Economic Impact of the Action Plan and Alternative Scenarios

4 Economic Impact of the Action Plan and Alternative Scenarios

4.1 The Need for Sustained Strong Economic Growth

The national income accounts for 2010 indicate that the country's economy is dominated by oil (60% of GDP), with a predominantly subsistence agriculture sector and government services each accounting for about 15% of GDP. Industry and other services play a minor role, accounting for the remaining 10% of GDP. The non-oil economy is estimated to have been growing at an average of about 5% a year in real terms in recent years. However, this growth has fluctuated widely as a result of the boost from sharp increases in development spending, large changes in the international price of oil and hence government spending, and the effects of drought on agricultural production.

With current high levels of unemployment and underemployment, and a labor force that is projected to grow at an average of 4.8% a year in the decade ahead, there is little doubt that the country will require an extended period of strong economic growth if it is to succeed in providing productive employment opportunities, reducing the high incidence of poverty and enhancing livelihoods in both urban and rural areas. The issue is not whether such a growth strategy should be pursued, but rather how can it be done?

The position taken in this Report is an extension of that set forth in the South Sudan Development Plan (SSDP) for 2011-2013. The best prospects for an extended period of sustained strong economic growth will come from the development of the vast agricultural potential of the country, first to meet the most pressing domestic needs of the country, and then to exploit opportunities in regional and global markets for export of a wide range of food and other agricultural products. This requires a fundamental transformation from the current system in which the predominantly rural population of the country is engaged in subsistence farming to meet family needs, with little or no production of marketable surpluses of food and other agricultural products. The inability of the farming community to produce surpluses for sale in the market economy stems from a range of shortcomings that are articulated in Chapter 6 of this Report.

As the analysis in Part B of this Report indicates, the current lack of basic infrastructure in the country is one of the most serious obstacles that stand in the country's path to achieve accelerated economic growth. The Report lays out a major program for development of the basic infrastructure of the country in the medium term that, in conjunction with a range of other initiatives, will provide the basis for a transition to economic growth in the range of 9% a year in real terms in the non-oil economy by the latter part of the decade. This proposed outcome is referred to as the High Growth Scenario in this Report. As Chapter 3 indicates the total cost of the program is estimated at $13.8 billion during 2011-2020 (at 2020 constant prices and exchange rate). A substantial portion of the required funding will come from the allocation by the National Government of a larger share of oil revenues to infrastructure development, from continued strong support from the international donor community and from a major push to attract private investment in infrastructure assets and services, especially in electric power, telecommunications, and irrigation.

4.2 Key Features of the High Growth Scenario

4.2.1 Growth in Production and Incomes

The basic strategy of the High Growth Scenario is to broaden substantially the economic base of the country. This proposed transformation of the economic base is led by a major build-up in public and private investment in infrastructure, thereby addressing one of the most serious constraints to strong economic growth in South Sudan. The build-up in investment in basic infrastructure assets and services is a key driver for the proposed transformation of the economy away from its excessive dependence of the oil sector as the primary source of economic growth. This transformation results in a broader-based pattern of development that provides large numbers of people with opportunities for productive employment and improved livelihood.

Table 4.1: Selected Macroeconomic Indicators for High Growth Scenario (Based on $ at 2010 constant prices and exchange rate)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Production											
GDP growth rate (% p.a.)		16.4	0.7	(3.1)	(7.9)	(4.4)	1.7	(0.5)	0.9	2.1	3.1
Non-oil GDP growth rate (% p.a.)		(5.5)	12.9	5.4	6.2	6.8	6.9	7.8	8.7	9.2	9.1
Non-oil GDP as % GDP	40.3	32.7	36.7	39.9	46.0	51.5	54.1	58.6	63.2	67.5	71.5
Income											
National income per capita ($)	956	960	744	725	705	702	711	724	745	774	805
Non-oil GDP per capita ($)	567	506	542	544	555	572	591	617	650	688	728
Memo items:											
Petroleum value added ($ mill)	7 968	10 452	9 903	9 109	7 532	6 473	6 224	5 582	5 016	4 518	4 088
Non-oil GDP ($ mill)	5 380	5 083	5 739	6 051	6 428	6 868	7 342	7 914	8 600	9 388	10 246
Gross domestic product ($ mill)	13 349	15 536	15 642	15 159	13 960	13 341	13 566	13 496	13 616	13 906	14 334
National income ($ mill)	9 077	9 646	7 886	8 058	8 174	8 431	8 823	9 276	9 863	10 561	11 339
Population. mid-year ('000)	9 494	10 048	10 594	11 116	11 589	12 012	12 414	12 819	13 232	13 652	14 079
Labor force ('000)	4 231	4 499	4 771	5 040	5 296	5 537	5 776	6 023	6 277	6 538	6 805

Source: Annex Tables 4.7 and %.1

Table 4.1 provides a summary of the projected increase in GDP, non-oil GDP and national income under the High Growth Scenario for the period 2011-2020. The key features are as follows:

- The growth rate for non-oil GDP rises steadily from a projected 6% in 2013 to a little more than 9% a year by the end of the decade.
- Because of the projected decline in oil production in the decade ahead, value added by the petroleum sector declines by about 50% in real terms by 2020.
- As a result, the total GDP of South Sudan declines from a peak of US$15.7 billion in 2012 to US$13.4 billion by 2015, after which the strong growth in the non-oil economy offsets the decline in the petroleum sector and total GDP increases by about 3% a year by 2020.
- By 2020, non-oil GDP accounts for almost three-quarters of total GDP, compared with about one-third at the present time – a major structural transformation of the economy towards a broad-based pattern of growth and development. As the discussion in Chapter 2 indicates, by 2020 industry and services sectors other than government account for almost 30% of GDP.
- With sustained strong growth in the non-oil economy, non-oil GDP per capita increases by almost 40% in real terms in the decade ahead, from an average of $535 in 2010-2011 to $740 by 2020. This implies a sustained improvement in average productivity of the labor force.

However, the combination of the decline in value added in the oil sector, continued outflows of investment income to the international companies involved in oil production in South Sudan and oil revenue sharing payments to the Republic of Sudan, results in a stagnation of the national income of South Sudan at about $11.5 billion a year for much of the decade ahead. It is only in the latter part of the decade that the strong growth in non-oil GDP offsets these other pressures; as a result, the growth in national income recovers to an average of 3% a year in real terms during 2016-2020. The implication is that national income per capita declines from a peak of $1,130 in 2012 to about $900 by 2018. This decline may result in a reclassification of South Sudan by the World Bank from a Lower Middle Income country at present to a Low Income country in the coming years.

