines the international competitiveness of the domestic business community.

Weak institutional capacities are also a matter of concern. A recent report by Kamier (2011) notes that institutional conditions in South Sudan are fragile, delivery capacities remain extremely weak, and there is an acute need for a professional and accountable public service to create increased confidence in the Government⁸. According to a recent UNDP report, half of all positions in ministries were unfilled in 2010, 50% of public servants had only early education and only 5% had a graduate degree of higher⁹.

1.2.9 Weak Operating Environment for Private Business Activity

Sustained improvement in the provision of infrastructure services will require the development of private sector capacities for provision of these services. Such capacities are at an early stage of development in South Sudan. A small domestic private sector has emerged in South Sudan

which is bimodal comprising a large number of small or even very small businesses on one hand, and a limited number of rather medium firms on the other. According to a recent report prepared for the African Development Bank, most of the formal businesses in the country are small and medium-sized enterprises. There are about 50 larger firms involved mainly with banking, telecommunications and manufacture of beverages¹⁰. Medium-sized firms number about 500 and are mainly in construction, hotel and restaurant services and trade-related services. Small firms number about 8,000 and are involved with services similar to that of the medium-sized ones. In addition to these registered businesses, there are more than 10,000 micro-firms (typically individual entrepreneurs) involved in petty trade. Almost all of the larger companies are foreign-owned, as many South Sudanese still lack the capital to start larger businesses.

A Business Registry was created in 2006. It reported that as of December 2010, 10,746 businesses had been registered in South Sudan. There has been dramatic growth in the number of SMEs that are registered; by end 2010 8,984 had obtained certificates of incorporation, up from 471 in 2006. According to the 2010 Business Survey Listing (SSCCSE, 2011), the number of registered businesses in the state capitals grew from 1,294 at end 2005 to 7,332 at end 2010. Three-quarters of these businesses employed less than three people, and about 90% of these businesses had less than five employees. As Table 1.9 indicates, more than 80% of these businesses are in wholesale and retail trade, accommodation and food services. There were 89 firms involved in construction, and in infrastructure related services there were 149 registered businesses, two-thirds of which were in information and communications.

The Interim Constitution that was adopted in December 2005 provided for the development of free enterprise and the protection of property rights. More recently, in the GOSS Growth Strategy for 2010-2012 and in the subsequent SSDP, the government reiterated its commitment to private-sector led growth¹¹. The International Finance Corporation (IFC) Doing Business in Juba 2011 ranked at 159th out of 183 economies on the ease of doing business (Table 1.9). A number of key conclusions emerged from this survey. First, South Sudan’s legal and regulatory framework remains incomplete; several important laws such as the Labor Bill and a new Companies Bill have been drafted but not yet enacted. The IFC reports that since 2005, 19 laws guiding business registration, operation and exit have been drafted, nine of which have been enacted by the Legislative Assembly and with several more submitted to the Assembly and are awaiting approval¹².

Table 1.9: Number of Registered Businesses in State Capitals in 2010

Type of business activity	Number	Percentage
Agriculture, forestry and fisheries		
Mining and quarrying	10	0.1
Electricity, gas, steam and airconditioning		
Manufacturing	199	2.7
Water supply, sewerage and waste management	7	0.1
Construction	89	1.2
Wholesale and retail trade	5 116	69.8
Transportation & storage	45	0.6
Accommodation and food services	1 037	14.1
Information and communications	97	1.3
Finance and insurance	52	0.7
Professional, scientific and technical services	46	0.6
Administrative and support services	10	0.1
Education	31	0.4
Health and social services	361	4.9
Arts, entertainment and recreation	22	0.3
Other services	211	2.9
Total	7 333	100.0

Source: SSCCSE (2011)

Second, the existing legal system can be confusing. South Sudan operates under three distinct and overlapping legal frameworks: (i) laws passed by the National Assembly in Khartoum; (ii) the Laws of the “New Sudan” – enacted by the Sudan People Liberation Movement before 2005; and (iii) the Laws of Southern Sudan – enacted by the Legislative Assembly of Southern Sudan after 2005. Alongside this, customary law – traditional justice applied by community chiefs and built upon custom and tradition, have been used to resolve many disputes.

Third, some of the key institutions that regulate Juba’s private sector are either absent or overlapping. There is confusion among federal, state and county jurisdictions over business licensing, taxes, customs, and land administration. Lack of

coordination has meant that entrepreneurs have had to deal with each level of government separately.

Fourth, Juba’s institutional capacity and infrastructure remain underdeveloped. Public authorities lack the qualified staff needed to implement regulations – namely, civil engineers to inspect construction sites, auditors to ensure tax compliance, and specialized legal professionals to handle commercial cases. According to The Economist more than half of all civil servants have not completed primary education.¹³ Without a public credit registry or private credit bureau in Juba, creditors cannot obtain reliable information on debtors and without a collateral registry; entrepreneurs have a hard time using their assets as guarantees for loans.

