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SUDAN

Review of Policy and Institutional Capacity to Facilitate Private Participation in Infrastructure

**Final Report to the World Bank
National Government of Sudan and
Government of Southern Sudan**

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1 Executive summary and major recommendations

This paper explores the potential for private sector participation in infrastructure in Sudan.

Infrastructure part of CPA success...

Following more than twenty years of civil war, the 2005 Comprehensive Peace Agreement (CPA) has presented an opportunity for Sudan to rebuild. Infrastructure is an important element in the process of rebuilding because it promotes economic growth, welfare improvement and poverty reduction. These are key elements to improve the prospect for sustainable peace in the North and the South.

but limited funds are available...

However, the Governments are constrained by limited funds and limited expertise whereas the demand for services is vast, thus creating a gap in public expectations for infrastructure and other social services. The discovery and exploitation of oil resources even moreso raises public expectations for the ability of the Governments to fund infrastructure well ahead of the capacity to pay.

PPP can help bridge gap...

Private Public Partnerships (PPPs) provide an opportunity to bridge that gap. Governments must proceed carefully though, since not all possible forms of partnership will be suitable and sustainable given the capabilities and resources of the public and private sectors. PPPs will need to prioritize areas of greatest social and economic need, and hence will need to be well integrated with the Governments' planning processes and budget resources.

PPPs need framework of law and regulation...

A critical element of success of PPPs is of course the overall environment within which the private sector will be asked to invest and participate. The report reviews the legal and regulatory framework as it directly affects private sector investment and involvement, as this impacts on the willingness of local Sudanese or foreign investors to put at risk – often for long periods given the long term nature of most infrastructure – their capital. The work of an associated project – the FIAS review on Administrative Barriers to Private Sector Investment is an important adjunct to this paper. The recommendations for action in both papers need to be considered as complementary.

and sectoral reforms to be defined or completed.

Furthermore, as the infrastructure sectors reviewed in the report (telecoms, electricity, transport, and water) are undergoing structural reform with the intention of attracting significant private sector involvement and capital, the reform environment and expected outcomes needs to be as certain as possible. Allied to that is the need to establish a properly structured and resourced regulatory framework which can impart certainty and consistency of decision to the private sector.

PPPs place a responsibility on public sector...

While PPPs are about bringing in the private sector to satisfy the demand for infrastructure services, paradoxically they place a heavy institutional burden on the public sector. The burden is likely to be less than the public sector attempting to supply the capacity needs for infrastructure itself: it is about leveraging the scarce capacity available within government to harness the resources and drive of the private sector.

Sudan has some unique issues for PPP implementation.

Overall, many of the issues faced by Sudan in taking advantage of PPPs mirror similar issues faced by other countries, and much can be learnt from the PPP experience around the world. A number of issues, however, are unique to Sudan:

- Conditions in the North and the South of the country are quite different, and may require different solutions within the dictates of the CPA. This adds a layer of institutional and regulatory complexity to the introduction of PPPs
- With Sudan receiving considerable amounts of humanitarian aid, there is a very real danger of aid dependency and an awkward transitional phase when –

as will inevitably happen – foreign aid comes to an end. Re-channelling the existing aid flows to promote sustainable development of the private sector could help to reduce the risk of aid crowding out domestic development. This suggests that donors and aid agencies should take particular care to promote private participation wherever possible. We suggest a way to help achieve this in Section 7 on donor aid.

1.1 Recommendations on facilitating PPP

Specialized PPP Units supported by the donor community are a useful tool in developing and implementing any governments' PPP strategy. International experience is generally very positive and should be a source of some comfort to policymakers in Sudan.

Recommendation 1: We strongly recommend (*Section 5.1, page 51*) the establishment of PPPUs in the Government of South Sudan (GoSS) and in the National Unity Government (NGU).

1.2 Recommendations for South Sudan

In the South, the devastation of infrastructure following the war was almost total. There is also very little institutional or private sector capability on the ground. Hence, PPPs need to be focused on areas with a high, quick and lasting impact on growth prospects, and need to be buttressed by strenuous efforts at developing the capability of the private sector.

First, we recommend GoSS action in roads and telecommunication. The proposed actions are aimed at improving marketing and helping to create markets. These improvements will enable farmers to sell surpluses and will motivate them to generate surpluses for new markets opened up by the improved road network and access to telecommunication.

Our summary of recommendations (*Page 83*) is:

Recommendation 2: Rehabilitating the road network is the most immediate priority:

- De-mine the existing road network using a combination of multilateral agencies (like the UN, for example), private contractors and central Government.
- Consider issuing Build-Own-Operate (BOO) contracts for the two arterial roads leading to Kenya and Uganda, making them private toll roads, with subsidies at least in the early stages. Alternatively, consider a competitively bid DB, with an O&M project delivery mechanism if the BOO contract is not feasible for post-conflict South Sudan
- Use Build-Maintain contracts, with both functions contained in single contracts for a medium-term period (e.g., five years) for interior roads; and
- Develop competitive bidding procedures wherever possible, while keeping them very simple. There needs to be transparency to discourage self dealing and corruption.

Recommendation 3: In time, the GoSS could consider instituting an independent Road Commission that would supervise building and road maintenance outside of the political process.

Recommendation 4: Encourage investment in mobile telephony:

- Impose minimal regulation on the sector

We recommend specialized PPP Units be set up...

South Sudan has different PPP needs in all infrastructure sectors...

- Issue spectrum on a first-come-first-serve, private property basis. There is no spectrum scarcity and Government revenue would come directly from end-users; and
- Create no barriers (*other than service standard levels and interconnection rules*) to entering the market.

We also considered solutions which would help to develop indigenous private sector capability and would impact positively on the agricultural sector. The following recommendations (*Page 86*) for GoSS action are intended to create a network of Water and Irrigation Cooperatives (WICs) to facilitate water provision and to improve agricultural productivity.

Recommendation 5: Create Water and Irrigation Cooperatives:

- Encourage farmers to form WICs
- Create a fund to provide credit to WICs through financial intermediaries
- Licence financial intermediaries (we are envisioning very small “banks” consisting of a few enterprising persons) to on-lend to WICs from the fund. These “banks” would take a commission on lending and/or a margin on repayment
- Finance and/or operate Equipment Leasing Companies to lease very basic equipment to WICs for water and irrigation purposes. Provide basic extension services through these leasing companies; and
- Impose no regulatory requirements on WICs, but require basic reporting to enable monitoring of such things as service levels, water quality, coverage, growth plans, and customer satisfaction.

Considering the example of the Maputo Corridor in Mozambique, the oil resources of the South could be used to similar effect. The potential for large-scale investment should be leveraged to create business-friendly regions and provide improved services to people in the area. The following recommendations (*Page 91*) are aimed at facilitating the development of more advanced and comprehensive infrastructure facilities around the oil producing regions.

Recommendation 6: Facilitate development around oil producing regions:

- Build infrastructure facilities which energy companies use on a large scale into the bidding process for the oil development itself. This will result in lower bids for oil development. However, the funds from the decreased bid would be directly transferred from Government revenue to infrastructure investment, thereby jump-starting the process.
- Use the fact that energy companies are investing on a large scale to attract investment in other infrastructure, through a signalling effect. This should be done at the same time to take advantage of the attention being paid by large-scale capital investors.
- Implement other business friendly reforms, particularly in the oil regions; and
- Keep regulation to a minimum. Use contracts to implement service standards and a PPP Unit to monitor performance.

1.3 Recommendations for North Sudan

North Sudan has better basic infrastructure than the South, but it underperforms ...

Unlike the South, the issues for the North arise not from dealing with the legacy of devastation, but from the legacy of inefficient service provision and below-cost tariffs, which have discouraged investment in infrastructure. Hence, our recommendations for the North follow a more familiar pattern of establishing structural reform processes required to turn around sectors dominated by under-performing, Government-owned monopolies, and creating the conditions precedent for effective involvement of the private sector in infrastructure rebuilding and expansion.

This is as much about establishing a predictable reform process as it is about establishing a legal framework which is attractive and secure for investors. This will be a major challenge for the NG authorities given the official capacity available for formulating and managing complex reform processes as well as managing PPP to the advantage of Sudan as well as the private sector.

Our summary of recommendations is:

Recommendation 7: We recommend (*Page 51*) that the NGU establish a PPP Unit in a key department – possibly the Ministry of Finance – to manage and promote the use of private-public partnerships in developing infrastructure in the North and the South, but:

- *We accept that the international experience suggests that another appropriately resourced and motivated agency could be the repository organisation. In the North this could be the Ministry of Investment, but*
- *If the NGU decides to site the PPU in the Ministry of Finance, we recommend the Ministry of Investment should have representation on, and even staff seconded to, the PPPU to channel investment opportunities to the private sector.*

Recommendation 8: In appropriate infrastructure sectors we recommend (*Page 92*) that regulatory bodies be disbanded in favour of monitoring of lease or concession contracts by the NGU PPP Unit.

Recommendation 9: We recommend (*Page 101*) the Government should establish a transparent regulatory and monitoring system of PPPs and private sector concessions, so the private sector has certainty is the overall environment they are operating in. (*The principles for establishing the regulatory system are set out in Section 3.5*).

Recommendation 10: For the ELECTRICITY sector, we recommend (*Page 97*) the government establish a process in the electricity sector, which must begin with establishing a clear reformed industry structure and regulatory framework for the sector. (*The principles are set out in Section 3.2*).

Recommendation 11: For the WATER sector, we recommend (*Page 101*) the policy approach should be the same as for the electricity sector. First, undertake a comprehensive paradigm review of the sector, decide which components will be sold to, or managed by, the private sector (or water cooperatives similar to the model we recommend for South Sudan) and which will remain in government or state ownership. (*The principles are set out in Sections 3.1 to 3.4*).

Recommendation 12: For the TELECOMMUNICATIONS sector, we recommend (*Page 104*) that the Government begins a policy development process to anticipate these possibilities, and establish an appropriate regulatory machinery ahead of the following inevitability:

- *as the sector becomes totally privatised, without any government equity participation, the regulatory machinery will need to be established to ensure anti-competitive behaviour and*

ownership concentration does not undo the present environment which encourages PS participation and competition for the benefit of consumers.

Recommendation 13: For the ROADS sector, our recommendations (*Page 108*) are:

- Contract for management of toll roads, including maintenance, using a bidding process
- Use private sector to design-build, maintain and where feasible, develop toll road concessions
- Classify Sudan's road network via a National Roads Classification SYSTEM
- Clarify institutional roles between Ministry of Transport, Roads and Bridges and MTR (GoSS)
- Enforce axle-load restrictions
- Consider penalties for vehicle-caused environmental damage
- Set-up a Roads Maintenance Fund, for lesser roads that cannot be managed by a private operator and engage in long-term maintenance contracts
- Establish a line ministry PPP division within the Ministry of Transport to promote and facilitate PPP contracts in the port sector, to work closely with the NG PPPU.

Recommendation 14: For the RAIL sector, we recommend (*Page 114*) that the NGU and the GoSS complete this framework using the principles and policy prescription set out in Section 3 before committing significant sums for investment, to ensure the investment is well targeted and managed, and service providers (whether private or public sector) are held accountable where they are a monopoly supplier.

- We also recommend the establishment of a line ministry PPP division within the Ministry of Transport to promote and facilitate PPP contracts in the port sector, to work closely with the NG PPPU.

Recommendation 15: For the RIVER TRANSPORT sector, we recommend (*Page 118*):

- Develop PPP and concession models for the river ports including clearing the river ways and managing the ports
- Investigate and promote private provision of river port facilities, with light handed regulation to ensure there is open access to facilities for river transport operators and to implement a transparent access fees arrangement
- Privatize the RTC
- Establish a line ministry PPP division within the Ministry of Transport to promote and facilitate PPP contracts in the port sector, to work closely with the NG PPPU.

Recommendation 16: For the SEAPORTS sector, we recommend (*Page 122*) that the government should:

- Transform the Sea Ports Corporation (SPC) into a landlord port
- Develop PPP arrangements for: container terminal management, all stevedoring services, and port services such as towing and mooring where financial feasible

- Establish a line ministry PPP division within the Ministry of Transport to promote and facilitate PPP contracts in the port sector, to work closely with the NG PPPU.

Recommendation 17: For the AIR TRANSPORT sector, we recommend (Page 125) the government:

- Privatize Sudan Airways (*already decided in principle*)
- Contract-out air traffic control services
- Develop Concession models for all airport terminal management where financially feasible.

1.4 Recommendations to improve risk management

These recommendations (Pages 36 - 37) are aimed at managing and reducing risk in order to facilitate PPPs in infrastructure:

Recommendation 18: Create PPP Units in both North and South to develop and implement Government risk management policies and to monitor contractual obligations

Recommendation 19: Simplify legislation governing each sector. Draw clear lines of responsibility and reduce the layers of supervision involved in each sector

Recommendation 20: Provide explicit subsidies, if tariffs are to be regulated at below full cost-recovery levels. Determine subsidy levels as part of transaction processes involving PPPs

Recommendation 21: Pay infrastructure-related bills promptly. Guarantee payments for quasi-Government agencies and consider legislation placing all Government payments to infrastructure companies on the same level of importance as other debts.

1.5 Recommendations for building capacity in the Sudanese private sector

These recommendations (Page 54) build on the proposals outlined in the Private Sector Forum developed as part of the suite of World Bank PPP/PSF project.

Recommendation 22: We recommend that the Sudanese Businessmen and Employment Federation (SBEF), and the Sudanese Chambers of Industries Association (SCIA) in the North, and the South Sudan Chamber of Commerce Industry and Agriculture (SSCCIA) in the South, as three of the key private sector organisations, should implement or commence the following capacity building tasks to complement the work of the Governments in expanding opportunities for the private sector in infrastructure development:

- Review, with universities and technical schools, the adequacy of management courses for training managers, and implement a programme of reform through the Forum with Government assistance as appropriate
- Review, with assistance from the international body of the Institute of Directors (IoD)¹, the adequacy of governance education for company directors and senior level management, and seek assistance from the IoD to establish appropriate courses and an organisation in Sudan to establish good governance practices in Sudanese businesses. Sudanese universities could be

¹ IoD International, based in London at www.iod.com.

Good risk management is an important part of making PPP attractive for the private sector...

The Sudanese private sector is weak, and to play an effective role in PPP, significant capacity building is necessary...

encouraged to partner with overseas universities and invite them to establish business management and technical courses in Sudan to rapidly promote new knowledge

- Establish a joint government-private sector commission of inquiry into the barriers in the banking and finance sectors, and in the capital markets, to the growth of larger private sector business entities in Sudan, and request actionable recommendations to address these barriers
- Investigate, develop and implement a policy where Sudanese private sector companies partner with foreign investors in infrastructure service delivery contracts, to ensure technical knowledge and management skills can be passed to domestic personnel. The policy should have the following characteristics:
 - The Forum should investigate establishing a post-graduate Higher Business Education Trust, with shared funding, to provide grants and scholarships to suitable business graduates to proceed to Masters and PhD level courses, both in Sudan and at overseas universities
 - The business organisations should review their organisational and representational structures, with a view to encouraging wider membership by offering high quality technical training courses, and effective policy development lobbying machinery for resolving business sector problems through the Private Sector Forum.

1.6 Recommendations for donors and aid agencies

These recommendations (*Page 76*) are intended to help donors administer aid in ways that help to develop private sector capabilities in the region in which they operate. In summary the recommendations are to:

Recommendation 23: Establish Private Sector Facilitation Units in the UN, MDTF and other aid agencies to coordinate with PPP units in the North and the South

Recommendation 24: Employ the private sector whenever possible to build, operate and own infrastructure facilities that the UN needs. This includes foreign companies who are more likely to remain in country when donors have reduced the scope of their operations

Given the size of the UN's operations throughout Sudan, the UN and its agencies can play an important role in helping build the capacity of the local private sector to deliver not only humanitarian and other services, but also in passing key skills needed for local PSP in the delivery of complex infrastructure services which characterize the UN's role in the country.

1.7 The next step: implementing the recommendations

Assuming the recommendations outlined above are acceptable in whole or in part, we have set out in Section 11 five Policy Action Programmes for consideration. The matrices detail ways in which the two Governments, and the private sector and the UN/World Bank agencies can announce and implement the details of the recommendations.

The UN, World Bank and MDTFs can play a role in fostering PSP and PPP in delivering their services...

We propose 5 Policy Action Programmes to implement the recommendations...

2 Introduction

This project has been commissioned by the World Bank, on behalf of the National Government of Sudan (NGU) and the Government of South Sudan (GoSS) to undertake a review of the institutional capacity necessary to facilitate private participation in post-conflict reconstruction and development in Sudan.

2.1 Daunting challenges

The economic and social challenges facing Sudan are immense. The country has had only 11 years of peace since independence in 1956, and the latest round of civil war lasted 21 years with 2 million deaths, 4 million internally displaced people and widespread famine. Few countries face such a complex array of concurrent economic, social and security challenges as does Sudan.

The continuous conflict has devastated infrastructure and social development, especially in Southern Sudan. The war ended in January 2005, with the signing of the Comprehensive Peace Agreement (CPA). Since then a number of important steps have been taken to coordinate and focus international development and humanitarian aid efforts which are still needed on a huge scale², and to assist the two Governments in North and South Sudan to rebuild the country.

2.1.1 Political commitment to reform

There seems to be considerable political commitment by both Governments to implement transparency and accountability as part of the culture of a reformed public sector. The importance of this cannot be overemphasized given the debt overhang and Sudan's past record of non-payment of external borrowing. The international financial community will need considerable confidence in the present Government's policy framework and sustainability of effort before committing sizeable funds to Sudan's economic and infrastructure development.

Yet while Sudan's debt – at US\$27.7 billion, of which US\$24.4 billion in is arrears³ – is very large by international standards, there are positive signs. The medium term outlook, based on a continuation of reform policies, is for 8-10 percent growth per annum. Oil has been exploited⁴, which attenuates some of the immediate financial problems of both Governments. The CPA has created a climate of peace for dealing with social and economic problems, and has given some confidence to the private sector that they can engage in entrepreneurship without security risk. Nevertheless, there are sensitive problems to resolve between the North and the South, particularly over the borders around the oil fields.

2.1.2 Private-public partnership a model to help recovery

In the report, we analyse the opportunities and the risks, of various forms of public private partnership (PPP) and private sector participation (PSP) in infrastructure development. We then examine the important role of infrastructure in post-conflict societies, as part of establishing the basic societal structures needed for an entrepreneurial, peaceful economy to work in a sustainable way.

² See Section 7 on donor aid below.

³ This is equivalent to nearly seven times the three-year average of exports of goods and services in present value terms.

⁴ Oil was first discovered and developed by Chevron, a US oil major, in the early 1980s. After SPLA attacks in 1984, Chevron exited Sudan, and since the late 1990s, exploitation has been undertaken by Chinese, Malaysian, Pakistani and Canadian companies, together with the national oil company of Sudan, SUDAPET.

An infrastructural framework is a necessary, but not sufficient, condition. Establishing an effective framework for attracting PSP is a key element of successful PPP, and this in turn requires a clear and settled policy environment for any reform that is adopted for particular infrastructure sectors.

There is a substantial gap in the availability of financing for needed investment in infrastructure. Not all can be covered by the NGU or GoSS from their budgets, nor will loans from international donors be sufficient. Indeed, with the continuing moratorium on concessional lending by many international agencies, and the pressure from the IMF to discourage the Governments to undertake further non-concessional borrowing, there are real constraints on meeting the high expectations of the public at large for better access to, and higher quality of, infrastructure services.

Consequently, there is an understandable desire on the part of both Governments to have the private sector play a greater role in supplying and managing infrastructure assets, as one of the few remaining options to cover the funding gap.

PSP can be a powerful vehicle to do this, but for it to work successfully and sustainably, there are many policy, legal and regulatory pre-conditions to be met. If the private sector is to be encouraged to put its savings and equity to work in risky infrastructure ventures, then the private sector will want to understand clearly the implications of the Governments' policies and the risks associated with high risk, long term infrastructure projects.

2.2 Directions in this report

We spend some time in the report in identifying and developing the issues which will be of concern to the private sector. There are a number of mechanisms to promote the role of the private sector through PPPs. We discuss them in Section 5 below. The potential for private sector involvement is further complicated in Sudan because of the private sector's relative weakness and small size, so there are capacity building matters to face up to as well, a point we develop in greater detail later in the Report.

There are considerable differences between the resource and institutional capabilities of the North and the South to manage PPP/PSP. The North, which has not suffered the same ravages of war as the South, has a well established public service with good capability given the stage of development, and a private sector which is vigorous but constrained by its generally small scale and family-oriented structure. Both public sector institutional capacity and an entrepreneurial private sector are important to successfully implementing a PPP strategy.

The South is a different story. It was ravaged by years of war. The private sector is largely non-existent. There is no established banking system in the region capable of harnessing savings or raising capital although it does have considerable potential with the close and developing commercial ties to Kenya and Uganda. The basic infrastructure services to support a market economy – for example, roads, communications, trained people with skills, markets of exchange, electricity and water of good quality – do not yet exist as a comprehensive network. What there is constrains rather than accommodates and promotes growth. Having said this though, there is a vigorous trading sector developing as businesspeople from Kenya and Uganda fill the void and establish markets in goods in larger centres, especially Juba. Government and political management skills are scarce, so there are considerable capacity building challenges ahead.

This leads us to develop two basic lines of argument in this draft report in formulating policy options for developing PSP in infrastructure. The basic policy prescription for

promoting PSP is the same for both the North and the South, as there is a clear wish – and indeed need – to have basic policy harmonisation as the CPA mandates.

Nevertheless, given the wide differences in the relative stages of development between the two, the South has a lot of “catch-up” to reach the same level of capability and potential as the North. This will be reflected in the approach needed to implement the same overarching policy prescription in each area, which is to establish PPP facilitating Units within each Government, and another within each Multi Donor Trust Fund to promote PSP where development aid is used for infrastructure construction.

2.2.1 Draft report tested with stakeholders

We have had extensive discussions already with many key stakeholders as reported in our Inception Report submitted in March. Since then, we obtained and collated substantial information on the four infrastructure sectors covered by the project. We have had good cooperation from many state agencies in the North and the South as well as private firms.

We held a number of stakeholder seminars where the proposals and ideas set out in this report were presented to stakeholders and Ministers in an effort to obtain as much consensus as possible on the underlying policy, and the proposed machinery to promote PSP.

This Final Report thus contains broadly agreed recommendations, together with an action plan for implementing the proposals and recommendations.

2.3 General facts about Sudan⁵

Sudan⁶ is a diverse country of multi-ethnic, multi-cultural and multi-lingual groups. It enjoys a strategic location in the African continent that marks a melding point between Arab and sub-Saharan peoples. The country shares extensive borders with nine countries of Northern, Central, Eastern and Western Africa.

Sudan is the largest country on the African continent – 2.5 million km² – and extends from the hot arid North to the tropics in the South with diversified ecosystems that provide fertile land of about 80 million hectares (about 20% of this land space is cultivated), natural pastures of about 24 million hectares, and forest areas of about 64 million hectares. The remaining land is desert or semi-desert. About a quarter of the country is in South Sudan - 0.65 million km². Considerable water resources are available from the River Nile and its tributaries, seasonal streams and the Nubian Sand-Stone Aquifer which is one of the largest water reservoirs in the world. While these are large water resources, they are not well distributed across the country, and drought and poor potability are significant problems.

The total population is 36.2 million⁷, of which an estimated 8.5 million live in South Sudan⁸. The population growth rate is not high, at 2.6 percent, but nearly 45 percent of

⁵ Information for the following sub-sections was collated from the Sudanese Ministry of Finance and National Economy, the UN group of agencies, IMF, World Bank, the International Crisis Group, the JAM Reports, the British FCO, the US State Department. Fuller statistical detail is contained in Appendix A.

⁶ The official name is *Jumhuriyat as-Sudan*, the Republic of the Sudan.

⁷ Based on the 1993 Census. More recent estimates place the population at around 40-42 million.

⁸ This estimate is quite uncertain, and will be impacted by significant numbers of internally displaced Southern Sudanese who are beginning to return home. The UNHCR estimates there are 4 million IDPs from Southern Sudan alone, and over 500,000 refugees in neighbouring countries like Chad, Uganda, Ethiopia, Republic of Congo, Kenya, Eritrea and CAF. Many are starting to return home in South Sudan, which is putting substantial pressure on GoSS and aid agency resources.

the population is under 15. Ethnically, the country is split tribally: 52 percent African, 39 percent Arab, 6 percent Beja, and 3 percent “foreigners” and others. The dominant religions are Sunni Islam mainly in the north, and animist beliefs (25 percent) and Christian (5 percent) in the south. There are hundreds of ethnic and tribal subdivisions and language groups, which make effective collaboration among them a major political challenge.

Approximately 7 percent of the country’s area is arable land (about 160,000 sq km, of which 10 percent is irrigated), with a considerably larger area used for nomadic cattle grazing, especially in the south and west. Agriculture⁹ is Sudan’s most important sector, employing around 80 percent of the workforce and contributing about 40 percent to GDP. Oil fields in the south of North Sudan and in Southern Sudan are being exploited and are already contributing significantly to Sudan’s economic recovery. China, Malaysia and India are developing the country’s oil resources.

There is exploitable mineral wealth for gold, iron ore, copper, mica, zinc, chromate and manganese. Industry is primarily based on agricultural raw materials, or servicing agriculture. The Ministry of Finance and National Development expects to see considerable growth in agriculture and agricultural servicing and light industry as the economy recovers.

Administratively the country is divided into 26 states, 10 of which are in South Sudan under the control of GoSS. The legal system is based on English common, and on Shari’a, law. In 1991, Shari’a law was applied to all residents of North Sudan except in personal family affairs where it is applied to Moslems only. The role of Shari’a law is evolving in South Sudan following the signing of the CPA in 2005.

⁹ Mainly producing cotton, peanuts, sorghum, millet, wheat, gum Arabic, sugarcane, cassava, mangos, papaya, bananas, sweet potatoes, sesame, and sheep and cattle for meat (the stock of sheep, goats, cattle and camels is estimated at 128 million head).

Figure 2.1: Map of Sudan



Source: United Nations

2.4 Sudan's economic situation and outlook

Sudan's economic prospects are promising, but with risks. The country has a considerable natural resource base. Economic growth is forecast at between 8 – 10 percent a year until 2010, assuming present policies continue. This reflects the impact of the ongoing investment boom, the discovery and exploitation of oil, and the stabilizing impact of the CPA, amongst other things. However, unemployment is high at about 18-19 percent of the workforce, and 40 percent of the population is estimated to be living below the poverty line.

The fiscal and balance of payments gaps of about 1.5 – 2 percent of GDP per year are expected to be covered by official grants.

Table 2.1 summarizes the latest outlook prepared by the Sudanese authorities and the IMF¹⁰.

Table 2.1: Medium term prospects for Sudan 2005-2010

	2005	2006	2007	2008-10
	Est.	Projections		
(Percent of GDP, unless otherwise indicated)				
Real GDP Growth (in percent)	8.0	13.0	10.3	8.9
Oil	-0.2	71.0	28.2	9.0
Non-oil	8.9	7.2	7.5	8.8
Inflation (period average)	8.5	7.5	5.0	3.3
Gross investment	23.3	25.3	26.9	27.4
Fiscal balance	-1.8	-0.9	-0.4	-0.1
Current account balance	-8.5	-5.2	-4.0	-3.7
Crude oil export price (U.S. dollars per barrel)	49.7	47.4	47.2	46.2
Crude oil production (in millions of barrels/day)	0.29	0.49	0.63	0.77

Source: IMF and Sudanese authorities

The IMF¹¹ has identified the major risks to this outlook as:

- “Risks arising from the influence of anti-reform groups that may oppose necessary reforms*
- “Unresolved domestic political tensions*
- “Weak institutions (especially at the sub-national level)”*

These concerns will be important to building the confidence and the trust that the private sector – whether national or international – has in the two Governments’ ability to cement in an overall environment where:

- Property rights are protected
- Viability of infrastructure projects – which are characterized by long lives – is assured, where private equity or long term borrowings are secure, and revenue flows are assured if the private sector is to manage or own/operate an asset
- Regulatory or other government decisions are predictable, certain and consistent over time
- Government institutions are open with, and accountable for, the decisions they take
- Contractual terms once agreed to, are enforceable by all parties through an independent judiciary
- Capacity to put together, evaluate, manage and monitor PPP/PSP infrastructure projects is thin within government and the private sector.

The CPA was an important start to rebuilding the trust citizens have in their governments. The negotiations demonstrated that the political leadership in the north and the south could work together after the conflict had ended, and agreed on a broad strategy for rebuilding Sudan. But the intentions expressed in the CPA will only mean something to those who might be prepared to play a part in economic and social

¹⁰ 2006 Article IV Consultation Staff Report, May 2006 IMF Country Report 06/182

¹¹ *ibid*, p5.

reconstruction if they trust their governments to back up intentions with the legislation and institutional frameworks that give lasting effect to the objectives of the CPA.

This is particularly true for PPP projects in infrastructure, where private operators are required to commit their own capital and know-how for long gestation, and invariably expensive, infrastructure projects with long operating lives. If the private sector does not trust a government to honour and respect the law and regulatory frameworks they establish at the time a decision to invest is undertaken, or to act in a predictable and non-arbitrary fashion, then the chilling effect on investment and participation by the private sector will be severe in a world where the gap is widening between countries perceived to be accommodating (or “safe”) for investment, and those which are not.

Where the Governments are trying to build confidence for the domestic and the foreign private sectors to become involved in reconstruction and development of sustainable infrastructure, then trust in the NG and the GoSS, and their commitment to respect for the law and property rights, is absolutely critical.

Without that commitment, private capital and private effort will go elsewhere to a safe harbour.

3 Assessing PPP arrangements – infrastructure reform

This project is focussed on using the private sector in some appropriate role, to help rebuild and add to the infrastructure needs of Sudan. As we discuss, the needs, and the scale of needs, are different as between the North and the South. An important issue to consider before PPP is undertaken is whether there is or should be reform of each infrastructure sector.

3.1 Different ways of delivering infrastructure services

Sudan is emerging from a long period where infrastructure in water, transport, electricity and telecommunications has generally been provided by state owned and operated monopolies. This was the traditional paradigm for delivering infrastructure services throughout the developed and developing world until the mid-1980s. In response to a world wide move promoting markets rather than governments to deliver the goods and services people wanted, and to rapidly changing technology, the poor development outcomes of state monopolies led to new ways of building and operating infrastructure services.

Considerable diversity of approach has been used, ranging from total privatisation (meaning the sale of government assets to the private sector) to different forms of private involvement in part of an infrastructure sector perhaps as owner and operator, or as operator of, and investor in, infrastructure assets in the continued ownership of government. The various approaches – not including privatisation - are gathered under the general heading of Public-Private Partnerships (PPP)¹².