Table 4.2: Investment Indicators for High Growth Scenario (As % of total GDP)

Indicator	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Public non-oil investment											
Infrastructure	3.0	2.2	2.6	5.0	6.7	7.3	6.9	8.3	10.1	11.2	10.9
Other	1.6	1.5	1.7	1.9	2.5	2.8	3.4	3.8	3.9	4.1	4.3
Sub-total	4.6	3.7	4.3	7.0	9.2	10.2	10.2	12.0	14.0	15.4	15.2
Private non-oil investment											
Infrastructure	0.4	0.3	0.8	2.1	2.7	2.5	1.3	1.5	2.0	2.3	2.3
Other	2.6	2.4	2.7	3.3	4.3	5.4	5.9	7.6	8.0	9.2	9.1
Sub-total	3.0	2.7	3.4	5.4	7.0	8.0	7.2	9.2	10.0	11.5	11.4
Total non-oil investment											
Infrastructure	4.6	3.7	4.3	7.0	9.2	10.2	10.2	12.0	14.0	15.4	15.2
Other	4.2	3.9	4.3	5.2	6.7	8.3	9.3	11.4	11.9	13.4	13.4
Total	8.8	7.5	8.7	12.2	15.9	18.4	19.5	23.4	25.9	28.7	28.6
Petroleum sector investment											
Private investment	8.0	7.6	5.7	5.6	5.7	5.5	5.1	4.8	4.6	4.3	4.0
Total investment											
Infrastructure	**4.6**	**3.7**	**4.3**	**7.0**	**9.2**	**10.2**	**10.2**	**12.0**	**14.0**	**15.4**	**15.2**
Other public	1.6	1.5	1.7	1.9	2.5	2.8	3.4	3.8	3.9	4.1	4.3
Private	10.6	9.9	8.3	8.9	9.9	11.0	11.0	12.5	12.6	13.5	13.1
Total	16.7	15.1	14.3	17.8	21.6	24.0	24.6	28.3	30.5	33.0	32.6
Memo items:											
GDP (SDG millions)	31 769	36 975	37 227	36 079	33 225	31 751	32 287	32 121	32 406	33 095	34 116
Non-oil investment as % non-oil GDP	18.8	19.4	21.1	30.9	35.2	35.2	32.3	36.1	37.9	39.8	37.3
Total fixed investment ($ mill)	2 075	2 159	2 101	2 721	3 050	3 159	3 061	3 512	3 885	4 340	4 393

Source: Annex 4.

4.2.2 Role of Infrastructure Investment in Accelerating Economic Growth

Infrastructure plays a key role in economic growth and poverty reduction. The lack of infrastructure leads to increased production and transaction costs. This lessens the competitiveness of businesses, and therefore the possibility of implementing economic and social development policies. As Chapter 2 indicated, the acceleration in the growth of the non-oil economy is to be achieved by raising the current non-oil investment rate from about 20% of non-oil GDP to an average of 35% during 2014-2020. In terms of total GDP, the overall investment rate needs to increase from 15.5% of total GDP at the present time, to about 25% of GDP by 2015 and about 33% of GDP by the end of the decade (Table 4.2). The cumulative amount of non-oil investment required during 2011-2020 to raise the economic rate to about 9% a year by the latter part of the decade is about $25 billion at 2010 constant prices and exchange rate (Annex Table 4.2). The key driver of this increase in aggregate investment is the proposed infrastructure investment program of some $13.3 billion (Table 3.2). It accounts for 53% of the total investment required in the decade ahead

As Table 4.2 suggests, the increased investment in infrastructure is led by the public sector (National and state governments and the international donor community). The sustained public sector commitment to a much improved national infrastructure network lowers business operating costs and improves service delivery, thereby addressing one of the major concerns of potential private investors. Reinforced by the range of other measures to improve the operating environment for private investment that are outlined in Chapters 2 and 3, non-oil private investment begins to rise sharply from 2014-2015. By 2020, non-oil private investment is projected to be at a level equivalent to 16% of GDP, compared with an average of about 3% at the present time.

Table 4.3: National Budget and Donor Funding for Infrastructure in High Growth Scenario
(As % of total GDP)

Indicator	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
National budget											
Oil revenue	17.7	15.3	32.2	30.6	27.4	24.7	23.3	21.0	18.7	16.5	14.5
Non-oil revenue	0.4	0.3	0.4	0.8	1.8	3.1	4.3	5.9	7.6	8.8	10.0
Total revenue	18.1	15.6	32.6	31.4	29.3	27.8	27.7	26.9	26.3	25.3	24.5
Recurrent spending	14.1	12.2	12.8	13.8	15.7	17.2	17.6	18.5	19.3	19.9	20.4
Capital spending											
Infrastructure	1.8	1.4	1.8	3.4	4.5	4.9	5.0	6.1	7.6	8.4	7.9
Other	1.7	2.0	2.1	2.3	2.9	3.2	3.3	3.5	3.7	4.1	4.5
Total	3.4	3.4	3.9	5.7	7.4	8.1	8.4	9.6	11.2	12.5	12.5
Total expenditures	17.6	15.6	16.8	19.5	23.0	25.3	26.0	28.1	30.5	32.4	32.9
Overall budget balance	0.6	0.0	15.8	11.9	6.3	2.5	1.7	(1.2)	(4.2)	(7.1)	(8.3)
Public funding for infrastructure											
Donor funding	1.2	0.7	0.9	1.6	2.2	2.4	1.8	2.2	2.5	2.9	3.0
Total public funding	3.0	2.2	2.6	5.0	6.7	7.3	6.9	8.3	10.1	11.2	10.9
Memo items:											
GDP (SDG millions)	31 769	36 975	37 227	36 079	33 225	31 751	32 287	32 121	32 406	33 095	34 116
Government share of infrastructure (%)	59.3	66.2	67.8	67.7	67.1	66.7	73.5	73.8	75.0	74.5	72.7

Source: Annex Table 4.8.

20 In the High Growth Scenario, it is assumed that South Sudan receives 80% of net oil income during 2011-2020. One of the alternative scenarios reviewed later in this Chapter and in Annex 5 is one in which South Sudan receives 96% of net oil income.

4.2.3 Financing the Build-up in Infrastructure Investment

As the discussion in Chapter 3 indicates, the rapid build-up in investment in infrastructure in the near- and medium-term will have to come from a substantial increase in public investment that is driven by a close partnership between the National Government and the international donor community. The proposed Action Plan for Infrastructure calls for public investment to increase from about 2.5% of GDP at the present time to almost 6% of GDP by 2015 and 7% of GDP by the end of the decade (Table 4.3). At the present time, the National Government is funding about 70% of the public investment in infrastructure investment that is taking place. For the decade ahead, the Government will continue to fund 70% of the proposed new public investment. This financing scenario is based on the assumption that the National Government receives at least 80% of the oil revenues generated within South Sudan. At a share of oil revenues of 80%, the National budget runs an overall deficit equivalent to 3.5% of GDP by 2020, after having generated large surpluses during 2012-2018. For the purposes of this Report, it is assumed that these surpluses are placed in the proposed wealth fund for the benefit of future generations. The budget deficit in 2019-2020 could be funded by withdrawals from the wealth fund of by the issue of long-term bonds by the National Government.