8 See Kameir, E. (2011), The Political Economy of South Sudan: A Scoping Analytical Study.
9 See UNDP (2010).
10 DCDM (2011), A Study on South Sudan’s Competitiveness and an Assessment of the Country’s Cross Border Trade with its Neighbouring Countries. Draft Report prepared for African Development Bank. December 2011.
11 The draft Growth Strategy, for example, states that “Economic growth is driven by the private sector, with GOSS (at all levels) limiting its role to: creating an enabling environment, addressing constraints to investment, and providing public goods.”
12 See International Finance Corporation (2011), Doing Business in Juba 2011: Comparing Business Regulation in Juba and 183 Economies. World Bank Group, Washington DC, 2011.

13 The Economist (2011), “Now for the Hard Part,” The Economist, Print edition, February 3, 2011

Table 1.10: **Doing Business Indicators** (Rank among 183 economies)

Indicator	Juba	Sudan (Khartoum)	Sub-Saharan Africa
Starting a business	123	121	126
Dealing with construction permits	49	139	117
Registering property	124	40	121
Getting credit	176	138	120
Protecting investors	173	154	113
Paying taxes	84	94	116
Trading across borders	181	143	136
Enforcing contracts	74	146	118
Closing a business	183	183	128
Overall ease of doing business	159	154	137

Source: IFC (2011).

1.2.10 Impediments to Cross-Border Trade

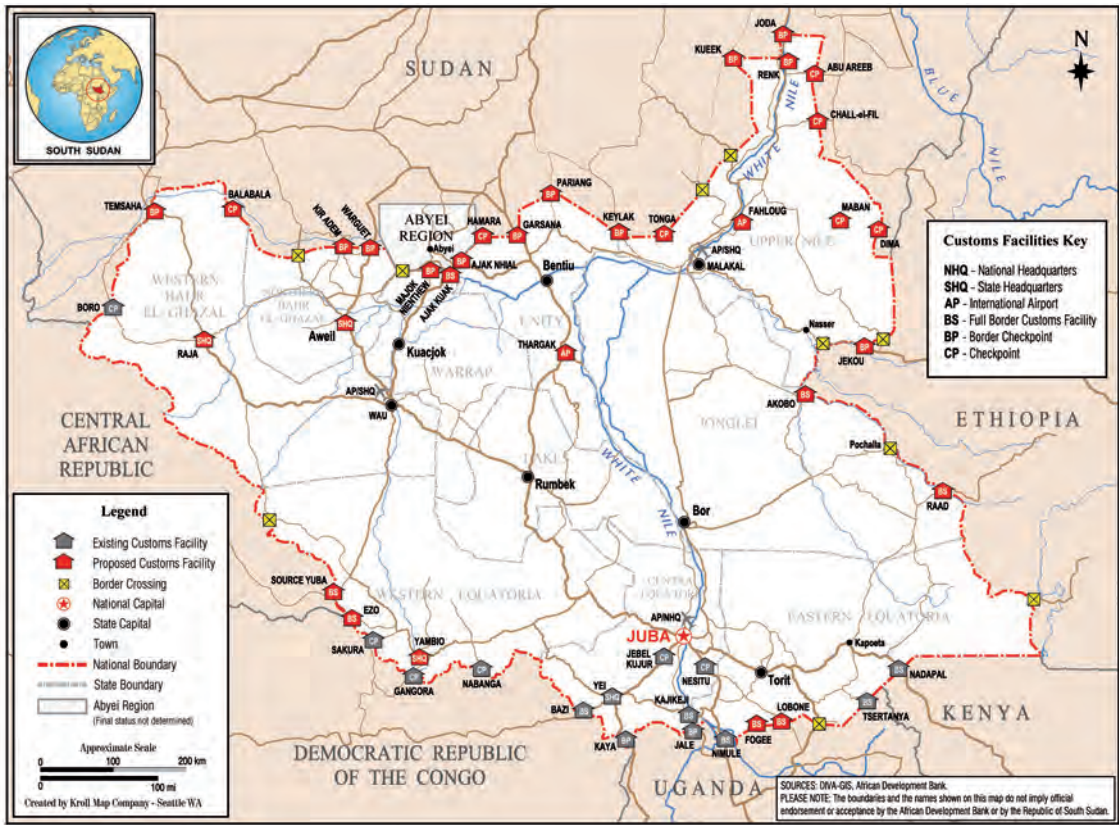
The bulk of South Sudan’s external trade is with Uganda, Kenya and Ethiopia and for trade involving use of seaports the primary route is through Uganda and Kenya to and from the port of Mombasa. Accurate information on the volume and value of this trade is not available at this time because there are significant volumes of informal, unrecorded trade. Trade is highly asymmetric; volumes and values of imports from these trading partners are substantially larger than South Sudan’s exports to them.