¹² In this report, we use the acronyms, PPP (Public Private Partnership), PSP (Private Sector Participation or Private Sector Participant) and PPI (Private Participation in Infrastructure) interchangeably to refer to private involvement in the provision of infrastructure services. A PPP is a contractual relationship between a public agency and a private provider, to provide an essential public service through sharing of assets and resources coupled with a balanced allocation of risk and reward over the complete spectrum of early program development through total project delivery. What distinguishes a PPP from a traditional procurement is the greater responsibility and risk taken by the private sector in return for an adequate return on their investment or coverage of costs.

The potential for the private sector to develop infrastructure in a more efficient and sustainable fashion than the government has been well documented in research papers and recorded experience¹³. The research shows that the private sector has a demonstrably better record in cost effective service delivery. In part, this is explained by the private sector's strong incentives to achieve financial discipline and to minimize costs, and by its access to capital and expertise.

Box 3.1: Performance of state owned infrastructure monopolies is mixed

“In many developing and transition economies ...*state owned monopolies*... suffered from low labor productivity, deteriorating fixed facilities and equipment, poor service quality, chronic revenue shortages and inadequate investment, and serious problems of theft and nonpayment. In addition, large portions of the population lacked services in developing countries—though not in transition economies, many of which achieved fairly high service coverage. Moreover, prices varied considerably across sectors. In telecommunications they were typically high, while underpricing was common in electricity and certain segments of transportation, and especially serious in water.

“In developing and transition economies a main cause of deteriorating infrastructure performance was underinvestment, which was largely due to the failure of governments to prescribe cost-reflective tariffs, especially during periods of high inflation. Under state ownership, prices fell to levels that could not cover the investment needed to meet growing demand. This problem was deferred as long as governments were able to provide subsidies and international financial institutions were willing to bail them out. But years of under funding and failure to address systemic problems led to a significant infrastructure deficit in the developing world, generating substantial welfare losses. Infrastructure inefficiencies constrained domestic economic growth, impaired international competitiveness, and discouraged foreign investment.

“In the early 1990s, for example, developing countries incurred annual losses of about \$180 billion due to mispricing and technical inefficiency in water, railroads, roads, and electricity—nearly as much as annual investments in these sectors (*World Bank 1994*). With growing budget deficits and the resulting inability of governments to maintain and expand infrastructure services, most developing and transition economies simply could not sustain state-owned utilities.”

Source: World Bank Research Report: “Reforming Infrastructure: Privatization, Regulation and Competition.” June 2004

3.2 New paradigm for delivering infrastructure services

The historical model of delivering infrastructure services through vertically integrated network monopolies owned by the state, has given way to a new framework for the organizational structure of network utilities.

The new paradigm has the general characteristics set out below, and recognises the reality that a vertically integrated network is not necessarily a natural monopoly in its entirety. Parts of the network will be a natural monopoly, but significant parts, depending on the particular infrastructure sector, will be potentially competitive.

¹³ A particularly good paper and summary of the issues involved is set out in the World Bank Policy Research Report, “Reforming Infrastructure: Privatization, Regulation and Competition.” June 2004

The new model¹⁴ has the following characteristics, if not principles:

- Network utilities should be unbundled both horizontally and vertically, with different owners for potentially competitive components and natural monopoly components
- For competitive or structurally contestable activities, government interference with market mechanisms and restrictions on ownership should be relaxed, and the scope for introducing competition through horizontal fragmentation should be fully exploited
- Only components involving unavoidable natural monopolies or substantial sunk capital should be placed under regulation and perhaps even operated by the public sector.

For Sudan, applying these characteristics would lead to a reorganisation of the following general shape for the infrastructure sectors the project is reviewing in Table 3.1 .

Table 3.1: The new network utility paradigm as applied to Sudan

Infrastructure Sector	Activities that are usually monopolistic	Activities that CAN BE or ARE potentially competitive
Telecommunications	Local (fixed line) loop, allocation of spectrum	Long distance, mobile, VoIP, internet and value added services
Electricity	High voltage transmission, and local distribution lines business	Generation plants, and supply to retail or wholesale customers
Railways	Rail track, and signalling and train control	Freight operations, track maintenance, rolling stock maintenance and ancillary services
Air Services	Airport runways and buildings, air traffic control, security	Airline services and operations, maintenance facilities, airport retail shops, ancillary services (<i>e.g. airport parking</i>)
Roads	Major national highways	Toll roads, maintenance, truck and car operations, safety inspection systems
Ports	Planning port infrastructure, nautical management	Cargo handling activities, dredging, terminal management and maintenance, towage and mooring, pilotage
Rivers	Planning river port infrastructure, waterway traffic management, security	Port maintenance and management, tug and barge (freight and passenger) operations
Water	Local potable water, wastewater or sanitation distribution	Long distance pipeline (<i>if more than 1 supply line</i>), production and purification, and sewerage treatment

Source: “Reforming Infrastructure” *ibid*, p37 and Castalia

The disaggregation of traditional vertically integrated monopolies into these components allows the application of competitive pressures to be harnessed to:

¹⁴ this is drawn from Castalia’s experience, and from the WB Report, “Reforming Infrastructure” *ibid*, p37

- Let the private sector participate in service provision by applying commercial and economic pressures to reduce costs and improve quality of infrastructure services for consumers
- Reveal the true costs of providing the services so sustainable pricing of services to consumers (with or without subsidy to classes of consumers) can be formulated
- Reduce the scope of activity which needs explicit regulation, and thereby reduce the cost of regulation and the room for inappropriate or damaging regulation
- Let consumers have more choice of the services they want, and the prices they are prepared to pay for it – this leads to more effective provision of services
- Allow the state to continue with ownership of monopoly (i.e. non-competitive or “strategic”) activities if that is desired, while using the private sector to extract the efficiency of operation it best delivers under an appropriate contracting (via PPP) or regulatory regime
- Minimize the need for intrusive regulation and the uncertainty that creates for private investors and managers
- Maximize the application of new technologies as infrastructure is rebuilt or expanded.

3.3 Technology a major driver of infrastructure reform

Technology is now a major driver of competition in network utilities. Perhaps the most spectacular example is in telecommunications, where mobile and internet-based technologies have radically changed the way in which the communications sector and computer technologies allow people and businesses to communicate, and most importantly from an economic development viewpoint, allow businesses to connect with consumers and their customers or logistics service providers in a cost effective manner.

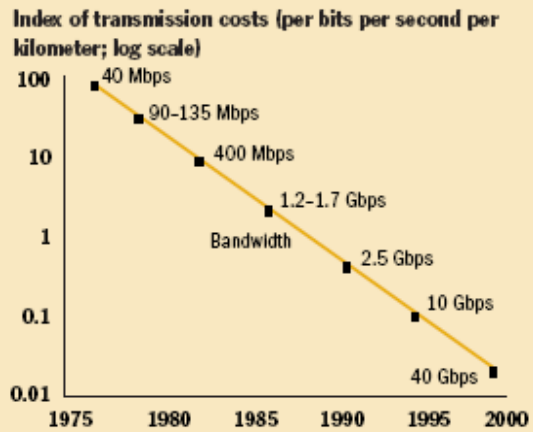
The cost curves for most infrastructure sectors have reduced significantly as well. Mobile telephony allows country wide services to be delivered cheaply and extensively in developing countries. Not only have costs fallen, but so has the need for government subsidies (see Box below).

Box 3.2: The technological revolution in telecommunications

TECHNOLOGICAL CHANGE HAS HAD A MASSIVE but uneven effect on telecommunications. Costs have fallen sharply in the industry's long-distance and traffic-sensitive segments, reflecting advances in microwave, satellite, and optoelectronic technology. The impact of optoelectronics has been especially impressive: in just a decade, optical systems have vastly outperformed coaxial cables and fixed satellite links in long-distance, high-capacity transmission. Substantial cost reductions have also been achieved in switching, reflecting software innovations and lower costs for integrated circuits and computers. Lower costs and significant improvements in software have also facilitated a variety of data- and transmission-intensive services (see figure).

But technological change has not had nearly the same effect on costs in areas where use is not concentrated. Technological change has been limited for nontraffic-sensitive, customer-specific loops that connect every subscriber to a central office. For low-volume nodes, copper cable was until recently the lowest-cost technology. Still, fiber optic distribution and microwave bypass have become economically viable in large office buildings.

In recent years telephone networks have been substantially digitized. Digital bits traveling on these networks can be parts of voice, video, or computer applications. Voice is treated as data, blurring the boundary between voice telephony and data services. When regulation-imposed price discrimi-



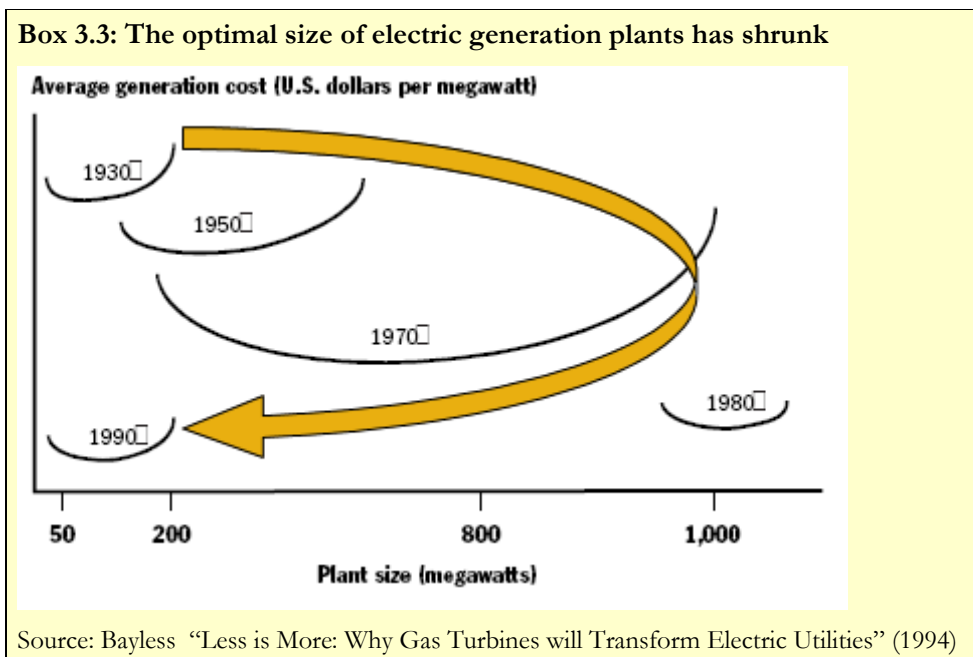
Source: Bond (1997).

nation between voice and data is eliminated, arbitrage can dramatically reduce the cost of voice calls that use relatively few bits—with important implications for pricing and market structure. Internet-based telecommunications services already threaten traditional long-distance service providers. As bandwidth to customers' homes increases, placing voice calls over the Internet will likely become a viable alternative to wireline telephones. Thus advances in technology have made the old, monolithic structure of the telephone industry both inappropriate and unsustainable.

Source: "Reforming Infrastructure" ibid p40

By and large, there is little need for regulation or control in the telecommunications sector, except where interconnection with a monopoly local loop is required (perhaps through open access regulation) or interconnection between service providers and internet and international communications backbone facilities cannot be achieved by negotiation between competitors. Technology is rapidly developing to deal with the local loop issue as wireless high speed data services are increasingly able to cope with the needs of customers by removing the "last mile" monopoly of fixed lines.

The same is true in electricity, which for many years justified vertical integration and monopoly delivery on the need for large power plants to obtain the benefits of economies of scale. In recent years, the economies of scale have been superseded by small, efficient, close-to-market generation plants which do not need expensive transmission monopoly lines services (see Box below).



3.4 Crafting certain reform processes for effective PSP

There is little doubt Sudan's infrastructure sectors under review in this report have considerable potential for involving the private sector. The form of involvement will be different as between North and South Sudan, and the potential is different again within each infrastructure sector.

One key lesson from the reform of infrastructure in developed, developing and transition economies is to establish firm government commitment, certainty and predictability in the reform path for particular sectors.

While there have been many examples of successful reform involving privatisation and different forms of PPP, there have also been many examples of poor reform processes and sequencing. Sometimes they have produced sub-optimal outcomes and a distrust of market based reforms and private sector involvement in the delivery of infrastructure services that many people regard as a fundamental right.

There is now enough experience for Sudan to learn from the successes – and mistakes – of other countries at a similar stage of development and need. Certainly, part of the reason for the wariness the private sector has towards infrastructure investment in high risk developing countries can be explained by poor reform policies and arbitrary intervention and regulatory processes sometimes adopted by governments.

We now discuss three major infrastructure sectors – telecoms, electricity, and transport - which are critical to Sudan's economic development, and review the international experience with reform and private sector involvement in each sector. Will PPP work in infrastructure, and what are the pre-conditions to their successful involvement? We then discuss the need to establish a clear regulatory framework to cover the sectors where it is necessary. Having said that, we recommend that GoSS and NGU consider maximizing the use of contracting for performance where some regulatory oversight is necessary, and ensuring that infrastructure monopolies in government ownership are subjected to an independent regulatory regime, in line with the international best practice models and experience.

Telecoms sector has significant scope for private sector involvement

The institutional and historical differences between north and south Sudan means that the South should be able to build a much more liberalized telecommunications sector than in the North, where the binding contractual arrangements for incumbent service providers in the North hamper the degree of liberalisation¹⁵. Apart from a contested interpretation of the CPA as it relates to the issue of telecommunications licenses between NGU and GoSS, the South could issue many more licences for the provision of mobile, internet, and fixed lines services¹⁶. There seems little doubt from international experience that more liberalized markets deliver lower cost, more diverse services to consumers than less liberalized and regulated telecoms systems.

In the telecommunications sector in Sudan, there is plenty of scope for private sector involvement and investment in the provision of this infrastructure service. The form of involvement which has developed is comprehensive privatisation of former state owned assets and private ownership of new assets. The sector and today's technology offers the promise of relatively small investment risk – as the size of investment is modest compared to most forms of infrastructure and the period of financial recovery is relatively short – compared to other sectors, so it is hardly surprising that the sector receiving the most private investment in developing countries with high country risk (such as Sudan) is telecommunications.

Electricity sector has scope for PPP if reforms carried out correctly

Like telecoms, the electricity sector offers considerable scope for private sector involvement. However, in part because the sector is more complex, and the size of investment needed is typically large with a long gestation period and a long investment recovery cycle, the commercial and financial risks for investors are considerably greater than for telecommunications.

In electricity, private sector investors will be looking for considerable certainty in the structural reform process and in the final outcome before committing to large scale investment which beneficial in the long term to Sudan's economic development.

There are a number of different models for reforming electricity infrastructure. Most countries have moved away from vertically integrated state owned monopolies. In some cases the reform has been quite minimal, with private participation constrained to investment in new generation facilities (Independent Power Producers - IPPs) with all sales at an agreed price being sold to the state monopoly generator and distributor. This is a fraught reform option¹⁷.

Other countries have undertaken significantly greater reform, with comprehensive unbundling of monopoly and competitive activities, and divestiture of the competitive activities to the private sector. In some cases it has gone further, with the

¹⁵ We understand the North has granted a degree of exclusivity to telecoms providers in return for agreeing to a traditional universal service obligation delivered by internal cross subsidy. This constrains the NGU from introducing more mobile competitors into the North, as it can be done only by agreement with the incumbent providers – Suditel and Mobitel.

¹⁶ Some progress was made in September 2006, where the roadblocks to inter-connection between operators in the North and South were removed after ministerial level negotiations.

¹⁷ Private sector involvement in an IPP which has a long term fixed price delivery contract with a guaranteed take off of energy generated is unlikely to produce a desirable long term outcome for the country. This is clear from the international experience with electricity reform, even though it might be superficially attractive because the private sector will invest on these terms. The Philippines experience with such IPP contracts sets a cautionary tale for all similar reform processes and private sector involvement in electricity.

commercialization or private sector management of state owned monopoly transmission or distribution infrastructure.

Table 3.2 below presents a scorecard for electricity reform in a number of regions throughout the developing world. The scorecard is built up by measuring the percentage of countries in each region where:

- The state owned electric utility has been commercialized and corporatized
- Parliament has passed an energy law permitting partial or complete sector unbundling and/or privatisation or some form of private sector involvement
- A regulatory body, separate from the utilities and the relevant ministry, has started work
- The private sector has invested in greenfield sites that are being built or operated
- The state utility has been restructured or unbundled
- The state sector has been privatised, whether through outright sale, voucher privatisation, or in a joint venture (PPP).

Table 3.2: Electricity reform by region - how thoroughgoing has reform been?

(percentage of countries where reform has occurred)

Reform	East Asia and Pacific	Europe and Central Asia	Latin America and Caribbean	Middle East and North Africa	South Asia	Sub-Saharan Africa
State utility corporatized	44	63	61	25	40	31
Enabling legislation passed	33	41	78	13	40	15
Independent regulator at work	11	41	83	0	40	8
Private investment	78	33	83	13	100	19
State utility restructured	44	52	72	38	40	8
Generation privatized	22	37	39	13	40	4
Distribution privatized	11	30	44	13	20	4
All reforms taken	41	45	71	17	50	15
Reform score (scale of 1–6)	2.44	2.70	4.28	1.00	3.00	0.88

Source: Bacon and Besant-Jones “Global Electricity Reform: Privatisation and Liberalization of the Electric Power Industry in Developing Countries” 2001

Out of a maximum reform score of 6 (where all reforms steps were undertaken, and these are regarded as best practice reforms), the Middle East and North Africa scored only 1, suggesting that there is scope for more considered reform of these countries’ electricity sectors, before PPP is likely to become attractive or effective in meeting development goals. Sudan is a member of this group.

We have distilled the experience of many developing and developed countries with electricity reforms into these insights into the preconditions for, and lessons from, the reform process:

- When properly designed and implemented, a combination of well sequenced institutional reforms can significantly improve operating performance. The reforms will comprise vertical and horizontal restructuring, introducing the private sector through PPP or privatisation, and effective targeted and independent regulation

- In reformed – as contrasted to unreformed – electricity systems, labour productivity in all activities has risen; service quality and customer satisfaction has improved, cross-subsidies have been removed, system and collection losses have reduced, and new technology has been introduced which has generally shifted the cost curve of the industry downwards
- The long history of under-investment, particularly in generation, distribution and supply has been reversed. This is less the case in transmission which mostly continues to be owned by state bodies
- In several countries electricity prices have fallen (such as in Latin America) as wholesale markets have developed and forced competitive, lower cost disciplines on generators
- Retail costs have been aligned more with underlying costs of supply and cross subsidies between classes of consumers have been made apparent and then reduced or removed. Where social subsidies have been considered desirable, the costs are known and managed as incomes rise
- Substantial financial and contractual risks for taxpayers have resulted where governments have attempted to promote new generation investment by signing up to disadvantageous long term, high cost power purchase agreements have resulted where structural reform is minimal. The problem is made worse where the reform process has been driven by the incumbent state or privately owned electricity monopoly
- It is essential to ensure that the sequencing of reforms, and the reshaping and rebuilding of the new infrastructure needed for a competitive electricity sector with substantial private sector involvement and investment, is formulated correctly for the particular electricity system being restructured
- The impact of new technologies – such as wind, photovoltaic and fuel cells – can be accommodated if the structure of the reformed market is flexible
- Where regulation is necessary, it must be certain in its impact, consistent in its decision making processes, independent of political control, and accountable and transparent to the public and Parliament.

In summary, the international experience is that where more far reaching reform has taken place in a well sequenced process so the competitive components of the electricity sector are unbundled, the outcomes for the consumer in terms of improved service and lower costs are more successful than for continuing with a vertically integrated state-owned monopoly. The potential for PPP is also greater, if effective incentives and a clear, predictable regulatory system are part of the sectoral reforms.

Transport infrastructure has significant potential for productivity gains

As for other infrastructure sectors, the impact of new technologies and a rethink of the costs of vertically integrated transport monopolies has led to considerable reform and significant cost saving in the transport sector. In certain components of the transport industry, traditionally uncompetitive sectors can become competitive as between different transport modes.

For example, Sudan has a large rail sector in an advanced state of disrepair and poor management. Significant capital investment will be required in upgrading the rail track infrastructure and rolling stock for the sector to have any chance of competing with other forms of transport (road and river), yet the potential for significant gains is exists.

Any investment programme should be preceded by a clear programme of reform and reorganisation. Based on the emerging international evidence, it seems clear that decentralized, market oriented decision making freed from excessive regulation and energized by market incentives is the surest way to develop efficient innovative solutions to improving transportation outcomes in all transport sectors¹⁸. Nevertheless, there are sometimes painful adjustments which accompany successful reform, as the box below illustrates.

Box 3.4: There can be downside impacts as well as benefits from rail liberalization

Restructuring, deregulation, and private participation have also generated significant benefits in developing and transition economies. Several policy options previously closed to state enterprises contributed to these gains.

First, as part of their privatization agreements, new operators could cut excess employment—among the most vexing problems for state-owned railroads.

Second, the freedom to change price structures (up to specified maximum rates) allowed concessionaires to attract traffic for which they had a comparative advantage.

Third, in some cases freedom to withdraw from unremunerative activities (including passenger services) enabled concessionaires to focus on more profitable ones.

Fourth, low spending on equipment and maintenance had hurt performance, so the physical refurbishment that preceded some concessions helped restore railways' ability to provide services.

Source: "Reforming Infrastructure" *ibid* p201

Reform in rail has been comprehensive in developing countries as well as developed countries throughout the 1990s. Over 40 railways in 16 countries were subject to some form of PPP in the 1990s, ranging from concessioning to complete privatization. In the period from 1990 through 2001, 76 rail projects involved private participation, with an investment of US\$28.8 billion. The dominant form of PPP in developing and transition economies was the concession or franchise to operate and manage existing railways with obligations to invest significant sums in refurbishing rolling stock. The role for the private sector in refurbishing track assets needs further examination, and it may be inevitable that this task is left to the government, with donor assistance, depending on the perceptions of country risk for such long term investment by the private sector.

Structural reform and private participation have reduced rail tariffs, and made rail more competitive with other forms of transport, as Table 3.3 shows.

¹⁸ See "Reforming Infrastructure" *ibid* p198

Table 3.3: Rail tariffs before and after reform, and private sector involvement

Country, railway	Initial year	Tariff in initial year (PPP\$ per ton-kilometer)	Tariff in 1999 (PPP\$ per ton-kilometer)	Change in tariff (percent)	Savings (millions of U.S dollars)
Côte d' Ivoire	1995	0.123	0.106	-13.8	8.9
Argentina, broad gauge	1993	0.039	0.036	-7.7	20.7
Argentina, standard gauge	1994	0.032	0.043	34.4	-5.4
Bolivia, FCO	1996	0.147	0.123	-16.3	15.0
Bolivia, FCA	1996	0.061	0.098	60.7	-20.6
Brazil, FCA	1996	0.051	0.032	-37.3	138.1
Brazil, Novoeste	1996	0.043	0.027	-37.2	25.4
Brazil, Nordeste	1996	0.056	0.026	-53.6	21.3
Brazil, MRS	1996	0.027	0.022	-18.5	134.2
Brazil, ALL	1996	0.044	0.033	-25.0	113.1
Brazil, Tereza Cristina	1996	0.120	0.101	-15.8	4.9
Brazil, Bandeirantes	1998	0.038	0.023	-39.5	89.8
Chile, Fepasa	1994	0.089	0.053	-40.4	42.8
Chile, Ferronor	1996	0.072	0.046	-36.1	19.3
México, TFM	1997	0.054	0.043	-20.4	189.8
México, Ferromex	1997	0.041	0.036	-12.2	103.2
New Zealand	1992	0.104	0.081	-22.1	93.8
Total					994.2

Note: Tariffs and savings calculated using 1999 purchasing power parity (PPP) dollars.

Source: Thompson, Budin and Estache "Private Investment in Railways: Experience from South and North America, Africa, and New Zealand" 2001

3.5 Crafting regulation for infrastructure with PSP involvement

Even where competition exists in, or can be fostered by structural reform of, infrastructure sectors, there is a need for overview regulation. The essential principles are:

- Where competition does not exist, or there is a dominant potentially monopoly player, regulation is needed to ensure:
 - fair treatment of customers who lack the protection that comes with competition
 - competitors have fair access to essential network facilities controlled by incumbent service providers who might otherwise be inclined to frustrate competitors needing access to meet consumer demand.
- Where competition does exist, governments have a role in ensuring competition survives the inevitable drive by private and public owners for consolidation to remove competitors. This is achieved by having an appropriate anti-monopoly and anti-trust institution to test mergers and eliminate anti-competitive behaviour.

The experience of the last 20 years of infrastructure reform points to the following success factors for establishing an effective regulatory regime, which would be looked for by private sector investors in infrastructure¹⁹:

- Separation of powers, especially between the Executive (the Government) and the Judiciary
- Well-functioning, credible political and economic institutions and an independent Judiciary

¹⁹ See "Reforming Infrastructure" *ibid* p82

- A legal system that safeguards private property from state or regulatory seizure without fair compensation and relies on judicial review to protect against regulatory abuse of basic principles of fairness
- Norms and laws – supported by institutions – that delegate authority to a bureaucracy and enable it to act relatively independently within clearly prescribed and published legislation
- Strong contract laws and mechanisms for resolving contract disputes
- Sound administrative procedures that provide broad access to the regulatory process and make it transparent
- Sufficient professional staff trained in relevant economic, accounting, and legal principles.

Once established, the regulatory regime should desirably operate on these principles:

- **Coherence:** regulators and ministries with policy responsibilities in a sector should have clearly defined roles and responsibilities. The regulator's decision should be available for all to see, and be accompanied by reasons for decisions and supporting information
- **Independence:** regulators should be independent of political influence, and be appointed or dismissed by a transparent process. Any directions from ministers or officials should be made public, and tabled in Parliament to ensure influence or direction is transparent
- **Accountability:** as the contra for being independent – which gives significant power – the regulator should be publicly accountable with regular reporting to appropriate bodies (Parliament, Auditor-General, Ombudsman)
- **Transparency:** all regulatory rules, decisions, and exchanges of correspondence should be discoverable if not published by the regulator. An Ombudsman should be able to reach into the regulator's files and expose them to public overview. Transparency is a key component of protection against corruption
- **Predictability:** regulators should follow the rule of the law establishing them and their powers and be challengeable in a higher Court at least with respect to the processes followed. Respect for precedent is critical to predictable decisions for those who are regulated. The principle of *stare decisis*²⁰ should be adhered to
- **Capacity:** the regulator's responsibilities – as established by the government – should match its financial and human resources.

While these principles might be seen as a counsel of perfection, their achievement – or failure to achieve – will have a profound impact not only on the effectiveness of how infrastructure sectors deliver services to consumers, but also on the ability to attract private sector participation and investment in Sudan.

As Table 3.4 shows, few developing countries in Asia have been able to achieve good grades in regulatory design. This is fairly typical in other developing – and developed – countries as well, a situation which should be avoided by Sudan. This is possible given

²⁰ *Stare decisis* requires that cases with the same underlying facts be decided the same way each time, or if changed, the decision is argued by the regulators and/or Courts with reasons for a change.

the substantial body of experience Sudan can now draw upon in designing and implementing its regulatory or PPP contractual frameworks in infrastructure.

Table 3.4: Performance ranking of infrastructure regulation principles

Country/sector	Institutional criteria				
	Coherence	Independence	Accountability	Transparency	Predictability
Bangladesh					
Electricity	D	D	D	E	E
India					
Electricity, federal	D	C	D	C	E
Electricity, Orissa	B	A	B	A	D
Gas	E	E	E	C	E
Telecommunications	C	B	B	A	C
Indonesia					
Gas	E	E	E	E	E
Transport	E	E	E	E	E
Malaysia					
Telecommunications	C	C	D	E	E
Transport	C	C	D	E	D
Water	C	D	D	E	D
Pakistan					
Electricity	C	B	C	C	D
Philippines					
Electricity	C	C	D	D	C
Water	C	C	C	C	D

Note: Rankings are on a scale of A (best practice) to E (highly unfavorable for private investment).

Source: Stern and Holder "Regulatory Governance: Criteria for Assessing the Performance of Regulatory Systems" 1999. Data as at 1998

3.6 Crafting subsidy regimes which work

The transition from bundled monopolies in government ownership, to an unbundled, more competitive infrastructure sector with both publicly and privately owned, and operated, entities is never easy. The process of unbundling inevitably reveals poor decision making, political rather than commercially driven pricing and investment decisions, and a plethora of hidden cross subsidies.

3.6.1 Public ownership often involves hidden subsidies

In public ownership, consumers often will be given a degree of protection from the true costs of providing sustainable infrastructure services by subsidies, postponed investment in assets – which expresses itself in poor service standards such as power blackouts – and an inability to replace assets over time.

Once the practice of allowing subsidies or postponed maintenance or investment to occur without explicitly recognizing the impact on the long term sustainability of the infrastructure assets and the quality of services to consumers, the decisions for later Governments become more and more difficult and expensive to make.

Injecting the private sector into this situation, without first recognising the existence of subsidies and the need for price increases to some or all classes of consumers, will only discourage private sector investment. The private sector will not invest if it cannot

recover its full accrual costs (i.e. costs of day-to-day cost as well as provision for maintenance, cost of capital and asset replacement), and earn a profit in its pricing.

This often causes a real dilemma for Governments which want to attract the private sector into public infrastructure services. Consumers are used to paying below true cost, and will accuse new PS providers of “profiteering”. Sometimes some publicly provided services are regarded as free goods, a “right”: water is often in this category, where consumers don’t realize the significant costs of producing and distributing potable water supplies.

3.7 Role of infrastructure in post-conflict reconstruction

In our introduction to this report, we elaborated on the necessity of dealing with the north and the south of Sudan differently. Infrastructure in the North has not suffered the degree of devastation that has occurred in the South. In addition, North Sudan has maintained the structures of Government and has a much higher degree of institutional capacity than the Government of Southern Sudan. Twenty years of civil war, and prior to that a systematic neglect of investment in the South, has left its infrastructure non-existent or non-functional and has deprived the Government of all but the most basic supervisory capability.

North Sudan faces a rather traditional set of infrastructure issues:

- Monopoly providers with high barriers to entry
- Low investment and a declining asset base
- Below cost tariffs with no explicit subsidy
- High level of country risk.

These problems are quite well defined with a plethora of literature on how to deal with them. They are also highly soluble, requiring action of which the Government is quite capable.

South Sudan is dealing with a set of issues common to countries that have gone through “total war”, where an entire area has been engulfed and destruction has been comprehensive. Countries that have experienced this type of conflict are more likely than not to be poor even before the start of the conflict. Post-conflict, their infrastructure bases will often have suffered catastrophic damage. In fact, as the example in Table 3.5 demonstrates, the people of post-conflict countries generally have systematically lower access to infrastructure services than people in similar countries without conflict.