The level of donor funding for the infrastructure program peaks at the equivalent of 2.5% of GDP in 2015 and then declines to the equivalent of 1.5% of GDP for the remainder of the decade. As the discussion in Chapter 3 indicates, the proposed funding arrangements for the donor community will require that 25% of the total amount of development assistance that is projected to be available during 2011-2020 will have to be allocated to the infrastructure program. This represents a small increase over the average of 22% that has prevailed in recent years.

4.3 Key Economic and Social Benefits of the Proposed Program

4.3.1 Overview of the Benefits

There are four broad sets of benefits that would flow from successful implementation of the proposed Infrastructure Action Plan. These are as follows:

- Improve access to basic services for large numbers of residents in urban and rural areas that, in turn, facilitates access to health and education services, improve access to information including market opportunities, and improve opportunities for sale of produce in domestic and regional markets.

- Lower the costs of infrastructure services such and road transport and electric power and thereby improve the competitiveness of domestic business vis-à-vis imports and in export markets in the region and internationally.

- Provide a substantial range of new business opportunities for the private sector within South Sudan.

- Contribute to job creation in two ways: (i) create direct employment opportunities in the implementation of these infrastructure development programs that, in turn, can produce multiplier effects at the local and national level; and (ii) the availability of more reliable basic infrastructure such as roads, river ports and transport, power and telecommunications at lower cost will provide the type of operating environment that is needed for increased production in agriculture, industry and trade.

4.3.2 Improved Access to Basic Services and Markets

The proposed program has a significant impact on the number of people in the country with access to basic services. At the present time, about 18% of the rural population and 7% of the cultivated land area are within 2 km of a road, although as Chapter 7 indicates, many of these roads are impassable for six months a year due to rains and flooding. Implementation of the proposed program to upgrade close to 11,000 km of trunk and rural roads to paved or all-weather standard in the decade ahead would improve substantially the access of rural communities to markets and services. As a result of this program about 70% of the rural population and 50% of the cultivated land area would be within 5 km of an all-weather road by 2020. This transformation in rural connectivity, in turn, improves farm access to basic inputs such as fertilizers and pesticides. The improved roads also contribute to lower transport costs for inputs and for produce destined for local and international markets. The improvement in rural connectivity plays an important role in creating the conditions required for growth in agricultural production of 6% a year by the later part of the decade ahead.

Table 4.4: Increase in Population with Access to Basic Services

Type of service	Share of population (% of total)		Population with access ('000) (total)		(increase)
	2010	2020	2010	2020	2010-2020
Improved water supply					
Urban	15	70	261	2 560	2 299
Rural	34	65	2 637	6 774	4 137
National	31	66	2 898	9 334	6 436
Improved sanitation					
Urban	37	60	643	2 194	1 551
Rural	9	40	698	4 169	3 471
National	14	45	1 341	6 363	5 022
Electric & solar power					
Urban (electric)	5	52	90	1 898	1 807
Rural (solar)		17	-	1 750	1 750
National	1	26	90	3 648	3 557
Communications					
Mobile cellphones	12	40	1 139	5 631	4 492
Internet users	1	10	95	1 408	1 313
Coverage of cell network	60	100	5 696	14 079	8 382
Memo items:					
Total population ('000)					
Urban			1 737	3 656	1 919
Rural			7 757	10 422	2 665
Total			9 494	14 079	4 585

Source: Table 3.5, Table 3.6 and Table 3.7.

The proposed program also improves access to basic services for a large part of the population. As Table 4.4 indicates, full implementation of the program will result in an additional 6.4 million people having access to improved water supplies and an additional 5 million having access to improved sanitation. In urban areas, a little more than 50% of the population will have continuous access to electricity supplied from the partial national grid in place by 2020. And as a result of the proposed rural energy program, about 1.75 million rural residents will have access to some form of solar energy (including solar panels, pumps and cookers). In the case of communications 100% of the population will be covered by cell phone networks, with 40% of the population having the use of cell phones, compared to only 12% at the present time. This represents an increase of 4.5 million people with access to cell phones. An additional 1.3 million people will have internet accounts.

4.3.3 Lower Costs for Infrastructure Services

As the discussion in Chapter 1 and in the Chapters in Part B of this Report indicate, the costs of basic infrastructure services in South Sudan are high. As Table 1.11 indicates, it costs $9,420 to import a standard container from Mombasa to Juba. This compares with $3,700 for Burundi, $4,100 for Rwanda and $3,000 for Uganda for container transit from Mombasa.[21] The average transit time for these three landlocked countries is 10 days compared with 60 days for Mombasa to Juba. In the case of exports it takes 52 days and costs $5,025 to transport a standard container from Juba to the port of Mombasa. The average cost for Burundi, Rwanda and Uganda is about $2,350 and the average transit time is six days. Road freight rates in South Sudan are typically in the range of 20 US cents per ton km, more than twice that of rates in neighboring countries such as Kenya and Uganda. With heavy dependence on small diesel plants in most state capitals the cost of electric power is also high, ranging from 20 to 50 US cents per kWh.

Successful implementation of the IAP will have a significant impact on these high infrastructure service costs. In the case of road freight, for example, a reasonable expectation is that the cost of road freight would decline to less than 10 US cents per ton km –perhaps in the range of 8 US cents per ton km. The potential economic benefits of this reduction are large. There are no reliable data for the amount of international freight that comes into and leaves South Sudan. In the case of Burundi, a much smaller landlocked country, the total tonnage of imported freight was equivalent to about 240 tons per $1 million of GDP in 2008 and about 255 tons in 2010. Applying these indicators to South Sudan for the High Growth Case for non-oil GDP in 2020, gives an estimate of 2.5 million tons of imported freight for that year. Of course, given that the Burundi economy is one fifth the size of the South Sudan non-oil economy, these illustrative freight volumes may be much too low for the $10 billion economy projected for 2020. Nonetheless, a reduction from 20 to 8 US cents per ton km would represent a saving in freight costs of about $360 million a year at this very conservative estimate of the level of freight imports for 2020.[22] It is the prospect of achieving these types of savings in freight costs that makes the large proposed investment in the trunk network of the country attractive. It offers a substantial improvement in the costs of doing business in South Sudan that will also benefit small farmers through reduced costs for fertilizers and other key inputs, as well as cheaper access to local and regional markets.