There are several reasons inhibiting smooth trade but one major concern of traders is the delays involved in getting clearance for goods coming into and out of the country. At the present time, only 14 customs facilities are operational in South Sudan, including facilities at four airports and seven border crossings. There are 53 facilities that are not

currently operational, although there are proposals to reopen two more airport facilities and facilities at 15 more border crossings (see Map 1.5).

With sustained economy recovery, the volume of international trade will continue to expand rapidly. Early action will be needed to ensure that customs capacities and procedures do not become a major bottleneck and a source of increased transport costs as a result of long waiting times at border crossings. At the present time, there are no one-stop stations at border crossings that speed clearance on both sides of the border. In a number of customs stations, processing of clearances is done manually and is cumbersome because of limited staff capacities and cumbersome administrative procedures. In some cases, trade is recorded only by value and not volume. A recent report of IFC (2011) provides additional insight into the costs of cross-border trading for the Sudan business sector (and for development programs that require substantial import of materials).

MAP 1.5: **Border Crossing and Customs Stations in South Sudan**



In order to trade overseas, cargos to and from Juba go through 2 customs border posts – at the Nimule/Bibia border between Sudan and Uganda and at Malaba between Uganda and Kenya. A business in Juba has to submit 11 documents, wait 60 days and spend \$9,420 to import a standard container of cargo through the port of Mombasa (Table 1.11). To export through the same port, a Juba-based business needs to submit 9 documents, wait 52 days

and spend \$5,025. In other parts of Sub-Saharan Africa, the process is quicker and cheaper: importing takes, on average, 38 days and costs \$2,492 while exporting takes 32 days and cost \$1,962. Juba ranks 181st out of 183 economies included in the IFC survey. Early action will be needed to ensure that customs capacities and procedures do not become a major bottleneck and a source of increased transport costs as a result of long waiting times at border crossings.

Table 1.11: **Juba Trading Through Port of Mombasa, Kenya**

Activity	Time (days)	Cost \$ per container
Exporting		
Documents preparation	28	275
Customs clearance and technical control	4	375
Ports and terminal handling	6	375
Inland transportation and handling	14	4 000
Export total	52	5 025
Importing		
Documents preparation	34	525
Customs clearance and technical control	3	430

Activity	Time (days)	Cost \$ per container
Ports and terminal handling	6	390
Inland transportation and handling	17	8 075
Import total	60	9 420

Source: IFC (2011).

1.3 Large Infrastructure Deficit for South Sudan

1.3.1 Current Status of Infrastructure in South Sudan

Decades of civil war basically inhibited the provision of basic infrastructure and this undermined much of its production capacity. As a result, most goods – such as food, construction materials, and basic inputs – are imported. And exports other than oil are minimal. Given that about 80% of the population lives in rural areas, the lack of basic infrastructure for many years now has been a serious impediment to the development of the large agricultural potential of the country.

At this juncture, a key issue for policy makers is compilation of a systematic assessment of the magnitude of the current infrastructure deficit and the extent to which it is an obstacle to acceleration of economic growth, job creation, increased incomes and reduced poverty. There has been only minimal investment in basic infrastructure over the past quarter century. Large

areas with very low population densities and decades of internal conflict have made it difficult to provide adequate infrastructure services throughout the country. Moreover, there has been a major decline in the quality of the little infrastructure that does exist: some of the facilities that were put in place several decades ago were damaged by the civil war and there have been negligible amounts of routine maintenance. As a result, most existing infrastructure is in need of rehabilitation. Moreover, relative to the population of the country and its GDP, there is not sufficient infrastructure to meet the needs of an economy that has the prospect of sustained strong economic growth in the decade ahead. As noted earlier, the SSDP attaches considerable importance to the provision of new and rehabilitation of the existing infrastructure of the country and its expansion in support of sustained strong economic growth.

It is clear that in the decade ahead there is a compelling case for the upgrade and expansion of all aspects of the basic infrastructure of the country. Numerous empirical studies point to the important role played by infrastructure in promoting economic growth. The AICD (2011) suggests that a major improvement in infrastructure in South Sudan could boost per capita growth in non-oil GDP by 3.5 percentage points.

Table 1.12: Selected Indicators for Comparator Countries, 2009

Country	Population		GDP (\$ bill)	GDP per capita (\$)	Population in poverty (%)
	Total (mill)	Rural (%)			
Burkina Faso	15.757	81.2	8.133	516	46.4
Burundi	8.303	87.9	1.251	151	66.9
Eritrea	5.224	76.9	1.873	359	53.0
Malawi	15.692	74.3	4.728	301	65.3
Niger	15.891	78.6	5.244	330	59.5
Rwanda	10.277	81.6	5.265	512	51.2
Average	11.857	79.6	4.416	372	57.1
Memo item:					
South Sudan	8 858.872	83.1	4 484	506	50.6

Source: African Development Bank statistics database. Notes: (i) GDP for South Sudan is non-oil GDP; (ii) The incidence of poverty is for the most recent reported year and not 2009, except for South Sudan.