Table 3.5: Access to infrastructure in Sub-Saharan Africa

Type of Infrastructure	Sub-Saharan Africa Conflict Affected	Sub-Saharan Africa Non-Conflict Affected
Electricity (<i>kWh used per capita</i>)	96	384
Telecoms (<i>fixed + mobile lines per '000 population</i>)	19	67
Roads (<i>% paved</i>)	13%	27%
Water (<i>% of population with access to improved water</i>)	52%	67%

Source: Schwartz, Jordan, et al, "The Private Sector's Role in the Provision of Infrastructure in Post-Conflict Countries: Patterns and Policy Options", page 4

Post-conflict countries consequently lack some of the most important drivers of growth and poverty-reduction. From newly unemployed soldiers to refugees returning at the prospect of peace, people's expectations after war tend to be high. Rebuilding infrastructure quickly creates jobs, improves access to welfare-raising goods and services and attracts capital into areas otherwise unlikely to do so.

If post-conflict expectations for welfare improvements are not met, the country is more likely to slide back into war. Infrastructure investment is therefore doubly important in improving growth and welfare prospects, and in preventing further conflict.

Institutional capacity is also most likely to be severely limited in post-conflict countries. It is one aspect of Government that is very difficult to change quickly and the situation will probably persist for many years. Conditions may worsen in fact when the initial surge of aid and accompanying expertise fades. PPPs must therefore be designed with this in mind.

Underlying risk conditions are also likely to be severe. However, policy-makers have a great deal of influence on exactly what risks private operators will face. Some of the options are previously briefly explored in this section. Government essentially has full control over regulatory risk. Budgetary concerns will limit the extent to which payment risk can be mitigated, but if costs are explicitly recognized and assigned, the lack of ambiguity itself is a significant reducing factor against risk. Country risk takes time to deal with but even so can be reduced with consistent and transparent action and by immediately implementing legislation that ensures private property rights are respected. The risks PSPs face are, therefore, determined to a large extent by policy decisions.

By making the appropriate policy decisions and correctly assessing its institutional and therefore, supervisory, capacity, Governments can find the right degree of private sector involvement for each area of infrastructure that needs to be rebuilt.

While institutional capacity will most likely be limited in the short term, Governments may decide to create a supervisory capability in certain discrete areas. It may do so, for example, in an area where it is unable to comprehensively eliminate a particular kind of risk and is not therefore able to attract large scale capital. Land mines in Southern Sudan, for example, are inimical to large private investments in transportation. Even a de-mining program may not completely eliminate mines, making foreign companies, in particular, wary of liability issues.

In this example, the Government may have no choice but to limit itself to build/maintenance contracts, while investing in the supervisory capability to make this type of PPP work.

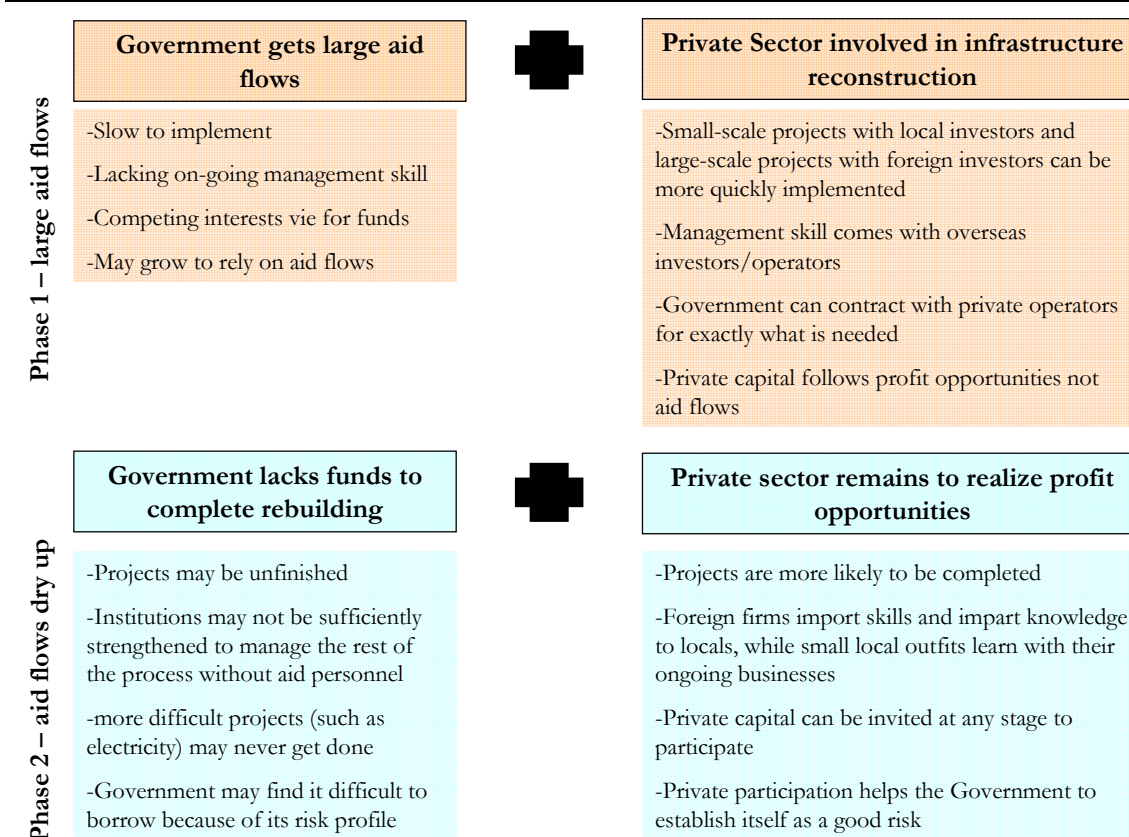
The private sector can be instrumental in improving the size and efficacy of capital flows in a post-conflict environment. Post-conflict countries often face two related problems. First, an institutional inability to properly absorb large aid flows immediately following the cessation of hostilities and second, a shortage of funds in the period following the initial spike of aid flows²¹. Involving the private sector can help with both these potential problems.

As illustrated in Figure 3.1 below, involving the private sector in the initial stages of the rebuilding process can mitigate many of the immediate and later problems that are commonly associated with post-conflict environments. Private sector participation (PSP) adds capital, expertise and focus in a situation where capital and expertise is often fleeting. There are also usually many competing interests targeting the same funds and Governments may find it difficult to decide between these interests much less making sure that the decisions are implemented. Once they are contracted to build or/ operate a particular piece of infrastructure, private participants can be given proper incentives to significantly decrease these problems.

Despite the difficult conditions faced in post-conflict situations, we believe it is possible for the two Governments under these circumstances to define workable and desirable PPP arrangements that will help to achieve service goals and attract local and foreign capital and expertise.

²¹ Schwartz, J and Halkyard, P, "Postconflict Infrastructure", Public Policy for the Private Sector, March 2006

Figure 3.1: Private participation is necessary to successfully rebuild infrastructure



Source: Castalia

4 Assessing PPP arrangements – establishing the best conditions for PPP

Notwithstanding the clear evidence that involving the private sector in infrastructure development can produce significant benefits for overall economic development, some caution is needed. Just as economic development depends on such infrastructure – and failure to reform and modernize it undermines national competitiveness and growth – if the reform processes used are not correctly specified and sequenced, rebuilding and expanding infrastructure services can produce unintended results.

4.1 What is the essence of Public Private Partnership?

Governments often look to the private sector to build, renovate, maintain, and/or manage a facility or business that provides a service to its citizens. Most governments maintain a wide range of contractual and other relationships with private businesses, designed to align commercial interests of these firms with the government’s policy objectives. These range from the procurement of supplies and other inputs necessary for the delivery of public services, to hiring firms to act on behalf of the government in the provision of public services, to regulating private businesses so that they deliver outputs which they would not have produced for purely commercial reasons. In some sense, most forms of on-going interaction between the public and private sectors—short of, for example, simple procurement of office supplies—can be termed as a form of partnership, since both parties share risks and rewards.

Figure 4.1 shows categories of contracts commonly struck between public and private sector entities for provision of works and/or services. The darker shading in the arrow corresponds with increased private sector risk on, and responsibility for, the outcomes or results of the enterprise's operations. The bracket in Figure 4.1 indicates the categories that are commonly considered as true PPP, where there is risk sharing by both public and private parties. A common aspect of this definition is that PPPs involve exposure by both public and private parties to customer risk. This can be contrasted with service contracts, where the government may subcontract private parties to deliver a service (such as building a road), but the private provider is not exposed to demand risk.

In other cases, PPPs are defined in terms of sectors for which the PPP unit is responsible. Most commonly, as in the case of South Korea and the Philippines, this includes focus on specific infrastructure arrangements, such as toll road and rapid transit concessions, electricity IPPs and bulk water supply BOTs.

Overall, the element of risk sharing between public and private partners is probably the main feature which differentiates PPP from other forms of contract between public and private sector parties. In some cases, such as for infrastructure lease contracts, the form of risk sharing may be fairly obvious, or at least discoverable from the language of the contract.

In many cases, however, risk sharing may be implicit. For example, what happens when the government privatizes the national airline? In a pure sense, it is not a PPP: the government no longer has direct exposure to, or responsibility for, the performance of the business. The Government may continue to regulate services, for example requiring that the airline continue to provide some uneconomic but socially significant services, but unless there explicit subsidies for such services, it is the shareholders who carry the risks associated with cross-subsidizing between profitable and unprofitable routes. In practice, however, many governments have not been able to allow national airlines to fail. Hence, even after divestiture, governments implicitly may continue to share business risks²².

On this basis, an appropriate definition of PPP may include the divestures of those government owned businesses which the government cannot allow to fail. There is no science to answering this question. In most countries, privatization of businesses such as hotels, sugar mills or suchlike would not qualify as a PPP. On the other hand, airlines, airports or toll roads may, although it will not take a contractual form, but will be left to the vagaries of politics.

Another important aspect of public-private partnership is when a government makes state property available for commercial use, but retains a strong interest in how that property is used. For example, if the government owns land on which port facilities are built, it may not be willing to see a private operator converting to potentially more profitable waterfront hotel and apartment developments. Where the government has an on-going interest in how a facility is used, it may also be thought to be involved in a form of PPP.

²² This happened recently when Air New Zealand was recapitalized by the NZ Government when the company got into difficulties with its Australian business following Australian Government intervention. The NZ Government then became the majority shareholder in Air NZ and now has a "judge and jury" role as equity shareholder and regulator.

Figure 4.1: Degrees of risk sharing in contracts between the public and private sectors

Greenfield (<i>New Infrastructure Asset</i>)	
Design Build (Turnkey)	A private sector contractor is selected to design and build a facility for a fixed fee. The contractor will in most cases assume risk for construction costs
Design, Build, Operate	A private sector contractor designs and builds a facility for a fixed fee and then operates the facility. Government (possibly with donor funds) provides financing. The contractor may 'lease' the facilities from the Government. If the tariff is high enough, the lease fee may help to cover the government's debt service costs. Alternatively, the government may receive the tariff revenue, and pay the contractor an operating fee – the risk of revenues not covering costs thus lies with the government.
Design, Build, Operate, Finance	Effectively, "Design, Build, Own". Private Operator is fully responsible for providing the facility and the service. Variants of this approach include: concessions, BOOT contracts, and investor owned utilities
Brownfield (<i>Existing Infrastructure Asset</i>)	
Service contract	A private sector contractor is paid on a fee-for-service basis for operation and maintenance, financial management, or implementation of capital investment programs. The public sector partner retains responsibility for financing and overall management of the enterprise
Management contract	A private sector contractor provides a small management team to run an existing utility. The firm receives a fixed fee plus (often) a performance bonus. The public sector partner provides finance, builds the infrastructure and takes operating risk
Lease /Affermage	A private sector contractor provides service to customers and in return receives a portion of the tariff, or a fee to cover the operations and maintenance costs of providing that service. The contractor takes the financial risk and liabilities related to operations. The public partner retains responsibility for making capital investment, though the contractor may manage the capital investment program
Concession	A private firm takes full responsibility for operations and investment, and all of the associated risks. The public partner retains ownership of the assets.
Privatization	A private firm owns a majority share of the company. The public partner takes a minority share, at most, or may not retain any shares.

Source: Castalia

4.2 Necessary pre-conditions for successful PPP

Using the private sector to develop infrastructure can be controversial. Many countries struggle to achieve success in their PPP programs. There are a number of reasons for these difficulties, directly relevant to the issues faced by Sudan:

- PPP contracts not only impose discipline on the infrastructure utilities themselves, but require greater discipline from the governments involved. In many countries, governments support infrastructure services, but their support is sporadic and unpredictable. Support for infrastructure is often used as a buffer for budget operations: when budgets are tight, investments can be delayed, and so can the payment of the government's own bills for infrastructure services. Under PPP contracts, however, such flexibility is no longer possible. PPP contracts crystallize government obligations, and require governments to deliver on their obligations under the partnership agreements. Nevertheless, the long run benefits of this discipline are substantial, both economically, and in terms of political management where demand for good quality services can be planned for
- Private operators, whether they are purchasing networks outright or managing a water company, have to make a return on their investment. There is no way around that fact. This means either that services have to be provided at full cost-recovery tariffs (where costs include adequate return on investment), or that governments have to provide explicit and reliable subsidy to the private service provider. Full cost recovery tariffs may be politically difficult if people have become accustomed to below-cost tariffs, or they may be unaffordable when the population is extremely poor. Many governments also find it politically difficult to pay subsidies so that private firms can make profits. The need to shift to explicit subsidies could pose particular challenges for Northern Sudan if they are to be used, but the benefits for consumers in terms of access to infrastructure services, and quality, will be significant
- Private firms will look for the best commercial opportunities, but areas with such opportunities may not be where the national priorities lie. For example, it is easy to attract private investors to build airport terminals or mobile telephone networks or electricity generation plants, but much harder to attract them to invest in water and electricity distribution networks or in risky transport projects. Governments need to take explicit action to encourage private investment into areas with the greatest social benefit, by reducing the risks associated with long-term investments and by directing their own resources into appropriate areas
- In many cases, there is little local private sector capability, while projects are too small or the political situation is too risky for foreign investors. For example, it is often difficult to attract foreign investors into rural electrification projects because of their small scale. This issue is particularly important in Southern Sudan, where the GoSS will need to make direct efforts to develop local private capabilities. This will impose costs and risks on the Government, but the risk is outweighed by the potential to develop indigenous capability because of the dire need to prevent the country from falling further into aid dependency.

Overall, the key challenge in successfully using PPPs for infrastructure development will lie in achieving the necessary changes in the public policy framework. While the

challenges facing Sudan are significant, they are not unusual around the world. Many lessons can be drawn from the experience of other countries.

In the remainder of this section, we consider a strategic framework for promoting PPPs in Sudan. We also explain why the differing facts on the ground in the North and the South contribute yet another layer of analysis, and may result in different solutions in similar industries.

4.3 Building infrastructure using the private sector

As Figure 4.1 above shows, PPPs can take many forms. Most Governments are involved in some kind of partnership with the private sector as we have seen. Private participants can improve service provision because they:

- Share the risk
- Can provide investment capital quickly
- Bring specialized expertise that Governments lack; and
- Can be given incentives to focus on specific objectives and outcomes.

The particular form of the PPP determines the extent to which each of the potential benefits is brought into play.

Table 4.1: Benefits of various forms of PPP

	Design	Build/Maintain	Manage/Operate	Own
Operational Risk Assessment	<input checked="" type="checkbox"/>	<i>Risk may be included</i>	<i>Risk may be included</i>	<input checked="" type="checkbox"/>
Capital Risk Assessment	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Additional Expertise	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Quick Access to Capital	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Operational Focus	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Source: Castalia

Table 4.1 summarizes the different forms PPPs can take, and indicates where they provide the benefits (– yes, – no) described above. As shown, the private sector may be contracted to design, build/maintain, manage/operate or own a facility. Where a private operator owns the facility, all the benefits can be obtained. Private managers or operators may take an element of operational risk through profit sharing incentives, and the like. However, they are usually not required make capital investments and therefore do not provide quick access to capital nor do they share in the capital risk.

Contracts for maintaining a facility will include some operational risk, since these are ongoing operations and there is uncertainty about the future state of the assets and therefore the cost to implement the required maintenance. All forms of PPP should, however, bring additional expertise and operational focus.

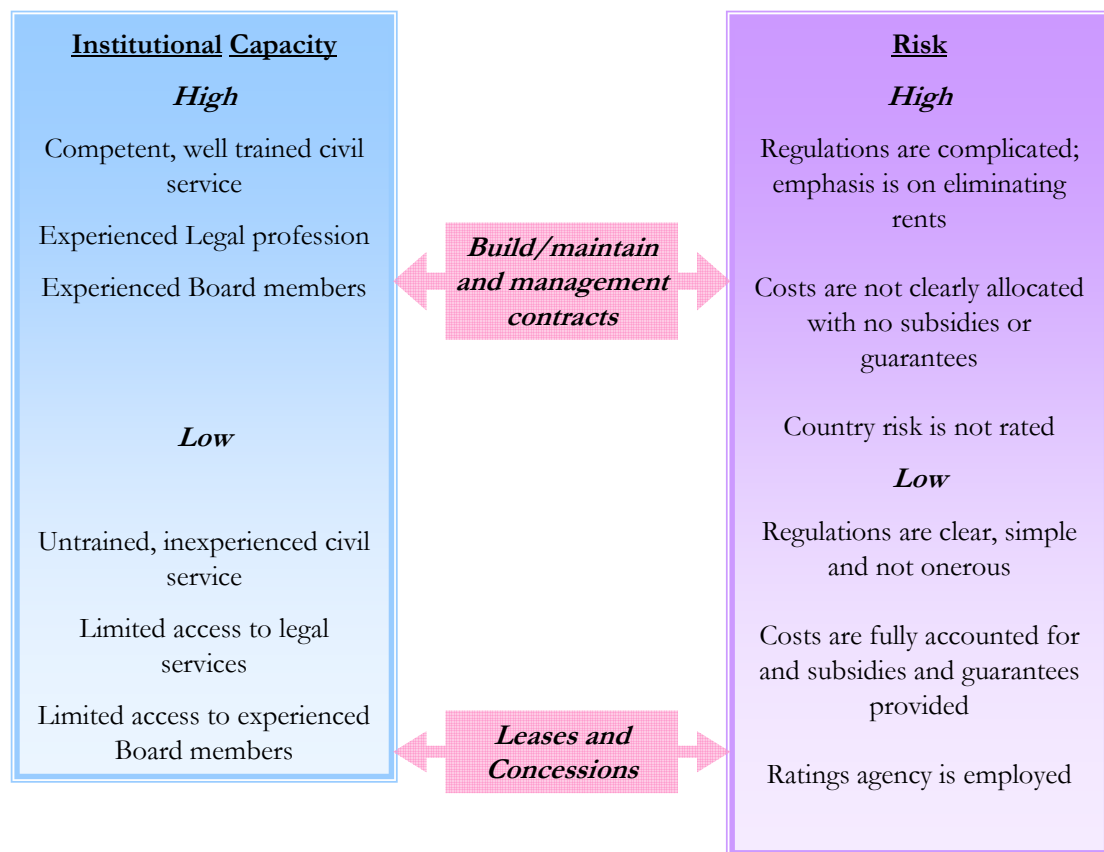
Not all forms of PPP will be suitable for the prevailing conditions. Governments need to think carefully about what they are trying to achieve before designing PPP mechanisms. PPPs may fail if, for example, the Government views them exclusively in the context of raising capital, without account for their ability to manage performance or aligning private interests with public objectives.

In the next section we outline some the considerations which may make PPPs more successful in Sudan.

4.4 What degree of private participation is most likely to produce the desired outcomes?

Different forms of PPP will suit differing sets of issues. The situation in which, say, a management contract will be suitable, varies with the degree of institutional capacity and the degree of risk faced by the PSP. Policymakers should weigh the willingness of private operators to take on risk against their own ability to supervise. Figure 4.2 illustrates the variety of factors contributing to risk and institutional capacity and the appropriate PPPs, depending on the circumstances.

Figure 4.2: Appropriate PPPs vary with risk and institutional capacity



Source: Castalia

Build/Maintenance and management contracts minimize private control and maximize Government control. They also minimize private exposure to risk, since typically the Government will contract over a shorter period of time for a specific task, without requiring capital investment from the private partner. However, management contracts may involve greater control and risk than build/maintenance contracts if they entail profit-sharing elements, for example. In short, build/maintenance and

management contracts are suitable when the Government cannot mitigate the risk conditions and when it has a relatively high capacity to supervise the contractor.

In contrast, a **lease** gives the private operator operational freedom and may give some control of assets over a longer term. It may involve sharing the risk in future capital investments. A **concession and/or outright sale** gives the private firm control of assets and operations and all the associated risks fall on the concessionaire. Under these conditions, concessions and lease arrangements are likely to be successful only if the underlying risks are not seen to be prohibitive. Governments should design these PPP arrangements where it can mitigate the associated risks and where it has a low capacity to supervise.

As the discussion implies, the suitable degree of intensity of private involvement is inversely proportional to both risk and institutional capacity. In other words, the degree of private involvement in a sector or project should increase as the associated risks decrease. This is simply because private capital is less likely to be attracted to an investment when risk is high. Similarly, the degree of private involvement in a sector or project should increase as the Government's institutional capacity decreases.

This latter point may seem counterintuitive because a lease or a concession gives a private operator a greater sphere of influence. However, it is precisely because of this greater degree of control that Governments can relinquish supervisory control. The Government no longer has any interest, for example, in the profitability of the company or in its return on equity and may limit its interaction with the operator to monitoring its performance as *contracted*²³. Performance criteria should then relate to deliverables that are of direct interest to the Government, such as service standards and number of new connections, for example.

Build/maintenance contracts pertain to a particular function or a single task and require the Government to manage all other aspects of the company as well as supervising the individual PSP contracts. Management contracts give private operators greater responsibility but at the very least usually require Government supervision at the Board level and may involve direct Government intervention in investment decisions. This level of Government control requires a strong degree of institutional capability to make sure that the private operator is fulfilling its contract, that the company is not becoming a drag on its Budget and that it is satisfying its mandate, in terms of service standards, etc.

4.5 Role of Government in shaping the risk environment

Government is the most significant factor in the determining the risk profile of a country for PPP. Private firms investing or operating in infrastructure usually face three types of risk in addition to the normal commercial risks they are used to managing:

- Payment risk, associated with Government and non-Government clients
- Regulatory risk; and
- Country risk, which all firms operating locally face.

There is always some degree of risk associated with an investment or in entering into a contract; not all of these risks can be eliminated. Unfortunately, in a post-conflict environment, these risks are much higher and Government action is that much more

²³ While this may be true in the main, if the government gets the original contract wrong (e.g. sets the allowable revenue too high and profits turn out to be excessive) public reaction to the private contract can be negative. This puts a considerable premium on the government negotiators having the skill and foresight not to establish contracts which carry eventual political risk for a future government.

important to soften the impact. Some actions which Governments may take to mitigate risk are costly, while others require only good decisions up-front.

4.5.1 Payment Risk

Private participants face the risk that customers may not be able to pay full cost-recovery tariffs and/or Government (or quasi-Government) customers may become delinquent. This risk is high in poor, post-conflict countries. Government can deal with the first by offering an explicit subsidy of tariffs to be built into its contract with the private provider. Over time, as incomes grow and development takes hold, subsidies can be faded out or reduced.

The risk of delinquency by (quasi)Government agencies is a trickier issue. The central Government may guarantee such payments, but it may become delinquent. It may also offer to increase the ranking of Government debts to PPP/PSPs in infrastructure in the hierarchy of all Government liabilities. In the initial stages of post-conflict reconstruction there is not a great deal that can be done about this risk, however, the longer a Government operates with a record of prompt payment, the less the perceived risk to future PPP/PSPs.

4.5.2 Regulatory Risk

Private operators are looking for a regulatory environment that provides near certainty or, at least, clarity on the rules and the ability to derive some rent from their operations. Simplicity is also a positive factor for both Government and PSPs, particularly in a post-conflict environment, where institutional capabilities are likely to be limited.

Government can provide clarity and simplicity at virtually no cost but with a large payoff in terms of reducing the risk to PSPs. Local private operators and investors are likely to suffer from the same institutional weakness as the Government and may have a particular inability to handle overly complex regulations. On the other hand, without some certainty about the regulatory environment in which they are operating, foreign investors are unlikely to invest and/or operate.

As regards the content of regulations, there is often a tension between fostering competition and encouraging new investment in infrastructure industries. In other words, there is tension between eliminating monopoly rents and attracting capital. In a post-conflict environment, the need to attract new investment is imperative and policy should focus less on eliminating rents and more on providing a favourable environment to investors.

Policy should be less concerned with restricting PSP behaviour where networks have been destroyed by war (or never were built), since regulation is necessarily more intense where network effects exist. In post-conflict circumstances, however, without significant payment guarantees or a large potential customer base is likely that only small operators will be interested in providing services, negating the probability of developing network effects. In any case, neither large nor small operators are likely to price themselves out of the market and in many cases will be providing a service where none existed before.

4.5.3 Country Risk

All private investors and operators face this risk in-country. Country risk is reduced when conditions in the country and its prospects improve. There are a myriad of factors that change a country risk profile, including fiscal policy, incidence of corruption, crime and growth. However, policymakers can improve country risk by getting a risk rating

done by an international ratings agency²⁴. This demonstrates openness by the Government and will provide an unbiased source of advice for current and future PSPs.

Policymakers may also counteract country risk by quickly implementing legislation that protects property rights. The right of foreign firms to repatriate profits, for example, is particularly important in a post-conflict environment. In addition, clarity on land ownership is crucial to both local and foreign investors and can make or break infrastructure deals. Generally, making sure that contracts are subject to few legal processes, external to the contract itself, will improve the risk profile for private participants.

5 Assessing PPP arrangements – establishing effective institutions²⁵

In most countries, there are a variety of channels through which PPPs can be procured. Many countries have created PPP units which, in one way or another, have tried to concentrate the skills involved in entering into PPP arrangements, or have tried to create “one-stop-shops” for the promotion of PPPs. We firmly believe such an arrangement would substantially assist Sudan – both in the North and South – and ensure infrastructure rehabilitation and construction can be maximized to the benefit of users of infrastructure services.

5.1 Establishing PPP Units in Government

A PPP Unit (PPPU) is a specialized entity within the Government which determines and manages overall PPP strategy on behalf of the Government. Its functions may include some or all of the following:

- Setting the overall PPP strategy, based on the Government’s risk profile and the commercial viability of each sector
- Deciding on specific PPPs based on the strategy
- Managing transactions to implement PPPs; and
- Monitoring and enforcing contracts governing PPPs.

PPPUs are not always necessary nor do they always function as hoped. They are, however, most needed in a context where the government or the private sector may have specific weaknesses and where the market is unable or unwilling to enter the sector as is.

5.2 Why do countries establish PPP units?

Central PPP units represent an institutional solution to specific government and market failures, and can be an important vehicle for motivating the use of PPP in infrastructure rehabilitation and expansion.

5.2.1 Government failure

Government failure represents a failure of government institutions in the absence of a PPP unit. It should be noted there are numerous examples around the world of

²⁴ Such as Transparency International, Standard and Poor (for financial risk), and MIGA (the World Bank Multilateral Investment Guarantee Agency) risk ratings.

²⁵ This section draws heavily on work undertaken by Castalia for PPIAF and the World Bank on the international experience with public private partnership units, which are becoming increasingly popular as an institutional form to harness the capital and expertise of the private sector in infrastructure. The report, entitled “*Centralized PPP Units for Developing Countries: Lessons for the Future*” will be published sometime in 2006.

successful PPPs being implemented without a central PPP unit. For example, Portugal had a significant and generally well-regarded PPP program prior to the creation of the PPP unit within Parpública. In Australia, both the states of Victoria and New South Wales have had numerous PPP transactions, particularly toll roads in the cities of Melbourne (Victoria) and Sydney (NSW), but Victoria has a central PPP unit (Partnerships Victoria), while New South Wales has none. However, where there is little experience with, and capacity in, managing PPP within government, concentrating and nurturing experience with PPP is highly desirable, and successful if international experience is any guide.

Poor Incentives for Procurement of PPPs

Perhaps the main government failure with respect to PPPs is inappropriate incentives facing government agencies. Government agencies may have both the incentive to procure too many PPPs, or not enough PPPs.

On the one hand, line ministries responsible for implementing services in a particular sector may have an incentive to enter into more PPP contracts than can be managed within the government's fiscal headroom, if the fiscal consequences are not made clear and palpable to those agencies. For example, a line ministry responsible for the provision of water services may wish to enter into many BOT transactions to satisfy demand for its services. To do that, it may structure transactions in such a way that the risks, and the costs associated with such transactions, are deferred. If the deferral of costs and the allocation of risks are not transparent, the overall cost to the government of the partnerships procured by the ministry may be well in excess of the government's ability and willingness to pay for water services. As shown below similar experiences, admittedly in different sectors, motivated Portugal and South Africa to create their PPP units.

Box 5.1: Reasons for creation of Parpública's PPP Unit

Portugal's PPP unit was created specifically:

- Out of a perceived need for better transfer of information to all branches of government on: a) contract design, and b) procurement, because of poor experience with PPP efforts in the past
- To ensure better efficiency in provision of services and not just the swift, off-budget completion of infrastructure projects.

PPPs were initially pursued in Portugal in the early-mid 1990s as a way to move large infrastructure investments off balance sheet. PPPs were seen as particularly important at a time when, because of EU membership, there was so much importance placed on Portugal's fiscal policy.

More recently, Portugal's PPP policy has evolved as part of broader policy goals to move the government from year-on-year budgeting toward a multi-year budgeting. There was little consideration for the inter-generational or long-term life-cycle costs of these projects. As part of the reform effort, Portugal opted to develop a process to rationalize the decision-making process for PPPs by:

- Promoting consideration and more transparent presentation of the long-term budgetary implications through explicit review of the long-term financing shortfall for which government will be responsible to ensure the project's financial viability
- Requiring evaluation versus a public sector comparator, as a way of standardizing evaluation criteria, if not also assessing potential value-for-money and efficiency gains from PPP.

Source: Castalia

As long as a ministry believes that it can shift the costs on to other sectors within the government or to some future government, it may pursue PPP transactions in excess of what is affordable or what represents value for money. Similarly, a ministry which does not directly bear the risks associated with projects may not be sufficiently motivated to be diligent in ensuring that the private sector takes on the appropriate level of risk.

At the same time, line ministries may also have insufficient incentive to enter into public-private partnerships. In many cases, being involved directly in the provision of a public service provides ministry officials with opportunities for influence and patronage which may not be available otherwise.