4.3.4 Business Opportunities that Flow from the Program

As noted earlier, full implementation of the proposed IAP will involve expenditures in the range of $13.8 billion (at 2010 constant prices and exchange rate) during 2011-2020. Given the size and importance of the program, a significant number of business opportunities will emerge. The fundamental issue then is the extent to which the domestic business community and labor market will benefit from these opportunities and the extent to which the benefits will accrue primarily to offshore suppliers of these goods and services. The position taken in this Report is that Government, with the support of the donor community, will need to take early action on the design and implementation of complementary programs of support for local business. The types of programs that will need to be considered are discussed later in this Chapter.

Table 4.5 provides a very rough estimate of the composition of the proposed $13.78 billion of development expenditures. About $4.75 billion will be spent on labor services and $5.81 billion on construction and other materials; about $3.22 billion of equipment will also be required for the program. In addition, as Table 3.3 indicates, the required level of spending on routine and periodic maintenance to keep the infrastructure assets in good working order is estimated at about $2.57 billion (also at 2010 constant prices and exchange rate) in the decade ahead.[23] Thus, the proposed IAP will generate about $16.35 billion of spending on development and maintenance during 2011-2020, about $5.60 billion of which will be for labor services, $7.53 billion will be for materials and spare parts, and $3.22 billion will be for capital equipment.

Table 4.5: Composition of Sectoral Expenditures by Type of Expenditure, 2011-2020
($ millions at 2010 constant prices and exchange rate)

Sector	Capacity building & technical services		Capital expenditures			Total expenditures			
			Civil works						
	Technical services	Goods & equipment	Materials	Services	Equipment	Services	Materials	Equipment	Total
Infrastructure general	58.1	24.9	15.8	10.5	8.8	68.6	15.8	33.7	118.1
Land & water resource management	21.9	9.4	380.8	253.9	211.6	275.8	385.5	216.3	877.6

21 See African Development Bank (2009), An Infrastructure Action Plan for Burundi: Accelerating Regional Integration. African Development Bank, Tunis, September, 2009.

22 The basis for this indicative estimate is as follows: assuming the current cost of freight from Mombasa to Juba is $260 per ton based on about 20 US cents per ton km, a reduction in freight rates from 20 to 8 US cents per ton km reduces the total freight cost to about $105 per ton. As a result, the total cost of transporting 2.5 million tons of imports declines from $625 million to about $265 million – a reduction of some $360 million a year.

23 About one-third of these maintenance expenditures would be for labor services ($850 million), with most of the remaining $1.72 billion used for spare parts and supplies.

Sector	Capacity building & technical services		Capital expenditures			Total expenditures			
			Civil works		Equipment				
	Technical services	Goods & equipment	Materials	Services		Services	Materials	Equipment	Total
Irrigation	10.9	4.7	458.8	305.9	254.9	316.7	461.1	257.2	1035.0
Water supply and sanitation	108.8	46.6	535.7	625.0	625.0	733.8	559.0	648.3	1941.1
Electric power	42.9	18.4	797.1	455.5	1024.8	498.4	806.3	1034.0	2338.7
Roads	58.0	24.8	3090.7	2472.5	618.1	2530.5	3103.1	630.6	6264.2
River transport and ports	9.8	4.2	15.9	15.9	21.1	25.7	18.0	23.2	66.9
Civil aviation	9.2	4.0	83.6	56.4	68.9	65.6	85.5	70.9	222.1
Railways	7.4	3.2	7.7	7.7	61.3	15.1	9.3	62.9	87.2
Communications	26.7	11.4	463.2	257.3	308.8	284.0	468.9	314.5	1067.4
Total	**353.7**	**151.6**	**5849.1**	**4460.5**	**3203.3**	**4814.2**	**5912.4**	**3291.5**	**14018.2**

Source: Table 3.9, Table 3.10 and Table 3.11 and estimates by authors.

Materials for civil works. The civil works component of the infrastructure program is estimated to be about $10.14 billion (at 2010 constant prices and exchange rate), largely because of the substantial program of road works for the decade ahead. Expenditures on materials are estimated at about $5.74 billion for the decade as a whole. The latter represents an important opportunity for development of domestic business opportunities for the supply of construction materials such as quarried materials for roads and other construction, cement, asphalt, rebars, lumber, a wide range of fixtures for buildings, and other materials. More work is needed to assess these opportunities and to promote the development of domestic suppliers at costs that are competitive with imports. The discussion in the next section addresses some of these basic issues.

Capital equipment. The simple assumption here is that there is little or no domestic capacity for supply of capital equipment required for the IAP. In this case, total imports of capital equipment for the infrastructure program will be in the range of $3 billion during 2011-2020.

Labor services. Labor services for the proposed program are estimated at $4.75 billion for the decade as a whole. These include technical services for capacity building and related activities (estimated at about $350 million), and labor for construction activities (estimated at $4.4 billion). In the case of capacity building and technical services (for studies, transaction advisory teams for PPPs, etc), the estimated outlay of some $354 million translates into an average of about 120 person years of advisory services per year during 2011-2020.[25] Given the nature of the work, almost all of these services will come from consultants and advisers with extensive international experience. Nonetheless, there will be need to promote opportunities for joint ventures between international providers of these types of services and local business interests.

In the case of labor services for construction activities, a wide range of skills will be required, including large amounts of unskilled labor in road works, as well as substantial semi-skilled and skilled labor in all sectors. A large portion of the semi-skilled and skilled labor will be in the area of trade skills such as surveyors, electricians, heavy equipment operators, plumbers, welders and so on. More work is needed on issues related to the extent to which labor intensive methods will be used for road construction and other activities and on the likely numbers of skilled and semi-skilled workers that may be needed for such a program. Key policy issues for development of skills in the labor force include actions to be taken to train electricians, equipment operators, and other trade skills within South Sudan. Lack of action on these issues will mean that a large portion of these skill requirements will be imported, with South Sudan supplying only the unskilled labor.

24 As Table 4.5 indicates, specific assumptions have been made about the proportion of capital expenditures in each sector are used for civil works and capital equipment. The assumptions about the split between these two types of expenditures vary among the sectors. There is a lot of civil works in road construction, whereas in the power sector the share of capital equipment is typically much larger.

25 The assumed fully-loaded average cost for international consultants with extensive experience is assumed to be $300,000 a year.

4.3.5 Promoting a Strong Domestic Supply Response

A number of initiatives can be taken to promote business opportunities for domestic firms and entrepreneurs. These actions include: (i) improvements in the business environment and information about business opportunities that flow from the proposed program; (ii) programs to ensure that small and medium business entities in South Sudan are able to benefit from the program; (iii) measures needed to promote the development of technical skills in the labor market; and (iv) development of contracting arrangements for domestic supply of goods and services for the program.