To facilitate comparisons in the development of infrastructure and associated services, a group of six comparator countries have been identified within the Sub-Saharan Africa Region whose level of development is roughly similar to that of South Sudan. These countries are listed in Table 1.12. They all have high proportions of the population living in rural areas; their aggregate GDP is roughly comparable to the non-oil GDP of South Sudan, as is their GDP per capita; and the incidence of poverty in these countries is high and again, roughly comparable with that of South Sudan.

Table 1.13 compares selected infrastructure-related indicators for South Sudan with other comparator countries. A number of points emerge from this comparison:

- The population density of South Sudan is very low, and is similar to that of Niger. This low population density has major implications for the design of infrastructure programs and the cost of bringing infrastructure services to many of the low density counties of South Sudan.
- South Sudan has a substantially larger area of land suited to permanent cropping than the comparator countries, and currently only a very small portion of this land is irrigated. There is substantial potential to expand irrigated agriculture to meet domestic and international demand for food crops and agricultural raw materials.
- Only 2% of the existing road network in South Sudan is paved, and most roads are impassable during the wet season making it difficult if not impossible for rural people, which raises the transportation costs and also hinders the movement of goods from rural areas to urban centers and markets in the country. With the exception of Burkina Faso, substantially larger portions of the networks of the comparator countries are paved.
- Within South Sudan, there is a lack of connectivity among regions and between urban and rural areas. Moreover, there are only limited connections with neighboring countries. Connectivity with Sudan in the north is primarily by air or river. On the road network, most traffic is between Juba and Uganda. There is an urgent need to improve connectivity and in so doing improve access to basic services throughout the country and support the integration of domestic markets. A high priority is therefore given by the Government to development of basic infrastructure, especially road networks, to improve this connectivity and provide enhanced support for agricultural development throughout the country.
- The road density, as measured by the km of road per thousand persons, is low in South Sudan and in all of the comparator countries except Burkina Faso. The average for Sub-Saharan Africa as a whole was 2.5 for the period 2000-06. A small number of Sub-Saharan countries do have quite high ratios of roads to population, including for example, Namibia at 21 per thousand, Botswana at 13 per thousand, South Africa and Zambia at about 8 per thousand, and Zimbabwe at 7 per thousand.

- There is no national rail network in South Sudan. The branch line from Babanusa in the North to Wau in South Sudan (446 km) is the only line in the country. It was heavily damaged during the conflict with the North and ceased commercial operations in 1991. It is currently being rehabilitated.
- A range of constraints limit the pace of recovery in the Nile river transport system. For example, Juba Port has suffered from siltation at its entrance. Navigational aids on the river require rehabilitation or re-installation, and in many locations dredging is required to open up the waterways after more than two decades of neglect. There is also a general shortage of equipment for operating river transport services, including a lack of handling equipment for containers, and vessels that are not in operating condition.
- Only one percent of the population has access to electricity. As a result, per capita consumption of electricity is estimated at about 80 kWh for 2010. Data are not available for the comparator countries, but for the low income countries of the world, the average consumption of power was 375 kWh in 2004. Inadequate electric power supply and its high cost is a major constraint on the economy. There is no national grid in South Sudan, only a series of isolated networks that serve three of the state capitals (Juba, Malakal and Wau) and Renk. The South Sudan Electricity Corporation (SSEC) has only 18.8 MW of installed capacity that is operational and it supplies these state capitals. Electric cooperatives provide 2.8 MW of capacity for the rural towns of Yei, Maridi and Kapoeta. The average tariff for SECC supplied power is 22 US cents per kWh while the cost of power supplied by the cooperatives is 53 US cents per kWh. According to recent surveys, 70% of businesses in South Sudan have their own diesel generators for power supply. Electricity is widely regarded as one of the most serious constraints to doing business in South Sudan.
- After decades of war, access to water supply and sanitation services is severely constrained. Only 27% of the population has access to improved water supplies, whereas the average for the comparator countries is about 68%. In the case of sanitation services, only 16% of the population has access to improved sanitation. In the case of the comparator countries, access ranges from 6% for Eritrea to 59% for Malawi. Many of the water points recorded in the national database are not operational. One-third of the population still relies on surface water as its main source. Access to piped water is practically non-existent, and more than 60% of the population relies on wells and boreholes for access to water. Three quarters of the population does not have access to any type of sanitation facility.
- In the case of communications, teledensity is poor. South Sudan has not experienced the explosive development of mobile phone and internet use seen in many other countries in Africa. Prices of ICT services are high, with most of the focus in the market on voice services. Data services are very limited and expensive.