For example, when health services are provided directly by the government agencies, and access to these services is rationed, ability to advance favoured individuals to the head of the queue is highly prized. PPPs on the other hand, due to explicit contractual arrangements and due to the introduction of commercial incentives for the service providers, typically restrict opportunities for patronage. This is particularly true when PPPs are competitively procured.

Hence, the beneficiaries of patronage (i.e. the line ministries) may be unwilling to allow PPPs to take place, even where they represent the best arrangement from the public policy point of view. More generally, there may also be fear of job losses within the government agencies responsible for procuring PPPs.

In reality, both incentives may be present at the same time, with the same ministry both holding back projects which should be advanced, and promoting projects which should not proceed.

In some cases, governments have tried to address these incentives through public sector management reforms, such as the introduction of performance contracts for heads of agencies, or through public finance reforms, such as the introduction of accrual accounting designed to capture contingent liabilities. However, the full set of consistent and coherent reforms may be difficult to implement, and may be beyond the technical capability or the political will of many governments. In this case, the creation of a specialist agency designed to offset the inappropriate incentives facing other agencies may be an appropriate institutional response. For example, central PPP agencies have been created in many countries to ensure that the PPPs operate within the overall fiscal envelope. Portugal and South Africa's PPP units were created with those concerns in mind.

Box 5.2: Reasons for creation of South Africa's national Treasury PPP Unit

South Africa's PPP unit was developed to counteract the risk that line ministries would use PPP to circumvent formal budgetary limits established through law by the Public Finance Management Act (PFMA). PPPs were, until creation of the PPP unit, more often used with this goal in mind than the goals of shifting risk to the private sector or achieving greater efficiency or value-for-money through private sector involvement.

A single specific transaction provided the catalyst for creation of the PPP unit. The Ministry of Public Works wanted to design a 30-year BOT contract for 2 prisons. Treasury found out about the transaction and asked to review the contract. Treasury's review found that, whereas the prisons indeed offered value for money, they were extremely expensive to build and therefore not affordable from an overall fiscal perspective.

The PPP unit was established to set clear rules for public and private partners, while providing better fiscal oversight. As a result of the country's early experience with PPPs, the new regulations on PPP now require that PPPs meet three criteria:

- Affordability
- Risk Management
- Value for Money.

Formal treasury approval is required at four stages

- Upon completion of feasibility study
- Upon completion of bid documents (including draft PPP agreement)
- Upon selection of preferred bidder and preparation of value for money report
- Upon finalization of negotiations with bidder and finalization of PPP agreement

PPPs are now used in South Africa primarily to transfer specific risks to a private sector operator who is better able than the public sector to bear such risks.

Source: Castalia

Lack of Coordination within Machinery of Government

The competence of public sector decision making is a critical component of successful PPP programs. This involves both policy making and policy implementation:

- *Policy-making* consists of processes and institutions through which policies are made at various levels of government, and includes the policy advice and analysis role of the public sector. In many countries, public sector agencies lack the capability to fully analyze needs, and develop realistic goals and well thought-out alternate strategies for achieve these goals. For example, how many governments have set out ambitious targets to achieve high water and power supply coverage but failed to deliver? In the absence of good analysis and advice, political leaders also find it difficult to draw connections between their broad objectives and day-to-day decisions they are called to make. For example, it is common to proclaim a desire to make PPPs happen, but often despite genuine desire, government do not have a clear understanding of what needs to be done to achieve successful, sustainable PPPs
- *Policy implementation* consists of processes and institutions, which ensure the implementation of public policy. For example, identifying total risks in a specific PPP project is far from straight-forward, and many of the less happy experiences with PPPs around the world arise precisely from the fact that neither party fully understood its full exposure going into the contract. How can a government know that the risk allocation in a particular project is consistent with its policy on risk allocation in PPPs?

In cases where policy making and implementation are poorly integrated, it is tempting to create a new agency to cut through the lack of integration, and to provide over-arching guidance and control. One of the most common government failures is poor coordination between various agencies. In many governments, individual agencies operate within “silos”, with little information sharing or cooperation across with other agencies. Sometimes the silos are reinforced through competition among political figures in charge of those agencies, but they may also derive from the institutional history, from inappropriate legislation, or from the tradition of secrecy within the government. In such cases, agencies with related functions may not be able to coordinate their activities sufficiently to make PPPs happen.

Poor coordination may also occur when many agencies with competing agendas have a say in a particular transaction, and where no single agency is able or willing to take charge.

Box 5.3: Bangladesh – the need for a One-Stop-Shop

Bangladesh’s Infrastructure Investment Facilitation Centre (IIFC) was established to assist the government in: developing policies to encourage PSP in infrastructure, identify and structure projects for PSP, prepare bids and evaluate draft contracts, and negotiate and manage contracts. IIFC also provides technical assistance to the Private Infrastructure Committee (PICOM) in the Prime Minister’s office.

Line ministries are not required to seek IIFC’s assistance nor follow any of IIFC’s guidelines, though IIFC staff generally have more experience with the private sector, and in procurement, than do staff in the line ministries. IIFC has little formal power or political clout of its own. As a consequence, to date, Bangladesh’s line ministries and the executive branch appear to have had much more sway in determining whether PPPs will go forward.

Procurement in the power sector, for example, has shown little coordination. An organization called the Infrastructure Development Company Limited (IDCOL) led procurement of, and provided debt financing for one of Bangladesh’s first major foreign IPPs (Meghnaghat). IIFC helped procure another (Haripur). Power Cell, a division of the Ministry of Power, Energy & Mineral Resources, is now formally responsible for IPP procurement, though recent IPPs have apparently been negotiated without Power Cell’s involvement.

Competitive procurement processes have suffered as a result. Recent IPPs have been procured through direct negotiation, or through faulty competitive bidding (for example, with the clear 2nd best financial and technical bids winning contracts). Direct negotiation or faulty competitive procurement need not always mean a bad PPP deal for the Government, but considerable evidence exists that Bangladesh’s recent IPPs have shown severe reliability problems.

Source: Castalia

Again, there are various solutions to poor coordination among agencies, and to ensuring that a whole-of-government approach to PPP transactions prevails. Creation of a central PPP unit may be one such solution, where other forms of coordination are less viable or more difficult to implement.

Lack of Skill

Procurement of PPPs requires high levels of skill, which often are lacking, particularly in developing country governments. It is common to focus on the need for skills involved in managing a successful transaction. However, such skills can often be procured through external advisory services. Perhaps more important are the skills involved in managing the complexity of the public-private interface: understanding how particular PPP projects fit within the government’s sectoral and service delivery objectives, and how the

allocation of risks under any particular project fits into the government's overall fiscal strategy.

When PPPs turn out to be unsuccessful, such failures often derive not so much from poor management of the transaction process, but from lack of attention being paid to government policy reforms which may be required for the success of PPPs. This involves design of explicit and sustainable subsidy schemes, improving the government's planning capacity, and ensuring that the government appropriately performs its on-going role within the public-private partnership. For example, failures of many management contracts can be attributed to clashes between the publicly appointed Boards of government companies and the management contractors.

Because so many other factors, other than skills, can affect the outcome of a PPP, it is important to be clear about which skills are lacking. Training requires time and resources, and hiring technical experts as full-time staff can be expensive. Many PPP units address a lack of skills by outsourcing short-term work requiring specific technical expertise, or by hiring longer-term consultants to work with full-time staff. Box 5.4 describes how different PPP units have sought to ensure they have the right skills to carry out their responsibilities.

Box 5.4: How PPP Units ensure they have the right skills

- The Philippines BOT Centre makes extensive use of long-term, local, in-house consultants
- The UK Treasury PPP Task Force utilizes a mix of public-sector employees and professionals seconded from the private sector for a fixed number of years
- The South Africa National Treasury PPP unit carries out much of its own technical work in-house, but hires some specialist consultants for short-term contracts
- IIFC in Bangladesh makes extensive use of local consultants. A small team of permanent staff manage the team of consultants
- Australia's Partnerships Victoria engages contractors to do some of the policy and technical work (such as legal drafting). Much of the project-specific work is done internally, however, with one or two officers from Partnerships Victoria involved in each project. If consultants are hired they are typically hired as outside consultants for 6-12 months, working from their own offices and not as internal staff
- Portugal's Parpública uses outside consultants only when they have a specific engineering question they need to consider
- Korea's PIMAC tries to do as much of the work in-house as possible, with at least 2 PICKO staff assigned to each project.

Source: Castalia

5.2.2 Market failure

High transaction costs

Where each PPP transaction is a highly customized arrangement, and each is considered on an *ad hoc* basis, the transaction costs are likely to be high. If standard legal and procedural structures can be developed, transactions costs would fall. A good test is whether relatively unskilled and inexperienced people within line ministries can easily replicate solutions that have been implemented elsewhere.

One obvious step in cutting transactions costs is preparation of standard "off the shelf" legal documents and operations manuals (for example, a key role of the South African PPP unit is to develop documents and manuals for use by contracting agencies). In addition, the process for taking an individual project through all the necessary

applications and approvals needs to be carefully thought through to avoid unnecessary duplications, delays and multiple authorities.

Successful PPP projects require checks and balances, and hence involvement of various organizations. However, checks and balances inevitably increase transactions cost. A PPP unit may provide the right balance between the need to minimize transactions costs, and the need to deal with the complexity of each PPP transaction.

Lack of information

Finally, investors may not have adequate information about the opportunities available in a particular country, or may have misperceptions about the risks involved. A PPP unit could improve the flow of information both by being focused on the need to promote PPP opportunities in a way that no other government agency would be. A PPP unit may even become a recognized “brand”, so that information from this unit would be seen as being reliable and valuable. For example, although Partnerships Victoria and Parpública are both units within Treasury departments, their corporate-style branding improves the flow of information to the private sector on a government-as-a-whole basis.

5.3 The international experience with PPPUs

Increasingly, PPPUs are being established in governments which are serious about developing infrastructure and ensuring there are proper evaluation and procurement processes in place for the benefit of both the public sector owner/regulator, and the private sector contractor which builds, maintains and/or operates the infrastructure asset.

They are a way to organize and establish clear procedures for public sector organisations which have the responsibility for creating infrastructure. They are also an important way of minimizing the opportunity for corruption in procurement and operation, and for self-dealing by private sector partners. Basic rules – such as competitive tendering – can be established for all parties to follow, to ensure value for money and proper monitoring processes are part of the PPP/PSP landscape.

Specifically, PPP Units can:

- Provide a pool of skilled persons, specializing in matters relating to PPP policy-making and implementation
- Help the Government to control how and why PPPs are chosen, by forestalling attempts to shift spending off-budget, for example, thereby ensuring implementation is consistent with strategy
- Develop commercially viable PPPs in sectors which may be perceived as loss-makers by crafting policy in conjunction with the Government on subsidies and guarantees; and
- Be a point of contact for unsolicited private offers.

To understand the institutional features of various PPP units, it is important to clearly delineate the functions of the unit relative to the overall set of government functions and tasks which need to be performed with respect to PPPs.

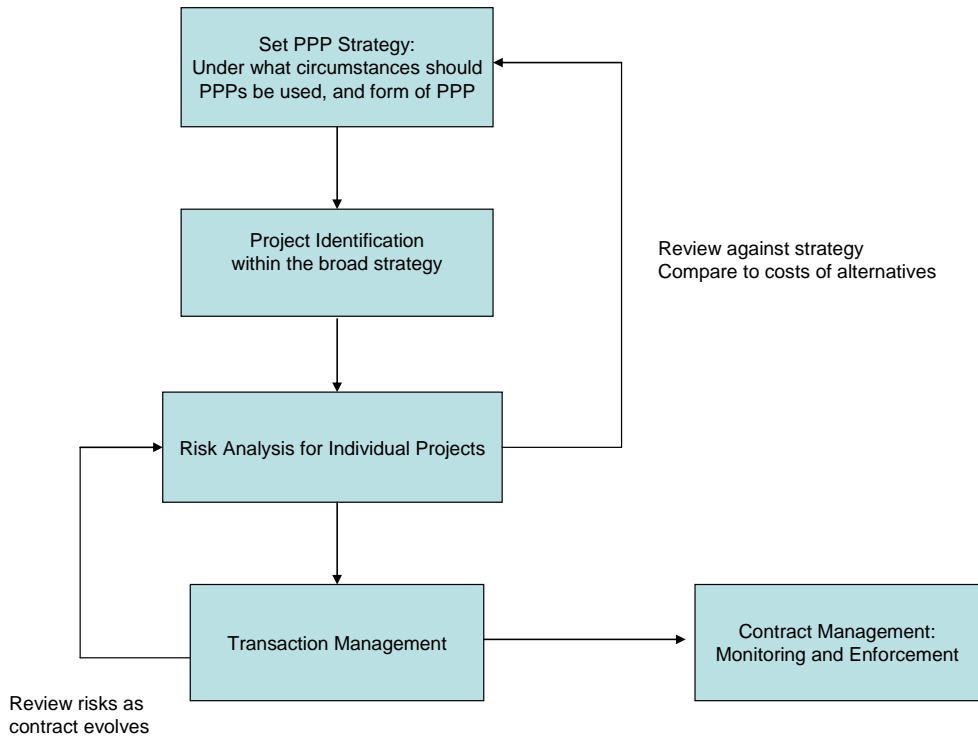
Figure 5.1 summarizes the main functions which must be performed. This provides a framework for thinking about what PPP units should do. The main functions are:

- The government needs to decide under what circumstances it would undertake PPPs to deliver public services, rather than delivering them directly. For example, in some countries, governments prefer to use PPPs where the service can be provided on a cost-recovery basis, but provide services directly when they are paid for by tax-payers, rather than customers. In other cases,

PPPs are used regardless of the form of payment, but are used for particular types of project, such as airports and major highways. In all cases, the government needs to decide what sorts of risks it wishes to take, and what sorts of risks are best carried by private service providers. Governments also need to control their overall exposure to risk, to ensure that the PPP program fits within the overall fiscal strategy

- Within the broad strategy, the government needs to identify suitable projects. This involves careful interaction between the government's sectoral and service priorities, and the commercial attractiveness of deals for the private sector. The government needs to ensure that the PPP projects are prioritized in a manner consistent with its policy objectives. At the same time, to ensure the success of PPPs, it is important that the deals be commercially viable and sustainable. In some cases, commercially attractive projects may represent a relatively low priority for the government
- Given the inter-play between policy and commercial interest in project selection, projects may originate from within the government or may come from private proponents. In both cases, the government needs to have a process for identifying the appropriate projects
- Having selected a project at a policy level, the government needs to analyze it in sufficient detail to fully understand the risks involved, and the kind of risk transfer appropriate under the PPP. High quality technical and financial due diligence on projects is a key pre-condition for achieving successful, sustainable PPPs
- Once the particular project is fully developed, the transaction needs to be managed. This typically involves the preparation of project documentation which faithfully reflects the intended risk allocation within the transaction, as well a competitive tender process to ensure the best deal for the tax-payer
- Finally, the contract or arrangement needs to be monitored and enforced on the on-going basis.

Figure 5.1: Summary of Government functions in making PPPUs work



Source: Castalia

Clearly, this taxonomy of functions can be broken down into even more detail. The key point we wish to make is that the central PPP unit may perform all or some of these functions. The decision about the specific functions which are allocated to the PPP unit will depend on:

- The functions allocated to other government agencies
- The ability of the government to coordinate the performance of different functions by different agencies within its overall machinery of government.

5.3.1 Countries which have PPPUs and PPP legislation

The following table shows the extensive use of PPPUs now applying.

Table 5.1: Summary of PPP institutional and legislative developments by country

Country	PPP Unit?	PPP Law?
Australia	▲ ▲ ▲	■ ■ ■
Austria	▲ ▲ ▲	-
Bangladesh	▲ ▲ ▲	■ ■
Brazil	▲	■ ■ ■
Czech Republic	▲ ▲	■ ■
Denmark	▲ ▲	-
Finland	-	■
France	▲	■ ■ ■
Germany	▲ ▲	■ ■
Greece	▲	■ ■
Hungary	▲ ▲	■
Ireland	▲ ▲ ▲	■ ■ ■
India (Gujarat)	▲ ▲ ▲	■ ■ ■
Italy	▲ ▲	■
Jamaica	-	-
Japan	▲ ▲ ▲	■ ■ ■
Korea	▲ ▲ ▲	■ ■ ■
Latvia	▲ ▲	■
Malta	▲	-
Netherlands	▲ ▲ ▲	-
Philippines	▲ ▲ ▲	■ ■ ■
Poland	▲ ▲	■ ■
Portugal	▲ ▲	■ ■ ■
Singapore	▲ ▲	-
South Africa	▲ ▲ ▲	■ ■ ■
South Korea	▲ ▲ ▲	■ ■ ■
Sri Lanka	▲ ▲ ▲	■ ■ ■
Tanzania	▲	-
Uganda	▲ ▲	■ ■
United Kingdom	▲ ▲ ▲	-
USA	▲ ▲ ▲	■ ■
Legend:	▲	Need for PPP unit identified and some action taken
	▲ ▲	PPP unit in progress (or existing but in a purely consultative capacity)
	▲ ▲ ▲	PPP unit existing (actively involved in PPP promotion)
	■	Legislation being proposed
	■ ■	Comprehensive legislation being drafted/some sector specific legislation in place
	+ ■ ■ ■	Comprehensive legislation in place

Source: *Delivering the PPP Promise*. Price Waterhouse Coopers, updated and countries added by the World Bank and Castalia

5.4 Lessons for designing an effective PPPU

There is no ready-made template for PPP units which can be easily replicated in different countries. While there are numerous institutional variations, there do not seem to be strong relationships between design features and the performance of the units.

The main reason for this appears to be the subtle and varied nature of government and market failures which these units are intended to achieve. PPP units are more successful when they target the main causes of government and market failure in each country. They are also more successful when the functions they perform with respect to PPPs fit well with the functions of other relevant government agencies in those countries. This is particularly true for Sudan where the institutional capability of different government agencies varies greatly. While the failures which needed to be targeted, and the functional fit would vary from country to country, these two considerations qualify as design principles:

- Need to target specific government and market failures
- Need to ensure functional fit.

How the PPP units fit into the overall functions associated with the PPP transactions is critical. It appears that PPP units are most effective when they are seen by line ministries as advisory bodies (not as adversarial regulatory bodies) to whom they can look for assistance in project development, *but* in order for this to work they must be backed by a project development pipeline with clear checkpoints that allow for oversight by some entity with 1) executive power and 2) oversight of the full range of the government's fiscal and economic activities. Most agencies have a "strong advisory" role but not outright executive power. PPP transactions can usually happen without their involvement, or against their recommendation, but not often.

Within these guiding principles, we considered a number of hypotheses which are often advanced in relation to PPP units:

- PPP units are most effective if located in finance ministries
- Possible success factors include:
 - Avoiding multiple agencies with overlapping responsibilities
 - Broader economic and fiscal reforms consistent with PPP
 - Integration of various kinds of PSP (*greenfield & brownfield, privatization & more limited risk sharing with private sector*)
 - Accommodate sub-sovereign interests
 - Utilization of outside expertise
 - Standardized procedures and templates
 - Ability to offer project development funding.
- There should be a "bright line" between being a public body and fee-for-service advisory
- PPP unit intervention is needed at many stages of the transaction.

We address these hypotheses in the subsections that follow through a broader discussion of:

- Where the PPP unit should be located
- Integration of various forms of PSP and integration with broader policy

- Separating public and private sectors
- Sub-sovereign interests.

5.5 Where the PPP Unit should be located

Should a PPPU be located within the Ministry of Finance? While integration with the fiscal policy is critical, location within the Finance Ministry does not appear to be a necessary condition to achieve a good outcome for PPP. This issue is a matter of some contention in Sudan, but the question of location of the PPPU should not derogate from the importance of establishing Units somewhere in the two governments.

The international evidence suggests instead that a well-designed PPP unit may be located within any agency that has a full view of the range of the government's fiscal and economic activities, and has incentives to serve the general interests of the fiscal objectives of government²⁶:

- One clear prescription about the location of PPP units does emerge from the evidence. ***PPP units should generally not be located in line ministries with their own sector-specific PPP agenda.*** For example, some responsibility for PPP in South Korea resided with the Ministry of Construction and Transport before being consolidated under KDI, an independent institute. Nor should the contracts be let by line ministries (or state enterprises) without final sign off by an economic or finance ministry
- Policy, project development, financing, and contract monitoring need not all be located in a single centralized unit, ***so long as the lines of responsibility are clear.*** For example: the São Paulo Partnerships Company (CPP) is a state owned corporation, and the Oversight Board is inter-ministerial. São Paulo's PPP program is relatively new, but the UK also offers an example of how responsibility for PPPs can be shared. The UK now has separate PPP policy (as part of Treasury) and project development (e.g. Partnerships UK) agencies. The individual line ministries also typically have their own project development teams
- Making the lines of responsibility clear is likely to be a difficult task. Brazil has done this via statute, with federal, state, and municipal PPP laws that attempt to clearly delineate responsibility for public involvement in private enterprises (where PPP is a legally defined subset of such involvement and privatizations and certain types of concessions are handled by separate agencies). Based on our work on PPP units, we recommend splitting responsibilities for PPP as little as possible unless:
 - Policymakers have great confidence that the lines of responsibility can be clearly delineated by statute and there is capacity in ministries to give the legislation effect. Brazil's PPP program is new relative to many other of the countries surveyed. The delineation of responsibility may or may not stand the test of time
 - The PPP program is already very well developed, as in the UK, and the need to split responsibilities evolves from an existing PPP program.

²⁶ São Paulo State PPP unit, for example, is located within The Ministry of Economy and Planning.

5.6 Integration of various forms of PSP and integration with broader policy

As the preceding discussion suggests, *function* matters more than *location* in designing PPP units. We do not believe that the principal issue is where the PPP unit is located, but we do believe it matters which agencies have final approval of the PPP process. The Ministry of Finance or Treasury, as the agency with responsibility for oversight of budgets, should have final veto power over PPP projects at several clear points along the project development pipeline. In the UK, South Africa, and Korea, for example, Finance Ministry approval is required at several stages, the last being after negotiations but prior to contract signature. This can be an important step in minimizing the opportunity for self-dealing or corruption as well.

PPPs should be, as they are in many of the countries we surveyed, part of the annual budgeting process. There is a growing recognition among many policymakers that a PPP does not move investments off the public balance sheet, and that the gains in terms of VFM or efficiency are secondary to the benefits of transferring certain risks to the private operator.

Given the length of most PPP contracts, there is some recognition that consideration of PPPs would be best if integrated into multi-year budgeting. Since few governments use multi-year forward budgeting, there needs to be some additional process for estimating contingent liabilities, and managing the total volume of liabilities over the medium term.

Finally, it also makes sense to integrate the PPP procurement process into broader government procurement. We see examples of this working both ways. Singapore has made PPP procurement a part of its broader procurement program while Portugal's PPP unit has been asked to apply principles of PPP procurement to other types of government procurement.

5.6.1 Separating Public and Private Sectors

The case studies suggest that it is best to maintain the bright line between the public and private sector. The PPP unit should not be allowed to “play for both teams” – in other words, to act for both parties (i.e. client and contractor/service provider). Care needs to be taken to ensure that PPP units are not “leaky”, using public funds but with incentives to act as private sector entities, or on behalf of private sector entities. Bangladesh's IIFC, for example, has considered the possibility of charging fees to line ministry clients as well as selling its services to private sector clients, though the unit's operating costs are shared by the Government of Bangladesh and donors.

Designers of PPP units must put some thought into institutional design issues related to financing, salaries, staffing and use of consultants. Two countries offer what we consider to be relatively good examples of how a PPP unit can formally serve both the public and private sectors with some success:

Partnerships UK offers some guidance on design in this case. Partnerships UK charges fees to the public sector but is self-financing (receives no government subsidies). Any profits received are reinvested in Partnerships UK. The organization is able to attract talent by offering competitive salaries and moderate bonuses.

South Korea's PIMAC offers another example that seems to have worked thus far, in a market without an abundance of available private sector expertise in PPP. PIMAC charges fees to its public sector clients which cover only project-specific expenses, not labour. PIMAC also actively serves the private sector sponsors, coordinating with relevant public agencies to make sure the necessary approvals and permits are in place for a project to move forward.

Most other PPP units we studied offer some *ad hoc* support to the private sector but not on a fee-for-service basis. More formalized fee for service arrangements can be difficult to implement and deserve a great deal of thought and caution.

The PPP unit is often most valuable as a centre for consolidating scarce expertise. Sector expertise is typically not lacking in developing countries, but project finance expertise, procurement expertise, and expertise in thinking like a large private sector firm (the profile of private partners) typically *is* lacking. This argues for a multidisciplinary team where sector-specific or government expertise is less important than PPP experience in general, or at least private sector experience, and sound commercial instincts. Specialist project development expertise (civil engineers, for example) and sector-specific expertise can be contracted as needed.

Specifically in developing countries, where private sector consulting capacity and project finance experience is limited, there is a risk of:

- Fee rates being too high, which could put the PPP unit in the position of becoming a sort of monopoly service provider
- Fee rates being too low, which could discourages the development of relevant expertise in the private sector.

Moreover, our surveys have shown that PPP units are not substitutes for transaction advisors. Even where a strong PPP unit exists, line ministries need their own transaction teams, whether they are in-house (as is increasingly the case in the UK) or hired hands. As part of integrating PPP policy with overall fiscal policy, line ministries should be required to budget for technical support needs in connection with PPP project development.

Giving the line ministries significant project development responsibility means that a PPP unit can have a small, agile, team. The Philippines BOT Centre is an example of a large, expensive PPP unit that has not been terribly effective.

Finally, our surveys revealed that much thought needs to be given to the PPP Unit's roles in monitoring and enforcement. The question is: should the PPP Unit undertake monitoring and enforcement itself, or should it simply prescribe rules for the line ministries to follow? What should be its role in contract renegotiation? Most of these questions have been answered *ad hoc* thus far by most PPP units.

5.6.2 Sub-National Interests

An important final question is whether PPP units should accommodate sub-national interests. The picture is mixed. The larger countries we surveyed (Brazil, India, and Australia) had decentralized PPP units, with separate state, federal and sometimes municipal entities.

The responsibilities of the PPP unit will (and should) likely correlate with the state or municipalities' dependence on federal funding. If most funding comes from the federal level, then it makes the most sense for the federal government to want to control what PPP activity is undertaken with those funds.

In many countries we surveyed (for example, in Brazil, Korea, and the UK), the project value often determines jurisdiction.

5.7 Recommendations for Sudan on PPU

Based on the findings of the work we have undertaken above, and reviewing Sudan's particular circumstances, [we therefore strongly recommend that the GoSS and the NGU establish PPP Units in key departments – possibly the Ministries of Finance – to manage](#)

and promote the use of private-public partnerships in developing infrastructure in the North and the South.

Nevertheless, we accept that the international experience suggests that another appropriately resourced and motivated agency could be the repository organisation. In the North this could be the Ministry of Investment.

In the South, the problem is that no other ministry has a sufficiently wide brief or skills capability to manage PPPs across the various infrastructure sectors and the Ministry of Finance is the obvious place, at least in the meantime.

The units will need to liaise closely with other government and private sector agencies to establish processes, and promote the role of the private sector. *If the NGU decides to site the PPU in the Ministry of Finance, we recommend the Ministry of Investment should have representation on, and even staff seconded to, the PPPU to channel investment opportunities to the private sector.*

6 The private sector in Sudan

Much of the discussion so far in this report has focussed on the policy and institutional factors needed for government to rectify and develop. The related administrative barriers project undertaken by the Foreign Investment Advisory Services (FIAS) team from the World Bank has identified institutional and business environment impediments to attracting foreign business to Sudan, as well making the business environment for Sudanese companies easier to growth.

Even if the government were to undertake and implement the recommendations of the two reports, the question arises whether the Sudanese private sector is equipped to capitalize on the new environment, and play a major role in marshalling the capital and human capacity needed to rebuild and expand Sudan's infrastructure.

Both the NG and the GoSS have active policy programmes to encourage the involvement of the private sector in Sudan's future growth. Indeed, the declared government policy of PS involvement in infrastructure is much more positive than is found in many more developed Western countries²⁷. The sale of government assets and privatisation is actively promoted, and new infrastructure service provision is to be undertaken very largely by the private sector. Furthermore, these policies are supported in a concrete way by institutions of the state – such as the Ministry of Investment which actively encourages foreign and domestic PS investment and ownership – and by specific programmes²⁸.

6.1 Sudanese private sector capacity

Although the government and state enterprise sector is large in Sudan, especially in the provision of large scale infrastructure services, there is a vibrant enterprise sector in private hands throughout the country.

However, it is built largely around family oriented businesses operating in the service (especially transport) and small scale manufacturing sectors. There are relatively few large scale, widely spread ownership companies with strong balance sheets capable of marshalling significant equity or debt to expand. The undeveloped banking sector and capital markets in Sudan do not make it easy for family owned businesses to

²⁷ e.g. New Zealand and Australia.

²⁸ Such as the Sudan Development Programme (www.sudandevdevelopmentprogram.org).

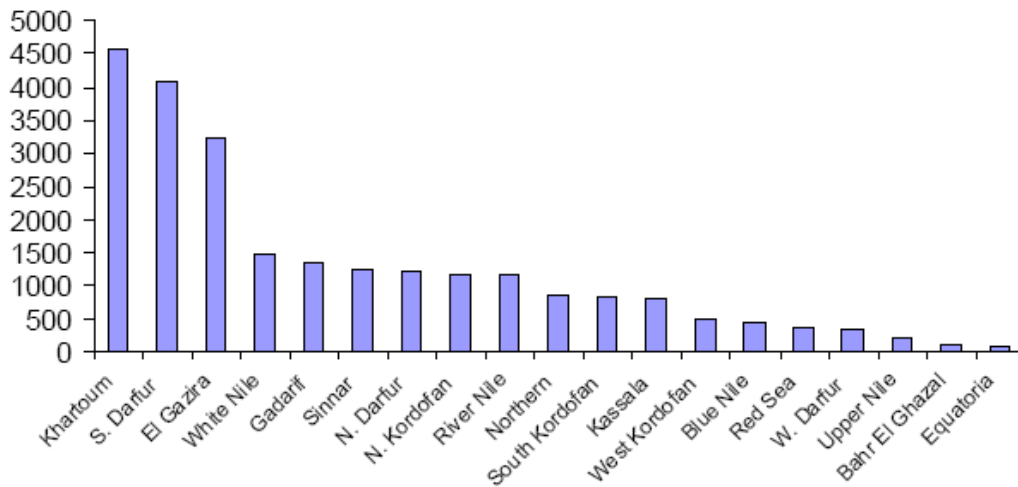
metamorphose into widely held stock companies, a structure of business that is needed for major and expensive infrastructure development.