Improving the business environment. As the discussion in Chapter 1 indicates, the country currently has limited capacity for providing institutional support to the domestic business community. The recent report on Doing Business in Juba 2011 (IFC, 2011) indicates that Juba ranked 159th out of 183 economies on the ease of doing business. The report indicates that a number of fundamental laws and institutions are still missing. In addition, there is a need to clarify existing laws, streamline existing procedures and improve the efficiency of existing institutions. According to the survey, the cost of business start-up and operation in Juba is high. For starting a business and registering a property, entrepreneurs must pay high fees to different state and local authorities. For dealing with construction permits, since few entrepreneurs have access to water pipes and power cuts are frequent, entrepreneurs must drill boreholes and buy expensive generators to secure their water and electricity.

The National Government, state governments and counties (payams) can identify key areas for improvement and take specific action to address these bottlenecks.[26] The Government of South Sudan can follow a path that is similar to that of these other successful reformers in Sub-Saharan Africa (e.g., Ghana, Mali, Mozambique, and Rwanda); the latter usually have a long-term agenda and push forward continuously. Their programs typically include all relevant stakeholders in the process, set specific goals, institutionalize the reform effort, and regularly monitor progress. The benefits can be substantial. Business reforms expand the reach of regulation by bringing firms and employees into the formal sector. Businesses pay taxes. Products are subject to quality standards; and in addition, formal firms have greater access to bank credit to fund expansions and courts to resolve disputes.

Support for small and medium business. A range of initiatives can be taken to promote and development of small and medium business entities in the country. A widely used approach in other developing countries relies on the use of a network of business development centers (BDCs) throughout the country. The programs of these centers typically include training and support for small and medium entities to bid on and implement construction and or maintenance contracts. Such training programs include preparation of tender documents, support for preparing applications to the banking sector for working capital loans, arrangements for lease of equipment, and bookkeeping and record keeping.

Box 4.1: Support for Small and Medium Busines by UNOPS

The United Nations Office for Project Services (UNOPS) works closely with Government and state employees at all levels, sharing project implementation experience and technical knowledge to build capacity for future development. The program supports local contractors and laborers by providing training in international procurement standards, by repackaging tenders into smaller units and by offering onsite technical support, including for example, onsite training programs in road maintenance. It helps local contractors by assisting with the preparation of bids. UNOPS procurement officers break tenders down into small packages to give experience to a larger number of construction companies of all sizes where possible and suitable. It ensures building designs are based on local materials and expertise while maintaining international standards for safety. It is also working to build the capacity of a number of Government ministries, through direct training and close partnership during implementation.
Source: www.UNOPS.org.

26 The IFC report indicates that 27 of 46 Sub-Saharan economies have implemented reforms aimed at improving their business environments. Rwanda was identified as one of the top improvers globally. Since 2005 Rwanda has implemented 22 business regulation reforms in areas measured by the Doing Business surveys of the IFC. Other countries such as Ghana and Mali have initiated similar programs.

Improving the supply of technical skills for the labor market. As the preceding discussion indicates, the proposed Infrastructure Action Plan will generate a large demand for a wide range of skilled and semi-skilled workers, as well as creating job opportunities for large numbers of unskilled workers. Equipment operators will be required in the construction industry, for example, along with electricians, welders, mechanics, and others. The key policy issues here will be the manner in which these people are trained, by whom and at what cost. In the case equipment operators, it is not unusual for the successful contractor to assume responsibility for hiring and training the personnel required. To meet the demand for skilled trades people such as electricians, surveyors, welders, the issue is the extent to which South Sudan can build accredited training institutions whose programs meet specific standards that are consistent with international practice. Closely related to these concerns is the actual accreditation of those training institutions whose programs conform to agreed standards for the industry. In the absence of agreed standards and an accreditation process, donor support for such capacity building may be considered. In the event that the development of these domestic capacities is slow, consideration might be given to support by donors for skills training of South Sudanese at appropriate qualified institutions in neighboring countries.

Procurement policies and programs for the domestic market. A range of initiatives can be taken to ensure that a reasonable share of the infrastructure-related procurement by government, donors and private investors is awarded to qualified domestic suppliers of goods and services. Procurement policies for various parts of the infrastructure program will need to address the following types of issues: (i) the choice of standards for civil works and goods and materials; (ii) to what extent can local materials be used and do their technical specifications comply with contract requirements: (iii) the number, size and type of contracts to be tendered and the extent to which locally bid contracts will be geared to contractor capacities within the domestic market. A key issue going forward is the extent to which domestic suppliers of materials will be able to meet specific product standards required for these programs. If it doesn't already exist, South Sudan will need to develop a uniform set of internationally accepted standards for domestic production of construction materials. Without these types of standards, there is strong prospect for the award of contracts external contractors for supply of materials that can comply with specifications in procurement notices.

Further work is needed on these types of issues to develop a clear set of policies for procurement. Early consideration could, for example, be given to awarding maintenance contracts to qualified local firms in various infrastructure sectors, initially for a year or less. As capacities of these firms increase, consideration could be given to the competitive award of multi-year or so-called "period" contracts for routine maintenance. Such contracts might start at say, $100,000 a year. The size of such contracts could be increased, consistent with the further growth of local capacities. Longer-term contracts that are implemented according to standards required can help reduce the cost of asset maintenance, and will also permit contractors to purchase necessary equipment and meet the costs of staff training. These types of techniques were used with great success in a number of countries in East Asia several decades ago to build small domestic firms into major construction companies that were able to compete effectively with international suppliers of such services.

4.4 Risks and Uncertainties: Alternate Scenarios for the Decade Ahead

4.4.1 Review of Major Risks and Uncertainties

This Report calls for the design and implementation of a major program of infrastructure development in the decade ahead. It does so in the full knowledge that there are many possible outcomes for growth and development in South Sudan in this period and beyond. The wide range of risks and uncertainties include major political risks such as deterioration in internal security in the country and or civil disturbances in neighboring countries that affect conditions in South Sudan and its attractiveness as a destination for foreign investment or require deployment of financial resources from development programs to increased spending on security. There are also risks that stem from the international environment, including sharply higher food and raw material prices, or weak growth international demand for the types of agricultural products and other raw materials that are potential exports from South Sudan. The financing capacities of the National Government could also be adversely affected by a weakening oil prices in the decade ahead, or lower than estimated levels of oil production. Yet another set of issues relates to the extent to which South Sudan will be able to use the waters of the Nile Basin for development of its very large potential for irrigated agriculture and the hydropower potential of particular sites on the White Nile that are located in South Sudan. Development of this potential will require some form of agreement with the other nine Nile Basin riparian states.