Table 1.13: Selected Indicators for Infrastructure Services

Indicator	Year	Burkina Faso	Burundi	Eritrea	Malawi	Niger	Rwanda	South Sudan
Population (millions)	2009	15.757	8.303	5.224	15.692	15.891	10.277	8.109
Urban (%)	2009	18.8	12.1	23.1	25.7	21.4	18.4	26.3
Area ('000 sq.km)	2009	274	26	101	94	1 267	25	644
Population per sq km ('000)	2009	58	323	52	167	13	417	13
Permanent cropland (% of total area)	2008	0.2	15.2	..	1.3	..	11.3	
Irrigated land (% of cropland)	2006	0.3	1.5	3.5	2.2	0.5	0.6	
Road network (km)	2000-06	92 495	12 322	4 010	15 451	18 423	14 008	12 642
Road network paved (%)	2000-06	4.2	10.4	21.8	45.0	20.6	19.0	2.0
Road density: km/1 000 sq km	2000-06	338.1	479.5	39.7	164.2	14.5	567.8	19.6
Road density: km/1 000 persons	2000-06	5.9	1.5	0.8	1.0	1.2	1.4	1.6
Motor vehicles per 1 000 people	2007	11.0	..	11.0	9.0	..	4.0	
Access to electricity (% of population)	2000-06	10.2	2.1	..	7.5	..	5.4	1.0
Urban	2000-06	53.5	20.9	..	34.0	..	27.2	6.7
Rural	2000-06	0.8	0.2	..	2.5	..	1.5	-
Firms with own generator (%)	2000-06	24.0	41.9	..	49.1	24.8	58.0	70.0
Access to improved water (% of population)	2008	76.3	72.5	60.9	81.6	51.2	64.8	27.0
Urban	2008	95.0	83.0	74.0	95.0	96.0	77.0	
Rural	2008	72.0	71.0	57.0	77.0	39.0	62.0	..
Access to improved sanitation (% of population)	2008	12.6	41.4	5.5	59.2	8.1	22.6	16.0
Urban	2008	41.0	44.0	14.0	51.0	27.0	34.0	..
Rural	2008	6.0	41.0	3.0	62.0	3.0	20.0	..
Telephone subscribers per 100 people	2005	7.7	2.9	2.1	6.1	..	3.5	..
Mainline	2005	0.7	0.4	0.8	1.0	..	0.2	0.1
Mobile	2009	21.0	10.0	3.0	17.0	17.0	24.0	12.0
Households with own telephone (%)	2005	4	6	..	1	15
Households with television (%)	2005	7	14	14	3	5	2	3
Internet users per 1 000 people	2009	11	8	49	50	8	44	..
Personal computers per 1 000 people	2005	2	5	8	2	1	..	1

Sources: World Bank database for comparator countries. Data for South Sudan from AICD (2011) and government sources. Note: data for South Sudan are for 2008 or 2009.

1.3.2 High Cost of Infrastructure Services

Not only is access to infrastructure services very limited within South Sudan, but the poor state and limited development of infrastructure results in high costs for these services. The high costs associated with ports, transport and trade logistics have a serious impact on the business environment and the profitability of business activities. The World Bank (2009) survey of the business climate in Sudan reported that more than 60% of businesses in Malakal reported that transportation was a major impediment to doing business.

Domestic transport costs are high and more particularly higher than in neighboring countries. Transport freight rates in South Sudan can be as high as US 20 cents per ton km. The freight rate from Kampala to Juba is about US 18 cents per ton km, more than twice the freight rate from Mombasa to Kampala (Table 1.14). The cost of transporting a ton of freight from Mombasa to Kigali, a distance of some 1,700 km, is about \$105. Transport of a ton of freight from Kampala to Juba, about one-third the distance, costs \$113. Freight costs in Sudan are in line with those in other East African countries as a result of a competitive trucking industry and the low price of fuel. However, South Sudan makes very limited use of Port Sudan; its primary gateway to the sea is Mombasa. The expectation is that reliance on Kenya for access to sea freight will grow in the coming years.

Table 1.14: Road Freight Charges for Various Transport Corridors

Gateway	Destination	Mode	Distance (km)	Time (days)	Cost per ton/km (\$ cents)	Total cost per ton (\$)
Mombasa	Kampala	road	1 145	5~6	6.0	69
Mombasa	Kigali	road	1 700	5~7	6.2	105
Kampala	Juba	road	630		18.0	113
Khartoum	Port Sudan	road	668		8.0	53
Khartoum	Juba	road	1 197	8	10.6	127
Khartoum	Malakal	road	679	5	15.8	107
Khartoum	Malakal	road & river		7		75
Malakal	Juba	river		2		270
Durban	Lusaka	road	2 300	9~10	3.9-5.6	109

Source: African Development Bank (2009), African Development Bank (2011), AICD (2011).

The very high transport costs stem from the poor state of the infrastructure which results in smaller loads and longer travel times. The Juba bridge, for example, limits loads to no more than 45 tons. The poor road conditions increase travel times substantially. Poor roads between Yei and Kaya on the border with Uganda, result in travel times of 24 hours for the 90 kilometers of travel – an average speed of about 4 km per hour. Moreover, trucks encounter transit bottlenecks along the way. Yoshino (2009) reports the example of a truck transporting sacks of onion from Kassala to Malakal, a distance of 835 km, that was subject to tax and fee payments at about 20 different locations, totaling SDG 2,000 (equivalent to about \$800). Moreover, the imbalance in trade between South Sudan and its neighbors has a big impact on transport costs. The trucking companies that operate in South Sudan are mainly Kenyan and Ugandan companies. These trucks return empty from Sudan to Uganda, increasing significantly the cost of transport services.