6.1.1 Scale of private sector

Some idea of the problem facing the private sector in Sudan – and therefore the Government which wants to encourage PS involvement – can be gauged from the next two charts.

Figure 6.1 shows the uneven distribution of manufacturing businesses throughout Sudan. This reflects population distribution of course, but as infrastructure is needed throughout the country, if the private sector is to play an active role, strength and size is important at local as well as at major conurbation level.

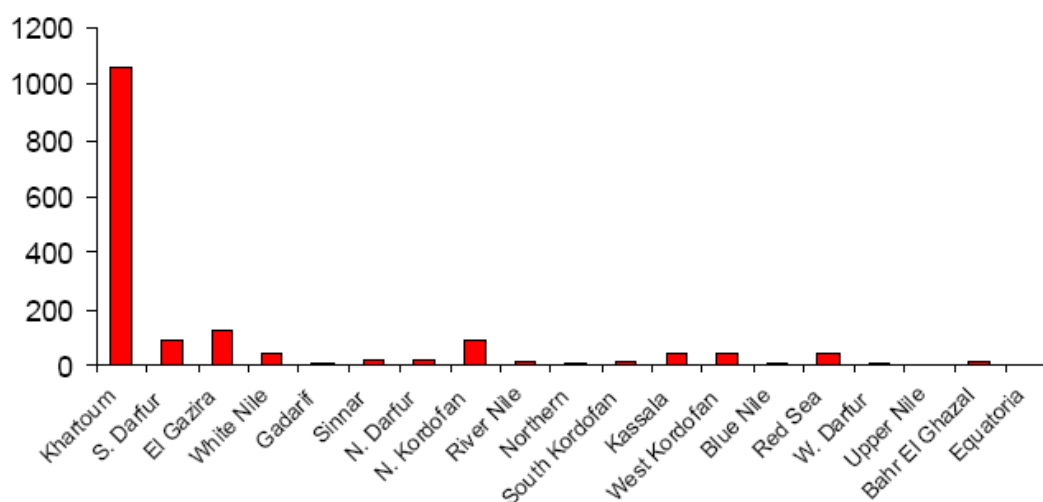
Figure 6.1: Manufacturing establishments in Sudan, by state



Source: Industrial Survey 2003

The degree of concentration is even more apparent if the size of manufacturing establishments is charted. Figure 6.2 shows that most of the industrial activity is concentrated in Khartoum, with few centres of significant manufacturing throughout the rest of Sudan.

Figure 6.2: Large manufacturing establishments in Sudan, by state



Source: Industrial Survey 2003

It is beyond the scope of this report to develop a full programme to build the capacity levels of the private sector in Sudan²⁹, but we have some observations which are relevant to the promotion of PPP/PPI in infrastructure.

The well-developed proposals to establish the Private Sector Forum are an important part of widening and deepening the dialogue between the Government and private sectors in Sudan. It is potentially a useful vehicle on which to graft other initiatives to build the capacity of the Sudanese private sector, such as we outline in the next section of this report.

6.2 Some key capacity building issues for the private sector to address

We recommend that the Sudanese Businessmen and Employment Federation (SBEF), and the Sudanese Chambers of Industries Association (SCIA) in the North, and the South Sudan Chamber of Commerce Industry and Agriculture (SSCCIA) in the South, as three of the key private sector organisations, should implement or commence the following capacity building tasks to complement the work of the Governments in expanding opportunities for the private sector in infrastructure development:

- Review, with universities and technical schools, the adequacy of management courses for training managers, and implement a programme of reform through the Forum with Government assistance as appropriate
- Review, with assistance from the international body of the Institute of Directors (IoD)³⁰, the adequacy of governance education for company directors and senior level management, and seek assistance from the IoD to

²⁹ To do so would involve, amongst other things, a complete review of the banking and capital market sectors (to remove the barriers to consolidation and growth from family based business to joint stock companies), a “business cultural” review to see if there are impediments to the growth of joint stock companies, a review of the tax and labour market policies, a stock take of the management and technical education capabilities of universities in Sudan, and specific assessments of how to build capacity in the business sector.

³⁰ IoD International, based in London at www.iod.com.

establish appropriate courses and an organisation in Sudan to establish good governance practices in Sudanese businesses. Sudanese universities could be encouraged to partner with overseas universities and invite them to establish business management and technical courses in Sudan to rapidly promote new knowledge

- Establish a joint government-private sector commission of inquiry into the barriers in the banking and finance sectors, and in the capital markets, to the growth of larger private sector business entities in Sudan, and request actionable recommendations to address these barriers
- Investigate, develop and implement a policy where Sudanese private sector companies partner with foreign investors in infrastructure service delivery contracts, to ensure technical knowledge and management skills can be passed to domestic personnel. The policy should have the following characteristics:
 - *It is not an agency relationship, where a foreign investor is required to have a local partner in order to secure a contract: this all too often simply becomes a tolling operation where no technical or management knowledge is learned or transferred*
 - *The Sudanese company would have to provide personnel to “partner” with the foreign company service provider as part of a technical assistance programme agreed before the head contract was signed. In return the Sudanese company – or the foreign contractor – would receive a grant or other form of government assistance (perhaps financed from the revenue flow of the infrastructure asset) against agreed outcomes*
 - *The Private Sector Forum, with assistance from the Ministry of Investment, could pre-endorse Sudanese companies to become part of this capacity building programme*
 - *The business management faculties of the universities should be closely involved in the programme ex-post to ensure the lessons learned by individual Sudanese companies can be passed more widely to the business community and to students.*
 - *The business organisations (SCLA, SBEP, SSCCLA) should also be encouraged with initial government assistance, to conduct extension programmes to Sudanese businesses to pass on the experiences and knowledge gained by the companies which are part of the programme.*
- The Forum should investigate establishing a post-graduate Higher Business Education Trust, with shared funding, to provide grants and scholarships to suitable business graduates to proceed to Masters and PhD level courses, both in Sudan and at overseas universities
- The business organisations should review their organisational and representational structures, with a view to encouraging wider membership by offering high quality technical training courses, and effective policy development lobbying machinery for resolving business sector problems through the Private Sector Forum:
 - *The business organisations could seek assistance to achieve this from business organisations such as the British CBI³¹*
 - *Alternatively, the World Bank may be able to offer assistance through the PPIAF³².*

³¹ The Confederation of British Industry www.cbi.org.uk

³² Public Private Infrastructure Advisory Facility www.ppiaf.org

7 Country risk issues for Sudan

In Table 7.1 below, we list a number of important risks to private investors that exist in all countries. We also recommend specific actions that the NGU and the GoSS can take to deal with these factors.

In previous sections, we have dealt with risk in a specific analytical framework. We have also suggested ways for Governments to share risk and manage risk within this framework. Risk management in this context has been in order to facilitate successful PPPs.

Here we have a more comprehensive list of specific recommendations and suggestions for the NGU and GoSS to reduce risks for investors in general, and infrastructure investors in particular, outside of the risk management mechanisms discussed previously.

Some of these suggestions involve policy shifts. We are aware that other factors will influence how risk is dealt with. Bearing that in mind, our recommendations nonetheless suggest policy directions to the Governments.

Table 7.1: Country risk factors: general and specific to Sudan

Description of Standardized Types of Risk	Risk Abatement Measures Specific to Sudan
<u>Political</u>	
Government may not be perceived as stable.	Implementation of the CPA. Prompt implementation of processes in both interim constitutions. (Re)join international organizations and agreements.
Government may not be democratic and/or is not perceived to be accountable to constitutional mechanisms.	Implementation of the CPA. Prompt implementation of processes in both interim constitutions, particularly relating to elections. Ensure development of Parliamentary processes to establish Government accountability. Establish effective and independent (of Government) Auditor General and Ombudsman offices supported by legislation and an independent Judiciary.
War or Civil strife may disrupt business and/or destroy assets.	Implementation of the CPA. Prompt implementation of processes in both interim constitutions. Cooperation, where possible between North and South on infrastructure development. Promote bilateral and multilateral political risk insurance, from MIGA and IFC, for example.
<u>Regulatory</u>	
Regulation is not well specified, and regulators are not independent and are subject to political authority.	Ensure regulatory bodies are removed from direct control of Ministers, and law establishing the regulatory roles and framework are clear for the regulators and the regulated.
Governments may use PPPs for the wrong reasons, resulting in misaligned private and public interests.	Create PPP Units to develop and manage Government risk management policy and to monitor contractual obligations.
There are many layers of supervision and it is unclear which body has final authority on regulatory matters.	Simply legislation governing each sector. Draw clear lines of responsibility and reduce the layers of supervisors/regulators involved in each sector.

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Description of Standardized Types of Risk	Risk Abatement Measures Specific to Sudan
Regulations are complex and their meanings are unclear.	Reduce regulation to absolute minimum necessary to protect genuine public interest (e.g. public safety, environmental protect, monopoly control). Regulatory rules and processes should be clear and certain to promote investment in industries where networks are minimal or nonexistent. Simplify regulations generally and focus on mandating performance using contracts.
Regulation may be unformulated and institutions may not exist creating the possibility of major changes in the regulatory environment in the future.	Avoid creating regulatory bodies for every sector in the South. Mandate performance through contracts and keep additional legislation to a minimum. Use PPP Units to monitor contract performance.
<u>Commercial</u>	
Customers have limited ability to pay tariffs at full cost-recovery rates.	Provide explicit subsidies, if tariffs are to be regulated at below full cost-recovery levels. Determine subsidy levels as part of transaction processes involving PPPs.
Central Government and/or quasi-Government agencies may become delinquent customers.	Guarantee payments for quasi-Government agencies and consider legislation placing all Government payments to infrastructure companies on the same level of importance as other debts, which get paid before recurrent expenditure in the event of a cash crisis.
Collection may be difficult particularly if customers are armed.	Governments should not require service to areas where private operators cannot collect revenues with reasonable effort. If service is a priority, Government should pay for the service directly, through an explicit subsidy
<u>Economic/Policy Environment</u>	
Local Currency may be unstable and inflation may be high.	Governments should pursue sound fiscal policy and make monetary policy independent of central Government control.
Tax rates may be variable or uncertain.	Policy makers should avoid setting "special" or retroactive taxes and the like, which may be perceived as having an element of property seizure. Simple, certain taxes will attract investment rather than uncertain, arbitrary and high taxes.
Foreign companies may have difficulty repatriating profits and dividends.	The ability to repatriate profits and dividends should be clearly allowed in contracts and where possible other legislation should indicate that this activity is not restrained.

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Description of Standardized Types of Risk	Risk Abatement Measures Specific to Sudan
Land rights may not be established or have a clear framework for settlement.	Government should allow long term leases where ownership is not possible. Legislation should be considered which allows for ownership in most areas and creates enabling institutions to issue and track documentation to that effect.
Legal environment may not be independent or may be corrupt.	Implementation of CPA and the interim constitutions, with particular attention to the independence of the judiciary.

Source: Castalia

8 The role of donor and aid agencies

The Sudanese economy has faced a very difficult financial situation over many years, and has very high debt levels constraining normal sources of international financing. Therefore developmental and humanitarian aid has been a critical part of Sudan's economic and political landscape. As we shall see in Section 8.2, the international aid community plays an important, and not always welcome, role in Sudan.

Notwithstanding the role aid agencies can play, they cannot meet the very large investment needs for infrastructure reconstruction and rebuilding. The funding gap is significant. This is sometimes frustrated by the policy of some national and international developmental agencies not to lend on investment projects because of moratoria in place when Sudan suspended repayment of loans some years ago.

8.1 The aid trap

We have mentioned some of the hazards involved in high aid flows which typically accompany the immediate cessation of hostilities. However, there is a more insidious danger to the client country: the risk that private enterprise will be crowded out by the manner in which aid flows are delivered.

The south and west of Sudan is currently the recipient of large amounts of food and humanitarian aid. This aid must by necessity be accompanied by small-scale infrastructure facilities to properly administer the delivery of the aid. The risk here (and indeed it is manifest in South Sudan) is that those entrepreneurs that are able and willing to take risks to provide such services will be unable to compete with GoSS and multi-lateral agencies, who are not restricted by the need to cover their costs of operation let alone earn a return on capital .

There is therefore an additional role for donors and GoSS in making sure that their efforts to help on the one hand are not undermining the nascent drivers of growth on the other. In the next section, we expand on the role of the donors and GoSS and how they may avoid doing harm to infrastructure development in the South.

8.2 The chequered history of development aid to Sudan

Foreign capital has played a major role in Sudan's development since independence in 1956. The great reliance on it and the general ease with which foreign aid and capital was acquired were major factors contributing to the country's severe financial problems after the mid-1970s. Sudan obtained public sector loans for development from a wide variety of international agencies and governments.

Until the mid-1970s, the largest single source of foreign capital had been the World Bank, including the International Development Association (IDA) and the International Finance Corporation (IFC). By 1975, the World Bank and its organs had funded US\$300 million in project aid. Excluding repayments, the outstanding amount had risen to US\$786 million by 1981, as major commitments for agriculture, transportation, and electric power projects were made. Most borrowing was made under concessional loans by the IDA, and by 1981, IDA borrowing accounted for more than US\$594 million of the outstanding total.

The Arabic oil-producing states also became significant suppliers of development capital through bilateral loans and Arab international institutions. The largest of the latter was the Arab Fund for Economic and Social Development (AFESD)³³ which proposed to develop Sudan as a breadbasket for the Arab world. The Arab Authority for Agricultural

³³ See www.arabfund.org for more detail.

Investment and Development (AAAID)³⁴ was established in Khartoum to manage the initiative and continues to do so. AAAID has significant equity holdings in a number of government- and privately-owned agricultural development companies in Sudan, as well as throughout the Arab world.

After the mid-1970s, Saudi Arabia, one of the founders of AAAID, became the largest source of investment capital having been convinced that Sudan's development could complement its own by making up Saudi Arabia's then large food deficits. Unfortunately, the ambitious plan for Sudan to become the Arab world's major food source had faded by the mid-1980s as agricultural production declined sharply.

In 1977, the United States resumed economic aid to Sudan. This aid followed a ten-year lapse beginning with a break in diplomatic relations between the two countries in 1967. In the five years between 1977 and 1981, US economic aid was almost US\$270 million, two-thirds of which was grant aid. By 1984 the United States suspended US\$194 million of aid, essentially for political reasons. After Sudan's failure to make repayments on loans, the United States discontinued development aid which had been administered by USAID. However, USAID did continue providing humanitarian relief assistance to distressed regions in Sudan and does so to this day.

Britain also made substantial aid contributions in the 1980s, notably US\$140 million to the Power III Project. In 1991, Britain suspended its development aid to Sudan (about US\$58 million in 1989) but continued humanitarian aid. This change was caused by a number of factors, including alleged terrorist activities by Sudanese agents against Sudanese expatriates in Britain.

In addition to Britain, France, West Germany, Norway and other countries, the EC provided significant economic and humanitarian aid to Sudan. Other major financial assistance came from Arab countries, especially from Saudi Arabia (then Sudan's largest importer) and Kuwait. By 1982, Sudan owed the Persian Gulf States US\$2 billion and aid from Arab states declined over the rest of the decade for a number of country risk and political reasons.

Sudan's support of Iraq in the 1991 Persian Gulf War alienated the Gulf States and Saudi Arabia. These countries sharply curtailed their economic aid to Khartoum. The increasingly close ties between Sudan and Iran in the early 1990s also concerned the Gulf States and Saudi Arabia. This was a further factor in their diminished financial aid to Sudan.

In 1991, the World Bank closed its Khartoum office. The decision resulted from the deteriorating relations between Sudan and international monetary bodies following cessation of debt repayment by Sudan to the World Bank and the IMF, and not for political reasons.

Amongst the communist countries, prior to the collapse of communist regimes in the Soviet Union and Eastern Europe, China had been the most important provider of development funds. By 1971, it had furnished loans equivalent to US\$82 million. An additional US\$300 million was reported to have been made available by 1981. Not surprisingly, Sudan was attracted to the interest free and long non-repayment terms. Economic cooperation with China continued into the 1980s, and the two countries have subsequently become major economic partners. China enjoys unequalled access to the recently discovered oil resources of Sudan.

³⁴ See www.aaaid.org for more detail.

8.3 Restricted room to move

There is little room for Sudan to undertake non-concessional borrowing because of its financial situation. This has caused tension in the past between the Government and some international financial bodies.

Nevertheless, some progress has been made over the last 2 years, as the signing of the CPA has created a more constructive environment for all parties. The NGU and GoSS have access to reasonable flows of investment funds from oil revenues and, with adequate transparency and accountability measures, aid agencies are beginning to consider development grants and lending for infrastructure investment again. The principal vehicles are the Multi-Donor Trust Funds (MDTF) we discuss below.

8.4 Multi-lateral and bi-lateral agencies operating in Sudan

Sudan has a considerable number of multi-lateral and bi-lateral aid agencies providing financial and technical assistance at present. Most organizations have been involved over many years, in spite of the significant security risks prior to the signing of the CPA in January 2005.

8.4.1 The Sudan Consortium

Following the signing of the CPA, an umbrella body called the Sudan Consortium was set up to ensure the CPA was implemented in line with the agreement, and to focus the international aid programs in the North and South. Sponsorship for the Consortium was provided by the World Bank, the IMF and the UN.

The first meeting was held in Paris in March 2005 with wide representation from the GNU, GoSS, multi- and bi-lateral agencies and NGOs. A further meeting in Paris was held in March 2006, where the key objectives were reaffirmed³⁵:

- To increase national and international funding for development purposes
- To increase transparency of the GNU and GoSS budgets and good governance.

Aid – both developmental and humanitarian – is essential to the Sudanese economy. The country has few degrees of freedom given the very high debt levels and considerable arrears to many international agencies and countries, both of which block off Sudan's access to concessional financing as we have seen above. Put this alongside very significant needs for infrastructure investment in water, transport, electricity, and to a lesser extent telecommunications, the GNU and GoSS have to be very strategic about prioritizing and funding investment.

Much of the work of setting out the recovery and reconstruction, and more latterly the infrastructure, needs of Sudan, has been undertaken by the Joint Assessment Mission (JAM). JAM was established in 2003, before the CPA was concluded, to assess these needs over the period 2003-2009. It has done so, and continues to work with both governments to update and prioritize the program. JAM also drives the work programs of the two Multi Donor Trust Funds.

8.4.2 Two MDTFs established

In April 2005, a donor conference was held in Oslo³⁶, subsequent to the first Sudan Consortium and the signing of the CPA. The product of the conference was the

³⁵ Presidential Statement issued at the Sudan Consortium March 20 2006.

³⁶ US\$4.5 billion was pledged at the Oslo Conference, of which US\$1.9 billion was for development assistance, and US\$2.6 billion was for direct delivery of humanitarian support.

establishment of two Multi Donor Trust Funds (MDTFs) to coordinate the activities of donors prepared to be part of the program.

One fund was established for the north (MDTF-N) and one for the south (MDTF-S). Initial pledges of US\$508 million were made by participating donors. The World Bank administers both funds in Khartoum and Juba.

We discuss the role of the MDTFs in 8.8 below.

8.4.3 Comprehensive aid agency involvement in Sudan

The map in Table 8.1 shows the comprehensiveness of UN agency presence in Sudan, with significant operations in most major states.

performing as effectively as possible the main tasks of a diverse plethora of humanitarian agencies. Unfortunately, it has also diverted attention away from building the infrastructure capacity of Sudan where the agencies have a presence which could then be used by the UN. In this way the UN framework would be more integrated into the life of the country, rather than operate as a supra-state within a state.

Consequently, the reconstruction and rebuilding of infrastructure is left to other multi-lateral aid agencies like the World Bank (which ironically has little involvement because of the moratorium on new lending), specialist development aid organizations and development banks, the MDTFs, and bi-lateral aid projects by donor countries. As important as these are, they are not large enough given the huge demands for investment in infrastructure.

8.5 Humanitarian aid flows

The World Food Program in Sudan is huge. It supplies only part of the total needs of the country, with the rest divided between other private and public bodies like OXFAM. The emergency food assistance (EFA) program operates throughout much of north and south Sudan, although most media and international attention is centered on Darfur.

Some 6.7 million people will require an estimated 800,000 tonnes of EFA in 2006³⁷. Some 2.1 million people are in Southern Sudan, consuming about 18 percent of total food requirements. There is uncertainty in these estimates, especially in the South where an expected 615,000 people displaced by the war are expected to return in 2006, on top of the 236,000 who returned in 2005.

WFP plans to mobilize and distribute 731,000 tonnes (91 percent) of this total with the rest shared amongst other agencies.

WFP prefers to purchase its EFA requirements locally. In 2004, it purchased over 100,000 tonnes, but in 2006 this is unlikely to be repeated for 2 reasons. First the 2005/06 local harvest³⁸ is unlikely to produce the surplus which occurred in 2003/04. Secondly, the Sudanese Strategic Reserve Corporation intends to purchase up to 500,000 tonnes of grain at prices well above world market prices, which makes it difficult for the WFP to justify local procurement.

The linkages between EFA and restoring the long term sustainability of the people of Sudan are now receiving attention from the humanitarian agencies. The box below sets out the attention being given to the wider issues than EFA alone.

For example, the WFP is engaged in a US\$80 million emergency road repairs program, including de-mining, in South Sudan to provide access to EFA regions, and which are expensive to supply by air. The WFP program is partly funded by a US\$30 million EU grant through the World Bank (yet to be received), with no provision for the shortfall yet identified³⁹.

The real question for both the Sudanese authorities, and the UN who operate within Sudan, is whether sufficient is being done to engage local Sudanese businesses in the provision of ancillary services to the UN's humanitarian operations, and whether the UN could or should do more using PPP to help contribute to the long term infrastructure

³⁷ Sudan Annual Needs Assessment Report 2006: Food Security Report, compiled by WFP, FAO, NGOs, NGU, GoSS as at February 2006

³⁸ Aggregate cereal production in Sudan is estimated at 5.46 m tonnes, about 59 percent higher than in 2004/05, and 17 percent higher than the average of the last 5 years.

³⁹ GoSS Ministry of Transport and Roads: statement to the Sudan Consortium meeting in Paris, March 2006.

needs of the country and which can coincidentally help make the UN's job easier. The WFP initiative is a good example of what can be done.

Box 8.1: The link between EFA and sustainable livelihoods

“For a number of years, emergency food aid has helped to save lives in Sudan. With the changing political environment – including the peace agreement – it is important that food assistance be delivered in a way that supports the resumption and restoration of livelihoods. *Food aid should be part of a coordinated set of broad sectoral interventions that address the root causes of food insecurity and other constraints including health, nutrition and education issues.*

To maximize the impact of food assistance, it should be used in conjunction with other non-food interventions designed to support the resumption of livelihoods. Such activities might include the distribution of agricultural inputs, agro-forestry, pasture rehabilitation, and the restocking of poultry and small ruminants. Recovery interventions aimed at restoring local agricultural production and sustainable farming systems - including livestock keeping – must be initiated immediately, allowing for a progressive reduction of the dependence on food aid as livelihoods are re-established.

Improvements in access to health and education services are critical part of the effort to develop sustainable and adaptable livelihoods. A healthy and well-educated population is better able to deal with the bumps in the road that they will inevitably face. Improvements in health and education services trailed only food, water and shelter among the priority needs listed by respondents to the ANA household survey.....

Investment in the development of infrastructure also has an enormous impact on the prospects for the development of sustainable livelihoods. Road repair interventions currently ongoing in the South are expected to improve livelihoods as well as the food security situation. They will facilitate trade, allowing households to market their surplus production and obtain the goods they need. They will also improve the access to services – and enhance the reach and efficiency of health and education facilities.”

Source: Quoted from p34 of Sudan Annual Needs Assessment Report 2006, WFP; Castalia *italics*.

8.6 Development aid and capital flows

Table 8.2 below lists the major international agencies involved in humanitarian and developmental aid in Sudan. At present the flow of international assistance is running at about US\$1.4 billion to US\$1.8 billion a year, at least in terms of pledges made for both humanitarian and development assistance⁴⁰.

⁴⁰ See Table 8.3 below.

Table 8.2: Major multi-lateral aid agencies operating in Sudan

Aid Agency	Major Aid Activities
World Bank	Manages MDTF facilities for North and South Sudan (see below). Has not been involved providing lending assistance since 1993, as Sudan is in significant arrears on past debt-servicing obligations, notwithstanding the recommencement of token payments by the GNU recently ⁴¹ . Sudan joined the Bank in 1957, and is a member of IDA. Neither the IFC nor MIGA has active programs at present.
UNDP (<i>largely humanitarian</i>)	A wide variety of UN agencies are active in Sudan including WFP, FAO, UNICEF, WHO, UNDP, UNHCR, UIFEM, UNESCO, OCHA, UNEP, DPKO, Habitat, and UNFPA. The UN agencies are part of a the Joint Assessment Monitoring Sudan (JAMS) in cooperation the World Bank, the Intergovernmental Authority on Development (IGAD), the GoSS and the SPLM. Infrastructure is one of the focus areas of JAM. In addition a significant number of GoSS complement the work of the UN humanitarian organizations.
World Food Program (<i>humanitarian</i>)	<p>In 2006, WFP plans to provide food assistance to over 6.5 million people in Sudan including Darfur, the South, East and Three Areas (Abyei, Blue Nile and South Kordofan).</p> <p>WFP's Emergency Food assistance to populations affected by conflict aims to save lives, improve and sustain the nutritional status of vulnerable populations and promotes peace building. The 2006 Emergency Operation, which is estimated to cost US\$746 million for the 2006, will feed 6.1 million people in Darfur, the South, Central, East and Three Areas.</p> <p>As transport within Sudan is poor, WFP is undertaking three different Special Operations to be able to operate:</p> <ul style="list-style-type: none"> ▪ Emergency road repairs and mine clearance at a cost of US\$183 million ▪ Logistic support of the Darfur operation at a cost of US\$63 million ▪ Humanitarian Air Services, essential not only for WFP but also for other UN agencies and humanitarian organizations working in Sudan at a cost of US\$27 million.
Multi-Donor Trust Funds (MDTF-S, MDTF-N) (<i>development assistance</i>)	<p>These funds were established at the April 2005 Oslo Conference, as part of Sudan's peace agreement. They are managed by the World Bank. Thus far US\$508 million in pledges have come from the countries attending the Conference (US\$484 million has been committed so far by Netherlands, Norway, the EC, United Kingdom, Sweden, Denmark, Finland, Iceland and Greece). The MDTF's launched their first two projects in January 2006. The projects include:</p> <ul style="list-style-type: none"> ▪ A <i>Technical Assistance Facility</i> (TAF), with grants of US\$5 million (with and additional US\$680,000 from the Government of National Unity), targeting war-affected areas of Northern Sudan. The TAF will "help

⁴¹ Starting in 2003, as prospects for peace began to emerge, the World Bank began formulating a strategy for re-engaging with Sudan after peace was established, and which was set out in the Sudan Country Re-engagement Note (CRN). The JAM programme is the product of the strategy.

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Aid Agency	Major Aid Activities
	<p>establish a facility within the Ministry of Finance and National Economy to strengthen central and state governments to formulate policies, programs, and projects emanating from the UN-World Bank Joint Assessment Mission (JAM) Framework for Sustained Peace, Development, and Poverty Eradication” (from the WB website)</p> <ul style="list-style-type: none"> ▪ A <i>Community Development Fund</i> (CDF) grant of US\$15 million (with an additional US\$10 million from the Government of National Unity). The CDF will “meet communities’ urgent recovery and development needs in the war-affected and underdeveloped areas of Southern Kordofan, North Kordofan, Blue Nile, and Kassala. The grants will support community-led projects providing social and economic services and infrastructure. The Community Development Fund (CDF) project will be delivered through partnerships with local governments, communities, GoSS and community-based organizations”.
Emerging Africa Infrastructure Fund (EAIF) <i>(development assistance)</i>	<p>Can provide subordinated or mezzanine debt, usually in tandem with a larger tranche of senior debt. Can also issue some currency guarantees to facilitate local currency lending. Loans are provided at commercial terms but EAIF is able to lend without political risk cover, can offer longer lending terms (up to 15 years) and is able to consider innovative repayment profiles that accommodate cash flows of underlying business. They are currently planning a water project for Khartoum (Khartoum State Water Company), which is awaiting the decision of EAIF business committee (subset of the credit committee, and made up of the 4 countries that run the fund).</p> <p>The business committee has, in the past, had concerns about reputational risk and previously turned down a proposal to build a power project in Sudan. As a result of this EAIF then declined to pursue a telecom (GSM) project in the country. The Khartoum project involves a BOOT for a water treatment plant as well as construction of some distribution infrastructure. The project will also have a component that focuses on technical losses (installation of computer sensors). The Khartoum State Water Company appears to be profitable. It has outsourced collections to women-run companies and collections are at 99%.</p>
International Foundation for African Development (IFAD) <i>(developmental assistance)</i>	<p>Activities provide loans targeting rainfall rural areas of Sudan where poverty tends to be most severe. Projects due include some basic infrastructure work (shown below). Currently 4 projects underway, in:</p> <ul style="list-style-type: none"> ▪ North Kordofan (total cost US\$23.7 million, loan amount US\$10.5 million): Promotion of natural resource management, training in agricultural/crop management, and creation of participatory financial institutions ▪ South Kordofan (total cost US\$39.6 million, loan amount US\$17.8 million): enhance incomes and productivity by providing community-based services and technical support; encourage equitable management of communal rangelands and farmland; establish community-run safe drinking water supplies and basic health-care facilities; create sustainable rural credit services; improve the rural road network; establish local and state institutions that can help rural communities improve their livelihoods; enable people in local communities to plan, manage their own development activities and resolve group conflicts ▪ Gash (total cost US\$39 million, loan amount US\$24.9 million): Rehabilitate the flood irrigation scheme to

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Aid Agency	Major Aid Activities
	<p>increase availability of cultivable land; improve forestry production and livestock productivity; refurbish existing water facilities to increase access of local communities to safe water; improve outreach of rural financial services to small tenant farmers and herders, landless people and women; help institutions support improved management of local resources</p> <ul style="list-style-type: none"> ▪ Western Sudan (total cost US\$49 million, loan amount US\$25.5 million): A resources management program focused on The program focused on the importance of appropriate natural resource management in resolving land and water-based conflicts; establishing land rights for herders and for traditional and mechanized farming, improving access to water, and providing or strengthening basic infrastructure
<p>Arab Fund for Economic and Social Development (AFESD) <i>(developmental assistance)</i></p>	<p>Lends for project aid in Arab states, and finances private sector projects as well. In 2004, the Fund made loans of US\$129 million: US\$99 million for the construction of the Meroewe Hydro Electric Dam, and US\$30 million for reconstruction of the Gadaref-Doka0Gallabat Road. Total disbursements of US\$826 million in 2004. Has disbursed US\$9.8 billion in loans since it was set up in 1968.</p>
<p>Arab Authority for Agricultural Investment and Development (AAAID) <i>(developmental and private sector equity and loan assistance)</i></p>	<p>Established 1976 in Sudan, with shareholding from most (19) Arab states. Paid up capital US\$340 million. Major objective is to fund development of agricultural resources of member states, and maximize food production. Has invested \$US237 million in equity capital injections to Arab country companies, and has an outstanding loan portfolio of US\$180 million in Sudan has shareholding in Kenana Sugar Co, Arab Sudanese Vegetable Oil Co, Arab Sudanese Blue Nile Agricultural Co, Arab Co for Agricultural Production and Processing Co, Arab Sudanese Seed Co, Arab Company for Crop Production Co, Arab Poultry Production and Processing Co, and the White Nile Sugar Co..</p>
<p>African Development Bank</p>	<p>At present, no aid or lending activity because of the moratorium on concessional development lending.</p>
<p>Intergovernmental Authority on Development (IGAD)</p>	<p>Comprised of seven Eastern African countries of Djibouti, Eritrea, Ethiopia, Kenya, Somalia and Uganda. A coordinating, rather than an aid funding, body.</p>
<p>OPEC Fund for International Development <i>(developmental assistance)</i></p>	<p>Has loaned roughly US\$150 million (concessionary loans) to Sudan for Agriculture & agro-industry sectors, energy, and transport. The Fund does also, in general, participate in the financing of private sector activities, sometimes extending loans and sometimes taking an equity stake. They have provided some assistance to a large (private) sugar company, as well as to a commercial bank and Telecom company. Other projects have been in irrigation and electricity.</p>
<p>Islamic Development Bank (IDB) <i>(humanitarian)</i></p>	<p>No apparent activity.</p>

Source: UN, World Bank, national aid agencies and Castalia

Table 8.3 sets out the extent of pledges for aid flows in 2005 and 2006. Notwithstanding the large sums involved, there is still a sizeable gap between the infrastructure and other investments needs of Sudan, and the development aid available. Given this, the GNU and GoSS are facing significant budgetary demands for infrastructure investment, and the private sector – local or foreign – will have to play a major role in building and operating infrastructure either in partnership with the two governments, or in profitable, risk adjusted projects which will attract the private sector as stand-alone investors.