For the purposes of this Report, the risks and uncertainties of greatest interest at this stage relate to the design, funding and implementation of the proposed Infrastructure Action Plan. It is therefore assumed that internal security in South Sudan continues to improve and that there is social and political stability for the decade ahead and that the Government continues to adhere to sound macroeconomic policies. It is also assumed that there are no new oil finds that affect production in the decade ahead, and no assumptions are made about the very real possibility that improved oil recovery (IOR) may boost production from existing fields within the decade ahead.

Table 4.6: Aggregate Non-oil Fixed Investment During 2011-2020 for Each Growth Scenario
(In $ billions at 2010 constant prices and exchange rate)

Scenario	Description	Total non-oil investment			Infrastructure investment			Infrastructure % of total		
		Public	Private	Total	Public	Private	Total	Public	Private	Total
A	High Growth Scenario (RoSS receives 80% of oil income)	14.2	10.6	24.8	10.0	2.5	12.5	70.4	23.7	50.4
Alternative Outcomes for Net Oil Income										
B	RoSS receives 96% of oil income	14.2	10.6	24.8	10.0	2.5	12.5	70.4	23.7	50.4
C	RoSS receives 69% of oil income	14.2	10.6	24.8	10.0	2.5	12.5	70.4	23.7	50.4
Alternative Outcomes for Private Investment										
D	Private infrastructure investment 50% of Scenario A	14.2	9.4	23.6	10.0	1.3	11.3	70.4	13.7	47.8
E	Same as D, but increase public investment to offset cut in private	15.4	9.4	24.8	11.2	1.3	12.5	72.8	13.7	50.4
F	Total private investment 50% of Scenario A	14.2	5.7	23.6	10.0	1.3	11.3	70.4	13.7	47.8
Alternative Outcomes for Total Investment										
G	Total investment 75% of Scenario A	10.8	8.1	18.8	7.6	1.3	8.9	70.2	15.9	47.0
H	Total investment 50% of Scenario A	7.6	5.7	13.3	5.3	1.3	6.5	68.8	22.7	49.2

Source: Annes Tables 4.9 through 4.16.

Table 4.6 provides a summary of eight possible scenarios for investment and economic growth in South Sudan in the decade ahead. Scenario A is the High Growth Case discussed earlier in this Chapter. In this scenario, the Government's share of oil revenues is 80% of total net income and the full Infrastructure Action Plan (IAP), as proposed in this Report, is implemented during 2011-2020. As discussed elsewhere in this Chapter, the scenario is built on the assumption that the vision articulated in the SSDP will be realized over the medium- and long-term. South Sudan makes steady progress in the next five years in building the enabling environment for broad-based private investment and in providing the internal security that is required for sustained strong development.

For the purposes of this Report, the economic impact of two alternative scenarios for the level of net oil income received by South Sudan have been examined (Scenarios B and C in Table 4.6), along with five alternative scenarios for the level of fixed investment and its distribution between the public and private sectors (Scenarios D, E, F, G and H in Table 4.6).

4.4.2 Uncertainties about the Level of Net Oil Income for Sudan

At the time that this Report was drafted, there was no agreement between the Republic of South Sudan and the Republic of Sudan on the arrangements for sharing income from oil fields currently in production. Annex 5 sets out a range of possible outcomes to illustrate the effect of various sharing arrangements on the net oil income of South Sudan. In the High Growth Case (Scenario A) discussed earlier in this Chapter it is assumed that South Sudan receives 80% of the net oil income, as per the assumptions set out in Annex 5. As Table 4.3 above indicates, with full implementation of the proposed IAP, the overall national budget balance turns from surplus in 2019 to a small deficit. As Table 4.7 indicates, for 2011-2020 as a whole the cumulative budget surplus is projected to be $6.1 billion under the High Growth Case (Scenario A). Allocation of this surplus to a wealth fund, while at the same time closing the infrastructure gap of the country, would represent a significant achievement.

The following two alternative scenarios for net oil income and the overall balance of the national budget have been included in Table 4.7:

- In Scenario B, it is assumed that the National Government receives 96% on the net oil income, with 2% going to the oil producing states and the remaining 2% to the Republic of Sudan. With full implementation of the IAP, the cumulative national budget surplus is projected to be $12.6 billion during 2011-2020 – a substantially larger build-up in the proposed wealth fund of the country than projected in Scenario A, for example.

- In Scenario C, it is assumed that the National Government receives only 69% of the net oil income, with 2% going to the oil producing states and 29% going to the Republic of Sudan. Again, with full implementation of the IAP, the overall balance of the national budget shrinks to $1.7 billion for the period 2011-2020. By the latter part of the decade, full implementation of the IAP results in a very large overall deficit in the national budget that may be difficult to finance. In this scenario, therefore, it is very likely that the IAP would have to be scaled back quite substantially. In all likelihood, the proposed roads program would have to be implemented over a much longer period of time and the ability of the country to meet growing demand for electric power from a national grid may also be in doubt.

Table 4.7: Summary of Alternative Growth Scenarios for 2011-2020
($ at 2010 constant prices and exchange rate)

Scenario	Description	Non-oil investment average 2011-20 (% of non-oil GDP)	Net oil income total 2011-20 ($ billion)	Non-oil GDP 2011-20 (% p.a.)	Gov't budget surplus total 2011-20 ($ billion)	Non-oil GDP per capita 2020 ($)
A	High Growth Scenario (RoSS receives 80% of oil income)	32.5	35.6	6.8	2.8	728
	Alternative Outcomes for Net Oil Income					
B	RoSS receives 96% of oil income	32.5	42.0	6.8	9.2	728
C	RoSS receives 69% of oil income	32.5	31.1	6.8	-1.6	728
	Alternative Outcomes for Private Investment					
D	Private infrastructure investment 50% of Scenario A	31.4	35.6	6.5	2.8	709
E	Same as D, but increase public investment to offset cut in private	32.5	35.6	6.8	1.6	728
F	Total private investment 50% of Scenario A	27.8	35.6	5.6	2.8	655
	Alternative Outcomes for Total Investment					
G	Total investment 75% of Scenario A	26.9	35.6	5.3	5.6	636
H	Total investment 50% of Scenario A	19.3	35.6	4.9	8.1	611

Source: Annes Tables 4.9 through 4.16.

4.4.3 Uncertainties about Availability of Funding

Successful mobilization of the funding required for the IAP will require a strong partnership involving the National Government, the international donor community and the private sector. During 2008-2010, the Government, donor community and the private sector spent a total of $1.24 billion on the rehabilitation and development of the infrastructure assets in South Sudan and on related capacity building and technical support. The average level of spending on these activities in this three-year period was about $415 million a year. The National Government accounted for 65% of these outlays, the donor community funded 22%, and the private sector accounted for the remaining 13% (Annex 3). Actual disbursements by donors were 71% of the amount budgeted in those three years. And actual disbursements by donors for the infrastructure program were 22% of the total development assistance program (excluding humanitarian assistance) of donors during 2008-2010 (Table 2.12).