In the case of electric power, the average cost of power in South Sudan is as high as \$0.37 per kWh, double the average cost of power in Sub-Saharan Africa which is estimated at \$0.18 per kWh and five times what is paid in other developing countries. These high prices reflect the fact that South Sudan has one of the highest costs of power production in Africa. The high cost stems, in part, from the use of small-scale diesel generation and from the high cost of diesel fuel.

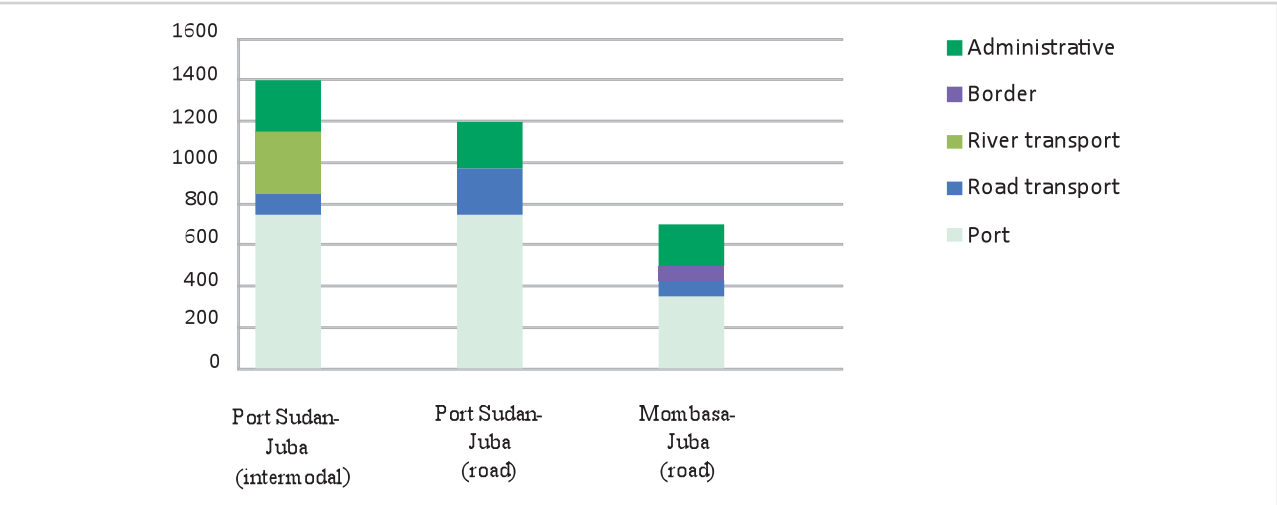
1.3.3 Freight Logistics and Costs

As noted earlier, much of the South Sudan economy relies on cross border trade. There has been an encouraging development of private business activity in the country since 2005; but years of conflict have wiped out much of the country’s infrastructure. As the AICD (2011) study has noted, poor infrastructure, coupled with high costs,

contributes to the long times and costs associated with moving freight within and outside South Sudan. The two key trading arteries are Mombasa and Port Sudan to Juba. The AICD study suggests that Mombasa is the more competitive option for inbound goods to South Sudan, based on times and costs associated with moving along these arteries. Importing freight to South Sudan takes between 30 and 60 days from the coastal gateways of

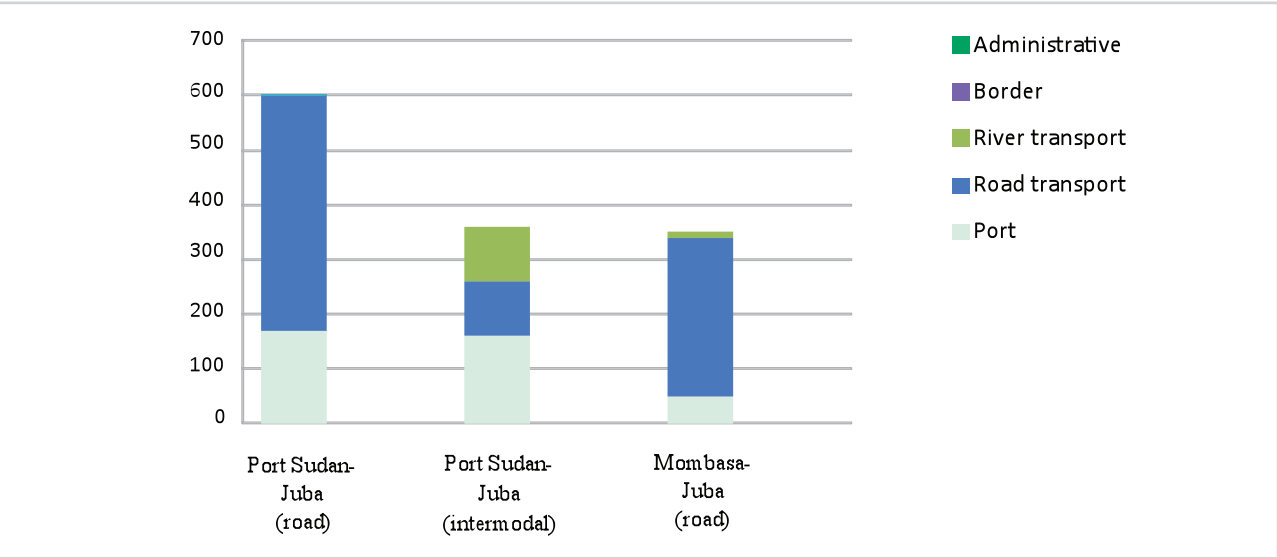
Mombasa or Port Sudan. As Chart 1.1 indicates, the transit time for freight coming through Mombasa is almost half that through Port Sudan. The main reason for the shorter time is greater efficiency in port handling in Mombasa. Port times for Mombasa are about 15 days, compared to more than 30 days for Port Sudan. The other point that emerges from the AICD study is that port-related charges increase the cost of moving freight by as much as 25% (Chart 1.2).