Table 8.3: Pledges for international aid in Sudan 2006-07 (US\$million)

	2006	2007
Humanitarian Assistance	<u>1,026.5</u>	<u>630.0</u>
Development Assistance	<u>732.5</u>	<u>546.0</u>
▪ GNU Development Assistance	139.2	102.9
of which: MDTF-N	(118.1)	(66.5)
Other Development	(21.1)	(36.4)
▪ GoSS Development Assistance	414.8	411.1
of which: MDTF-S	(149.8)	(87.5)
Other Development	(265.0)	(323.6)
Total Humanitarian and Development Assistance	<u>1,759.0</u>	<u>1,473.4</u>

Source: The Sudan Consortium March 2006, Presidential Statement, p9

8.7 Bi-lateral donor agency arrangements

Most countries provide humanitarian assistance through their aid programs.

8.7.1 United States of America

USAID is the largest individual donor country by far. The US has channelled its aid through many private and international agencies such as CARE, World Vision, ICRC, and Tearfund, as well as the major UN agencies such as the WFP, WHO, FAO, IOM, UNHCR and OCHA.

In 2005, US Government humanitarian aid to Sudan totalled US\$762 million, of which US\$95 million was channelled into Southern Sudan mainly for refugee repatriation and reintegration. Some US\$4.5 million was for infrastructure rehabilitation through UNICEF and WFP⁴².

In 2006, US Government humanitarian aid is being significantly increased, although details are not yet available. Total aid for Sudan and Eastern Chad – the only figures available – is increasing from US\$827.4 million in 2005 (of which US\$762.1 million was for Sudan) to US\$1,380.2 million in 2006. Most of the increase is likely to be for Sudan.

8.7.2 United Kingdom

The UK, mainly through DFID, with significant help from British GoSS like OXFAM, has been the second largest national donor country.

⁴² USAID Situation Report #1, Fiscal Year 2006, October 2005.

DFID will contribute US\$200 million a year for 2006/07 and 2007/08 in humanitarian aid. Most will be channelled through the International Committee of the Red Cross and a Common Humanitarian Fund. Over the next 3 financial years US\$85.4 million will be contributed to the MDTFs.

8.7.3 Other National Donors

Table 8.4 summarizes the major lines of humanitarian and developmental aid – where it is given – for a number of countries.

Table 8.4: Bi-Lateral donor and lending agencies operating in Sudan

Aid Agency	Major Aid Activities
<p>USAID (both humanitarian and developmental assistance)</p>	<p>USAID is the largest donor in Sudan. Three categories of activities:</p> <ul style="list-style-type: none"> ▪ Humanitarian aid (assisting individuals displaced by conflict, providing basic services in traditionally underserved areas, and improving food security through increased agricultural production) ▪ Food aid ▪ Reconstruction programs (US\$105.8 million in 2005; US\$109 million in 2006) <ul style="list-style-type: none"> – Peace process (US\$20.8 million in 2005; US\$21 million in 2006): Dissemination of information about the peace process and consensus building through conferences and dissemination of radios – Governance (US\$9.8 million in 2005 and 2006): In Southern Sudan, working with ministries and government institutions. Activities include supporting in the development of political parties and civil society, and creating a legal framework for the Southern government (assisted in preparation of the constitution, the first budget, and helping the government conduct the first census) – Education (US\$10.3 million in 2005 and 2006): Rehabilitating schools, training teachers, Also working to strengthen the capacity of Southern Sudan's Ministry of Education – Health transformation (US\$16 million in 2005; US\$21 million in 2006): Training country medical officers; national immunization and polio eradication campaigns; HIV/AIDS education, testing and counselling. Also working to strengthen the capacity of Southern Sudan's Ministry of Health and other health institutions. Specifically in Juba, have initiated cash- and food-for-work clean-up campaigns, provided latrines for market areas, provided 4 water pumps to the Juba's Urban Water Company, as well as leak detection equipment and purification chemicals. Also rehabilitating some village water systems and training village committees to repair manage and operate them. (Allocations for programs devoted to providing access to clean water and sanitation were US\$2.7 million in 2005; US\$2.6 million for 2006) <p>Economic recovery (US\$48.9 million in 2005 and 2006). Helped establish a microfinance institution to provide small business loans with a focus on agricultural activities, women and returned refugees. Under the Southern Sudan Rural Electrification Program, building electric grids in larger market towns and setting up utilities as viable businesses (NRECA built a power grid and started up a new town utility in the town of Yei). Also doing work to provide telecommunications services to broad base of customers and rehabilitating farm-to-market roads and develop local capacity in road maintenance and operations. (US\$39.5 million was devoted to these activities in 2005. Forward planning seems to focus more on roads than other sectors).</p>

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Aid Agency	Major Aid Activities
European Commission (largely humanitarian)	<p>The EC has not provided development assistance to Sudan since 1990 but has provided humanitarian assistance in both the north and south: “Assistance to the victims of the civil war and natural disasters, according to basic humanitarian principles. Up until 2005, more than €500M has been made available to the population of Sudan in the form of direct relief assistance, including more than €315 million of ECHO funding and close to €200 million in food aid.”</p> <p><i>“Provided that the issue of Sudan’s €73.4 million debt to the European Investment Bank is resolved, support for private sector development and large public investments may become available from co-operation with the Bank and its newly established Investment Facility, along with finance available from the Bank’s own resources. The determination of amounts and conditions for financing will depend on detailed appraisal of every project, on a case-by-case basis applying on sound economic and financial criteria. Such projects could be regional in scope.”</i></p> <p>Most of the EC’s 9th development financing strategy is devoted to food security issues (€221 million out of €318 million), with some support (€30 million) for education and education policy support, €52 million for capacity building, human rights, democracy, and good governance, €10.5 million in support of peace building and €5 million for a “Technical Cooperation Facility”.</p> <p>The EC has also committed funding to the World Bank-managed Multi-Donor Trust Fund.</p>
DFID (largely humanitarian)	<p>DFID’s funding for 2006/7 and 2007/8(GBP 110 million/year) will be channeled into:</p> <ul style="list-style-type: none"> ▪ A common humanitarian fund (GBP 40 million in 2006/7) ▪ A basic services fund to assist GoSS working in South Sudan to provide basic services: health, education, water & sanitation (GBP 17 million) ▪ Multi-Donor Trust Fund (GBP 47 million over 3 years) ▪ Humanitarian funding to GoSS (GBP 5 million) and the International Red Cross (GBP 5 million)
NORAD (Norway)	<p>Norway, like Sweden, channels most of its aid through MDTF. The Norwegian government has pledged US\$250 million in aid to Sudan through the MDTF over the next 7 years.</p>
Netherlands Ministry of Foreign Affairs	<p>Has pledged €175 million to support reconstruction (road building, water supply and energy restoration, education and health care, development of educational sector, development of good governance and capacity building) through the multi-donor trust fund managed by the World Bank. €75 million are earmarked for each North and South Sudan, while the remaining €25 million is for disarmament, mine clearance and reform of the security sector.</p>

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Aid Agency	Major Aid Activities
Australian Aid Agency (AUSAID)	Has committed A\$40 million in emergency assistance to Sudan since May 2004. 75% of this has been disbursed for the Darfur crisis in Western Sudan (through various agencies including UN Children's fund and World Food Program, Red Crosse, Care Australia, Oxfam, and World Vision), A\$6 million for Southern Sudan (through UN Children's fund and World Food Program, and A\$4 million to be disbursed in 2005 based on an assessment of remaining needs across Sudan (from 25 May 2004).
Swedish International Development Cooperation Agency (SIDA)	SIDA contributes its aid principally through the MDTF established by the Oslo Donor Conference in April 2005. Sweden is to contribute SKr770 million (US\$105m) through the MDTF. In addition, SKr180 million (US\$25m) in humanitarian and reconstruction aid beyond the scope of MDTF, and a further SKr100 million (US\$15m) to the UN's donor coordination improvement plan through FAO, UNFPA, IOM, OCHA, WFP, UNDP, UNICEF, WHO, UNAIDS, and OHCHR.
Canadian International Development Agency (CIDA)	CIDA pledged the following in 2005 for aid efforts in Sudan: <ul style="list-style-type: none">▪ C\$40 million will support the efforts of the Joint Assessment Mission, an effort led by United Nations and the World Bank with the endorsement of the Government of Sudan and the Sudan People's Liberation Movement, to establish sustained peace in the south and reduce poverty in Sudan▪ C\$40 million will help fund international humanitarian efforts▪ Up to C\$10 million will be committed to peace building and governance initiatives.

Source: Individual Agency websites, Castalia

8.8 Key role of the Multi Donor Trust Funds (MDTF)

Of the US\$508 million pledged over the 6 year period of the JAM program, only US\$147.6 million had been contributed by early 2006. About US\$56 million is currently available for investment in JAM related projects, although further commitments of donor contributions are about to be made.

Table 8.5: Multi Donor Trust Funds in Sudan (US\$million)

	MDTF-N	MDTF-S	Total
<u>Source of Funds</u>			
Net Donor Contribution	<u>48.2</u>	<u>99.4</u>	<u>147.6</u>
▪ Contributions Received	48.1	99.2	147.3
▪ Investment Income	0.3	0.4	0.7
▪ Other	-0.2	-0.2	-0.4
<u>Use of Funds</u>			
Commitments Made	<u>20.5</u>	<u>71.1</u>	<u>91.6</u>
▪ Grant Agreements Signed	20.0	70.0	90.0
▪ Monitoring and Administration	0.5	1.1	1.6
Net Commitment Authority Available	<u>27.7</u>	<u>28.3</u>	<u>56.0</u>

Source: Sudan MDTF First Progress Report for 2005 December Year

MDTF-S is spawning other initiatives. Recently Scandinavian countries, together with the UK and the Netherlands, have set up a joint donor office (understood to be a first) in Juba to manage the aid programs for these countries with the GoSS. The joint office will act as a single point of contact between the group and MDTF-S.

This step is being taken in advance of sizeable new injections of funds into the MDTFs. For example, Norway intends to channel all of its US\$250 million in aid to Sudan through the joint donor office in the first instance, and then into the MDTFs.

There seems to be a clear appreciation amongst donors that the major development issue in South Sudan at least, will not be the availability of finance, but how the funds will be used effectively and transparently.

Parliamentary oversight processes, and the oversight machinery in GoSS, is not particularly robust. Considerable effort will be made by the donor bodies, led by the MDTFs and the joint donor office, to establish capacity and transparency in government bodies and Parliament.

These initiatives are also very important for any PPP projects that may be established, whether or not MDTF, Sudanese government matching funds, or other donor agency funds are used to fund them. If a rigorous transparency and accountability regime is established for international aid programs and the development programs of the GoSS and GNU, the demonstration effect in building confidence by the private sector in joining PPPs will be significant.

As large as the MDTF program is however, it is a drop in the ocean of the total investment needs of US\$7.9 billion through 2007⁴³. US\$4.3 billion is needed for the North and US\$3.5 billion for the South.

US\$2.66 billion needs to come from the international community, of which only US\$508 million has been pledged – but not yet fully disbursed – to the two MDTF programs. Sudan itself will contribute considerably more than the international community towards the pro-poor recovery program.

The challenge for the MDTFs, the Sudanese government, and other aid agencies is how the development assistance flows can be leveraged both from a financial and an implementation capacity point of view. We discuss this elsewhere in the report, but if the private sector is to be involved, then there is a clear need for other machinery to be established to ensure the potential for PPP can be maximized.

This will not be easy, but given the lead for investment programming of infrastructure development is planned to come from the GNU and the GoSS, and from the MDTFs, any machinery which works to promote PPP will need to be integrated into the machinery of the governments and the aid agencies.

8.9 Potential for greater private sector participation in aid programs

Given the large network of developmental and humanitarian aid agencies in Sudan, and the complexity of aid funding and disbursement, it is difficult to offer a “one-size-fits-all” policy prescription for increasing the involvement of the private sector in aid.

We have not attempted to enumerate a list of particular opportunities in each agency which could expand the use of the private sector to a greater extent. This is a major task, and would undoubtedly confront many agencies with the challenge of changing the way they carry out their business to produce more positive results in involving the Sudanese private sector.

With this in mind, we believe a better approach may be to establish a unit within the UN network to trawl through the possibilities for greater PSP involvement. The related task would be to work with the Private Sector Facilitating Unit (PSFU) we recommend elsewhere in this report to be established in the MDTFs and the PPP Units in the NGU and GoSS.

Figure 8.1 describes the linkages between the various bodies as they relate to the UN framework of institutions. A key set of linkages is the networking between the proposed PPP Units in each of the Governments, the proposed MDTF Facilitating Units in MDTF-S and MDTF-N, and the proposed UN Private Sector Facilitating Unit.

The key roles of these units, so far as they relate to promoting the role of the Sudanese private sector in helping deliver the UN agencies’ goods and services in-country, are:

- UN PSFU:
 - To review opportunities within the UN framework of agencies where the Sudanese private sector at enterprise level⁴⁴ could play a greater role in delivering UN services with Sudan
 - To facilitate the involvement of Sudanese businesses and contractors within individual UN agencies, by making it easy for both (e.g. setting up

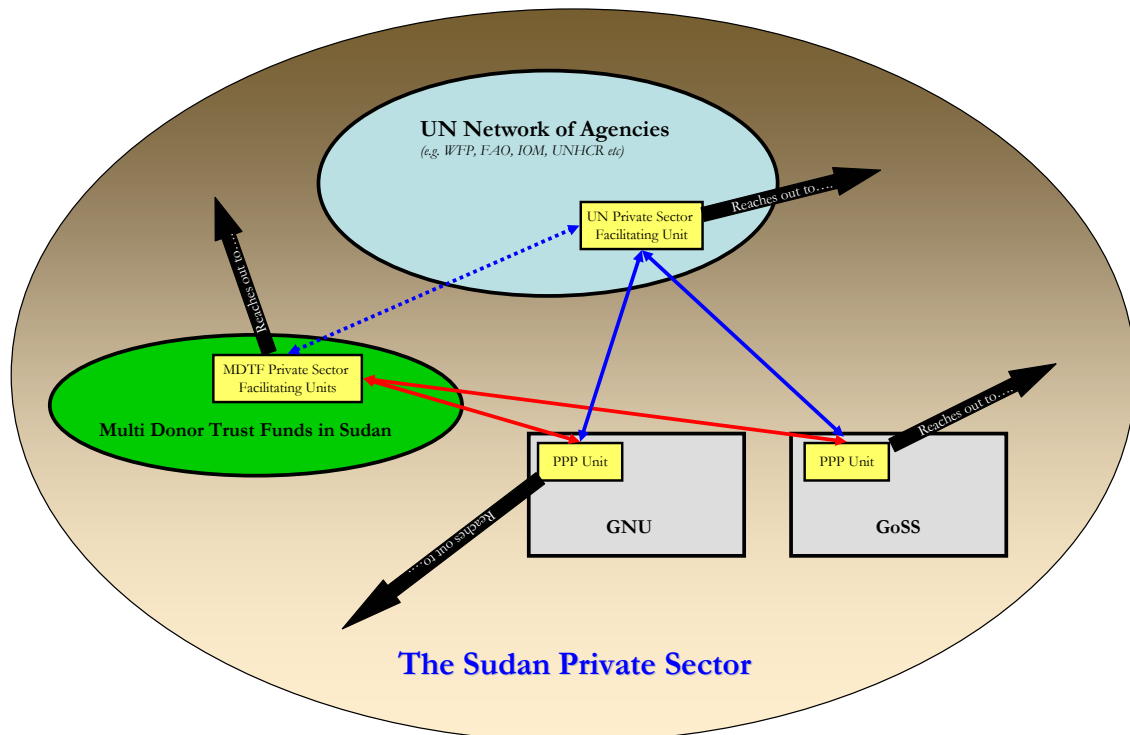
⁴³ IMF Staff Report for 2005 Article IV Consultation, Country Report 05/180.

⁴⁴ As opposed to direct hiring of Sudan locals onto UN payrolls as permanent or temporary employees.

contractual arrangements, defining tasks, assisting with procurement, monitoring performance of both PS and UN agencies)

- Liaising with the MDTF PSFUs and GNU/GoSS PPP Units to identify opportunities where the UN can supplement the activities of these units.

Figure 8.1: Building PS involvement in the UN network in Sudan



Source: Castalia

- MDTF PSFU;
 - To identify opportunities for the Sudanese PS within the work program of the trust funds, and development projects identified by JAM priorities
 - To liaise with the UN PSFU to maximize PS involvement
 - To identify capacity and financial constraints in the Sudan PS which militates against their involvement, and recommend ways of removing the constraints
 - To work with the PPP Units of GNU/GoSS to ease any problems which may develop between the UN PSFU and the Governments.
- GNU/GoSS PPP Units: these units are the principle driving forces within the GNU and GoSS to manage the involvement of the private sector in development aid projects, and in UN delivery of humanitarian services within Sudan. They would be expected to:
 - Liaise closely with the UNPSFU and the MDTF PSFUs to source Sudan private sector resources which could meet the opportunities found by the PSFUs

- Monitor the performance of the Sudanese private sector in conjunction with the relevant PSFU, and help rectify any problems
- Identify and find solutions to capacity problems in the private sector (which may involve technical assistance aid from the World Bank, or other relevant aid agencies).

9 Southern Sudan– a strategy for more investment

The people of South Sudan face what can only be described as a desperate situation. There is essentially no infrastructure in the South. Very few networks of any kind existed before the war and those that existed, like roads, have been destroyed or rendered unusable by mines.

If there is a positive vantage from which to view the task ahead, it lies in the fact that policymakers will be starting from scratch. The GoSS has a rare opportunity to avoid the known mistakes and take bold action. It also has another advantage usually absent from post-conflict environments – access to resources from the division of oil receipts under the CPA and the opportunity to use the impending investment in oil to jump-start the necessary investment in infrastructure.

We approached the question of what PPP arrangements are sensible by first considering which investments are most important to promote growth and poverty reduction. All basic infrastructures can be said to fit these criteria, however, we are limited by what is possible and the pre-existing conditions for growth. Furthermore, we also need to consider the institutional capability of the GoSS to monitor the recommended PPPUs, as well as its ability to mitigate the extreme risks to potential service providers. Using the PPP assessment framework described in Section 4, conditions in South Sudan, which are high risk with very low institutional capacity, suggest that maximum private involvement coupled with major risk reduction/reallocation, will be the recommended norm.

Agriculture and the oil industry represent the most likely areas for growth in South Sudan. In light of this, we propose three approaches to infrastructure development which directly impact on or are facilitated by growth in these industries.

- Improving access to and development of markets by de-mining and reconstructing road networks and attracting mobile telephone operators
- Encouraging formation of small-scale cooperatives to build, own and operate low-tech irrigation and water supply systems; and
- Using planned oil investments as anchors for regional infrastructure investments.

These areas have been chosen based on their likely impact on stimulating entrepreneurship and growth and improving incomes. They have also been assessed according to the likelihood that they can be made to work, given the underlying risk and institutional conditions.

Specific modalities for GoSS and donors are also suggested in this section, which may facilitate private sector development and mitigate the likelihood that their efforts will crowd out the private sector.

9.1 Improving markets

Southern Sudanese rely on agriculture to meet their basic needs for food, and to make a living. On-going trade with its southern neighbours indicates that there is, or could be, a

sizeable agricultural surplus for trading with nearby countries, and with north Sudan. There is clearly an unfilled demand, as evidenced by the growth of markets for food from Uganda and Kenya in particular. However, farmers' access to these markets (and their ability to create new markets) is severely hampered by their inability to deliver goods and to communicate with potential buyers and sellers: in other words, by an inadequate transport, communications, and banking infrastructure.

9.1.1 Rebuilding the roading network

Southern Sudan has an area of approximately 650,000 square kilometres – the size of Afghanistan – yet the total road network consists of only 4,000 to 5,500 km of main gravel roads and 7,500 km of feeder roads.

Under the British colonial administration roads connected the Southern capital Juba with the national capital Khartoum via Bor, Malakal, Renk, and Al Jabalain to Khartoum. The total route length was about 1,700 km, of which only the northern section from Al Jabalain to Khartoum (approximately 400 km) was paved. The standard of roading varied, but was modest. Development of physical infrastructure in South Sudan was neglected even before the first civil war from 1955 to 1972. A road network, which reportedly consisted of more than 2,500 km of gravel roads, was developed at the end of the first civil war and up to 1983 when the civil war erupted again. Between 3,000 and 4,000 km of gravel roads located mostly in the southern region existed in 1990. In general, these roads were usable all year round, although travel might be interrupted at times during the rainy season. However, most of these gravel roads became unusable after being heavily mined during the war. The remaining roads were little more than fair-weather earth and sand tracks.

Historically, there have been two main routes linking Southern Sudan with the North: one from Juba via Wau and Babanousa that could be termed the Western Corridor and one from Juba via Bor and Malakal that could be termed the Eastern Corridor. The significance of this division is that Juba was and still is the only place with a bridge crossing the White Nile in all of Southern Sudan. More or less all of these routes have essentially ceased to exist as road connections, with the exception of the newly constructed road networks in the oil fields in Bentiu and Adar areas of western and northern Upper Nile region.

The main roads in the deep South today are the international links. Two main routes connect Southern Sudan with Uganda; one from Juba over Yei and Kaya at the border, and one from Juba to the border at Nimule. One international road link to Kenya exists from Juba via Kapoeta to the border post at Narus and to Lokichoggio on the Kenya side. Apart from a few kilometres in Juba town which are in a state of disrepair, there are no sealed roads in Southern Sudan.

De-mining road networks

No private investor will be willing to rebuild, maintain or manage the roads in South Sudan until they have been comprehensively de-mined. This task needs to be undertaken immediately, publicly and on a large scale. Even here, private operators may be employed. The GoSS should consider issuing contracts which pay private companies by the mine (destroyed) to speed up the process, for example. Alternatively, the GoSS may ask United Nations, which has specialized skills in this area, to undertake the task directly as a part of its aid effort.

This is an absolute pre-requisite for foreign investment in roads, since foreign investors will be more concerned about liability issues in the management of road networks. The GoSS should therefore consider this a priority issue in the development of market

opportunities for the farmers of South Sudan, and it does at least in terms of overall policy.

Rehabilitating the road network

The World Food Program (WFP) has begun to undertake a program of road reconstruction to facilitate aid operations. Under Phase I (2003-2004) US\$18 million funded 360 km of repair works. Phase II (2004-ongoing) includes US\$89 million which has already funded 1,061 km of repair works. Phase III (2005-ongoing) has targeted 857 km of road repairs with US\$24 million already disbursed. WFP currently has a shortfall of US\$67 million that remains to be funded from donors.

The implementation of the WFP road repair program is divided into two corridors, e.g. Western Corridor and Eastern Corridor. A number of roads are identified from each corridor for repair. The figures below show the roads which are successfully rehabilitated and are in use, and those which are still to be repaired.

Figure 9.1: Road network from Western corridor

Road Network	Distance in km	Contractor	Implementing Agent	Remarks
Kaya-Yei-Rumbek	570	Civicon Ltd	WFP	90% of work completed, work is continuing.
Yei-Juba	160	Hayer Bishan Singh	WFP	85% of work completed, work is continuing.
Rumbek-Yirol-Shambe	168	Hayer Bishan Singh	WFP	58% of work completed, work is continuing.
Rumbek-Tonj-Wau	110	Civicon Ltd	WFP	Work in progress
Wau-Aweil	130	none		No contractor to undertake works road
Total	1,138			

Note: Most of these roads were started before the signing of the CPA.

Source: Ministry of Transport and Roads (GoSS)

Figure 9.2: Road network from Eastern corridor

Road Network	Distance in km	Contractor	Implementing Agent	Remarks
Nadapal -Juba	350	GTZ-IS Southern Sudan Program	WFP	62% of the road completed, work is continuing but slow due to heavy mine contamination along the road
Nimule-Juba	192	Kirinyaga construction company	WFP	30% of road is completed. Work has stopped due to lack of equipment on site
Juba-Bor	224	GTZ-IS Southern Sudan	WFP	12% of work completed, but work was stopped due to activities of LRA in the area
Bor-Panyagor	110	GTZ-IS Southern Sudan	WFP	100% completed
Total	876			

Note: Most of these roads were started before the signing of the CPA.

Source: Ministry of Transport and Roads (GoSS)

The WFP role cannot be viewed as a long-term strategy. Other agencies and institutions such as the World Bank and USAID are expected to engage in more durable, large-scale multi-year road development activities.

It is nevertheless likely that aid flows will not be able to meet long term demand. Furthermore, if these investments are to be sustainable, that is, if the roads are to be maintained and expanded as needed, private participants should be recruited.

There are a variety of project delivery mechanisms for PPP in roads, including Design/Build, Performance Maintenance Contracts, and Concession schemes such as toll roads. The new framework in Section 3 indicates a preference for concessions over contracts requiring intense supervision. However, offering concessions over some of the road network may not be feasible, because the potential revenue is very low and the required subsidy would be very large or because tolls are impractical due to the physical layout of the road network.

However, the two arterial roads linking South Sudan with Uganda and Kenya, respectively, may be good candidates for concessions and toll road concessions. They are the only link with the region's two largest trading partners and are the route used for what marketing currently exists. They are also likely to be the routes by which Southern Sudan will be able to expand trade in the future.

Potential investors also face similar risks as outlined in previous sections and would probably require some income or payment guarantees and/or some explicit subsidy for extended periods before considering such a risky investment⁴⁵. Though the cost to the

⁴⁵ In particularly risky situations, government could provide upfront capital investment as the payment risk associated with subsidies is too high and the risk premium paid would result in higher tariffs.

Government may seem large or prohibitive, they should be measured against the following considerations:

- The GoSS should provide preliminary designs and performance specifications which would include penalties for non-performance
- The GoSS would subsequently not be responsible for road maintenance, thereby avoiding a long-term drain on the Budget
- The GoSS can avoid the possibility that road maintenance will become a political gravy train, a well established pitfall even in developed countries
- The GoSS would, through the concession, mobilize private (probably foreign) capital into the country
- If the concession were correctly designed, the capital could be quickly invested.

It is unlikely that the internal road network could invite private capital, because the costs required to successfully reduce the risks to acceptable levels would be so high as to defy credibility. In this case, private contractors could be invited to design, build and maintain for five years (in one contract) parts of the internal road network. Clearly, this requires some degree of institutional capability, but this degree would still be lower than that required were the Government to attempt to build and maintain the road assets.

The proximity of this work to the regional capitals also provides the advantage of physically being more amenable to supervision. In other words, administrators will be able to see how work is progressing around them.

There is always the possibility that such contracts can be won through bribery or that other forms of corruption may result. As a consequence, we suggest that the specifications for the rehabilitation of these internal roads be determined very precisely, with the assistance of donor expertise. In time, the GoSS could consider instituting an independent Road Commission that would supervise building and road maintenance outside of the political process. Because this is unlikely to happen in the short term, outside control mechanisms are necessary as a temporary step. There is also an important role for the PPPU we recommend for the GoSS, in establishing viable contracts and an effective monitoring regime.

There should also be strict bidding processes in place for all contracts. The process need not be cumbersome. Indeed, for smaller projects it would need to be simple enough to facilitate bidders who may not know how to read and write. All contracts should have clear penalties for non-performance, while making sure that the penalties are credible and enforceable.

In conclusion, the GoSS should make rehabilitating the road network a priority. This will create jobs in the short term and will dramatically improve the ability of South Sudanese farmers to market their goods. In doing so, however, the GoSS needs to be wary of the pitfalls of road contracting, by keeping the process as open and as simple as possible.

Recommendations for Roading

The following recommendations are proposed for rehabilitating South Sudan's road network, together with proposals for contractual options available for implementation:

- De-mine the existing road network using a combination of multilateral agencies (like the UN, for example), private contractors and central Government
- Consider issuing Build-Own-Operate (BOO) contracts for the two arterial roads leading to Kenya and Uganda, making them private toll roads, with subsidies at least in the early stages. Alternatively, consider a competitively bid DB, with an O&M project delivery mechanism if the BOO contract is not feasible for post-conflict South Sudan
- Use Build-Maintain contracts, with both functions contained in single contracts for a medium-term period (e.g., five years) for interior roads; and
- Develop competitive bidding procedures wherever possible, while keeping them very simple. There needs to be transparency to discourage self dealing and corruption⁴⁶
- In time, the GoSS could consider instituting an independent Road Commission that would supervise building and road maintenance outside of the political process.

9.1.2 Telecommunications: encouraging mobile telephony

Another important element in developing and providing access to markets is communication. Mobile telephone service is usually the first kind of investment in infrastructure that is made post-conflict. That is because there is a quick return on investment and because the infrastructure does not require large amounts of capital. It is also a popular choice over fixed line telephony among the poor in developing countries and has in fact surpassed fixed line use in many countries, like Jamaica and the Philippines.