As indicated earlier, implementation of the Action Plan requires a total of $13.8 billion for the ten-year program. The proposed annual levels of spending are substantially larger than during 2008-2010. The program calls for mobilization of $7.13 billion of funding from the resources of the Government of South Sudan (52% of the total required), an allocation of $3.75 billion to the IAP by the international donor community (27% of the total requirements), and mobilization of $2.9 billion of investment capital in the private sector (equal to 21% of the total required). There are major uncertainties about the availability of the financing on this scale from these three sources.

Availability of donor funding. During 2008-2011, ODA allocations for basic infrastructure were about 22% of total development assistance. For the purposes of this Report, it is assumed that allocations for basic infrastructure would account for 25% of total development assistance during 2011-2020. Allocations for infrastructure are therefore projected to rise from about $185 million in 2010 to about $525 million a year by 2020. Given the preferences of bilateral donors for this type of assistance, it is assumed that a substantial portion of this support would go to urban and rural water supply and sanitation, development of rural and feeder road networks, and irrigation programs that raise productivity and incomes of small-scale farmers. The multilateral financial institutions such as African Development Bank and the World Bank, on the other hand, may play a substantial role in supporting the development of Sudan's infrastructure connections with other countries in the region.

A basic assumption used in this Report is that allocations of ODA to South Sudan will rise steadily in the decade ahead from $104 per capita in 2010 to about $140 per capita by 2020. This translates into a total allocation of $14.5 billion for development assistance in the decade ahead for the High Growth Case. It is possible that the international donor community may not be able to expand resource allocation by this amount. Reasons for smaller allocations may vary. Donors may have difficulty in justifying an increasingly large allocation per capita for South Sudan, especially if implementation performance of aid-supported programs is slow to develop. Alternately, donors may choose to reduce their allocation to basic infrastructure in favor of increased support for say health and education programs. In the event that donors keep their per capita allocation of development assistance at $100 for the decade ahead, the total amount of development assistance will amount to $11.9 billion. Assuming the allocation for infrastructure remained at 25% of total development assistance, donor support for infrastructure will be reduced by $650 million in the decade ahead. This will require the national government to fund a somewhat larger share of the public investment program for infrastructure, or defer some investments.

Mobilization of private investment. The current amount of private investment in basic infrastructure assets in the country is very modest and is estimated to be in the range of $200 million. It is concentrated in communications and private diesel generation plants for electricity supply in state capitals. The High Growth Scenario used in this Report proposes that about $2.9 billion of new private investment should be mobilized in the decade for investment in basic infrastructure assets and that $600 million of private investment is mobilized for development of irrigation services for commercial farming operations. The expected areas that will be attractive to private investors will be power generation, inland water transport, airport concessions, communications and water storage and irrigation for large-scale commercial agriculture. Under the assumption that the overall debt: equity ratio for this private investment is a conservative 70:30, the implication is that potential investors would aim to mobilize about $1 billion of equity funding and $2.5 billion of debt financing from their internal resources or from international financial markets. As the discussion in Chapter 3 indicates, successful mobilization of this amount of commercial debt may require the involvement of government guarantees or other enhancements that would address potential investor concerns about risk sharing arrangements.

The underlying assumption in the High Growth Case (Scenario A) is that the Government will make a concerted effort in the near- and medium-term to improve the operating environment for private investment. In that connection, the Government will need to address a number of potential concerns of private investors in advance of its launch of a major international program of investment promotion. In that connection, it will be useful to make a clear distinction among the various types of private investments that are to be mobilized. These include the following: (i) investments that would be undertaken under some type of PPP arrangement, such as investment in power generation under take-or-pay contracts with a government entity for the supply of electric power to a national or local grid; (ii) concession agreements in which the government retains ownership of the basic infrastructure and awards one or more concessions to private investors for the operation of these assets and provision of related services (e.g., concessions for operation of airports, river ports, and railway services); and (iii) investments in infrastructure assets that would be used directly by the investor for the manufacture of a product (e.g., investment in irrigation for commercial agriculture), or provision of a service (e.g., telecommunications services from a national grid developed by one or more private investors).

In each of these cases, private investors will have a range of concerns that will need to be addressed by the government. To mobilize some $3.5 billion of private investment for basic infrastructure and irrigation, the government will need to develop effective capacities to address concerns of potential investors in a timely manner. An inability to address such concerns may result in potential investors shifting their attention to other countries where the risk-reward relationship is more attractive. There is typically a wide of concerns that potential investors will have in assessing the risk-reward framework for a country such as South Sudan.[27] These range from concerns about force majeure to political risks (such as changes in the regulatory environment), environmental risks and the current status of environmental laws and regulations in South Sudan, currency exchange risks especially in those cases where substantial amounts of debt financing are used and are denominated in a currency other than that of the bulk of the revenues generated under the project, and social risks where a project may have important impacts on local communities. Unsatisfactory arrangements regarding land tenure or use of local water resources, for example, can lead to significant local opposition to a project that may in turn result in delays in project completion, increased completion costs, or even undermine project viability.

Apart from building capacities within Government to address these types of investor concerns, the Government will also need to give close attention to other aspects of the operating environment for private investment. Investors will be concerned about the adequacy of the legal framework for PPP-type investments (such as take-or-pay contracts in power, and concession agreements for civil aviation, railways or river transport and ports) and about the extent to which there is clarity in the regulatory framework. As noted in Chapter 3, development of the regulatory framework is at a rather rudimentary stage at this time; much of what is required is not yet in place. Successful mobilization of these private funds will also depend on early progress on these institutional arrangements and the development of financially viable public entities that will enter into these partnerships.

Delays in addressing these types of concerns may result in potential private investors deferring decisions about particular investment proposals. Table 4.7 includes three different scenarios in which the proposed level of private investment is not realized because of uncertainties about the operating environment or about the risk-reward characteristics of particular projects. These three alternative scenarios are as follows:

- In Scenario D, the government is unable to mobilize the proposed $2.9 billion of private investment for the infrastructure program and the $600 million for commercial irrigation because of uncertainties about the environment and the quality of projects available. In this scenario it is assumed that only half of the required amount is mobilized (that is, about $1.75 billion). It is further assumed that the unfunded projects, primarily in the power, telecommunications and water supply and sanitation sectors, are postponed. This results in a somewhat slower expansion infrastructure related services, and with a lower level of investment somewhat slower growth. As Table 4.7 indicates, the average growth rate for non-oil GDP during 2011-2020 drops from about 7% a year in the High Growth Scenario A to 6.5% a year.