Figure 1.1: Transit Times for Imports (Time required to import freight in hours)



Source: AICD (2011).

Figure 1.2: Price for Importing Freight to South Sudan (Cost per ton in US\$)



Source: AICD (2011).

Inland transportation between Mombasa and Juba takes 17 days and costs \$8,075 for importing and 14 days and \$4,000 for exporting. These high costs stem not only from geography; they also arise from a burdensome administrative process, multiple checkpoints, and transport infrastructure constraints. The details are discussed at some length in the IFC (2011) report.

The other reason for large differences in transit times is that during the rainy season from April/May to October/November each year, a majority of roads in South Sudan are impenetrable. Multimodal road-river transport is the only alternative for travel for half the year. The multimodal transport costs are typically lower than for road, but the river transport adds about six days to the travel time.

1.3.4 High Unit Costs of Road Construction

Costs of road construction in South Sudan are very high in comparison with other Sub-Saharan African countries (Table 1.15). Section 7.2.5 of chapter 7 provides a detailed assessment of these costs for various types of roads. According to the AICD study, several factors contribute to these high costs. First, the ongoing construction boom in South Sudan prompted by substantial additional funding by Government and donors for rehabilitation of infrastructure and buildings has been hampered by the small domestic supply base for construction services and materials.

Table 1.15: Cost of Rehabilitation and Reconstruction of 2-lane Inter-urban Roads

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

Source: World Bank (2009).

These very high construction costs, in effect, divert substantial amounts of public funds from other high priority investments in health, education, water supply and sanitation, for example. Moreover, they can also undermine the economic rationale for investment in portions of the national road network where traffic volumes are modest.

1.3.5 Inadequate Levels of Maintenance of Infrastructure

Inadequate levels of spending on routine maintenance of newly constructed or rehabilitated infrastructure assets have also contributed to the deterioration in the quality of these assets. The analysis undertaken in the individual infrastructure chapters in Part B of this Report suggests that the capital replacement cost of infrastructure assets

owned by the National Government was about \$1.45 billion in 2011, about 60% of which was transport sector assets. The level of spending required to keep these types of infrastructure assets in good working order is typically in the range of 3% to 5% of the capital value of the asset. This suggests that allocations in the National Budget for routine maintenance of the public infrastructure assets should have been in the range of \$45-70 million. The 2011 National Budget reports an allocation of \$20 million equivalent for maintenance of transport sector assets, but there do not appear to be specific allocations for public assets in other sectors. The international donor community has also been contributing modest amounts to the routine maintenance of some of these public infrastructure assets, but detailed information about the level of support provided in 2011 is not available. On the basis of this somewhat incomplete information, it would appear that budget allocations for routine maintenance are currently not at the levels required to ensure that

recently rehabilitated infrastructure assets are adequately maintained. In the case of the roads sector, for example, Chapter 7 reports that over the past five years a total of some 5,000 km of roads have benefited from some rehabilitation; however, informal estimates suggest that only 30% of these roads are currently in good condition.

1.3.6 Inadequate Levels of Cost Recovery for Infrastructure Services

One of the persistent problems for the provision of infrastructure services by public entities in South Sudan is the choice of pricing policies for these services and for cost recovery. According to the AICD (2011) study, the average cost of water production in the Upper Nile Water Corporation is about \$1.00 to \$1.20 per cubic meter, which is broadly in line with comparable costs for water utilities in other water-abundant areas in Sub-Saharan Africa. Water tariffs are set at about \$0.80 per cubic meter which, according to the AICD, is higher than other African benchmarks. However, cost recovery is very low, with only 40% of revenues being recovered. This situation undermines the financial sustainability of the water utility as revenues cover only half of the operating costs and none of the capital costs – a situation that typically leads to continued inadequate levels of maintenance even if facilities have been subject to major rehabilitation. A related problem is that 30% of water production is lost due to leakages in the system which stem from inadequate levels of maintenance. The Upper Nile Water Corporation loses about \$1 million a year due to various inefficiencies. Experience with this Corporation provides insight for the management of the South Sudan Urban Water Corporation. The challenge for the latter will be to build the financial viability of the entity through a combination of reduction in system losses,

improved cost recovery and revenue collections.