Mobile telephones are an affordable alternative because users are easily able to restrict the amount they spend over short periods of time. In competitive environments, many mobile phone operators also sell the hardware at a subsidized rate in order to attract higher numbers of users, making the option even more affordable. This aspect of infrastructure development can be relatively quickly and easily implemented with minimal effort of the part of policy makers.

Recommendations for telecommunications

The priority for policy should be attracting investment quickly. We recommend that the GoSS:

- Create no barriers to entry
- Avoid regulation as far as possible, and constrain to access rules and interconnection arrangements where the parties cannot agree amongst themselves; and
- Adopt a first-come-first-serve, private property rights approach to spectrum licensing.

The last of these involves awarding spectrum on a first-come-first-serve basis. This approach is somewhat unconventional. Traditionally, spectrum is viewed as a scarce resource, which should be efficiently allocated through an auction, raising revenue for the

⁴⁶ FIDIC tender procedures are a useful model. The road agency in the North already has experience with these procedures.

Government. However, in this instance, the resource is not in fact scarce, since demand is no doubt lower than the available spectrum. So there is no need to find an allocative mechanism to remove spectrum rents from operators between competing users. Any allocation is needed solely for technical reasons.

If the Government were to insist on using the licensing of spectrum as a revenue raising exercise, it would be taxing mobile phone use. This is precisely the sort of action that should be avoided. Awarding spectrum on the recommended basis would also have the advantage of simplicity, and would be well within the capability of the GoSS. If there is a need – and this should be thought through carefully – to raise revenue from telecommunications, it should be raised from consumers of telecoms services rather than the producers.

We believe this is the approach most likely to generate investment in the sector and quickly bring communication services to the people of South Sudan.

Possible regulatory difficulties

There is disagreement about whether the National Corporation for Telecommunications (NCT), the regulatory body in North Sudan, has the right, exclusively, to grant licenses to operators in the South. Recently, a private operator started mobile telephone services on a small scale in the South, with a permission from the GoSS. NTC did not intervene and says it will not do so, as long as the mobile company operates within the physical boundaries of the South.

A few months after commencing operations, the mobile company asked NTC to allow it regional and international connection through the North. NTC rejected the request on the grounds that the company is not licensed by NTC.

If the GoSS is unable to get cooperation from the NTC, it may approach other neighbouring countries, such as Kenya, for interconnection arrangements.

9.2 Providing credit and promoting cooperative structures for small-scale irrigation and water infrastructure in farming areas

The dispersed nature of the farming population in South Sudan makes the development of large networks for water and irrigation expensive and improbable. Nevertheless, putting in place irrigation networks in South Sudan could be a substantial boost to agricultural productivity. Currently, only a very small part of arable land in South Sudan is under cultivation. Obviously, not all of the remaining area can or should be brought under cultivation, however, the majority of farms in South Sudan are not rain fed and some of these lands can be improved by irrigation.

Given that many of the same processes and equipment are involved in some irrigation and water supply systems, it makes sense to aim for a process that will produce both. If large networks will not be put in place, how do you get the private sector to invest on a small scale? Our conclusion is that, in light of the scale of the operations, the users are the most likely investors in such schemes.

In the next sections, we describe the cooperative governance structure and how it could be used to facilitate building, operating and financing of small scale water and irrigation facilities. We also discuss how the Government can help to provide financing for such schemes using the cooperative structure.

9.2.1 Why cooperatives work as corporate structures for bringing farmers together as consumers and producers

Cooperatives seem to go hand in hand with agriculture, though not always with happy results. The most successful of them probably operate as normal businesses whose shareholders happen to be their customers. This gives cooperatives an unusually close relationship with their markets and gives customers a direct influence over the behaviour of their supplier. Cooperatives, then, can be profit oriented, but will have other direct objectives, depending on their shareholders' needs.

Cooperatives also provide a means for farmers to share risk. Obviously, the individual farmer in South Sudan is unable to purchase the equipment necessary to dig ditches and pump water. He is also unlikely to make a good credit risk. A group of farmers from the same region, with different individual risk profiles, together make a much better credit risk.

A Water and Irrigation Cooperative (WIC) could also provide some of its own labour but could draw from the neighbourhood for additional labour as needed: this approach is one we believe the GoSS should seriously consider as a way of involving the private sector and facilitating self-help solutions in hundreds of villages and communities throughout South Sudan.

This is one reason why the emphasis here must be on low tech irrigation and water solutions. There will be no technical expertise available on site to assist the cooperatives, outside of what may be provided by extension services. Additionally, the cost of equipment to build complex irrigation and water systems is prohibitive, yet forming cooperatives is a way of spreading risk and making small infrastructure facilities more bankable.

9.2.2 Description of irrigation and water cooperatives

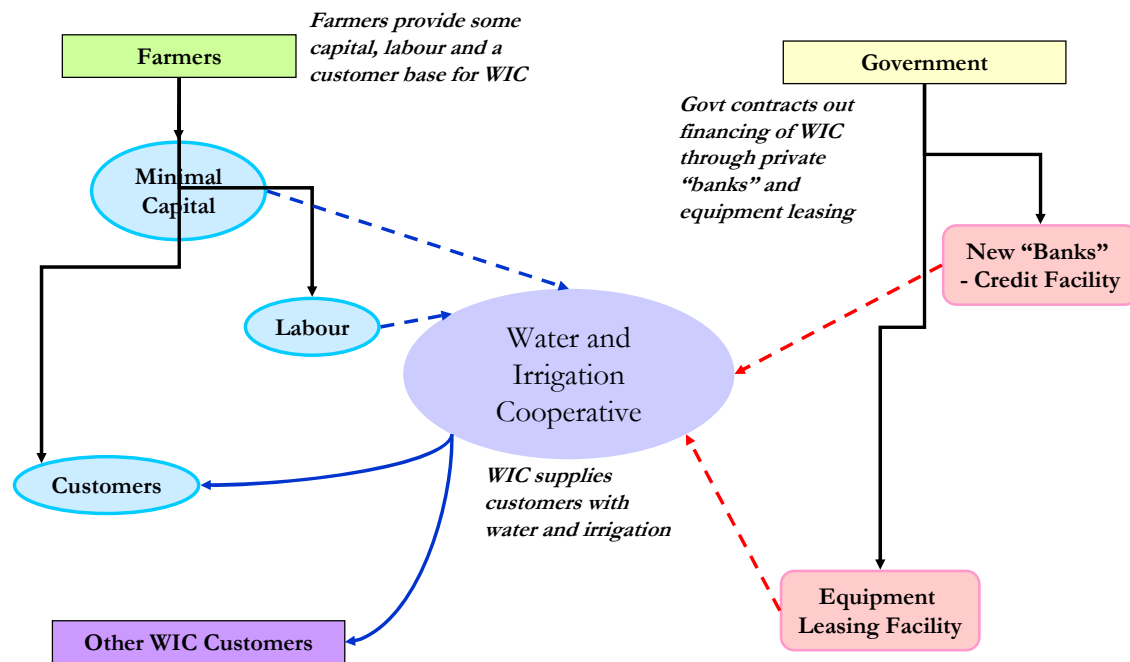
The relationships envisioned by this model are as follows. Groups of neighbouring farmers would form WICs to help share risks, pool resources and manage the provision of water and irrigation services for their businesses. The Government could lend funds to other private operators, who would act as banks and equipment leasing companies.

The word "bank" may describe a two-man entity that travels around the country looking for prospective borrowers and taking a margin on repayment or a commission on disbursement. It may also describe a 'proper' corporation with an actual building, to which prospective customers come looking for loans. Small operators could actually use their WIC credit businesses and customer bases to grow into traditional banking houses. The scheme could also be linked into the micro-financing facility being set up through the Central Banks of Sudan.

Similarly, equipment leasing facilities help WICs by making it unnecessary for them to have to buy equipment on the open market. They may also reduce some of the risks to farmers associated with transportation of equipment. Equipment leasing facilities may also provide a limited extension service to farmers, in order to ensure that their equipment is used properly and therefore has a longer life.

In Figure 9.3, we set out the relationships envisioned by this model. This structure also has the advantage of sharing risk between several entities and individuals. By involving the private sector at every level of the process, the Government also allows different groups to take on a more specialized form of risk. These risk mitigating characteristics and the limited capacity for Government supervision suggests that ownership and operation of all the assets should be private, as set out in section 3.

Figure 9.3: Water and irrigation cooperatives



Source: Castalia

9.2.3 Recommendations for water

Accordingly, we recommend the following for water infrastructure in South Sudan:

- Encourage farmers to form WICs
- Create a fund to provide credit to WICs through financial intermediaries
- Licence financial intermediaries (we are envisioning very small “banks” consisting of a few enterprising persons) to on-lend to WICs from the fund. These “banks” would take a commission on lending and/or a margin on repayment
- Finance and/or operate Equipment Leasing Companies to lease very basic equipment to WICs for water and irrigation purposes. Provide basic extension services through these leasing companies; and
- Impose no regulatory requirements on WICs, but require basic reporting to enable monitoring of such things as service levels, water quality, coverage, growth plans, and customer satisfaction.

A Note on Regulation

It is unlikely that the GoSS would practically be able to supervise WICs scattered across Southern Sudan. At the same time, small WICs will have very little capacity to fulfil complex information requirements from the Government. Given the current state of the infrastructure for such services, we would recommend that the GoSS impose no regulations, ensure no barriers to entry exist and allow the market to set prices. This is a sensible approach because of the cooperative corporate structure.

We believe that this corporate structure will exert a powerful pressure on the WIC to provide good service at a fair price. This pressure will be credible because as we

discussed above, the customers are the shareholders, and have every incentive to keep the costs of production as low as possible.

9.3 Use planned large-scale capital investments as anchors for on-site and nearby infrastructure projects

Southern Sudan has large oil reserves. There are already plans to exploit this resource, with some initial investment having already been made in the Bentiu and Adar areas, in the Upper Nile Region. Development of oil wells and the accompanying investments will bring billions of dollars to South Sudan. The presence of that much capital will have a signalling effect for other potential investors in the area and provides an opportunity to develop the region by:

- Expanding infrastructure that the energy companies will need to facilitate their businesses to include larger geographic and service areas; and
- Using the fact of the impending development to attract other infrastructure investors directly.

This approach has worked well in Mozambique⁴⁷, where the anchor project was the MOZAL aluminium plant. Its effect on the surrounding area of Maputo is described in the box below.

⁴⁷ The Maputo Corridor is a good example of how a Spatial Development Initiatives (SDI) can succeed. It was largely private sector driven although the concept has been spearheaded by NEPAD. Other SDIs that have been given top priority include the Northern (Kenya) and Central Corridors (Tanzania).

Box 9.1: Mozambique's successful leverage of the MOZAL Anchor Project

In post conflict Mozambique, the Government began an economic liberalization program followed by growth initiatives. These Government reforms attracted a US\$1.3 billion investment in the MOZAL aluminium plant. The MOZAL investment subsequently led to or supplemented investment in:

- Power Transmission – US\$120 million investment by South African investors to supply MOZAL with reliable electricity.
- Roads – US\$180 million toll road linking Maputo with South Africa's industrial heartland Gauteng supplemented by truck traffic to and from the MOZAL plant.
- Ports – A master concession for Maputo port with US\$70 million worth of projected investments.

While having a less direct impact on other PPI projects, the MOZAL plant created a successful precedent as an industrial-scale transaction that helped to create the necessary momentum for further investment in infrastructure including:

- Rail – A projected US\$10 million investment in a main rail line to South Africa.
- Water Supply – A projected US\$65 million investment under water supply lease agreements.
- Power Generation – Private participation in a few small independent power supply schemes outside Maputo.
- Gas – US\$1.3 billion gas pipeline to transport national gas from the Beira area to South Africa with some outlets to Mozambique for domestic gas supplies.
- Telecommunications – A projected investment of US\$250 million over a five year period in a second, privately operated mobile phone network.

While a large contributing factor of the Maputo Corridor's success has been its anchor project, there have been a few special circumstances:

- A rich trading partner in South Africa.
- Maputo Corridor's proximity to South Africa's capital and economic heartland.
- Access to low cost energy for production of aluminium.

Despite these special circumstances, the MOZAL plant-Mozambique example illustrates that it is possible to use a large capital investment as a tool to attract further national investments in infrastructure.

Source: Schwartz, J., Hahn, S., & Bannon, I. (2004) *The Private Sector's Role in the Provision of Infrastructure in Post-conflict Countries - Conflict Prevention & Reconstruction*. Paper No. 16, August.

Given the current institutional capacity of the GoSS, our PPP Assessment framework suggests that the best suited PPPs would involve maximum private involvement and minimum Government supervision; that is, concessions or leases. The GoSS does not have the ability to supervise management contracts for water or electricity but could easily develop the capability to monitor service standards in a concession. However, in order for that degree of private involvement to be possible, the underlying risks to investors would have to be greatly reduced.

Conditions around the areas to be developed by energy companies in South Sudan may be more difficult than in Mozambique. First, there will be no sure market for infrastructure services, and second there are no existing networks to supplement. Everything would have to be built from the ground up. However, if the first concern can be addressed then the second will be manageable.

It is likely that with the prospect of peace, South Sudanese refugees in neighbouring countries and perhaps others located in different areas of South Sudan will tend to move to areas where there are opportunities to earn a living or start a business or gain access to

services unavailable elsewhere. Large-scale investments by energy companies will be a signal to these people as well. Despite this logic, foreign investors may not be willing to invest, because payment risk, in particular, will be very high.

The recent experience in Nigeria is a lesson that should be learned in South Sudan. If local people do not see some form of benefit, in terms of jobs and improved living standards, there could be significant security related costs for oil sector managers. The obvious starting point is to ensure there is a good social and economic infrastructure for people settling in the area. The GoSS can take a number of actions to reduce these risks.

Some of these risks can be addressed through various cost-sharing arrangements, while others can be addressed by adopting the appropriate regulatory environment. In the following sub-sections, we outline some of the possibilities.

9.3.1 Cost-sharing arrangements between the investor, the GoSS and end-users

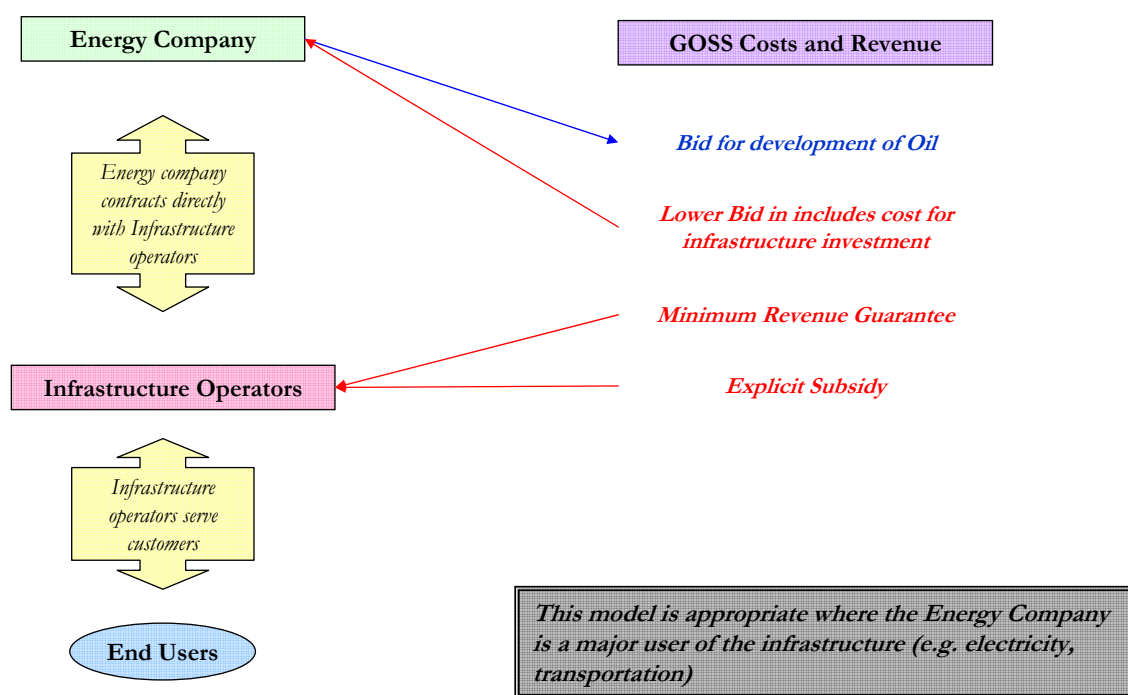
The GoSS needs to consider the initial allocation of costs in three areas:

- Initial capital investments
- User fees
- Additional risk-reducing costs.

In fact, all costs for infrastructure development and use will be paid by end users, either directly or through the Government. The measures that we will outline represent an inter-temporal reallocation of costs which will fall in the long term on end users. The timing of payments makes this reallocation important because the GoSS needs access to cash and expertise up front.

In Figure 9.4 we describe a possible model for cost allocation where the energy company is a major user of the infrastructure. The company could be in any major sector of the economy – for example oil – which needs access to good quality infrastructure to conduct its business. In this instance, the energy company has a vested interest in making sure that the infrastructure is in place and that service is provided efficiently. Consequently, as pictured, the energy company directly contracts with the infrastructure operator to provide service for the area. This may take many forms. For example, the energy company may form a joint venture with an electricity company to build and operate generation and the grid or it may contract out the construction and operation of rail and/road facilities to a separate company altogether.

Figure 9.4: A model for cost allocation where an energy company is a major user of infrastructure



Source: Castalia

In this model the GoSS would agree and define the service area and standards before bids on the oil exploration and refinery are submitted. Clearly the larger the area and the more ambitious the service standards, the lower will be its revenue from the bids. The Government would need to assess the number of potential customers and the likelihood that the area could become a hub for other business activity. As we stated before, the advantage of paying now rather than later, is the potential immediate access to capital and expertise. There is also the benefit of creating a “growth-friendly” region, much more quickly than the GoSS could manage on its own.

Some infrastructure industries, such as water, are less likely to be successfully developed using this approach. However, as in the Maputo, the Government can attract such investors by asking for bids simultaneous with the oil development process and by implementing other business friendly processes that indicate to investors that it is committed to developing the area in a way that will make it more likely that investors can get a return on their investments.

It may also need to offer further risk reducing incentives, such as, minimum revenue guarantees and an explicit subsidy.

9.3.2 Regulatory and legal environment to promote large planned infrastructure investments

Infrastructure regulation needs to focus on attracting investment and should be within the capabilities of the regulators. Regulation should be restricted to monitoring service standards set out in the initial contract. Price/Rate of return regulation would require an on-going institutional capacity which the GoSS is unlikely to be able to develop and sustain for some time. It is also not necessary, since with initial large scale and risky investments, and fixed guarantees and subsidies, operators will not price themselves out

of the market. Clearly, the exact level of subsidies and revenue guarantees will need to be carefully determined, given this approach.

At the same time, there should be no exclusivity granted. It is hardly likely to be an issue initially. In a later, more developed context, this lack of exclusivity will act as a counterpoint to the lack of price/rate of return regulation. Both conditions are attractive to investors in uncertain environments and leave the GoSS able to focus on making sure that service is extended to as many people as quickly as possible, in a sustainable fashion.

9.3.3 Recommendations for leveraging large-scale investments

In summary our recommendations are:

- Build infrastructure facilities which energy companies use on a large scale into the bidding process for the oil development itself. This will result in lower bids for oil development. However, the funds from the decreased bid would be directly transferred from Government revenue to infrastructure investment, thereby jump-starting the process.
- Use the fact that energy companies are investing on a large scale to attract investment in other infrastructure, through a signalling effect. This should be done at the same time to take advantage of the attention being paid by large-scale capital investors.
- Implement other business friendly reforms, particularly in the oil regions; and
- Keep regulation to a minimum. Use contracts to implement service standards and a PPP Unit to monitor performance.

9.4 Administering aid to promote private involvement – reducing the aid trap

As we discussed in Section 8.1, there is a danger that, in delivering aid to South Sudan, GoSS and donors may crowd out the private sector. Donors are delivering lifesaving goods in South Sudan, such as food and medicine. However, the infrastructure that they build or bring in-country is not being provided by the private sector. Telecommunications, for example, tends to be provided by VSATs set up and operated by the donors, while electricity is supplied by generators that they import and run.

We have already briefly discussed the problems which arise when aid flows reduce after the initial surge, post-conflict. The additional problem is that donors may actually damage the private sector during the period of plenty. Who can compete with an airline operated by the United Nations? How can entrepreneurs fill gaps in the market if their competitors are highly subsidized, non-competitive donors?

We would suggest that donors adopt some of the same approaches that we recommend for the GoSS. These include:

- Contracting out for as many services as possible
- Entering into joint ventures for larger-scaled projects; and
- Using foreign private contractors where local partners are not possible.

The use of foreign private operators and investors may not immediately result in the transfer of expertise or the create opportunities for local entrepreneurs. However, foreign private firms are more likely to remain in the country (if conditions warrant it) than aid personnel, after the initial phases of recovery.

These suggestions may mean that there is some risk that donors may not receive service as reliably or to the same standard to which they are accustomed. The payoff to the economic environment in South Sudan however, could prove just as important as the aid being directly administered.

This approach also can benefit donors by allowing them to focus on delivering the services which only they can provide. In South Sudan, one of the major impediments to economic growth is non-functionality of the road network, due to mines. The United Nations, for example, is uniquely qualified to de-mine the area and should be encouraged to extend their mandate in this direction.

Donors can have as big an impact as the GoSS in this period of fledging Government. Their interventions must be carefully managed to ensure that the impact is positive and maximized.

10 Northern Sudan – improving poor services and failing assets through PPP

The existing infrastructure in Northern Sudan needs significant rehabilitation. Vast areas of the country have little or no access to services. This is typical where infrastructure has traditionally been provided through Government monopolies. Some industries, like telecommunications, have been partially reformed, while others retain their old statist forms. What emerges from our examination of the state of infrastructure is a familiar picture. Networks are aging with little new investment, customers are often poorly and sporadically served, and private involvement is on a limited ad hoc basis.

In this section we examine each of the sectors in turn and make recommendations for their improvement. Our analysis is made in the context of:

- Significant risk factors, though the state of infrastructure is better than in the South
- Hesitant reform steps are being taken in some sectors, but there does not seem to be a rigorous approach to the reform process or to coordination at government level of complex change management processes, at least in terms of the new paradigms discussed in Section 3.2
- Some institutional capacity, though the relevant institutional frameworks lack clarity and have a high degree of political supervision; and
- Recognition that even in the North there is a duality to provision of services, to the extent that some areas receive no service at all.

Our framework for PPP assessment also suggests that the NGU is capable of administering a wider range of PPP forms and therefore there is a greater scope for build/maintenance and management contracts compared to the South. *In appropriate sectors, however, we recommend that regulatory bodies be disbanded in favour of monitoring of lease or concession contracts by the NGU PPP Unit.* In these cases, the small size of the networks and the dispersion between networks make contract monitoring more efficient than attempting to regulate operators across the country. At some point in the future however, as the size and reach of particular sectors increases, it may be necessary to establish more formal regulatory machinery.

10.1 Electricity

The electricity sector in North Sudan is dealing with problems familiar in a setting with a Government-owned vertically integrated monopoly. Assets are poorly maintained, new investments do not keep up with demand and customers are badly and sporadically served. These are soluble problems and there has been demonstrable success in other countries by adopting well thought through sectoral reforms and using PPP as a way of marshalling capital and harnessing skills.

The National Electricity Corporation (NEC) is a Government-owned and operated provider of electricity. Until recently, NEC's monopoly status was guaranteed by the legislation incorporating the company. However, in 2001, the Government passed the Electricity Act, which allows competition in generation and compels the NEC to connect them to the national grid. There have been few IPPs. There is an agreement with a private firm to build and operate the Soba Power Generation Plant in the south of Khartoum, though the investor has yet to secure financing.

We were advised that the present state of structural reform of the NEC is as follows⁴⁸:

- The NEC has been functionally split into separate generation, distribution and transmission arms
- It is intended to constitute the functional entities of the NEC as commercial SOEs in the first instance, where individual companies in each arm (e.g. generation and distribution) will be leased to private companies then privatised by 2010
- The private operators will have local monopolies initially at least, including local distribution assets
- Tariffs levied by private operators will be negotiated to reflect the costs of operation and a reasonable rate of return. Revenue collection (and the associated risks of non-collection as well as system loss management) is in the hands of the private operators
- New generation assets will be built and owned by private operators and amortized with a reasonable rate of return over an agreed period with energy sold at a negotiated tariff to the NEC (initially there is to be no market set up)
- HVDC transmission assets will continue to be owned by the Government.

The reform programme outlined above resulted from an officials' committee report submitted to the Minister of Finance. The committee reviewed international experience in forming its views⁴⁹. We do not propose to comment on the particular structural reform proposals adopted, but offer the view that if they are to have a chance of succeeding, very tight oversight of the privatisation and PPP process will be necessary by the Ministry of Finance to avoid creating significant fiscal risk for the Government, while ensuring there is security of electricity supply at reasonable cost to low income consumers and at competitive prices to industry given the increasing openness of the Sudanese economy. This is particularly true of Independent Power Producer (IPP) contracts signed between NEC and the private sector.

⁴⁸ This information was supplied by the NEC in an interview with senior NEC personnel on 3 October in Khartoum.

⁴⁹ We were unable to obtain a copy of the report, and were asked to provide comments to the NEC on Castalia's views on the proposals outlined. We have done so separately, in the form of a memorandum, drawing on our experience with electricity reform internationally.

At present, private sector involvement in generation is limited and virtually non-existent in transmission and distribution. Currently, the NEC and the Government employ private contractors to build turnkey projects, as with the construction of the Merowe Dam. The NEC also employs small private companies as fee collectors in some villages in Gezira State.

10.1.1 State of the sector

Generation

Generation capacity operates within and outside the national grid and is supplied by hydroelectricity and steam and gas turbines. The NEC reports that within the grid, generation capacity is 1006 MW with the plants operating at 88% of capacity. Outside of the grid, there are isolated generation plants functioning around the country. NEC estimates that off-grid installed capacity at 147 MW, but it only operates to 109 MW. This includes capacity in South Sudan.

Transmission

The National Electricity Grid was first established by constructing the Blue Nile Grid in 1967 to transfer electricity from Sennar Dam to Khartoum. This grid was expanded to the south of Sennar as the construction of Rosseirs Dam was completed. The second part of the grid, called the Eastern Grid, was constructed to carry electricity from Khasm El-Girba Dam to the eastern cities of New Halfa, Kassala, Gadarif and Fau. In 1990, the two grids were connected and became the National Grid. In 2005, the River Nile State was linked to the National Grid. There are no international connections, although there are plans to connect to the Ethiopian Grid.

Most of the existing lines are fairly new with the exception of the Rosiers-Khartoum line which dates back to the late sixties. There is no data specifying the age and condition of the existing network.

Customers

NEC estimates that it services nearly 842,000 customers. Again, NEC estimates include customers in South Sudan, where we have been informed there is very sporadic service. These estimates are thus overstated. There is no data specifying the number of consumers in each city or town. About two-thirds of the country is not currently being served.

The number of consumers by regions and categories is shown in Table 10.1. A large majority of serviced customers live in the Khartoum region. Out of a total 686,086 consumers on the grid in 2005, 60% are located in greater Khartoum, i.e. Khartoum, Khartoum North and Omdurman. The table also reveals that production areas like Gadarif, Halfa and White Nile have little or no access to distributed electricity supply for their agricultural operations.

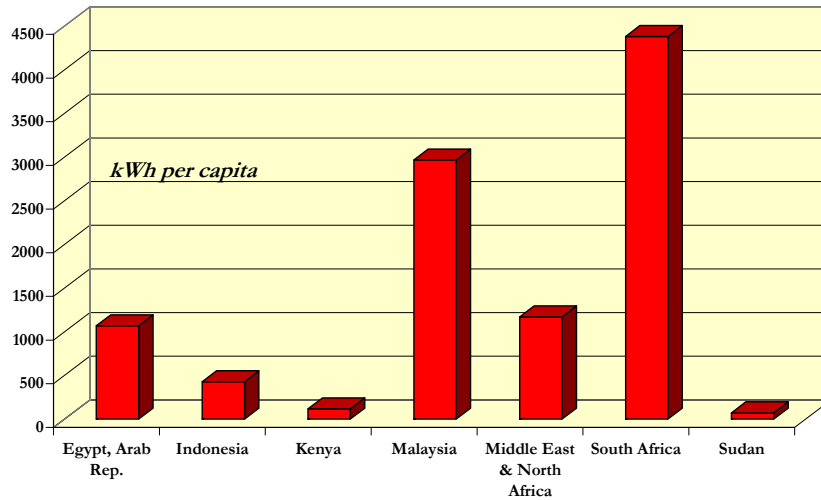
NEC estimates that it serves about one-third of all potential customers in both the North and the South.

Table 10.1: Electricity customers served by NEC

National Electricity Corporation						
<i>(No. of Consumers by area category as at December 2005)</i>						
On-Grid Areas:						
Area	Governmental	Agricultural	Industrial	Commercial	Domestic	Total
Khartoum	3476	1213	195	28051	147467	180402
Khartoum North	2132	1156	281	11477	94698	109744
Omdurman	1649	92	257	20795	97097	119890
Gezira – Mid	1232	363	104	5099	74774	81572
Gezira – North	940	414	28	2177	60457	64016
Gezira – South	853	112	28	2367	32315	35675
White Nile	700	8	47	4311	25966	31032
Halfa	243	2	15	1353	12232	13845
Girba	157	3	0	558	3442	4160
Kassala	594	435	5	2572	16134	19740
Gedarif	414	7	4	2837	16403	19665
Damazin	352	0	3	1415	4575	6345
Total	12,742	3,805	967	83,012	585,560	686,086
Off-Grid Areas						
Area	Governmental	Agricultural	Industrial	Commercial	Domestic	Total
Red Sea	722	12	96	3246	19603	23679
River Nile	887	419	7	3546	24366	29225
Shendi	425	210	1	1818	11869	14323
El-Obeid	524	0	60	3123	16064	19771
Um-Rwaba	100	0	9	534	2210	2853
Wadi Halfa	68	0	1	157	1611	1837
El Fashir	463	0	0	1274	6285	8022
Nyala	247	1	20	2073	11214	13555
Genaina	143	0	0	222	1973	2338
Juba	216	0	0	739	3446	4401
Malakal	172	0	0	260	1491	1923
Dongola	359	128	0	1097	7774	9358
Karima	555	1015	14	1555	11225	14364
Wau	346	0	0	0	2688	3034
Collection	0	0	0	0	7209	7209
Total	5,227	1,785	208	19,644	129,028	155,892
Grand Total	17969	5,590	1,175	102,656	714,588	841,978

As shown in Figure 10.1, Sudan (both North and South) has very low electricity use per capita. The figure reinforces the data provided by NEC demonstrating that electricity service is very limited to the population at large.