- In Scenario E, it is assumed that the national government steps in and funds the $1.75 billion shortfall in private investment in basic infrastructure. As a result, the non-oil GDP growth rate remains at an average of about 7% for the decade as a whole; but with a higher level of government spending the cumulative budget surplus for 2011-2020 declines from $6.1 billion to $4.4 billion. This scenario underscores the fact that there may be a trade-off between building the wealth fund and building basic infrastructure for the country.

- In Scenario F it is assumed that the obstacles to mobilization of private investment are more severe than in Scenarios D and E above. In this case, the overall level of private investment in the economy, and not just in infrastructure, is only 50% of what is assumed in the High Growth Case (Scenario A). In this case, the government does not step in to offset the weak private investment response. As a result, the average investment rate in the economy declines to about 27% of non-oil GDP, compared with 32% in Scenario A, and the non-oil GDP growth rate drops to an average of 5.7% a year for 2011-2020 as a whole.

The key point about these alternative scenarios for private investment is that in the event that private investment is not forthcoming, the Government faces difficult decisions about the allocation of its own financial resources or those of the international donor community, among competing demands for infrastructure development and whether to draw down the resources of the wealth fund to compensate for the weak private investment response.

4.4.3 Slow Development of Implementation Capacities

The final outcome for the decade ahead will also be shaped by the extent to which there is a rapid build-up in implementation capacities for civil works programs and related installation of capital equipment. Efforts to improve implementation capacities will center on developing the required skills in the labor force, or importing these skills required, and on the development of key domestic industries, including fabrication of goods and equipment, construction activities, transport and communications. Strategies for developing these domestic capacities are discussed earlier in this Chapter and in Chapters 2 and 3. The underlying assumption in the High Growth Case (Scenario A) is that with the help of the international donor community, the Government continues to make steady progress in building effective internal capacities for the implementation of development programs in general.

Scenarios G and H in Table 4.7 above look at the impact of slower progress in building these implementation capacities in the public sector and in promoting the development of domestic business activities. The key findings in these two alternative scenarios are as follows:

- In Scenario G, it is assumed that public and private investment in the decade ahead is only 75% of that in the High Growth Case. In other words, instead of an aggregate level of investment in the economy of about $25 billion in the decade ahead, a weak implementation

27 A detailed discussion of the issues related to private investor concerns about risks is beyond the scope of this Report. For a comprehensive review of these issues in the context of PPP-type investments see, Delmon, Jeffrey (2009), Private Sector Investment in Infrastructure: Project Finance, PPP Projects and Risk. Kluwer Law International, The Netherlands, 2009.

and operating environment results in total investment of about $18 billion for the decade as a whole. The result is that the average investment rate declines to about 27% of non-oil GDP and the latter grows at an average of only 5.5% a year.

- In Scenario H, it is assumed that public and private investment in the decade ahead is only 50% of that in the High Growth Case. The implication in this scenario is that the proposed IAP program of almost $14 billion is reduced to a total of $7 billion for the decade ahead, thereby prolonging the difficulties faced by many residents in getting access to basic services and markets at reasonable cost. In this scenario, non-oil GDP grows at an average of only 4.7% a year – the same as the labor force – and the aggregate investment rate remains at the current level of about 20% of non-oil GDP.

These two slow growth scenarios underscore the importance of early action to lay the foundations for sustained strong economic growth. In these two scenarios, non-oil GDP per capita is the same as or lower than the average of about $535 for the period 2010-2011. With the non-oil economy growing at the same rate as the labor force, or at a rate that is only marginally higher, there is little prospect for creating productive employment for all the new entrants into the labor force and of reducing the current very high unemployment and underemployment levels. The implication is that the current high levels of poverty would continue. In these circumstances, the risk is that internal security may become a matter of concern, further compounding the difficulties associated with attracting foreign investment to the country. Moreover, with substantially lower levels of public investment, the overall budget balance rises. In Scenario H, for example, the cumulative increase is $11.5 billion for the decade as a whole. In a setting in which there was weak economic growth and high unemployment and underemployment, the political pressures to spend the resources of the wealth fund on welfare programs for the existing population would be considerable and may be difficult to ignore.

4.4.4 Adverse Macroeconomic Impact of the Program

The importance of a stable macroeconomic environment is discussed at some length in Chapter 1 in the context of South Sudan's continuing dependence on very large inflows of financial resources from abroad, including oil revenues and development and humanitarian assistance from the international donor community. Full implementation of the IAP could add to these pressures with the proposed large inflow of private investment capital as well. The rapid development of the non-oil economy in the decade ahead will help lessen some of the potential strains that can stem from instability in the inflow of these resources from abroad. For example, non-oil revenues in the national budget are projected to account for almost 40% of total revenues by 2020, compared with about 2% in 2010. This diversification of public revenues, along with the development of a substantial wealth fund and access to international financial markets via the issue of public bonds by the National Government, will all contribute to reducing the current high potential for instability that stems from the heavy dependence of the economy on oil revenues. Nonetheless, there is a continuing risk of upward pressures on the exchange rate as a result of the projected large inflow of these resources from abroad. Mechanisms for dealing with these pressures center on early development of a sovereign wealth fund that can compensate for boom and bust cycles in oil prices and production, in conjunction with well-coordinated management of monetary and fiscal policy. These initiatives will be essential in providing the government with the required tools for dealing with these pressures.

There is also a risk that the levels of investment spending proposed in the High Growth Case may impose other types of macroeconomic strains on the economy, including for example, shortages of skilled and semi-skilled labor that translate into inflationary wage pressures, and crowding out of private investment in areas unrelated to the propose Infrastructure Action Plan. Given the very limited development of the domestic banking and financial market, demand for working capital loans by the construction industry, for example, may pose serious constraints on the availability for such funds for other types of business activity. There are no quick and easy answers to these types of pressures. Cost push inflation can be moderated through the use of imported labor and materials; however, the development of the domestic financial market will take time. As Chapter 1 indicates, the domestic savings rate is low and at this time, only a relatively small portion is in the form of financial assets. (Much larger amounts of domestic savings occur in the form of livestock herds, for example). The Government will need a clear plan for the development of the domestic financial market that can be a reliable and growing source of funding for the domestic business activity. The plan will need to encourage residents to hold larger shares of their savings as financial assets in the banking system. To the extent that the domestic banking system is dominated by branches of foreign banks, the South Sudanese authorities will have to ensure that these savings are not then transferred out of the country by the banks concerned for lending elsewhere. Building the capacities of the central bank for regulation and oversight of the domestic financial market will be an essential part of a well-managed macroeconomic policy framework. To some extent, strong growth in demand for working capital loans and investment loans from the domestic banking system can also be met with lines of credit provided by the multilateral development institutions.