As noted earlier, power tariffs in South Sudan are high. However, revenue collection is substantially lower than the actual cost of supplying power. The combination of under-pricing power production costs, high technical and non-technical losses (AICD reported transmission and distribution losses of 50% of total electricity produced in 2006 – double what is reported for other countries in Africa) and under-collection of accounts payable (only 40% of bills were paid in 2006) meant that the power utility had a very large operating deficit in 2006. The implication is that in 2006 the SSEC had hidden costs of almost \$9 million – equivalent to about 190% of revenues collected. Development of a financially viable power utility in South Sudan is a high priority to reduce demands on the national budget and to develop a commercially viable partner for potential Public-Private Partnerships (PPPs) in the decade ahead.

1.3.7 Large Financing Requirements for Infrastructure

At the present time, there is a modest allocation of public resources for the rehabilitation, upgrade and expansion and maintenance of basic infrastructure. As Table 1.16 indicates, the total government and donor allocation for basic infrastructure capital and recurrent costs was about \$430 million in 2010 – some 68% of which came from the National Budget. The Government spent the equivalent of 4.4 % of non-oil GDP on capital outlays for the core infrastructure of the country, together with donor spending of a little over 2% of non-oil GDP. In \$ terms, total spending on the core infrastructure program is projected to decline in 2011, largely because of the projected depreciation of the SDG from an average of 2.38 pounds per dollar in 2010 to 2.95 in 2011.

Table 1.16: Estimates of Expenditures on Infrastructure Related Programs (In \$ millions)

Expenditure category	2006	2007	2008	2009	2010	2011
On-going donor programs						
Planned disbursements	40.0	60.0	142.3	174.5	185.5	180.3
Actual disbursements						
Recurrent expenditures	6.0	9.0	18.4	26.6	27.4	26.6
Capital expenditures (80% of total)	24.0	36.0	73.5	106.3	109.6	106.4
Total	30.0	45.0	91.9	132.9	137.0	133.0
Undisbursed balance (annual)	10.0	15.0	50.5	41.6	48.5	47.3

Expenditure category	2006	2007	2008	2009	2010	2011
National budget						
Recurrent expenses	14.9	25.1	39.3	34.3	57.9	60.6
Capital expenditures	67.6	36.6	359.4	204.7	237.5	179.0
Total	82.5	61.6	398.7	239.0	295.4	239.6
Aggregate spending						
Recurrent expenditures	20.9	34.1	57.7	60.8	85.4	87.2
Capital expenditures	91.6	72.6	432.9	311.0	347.1	285.4
Total	112.5	106.6	490.6	371.9	432.5	372.6
Memo items:						
Disbursement ratio for donor programs	75.0	75.0	64.5	76.2	73.9	73.8
Capital spending as % non-oil GDP			9.5	6.9	6.5	5.1
Recurrent spending as % non-oil GDP			1.3	1.4	1.6	1.6
National budget (SDG millions)						
Recurrent expenses	32.4	50.6	82.2	79.2	137.9	178.7
Capital expenditures	146.6	73.9	751.2	472.9	565.2	528.0
Total	179.1	124.5	833.3	552.0	703.1	706.7
Exchange rate: national currency per US\$	2.17	2.02	2.09	2.31	2.38	2.95

Source: Annex Table 2.5, Annex Table 3.1 and Annex Table 3.2.

If South Sudan is to close the very large infrastructure gap outlined in the preceding discussion, there will have to be a substantially larger allocation of financial resources for the program. In a recent assessment, AICD (2011) indicated that South Sudan will need to allocate an average of about \$1,080 million a year in the decade ahead to address the severe infrastructure deficit of the country.¹⁴ The study

estimates that the average annual outlay on operations and maintenance of the infrastructure network would be about \$280 million a year. The levels of spending in the recent past have been about 40% of the levels proposed by the AICD study. Mobilization of substantially larger amounts of funding for the infrastructure programs poses yet another major challenge for the Government.

14 See Ranganathan, Rupa and Cecile M. Briceño-Garmendia (2011), South Sudan's Infrastructure: A Continental Perspective. Africa Infrastructure Country Diagnostic. Country Report. June 2011. Their calculations imply that the average GDP for the 2011-2020 period was \$6.02 billion (presumably at 2010 constant prices). This appears to be on the low side, given that the non-oil GDP of South Sudan was about \$5.38 billion equivalent in 2010.