Figure 10.1: Electricity consumption per capita – selected areas, 2002



Source: World Development Indicators, World Bank

According to demand forecasts commissioned by the NEC in 1995, demand is expected to grow significantly, increasing by up to 150% by 2010. At present economic growth rates, this is a conservative growth forecast, and will leave supply well short of potential or desired demand if it remains as the planning target for generation and transmission capacity.

The government is currently building hydropower and thermal generation facilities to increase capacity from 1080 MW to 2830 MW. The completed Merowe Dam and a 450 MW station at Rabak will be connected to the Northern Grid and are intended to improve services to the Western regions.

Tariffs

Tariff rates are not set on an allocated cost basis, but are determined on a “social needs” basis. The tariff schedule is as follows:

Table 10.2: Energy tariff by category (US Cents/kwh)

Domestic	9.4
Industrial	9.4
Agricultural	7.5
Government	11.3

Source: NEC

Neither are tariffs set at full cost recovery. There is no explicit Government subsidy of electricity. NEC consequently absorbs this subsidy through operational losses.

10.1.2 Institutional and regulatory environment

As mentioned above, private participation and competition in generation is permitted through the Electricity Act 2001.

A new body, the Technical Bureau for Regulation and Supervision, was established under the Electricity Act. The Bureau is under the supervision of the Minister of Energy and advises him on all policies and regulation for generation, transmission and distribution of electricity. Thus, the ultimate regulator is the Minister.

Political involvement in regulation is a risk factor for private participants, since judgments on prices, for example and the process for granting licenses may be open to political intervention and perhaps corruption. The regulation of tariffs by the Minister on an ad hoc basis, without an explicit subsidy is also a recipe for confusion. Below we provide an example of these difficulties.

Box 10.1: The hazards of poorly specified regulation – scaring off investors

Sherian Elshemal Company, a partnership between the public and private sectors, concluded an agreement with the Government to generate, transmit and distribute electricity with to the cities of Dongola and Kareema in the Northern State. Having built two power plants, the company fell into a dispute with the state government over tariff levels, which were higher than national levels.

To resolve the dispute the state government sought a subsidy from the NEC but was refused. Though they had initially agreed to the tariffs, the national government decided to revoke the contract with the company and returned the electrification of the cities to the domain of the NEC.

Source: Castalia

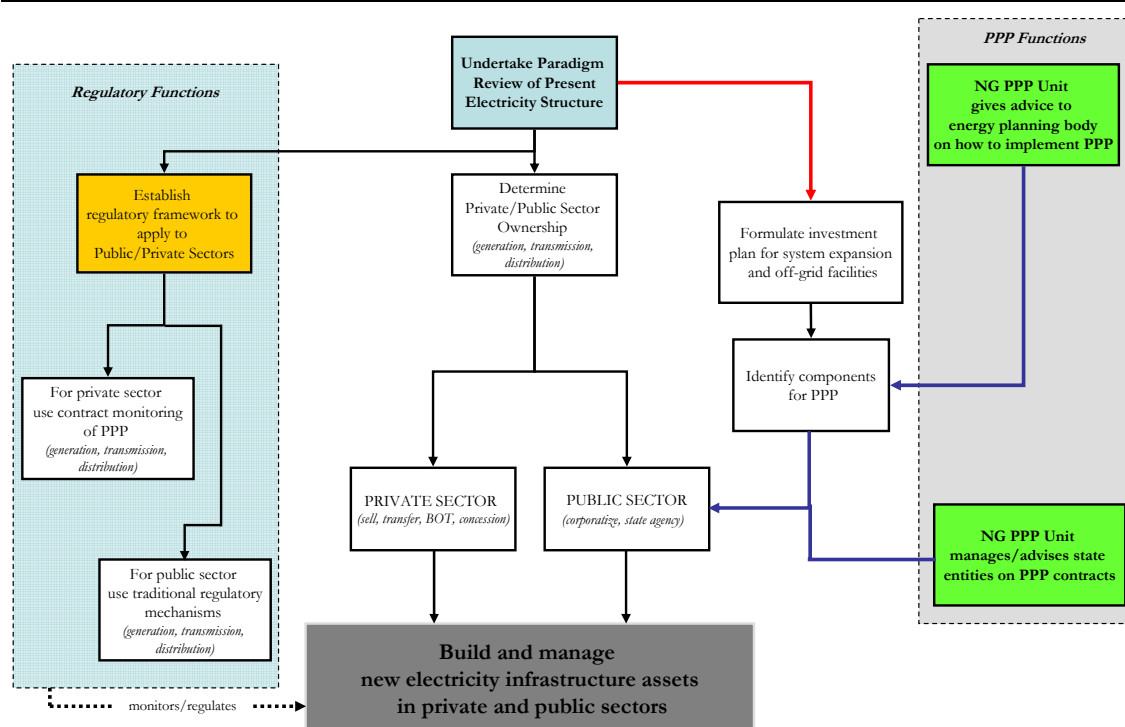
10.1.3 Recommendations for electricity

There is considerable room for private sector involvement in the electricity sector. Indeed, given the capital constraints faced by the NGU it is very unlikely that the NEC can meet the rapidly rising demand for efficiently produced and affordable energy throughout the country given the rapid economic growth Sudan is achieving.

[We recommend the government establish a process in the electricity sector, which must begin with establishing a clear reformed industry structure and regulatory framework for the sector, such as we outline in principle in Section 3.2.](#)

Table 10.3 sets out the process for establishing the right environment for encouraging private sector investment and involvement in the electricity sector. This process has equal application in both the north and the south, but particularly in the north where there is considerable infrastructure already which needs a new paradigm for investment and effectiveness.

Table 10.3: Process for establishing PPP in electricity sector



Source: Castalia

10.2 Water

The water sector is in a similar condition to the electricity sector, except that there have been fewer reforms made and private sector involvement is currently not permitted at all. Water provision is solely through the National Water Corporation (NWC), a Government monopoly. Service provision is decentralised through state water corporations and there are several other supplementary government owned bodies contracting to the NWC, including the National Company for Development of Rural Water Resources, National Company for Manufacturing of Water Equipment and the National Company for Drilling & Investment. There is little coordination between this myriad of groups, and information on the state of the infrastructure is hard to come by.

Nonetheless, what emerges is a familiar picture of depleted assets, poor and sporadic service and little investment. In the following sections, we describe some of these conditions, and make recommendations for improvement through private involvement.

10.2.1 Existing services

The production system depends on the source of water. The main sources of water are rivers, underground water, and hafeers⁵⁰. Water is produced through electrical driven pumps, manual pumps or modern water stations. A snapshot of production facilities is listed in the table below. All these facilities are operating, but they are generally run-down and some are more than 50 years old.

⁵⁰ A hafeer is a man-made depression to harvest and store seasonal surface water.

Table 10.4: Number of existing water facilities in Northern Sudan by region, 2002

Region	Urban	Rural						
	Water Stations	Bore holes	Surface holes	Hand set pumps	Filters	Hafeers	River Stations	Dams
Khartoum	6	489	200	585	3	60	14	
Darfur	4	520	248	2,162	-	156	-	23
Kordofan	9	594	4,184	5,724	3	365		2
Eastern	14	266	154	449	78	158	-	5
Northern	11	381	450	76	-	-	78	
Central	13	1,968	327	2,558	164	292	-	2
Total	57	4,218	5,563	11,554	248	1,031	92	32

Source: NWC

The distribution of the facilities provides an indication of the low level of investment particularly in areas outside of Khartoum. Water produced in urban areas is relatively clean due to the existence of purification facilities. In the rural areas, only a small share of production includes purification facilities. None of the surface water sources employ purification facilities.

About 70% of Sudan's population is rural, depending on agriculture and livestock husbandry as the backbone for their survival and livelihood. A few kilometres away from the Nile, availability of surface and groundwater sources determines the mode of the (rural) settlements and the other economic activities.

Many rural water supply systems, such as bore holes and river intakes are unofficially outside the NWC and state systems, and are of generally poor quality. Even those within the system provide low quality water. They are often also environmentally unsound and are unmonitored in this respect.

The Government has signed contracts totalling over US\$500 million to build various water facilities. These contracts have been financed by donors and foreign Governments but do not involve PPPs. Over US\$400 million of this is intended to improve water supply in Khartoum and Port Juba and consequently does not address significant problems in the outlying and rural regions.

Customers served

NWC estimates that only 50 percent of the urban population and much less of the rural population have access to drinking water.

Table 10.5 implies that in some states per capita consumption is less than the minimum requirement set by WHO/UNICEF. Some areas have virtually no service at all. It is clear that the need for investment is urgent and disproportionately so in many regions.

Table 10.5: Water supply in North Sudan

State	Supply <i>Mm³/day</i>	Total Demand <i>Mm³/day</i>	Coverage %	Deficit %
Blue Nile	70.960	194,880	3.6	94.4
South Darfur	26.200	306,213	8.6	91.4
North Darfur	20.252	221,536	9.1	90.9
West Darfur	11.120	117,174	9.5	90.5
West Kordofan	50.298	307,428	16.4	83.6
South Kordofan	35.255	181,229	19.5	80.5
North Kordofan	55.960	141,655	39.5	60.5
Red sea	8.2990	31,319	26.5	73.5
Kassala	25.040	88,027	28.4	71.6
EL. Gadarif	34.915	120,442	29.0	71.0
White Nile	47.165	144,582	32.6	67.4
Sinnar	48.970	150,008	32.6	67.4
EL. Gazira	85.765	205,878	41.7	58.3
Northern State	30.400	62,548	48.6	51.4
River Nile	32.746	53,382	61.3	38.7
Khartoum	74.120	97,397	76.0	24.0
Total	593.6	2,423.7	24.5	75.5

Source: NWC

Tariffs

Each state water corporation is responsible for setting and implementing the water tariff rates after the approval of each State's Legislative Council.

Despite the fact that the Government policy is that water should not be free, in some cases there is little or no charge for water. Implementation of water tariff rates has been a source of conflict between the National and State Governments and the National and State Water Commissions for this reason. We have been unable to get data on tariffs for the regions but have been informed that they are minimal.

The poor service provided by the NWC is directly related of course to the low/non-existent tariffs it charges. Clearly, payment risk is a major risk factor in the water sector. This needs to change if investments are to be made and if the private sector is to be attracted for PPP projects. It is worth pointing out though, that consumers in very poor countries are often willing to pay for the water supply even if it is supplied in by small operators at higher cost. For example, people are prepared to pay high prices for potable bottled water, which suggests if water quality was adequate consumers will pay: the strategy of making water free is therefore self defeating.

10.2.2 Institutional and regulatory environment

The National Water Corporation is operated by a management board under the supervision of the Federal Minister of Irrigation and Water Resources, while each of the state's water corporations has a management board under the supervision of the State Ministers of Planning and Public Utilities.

There are also several laws and regulatory bodies such as involved in the water sector and which operate without coordination.

The Minister is responsible for implementing state policy. He has the authority over the National Corporation for Water and is authorized to issue general directions to the Board of Directors of the Corporation and recommends appointments to the Board to the President. The Minister is also the de facto regulator of the system.

The NWC and the state operators have monopoly status, though there is some official and unofficial private involvement in the sector. Particularly notable is the increasing use of building contractors.

The potential for corruption and unfairness is even greater here than in the electricity sector, since not only is the Minister both regulator and policymaker, but there are several additional layers of accountability which are not being supervised by any central authority. Implementation of policy is also suspect under these circumstances, since the state corporations are not under effective control of the federal authority and have no standardised regulations of their own.

10.2.3 Recommendations for water

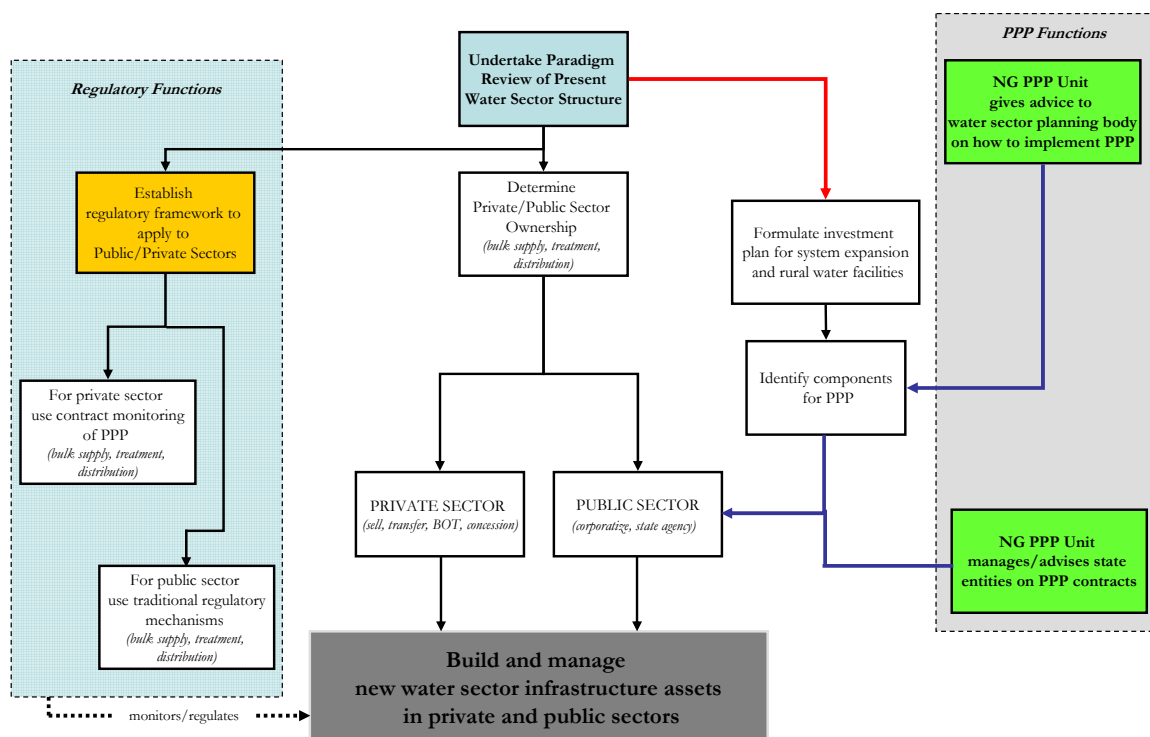
The circumstances of the water sector in the north are similar to the electricity sector. The broader policy implications are the same, in an environment where the Government has monopoly provision and considerable downstream monopoly supply of essential factor inputs into the NWC.

Accordingly, we recommend the policy approach should be the same as for the electricity sector. First, undertake a comprehensive paradigm review of the sector, decide which components will be sold to, or managed by, the private sector (or water cooperatives similar to the model we recommend for South Sudan) and which will remain in government or state ownership. The principles are set out in Sections 3.1 to 3.4

In parallel to this we recommend the Government establish a transparent regulatory and monitoring system of PPPs and private sector concessions, so the private sector has certainty is the overall environment they are operating in. We recommend the principles for establishing the regulatory system be those set out in Section 3.5.

The approach we recommend is set out in Table 10.6.

Table 10.6: Process for establishing PPP in water sector



Source: Castalia

10.3 Telecommunications

Telecommunications services were privatized in 1993 and the sector partially deregulated. Sudan Telecommunication Company, Sudatel, the new private operating company, maintained at that time a monopoly in fixed line and mobile phone services. In 2005, competition was allowed in both mobile and fixed line services. The regulatory body, National Corporation for Telecommunications (NCT), regulates all tariffs including interconnection rates.

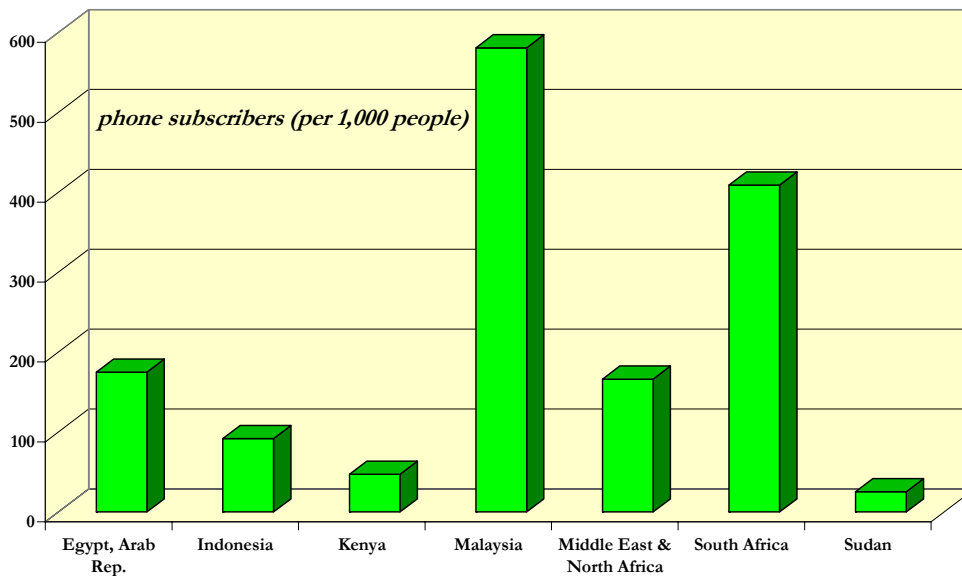
Despite these innovations, telephone use remains low relative to other countries, though overall use has increased. This is most likely due to the changes in the competitive structure and regulatory regime made only recently. In time, these changes should have a much larger impact. We have been unable to obtain information on the manner in which spectrum is allocated.

In the next sections we discuss some of the features of the new telecommunications industry and associated regulatory regimes. Finally, we recommend changes to improve services using PSP.

10.3.1 State of the sector

The number of phone users in country remains low despite significant increases since deregulation. Fixed-line users have increased by 73 percent and the number of mobile phone connections is nearly 2 million. While tariff rates are set at full cost recovery levels, investment in new capacity has not kept up with demand.

In Figure 10.2, it can be seen that Sudan remains far below the comparator countries in terms of subscribers per 1,000 people.

Figure 10.2: Fixed-line and mobile subscribers – comparison with selected areas

Source: Newtech

As mentioned above, it will take some time for the 2005 deregulation to take effect and for these effects to be reflected in improved service to customers. On the other hand, as long as poverty rates remain high in North Sudan, it is likely that phone use will remain low. This could be alleviated by allowing more competition on mobile and internet services than seems likely under present rules.

Networks

There are two fixed-line operators: Sudatel and Kanartel. Kanartel was recently awarded a licence to operate. There are three mobile operators: Mobitel (which is partially owned by Sudatel), Kanartel and Bashaier. Interconnection agreements exist between Sudatel on the one hand, and Mobitel, Bashaier and Kanartel on the other. Kanartel also maintains interconnection agreements with Mobitel, Bashaier and Sudatel.

The system in general appears to be well interconnected and new investors are being licensed, although the NGU Minister of Information advised that issuance of new licences required the prior approval of existing mobile operators. This perhaps explains why there are a relatively small number of mobile operators considering the size of potential customers. Such a barrier to new entrants by the existing players is unusual to say the least, and points to a significant problem in the spectrum allocation mechanism if competition is to be encouraged, and PPP opportunities to be maximized.

10.3.2 Institutional and regulatory environment

As in the other infrastructure sectors, the relevant Minister has final say over all decisions of the regulator, NCT. This is unusual by international best practice standards, where it is more normal for the regulator to carry out its functions within a statutory framework set by the Government (and the Minister), without any ministerial veto or other political involvement. This issue will have to be addressed if a positive environment for further private participation in telecoms is to be achieved.

Box 10.2: The perils of political involvement in regulation

The NCT is not independent and the Minister has the final say regarding any important issue. Such was the case in the intervention in a recent dispute between SUDATEL and MOBITEL.

A mobile concession was awarded to SUDATEL, which it then sub-contracted to MOBITEL. Sudatel owns 60% of the shares of Mobitel and at the end of the concession term Sudatel demanded US\$125 million from Mobitel as payment for the concession.

There was no such requirement set out in the contract.

The other shareholders of Mobitel refused the claim and the Board of Directors of NCT supported them. The Minister intervened and issued a resolution supporting Sudatel. This incident resulted in the resignation of the Chairman of the Board of Directors of the NCT.

Such incidents have a very chilling effect on the development of new competition and new investment.

Source: Castalia

10.3.3 Recommendations for telecommunications

There is vigorous private sector involvement in telecommunications in North Sudan. The NGU has plans to extend the reach of high capacity networks throughout the country: at present about 11,000 kms of fibre-optic networks have been completed or are under construction in Sudan, and a Euro 78m contract has been signed with Ericsson to improve internet services.

As is the case for a number of other infrastructure sectors, the responsible Minister has significant sway over investment decisions, and the regulatory machinery does not appear to be substantially independent of political control. This does not seem to be detrimental to the involvement of the private sector, or the emergence of effective competition in the sector, at least in the North.

Nevertheless, as the sector becomes totally privatised, without any government equity participation, the regulatory machinery will need to be established to ensure anti-competitive behaviour and ownership concentration does not undo the present environment which encourages PS participation and competition for the benefit of consumers. [We recommend that the Government begins a policy development process to anticipate these possibilities, and establish an appropriate regulatory machinery ahead of this inevitability.](#)

10.4 Roads

This section sets out available information on the extent, condition, and performance of road network in Sudan⁵¹.

10.4.1 Description of the network

The total classified main road network⁵², including roads under design and construction is about 30,069 kilometres (see Table 10.7 below). In addition to the classified main road network, the remaining road network in Sudan is composed mainly of tracks which can only be used by light trucks and four-wheel drive vehicles.

⁵¹ In addition to information provided directly by the National Highway Authority (NHA), which is used as the base data for this Report, the principal sources used were the National Comprehensive Plan for Roads and Bridges in Sudan prepared in November 2005 and relevant sections of Joint Assessment Mission (JAM) Report prepared in 2004 and 2005.

⁵² Refers to both North and South Sudan; identified as 195 road segments by NHA.

Table 10.7: Sudan's road network

Type of road	Total	Share of total	Road density	SSA average 1999)	
	<i>km</i>	%	<i>km per m</i>	%	<i>per m</i>
Paved roads	4,738	16	139	13	339
Paved roads (under construction)	2,854	9	84		
Gravel roads	2,978	10	88		
Earth roads (design completed)	2,277	8	67		
Earth roads	17,222	57	507		
Total	30,069		884		

Source: The National Comprehensive Plan for Roads and Bridges in Sudan, NHA

The extent of the paved main road network in Sudan is in the order of 3,599⁵³ to 4,738 kms, although estimates vary. The paved road network connects Khartoum with the main regional centres, as well as linking some of the important regional centres to each other. The key highway is the one that links Khartoum to Port Sudan, which is about 1,200 kms. Other highways include those that run from Khartoum to Elobeid, Kosti, Kadugli, and Demazin. The balance of the road network amounts to about 22,477 kms of gravel and earth roads. Most of Sudan's roads are dirt tracks that become impassable during the rainy season.

Records of the number of bridges, viaducts, and culverts are not available, although the number of such assets is considerable given the size of the country and the many rivers and streams that the road network has to cross.

The density of Sudan's paved roads is low at 139 km per million people while the average for Sub-Saharan Africa is 339 km. No comprehensive national assessment of road quality is available, but the condition of roads is believed to be poor to fair on the major routes in Northern Sudan. The condition of the main road network can be attributed to the passage of overloaded trucks and the lack of proper maintenance.

The National Highways Authority (NHA) statistics indicate that the volume of traffic on roads in Sudan 2004 was as follows:

- Commodity traffic: 122,195 tonnes
- Passenger traffic: 135,507 passengers.

The NHA estimates that 31% of freight traffic moved by road in 1970. By 2004 NHA estimates this figure to have risen to 84%.

⁵³ Source: <http://www.unjlc.org/sudan/infrastructure/> United Nations Joint Logistics Centre (UNJLC)

Table 10.8: Freight traffic by mode of transport

Year	Percentage Share			
	Railway	Road	River	Air
1994	33	66	0.4	0.6
1995	33	66	0.4	0.6
1996	33	66	0.4	0.6
1997	33	66	0.4	0.6
1998	29	70	0.3	0.7
1999	25	74	0.3	0.7
2000	25	74	0.4	0.6
2001	24	75	0.4	0.6
2002	20	79	0.4	0.6
2003	18	81	0.3	0.7
2004	15	84	0.3	0.7

Source: National Highway Authority, 2005

Annual growth in the number of vehicles on the road in North Sudan has ranged from 8 to 39 percent. Passenger cars represent 60 percent share of vehicles on the road followed by light trucks and buses at 25 percent. Medium and heavy trucks are not far behind at 17 percent.

10.4.2 Regulatory and institutional setting

Sudan's highway network has been administered by the NHA since 2001. It was previously administered by the Roads and Bridges Public Corporation (RBPC)⁵⁴. RBPC was responsible for studies, design, construction, construction supervision and maintenance of all national roads and bridges in the country. In the middle of the 1990s, the states were given responsibility for “feeder” roads and RBPC became responsible for national roads only. Actual maintenance and small construction work was carried out by RBPC, while large road projects were undertaken with support from international contractors and consultants.

When NHA was set-up by Presidential Decree in 2001 as a department under the Ministry of Roads and Bridges⁵⁵ it was charged with sole responsibility for planning, construction, rehabilitation and maintenance of all national roads. The RBPC was abolished and RBPC's production unit (the National Construction Company for Roads and Bridges - NCCRB) was transferred to a commercial construction corporation which is 90% owned by government, which is now left to compete as a contractor on the open market. NHA now has a staff of about 30 engineers.

Ministerial oversight and responsibility for roads policy rests with the Ministry of Transport, Roads and Bridges.

⁵⁴ In 1988 RBPC had a staff roster of more than 150 engineers, more than 1000 other technical staff including labourers, and 260 administrative personnel

⁵⁵ In August 2005 this Ministry was incorporated in the newly constituted Ministry of Transport, Roads and Bridges.

In terms of the Power Sharing Agreement, national and inter-state roads are a national responsibility. Intrastate roads are a responsibility of the states. The powers of the GoSS include, on the other hand, the reconstruction and development of the Southern Sudan as a whole. The full implications of this potential conflict will need to be sorted out and touches upon the fact that a functioning road classification system is missing in Sudan.

With no classification system in place the division of responsibility for road maintenance among the central, regional and local governments is unclear. The National Highway Authority (NHA) is responsible for maintenance of “national roads” and has a list of roads that are designated as such (this was not made available) in North and South Sudan⁵⁶. In practise, it appears that all paved roads are regarded and listed as “national roads”, except those falling under the management of Khartoum state, which seems to be the only local administration with capacity and resources to carry out any road maintenance.

The Government levies a considerable number of taxes and fees on vehicles, spare parts and tires. Taxes include vehicle licensing, vehicle resale tax, custom duties, fuel tax and sales tax. The amount collected and its use was not made available.

Funding for road maintenance of paved roads in the North is provided in part through toll fees are collected at 46 toll stations spread over the national road network in the North. All vehicles that pass through these toll stations have to pay a weight/distance toll according to vehicle type and are at the same time registered and entered by hand in a ledger. The security company (HADAF) that collects the toll fee, retains 7% of the total as commission. The remaining 93% is earmarked for the road sector, including administration, maintenance and rehabilitation. All tolls collected in 2003 amounted to about US\$21.6 million, more than double the revenues collected in 2000. NHA would like to introduce a fuel levy to cover road maintenance costs but this idea was not accepted by Government.

The entire road network is state owned. Funds for new investments (national roads) are allocated from general government budget allocations.

10.4.3 Existing role and potential for PSP in roads

PSP currently occurs in all areas of the road sector:

- Road haulage of freight
- Bus services
- Road maintenance
- Civil works
- Toll collection.

Private carriers are licensed by the Ministry of Justice to participate in the market for truck and bus services, and are free to enter or leave these businesses with minimal constraints or requirements. Carriers are organized by mode and by function under the Chamber of Transport which is one of the main branches of the Chamber of Commerce. The Chamber of Transport provides an informational conduit between the public and private sectors of Sudan’s transport economy. Long haul trucking is a relatively new industry in Sudan. Until about 1975, the Government of Sudan provided relatively little

⁵⁶ In his speech to the Opening of the Second Session of the Southern Sudan Legislative Assembly on 6 September 2006, the President of GoSS announced significant road repairs and upgrading of nearly 2,800 kms of Southern Sudan, without any reference to NG planning.

highway infrastructure on which long haul trucks could operate efficiently. A strong lobby has emerged from within the industry to build more highways and to continue to shift modal dependence to highway transport. Road building has become a growth sector within Sudan's economy, along with highway services for both goods and passengers.

EL NEFEIDI is a major transportation and logistics company based in North Sudan. It is currently involved in road transport under the name REBIA with a fleet of 1,000 trucks and extensive maintenance workshops. It also has interests in river transport and dry ports. The company has already begun discussions with GoSS on setting up a private river transport company with 13 barges serving the Kosti – Juba route and with Juba port as its base of operations. El Nefeidi is aiming at integrating transport services through intermodal solutions to better serve its clients. In 2006, it started constructing a dry port near Khartoum which is expected to be operational in 2007.

According to El Nefeidi there are four other major road hauliers in Sudan.

NHA reports that, in their view, only 10 Sudanese roading contractors are competent out of 200 firms that are registered. These domestic contractors have established resources to carry out paved road construction, such as Petrocost, which has set up permanent asphalt plants at several locations in the country. Petrocost has also made a joint venture with a Malaysian company and is currently doing the Al Hoy- En Nahud road, a section of 103 km with double bituminous surface treatment (DBST). The government controlled construction company (NCCRB) has also established asphalt plants and crushers at two locations. It is understood that NCCRB suffers from limited resources, and is about to be sold to private interests.

The local Sudanese consultancy business started about 1980. Before this date a few architectural offices were in practice to serve the building industry. Most development projects were financed by external sources, and used international consultants. Early in the 1980s the Government decreed that foreign consultants must be joined by local firms. As a result of this policy around 15 firms started to practice. About five firms are active in the road sector with staff ranging from 25 to 30 professionals.

Local capacity has responded well to meet the demand for road haulage of freight and bus services although the financial capacity of smaller operators is limited. Based on data provided by the Chamber of Transport there were 5,500 heavy dry cargo trucks, 1,200 tank trucks, 900 buses and 10,000 lorries registered for operation in Sudan in 2004. Since the import tariff barriers were dropped in late 2005 for a limited period these figures have increased when the market was flooded with truck imports⁵⁷. SPC reports that the road tariff dropped from 18,000-20,000 SD/tonne to 6,000-8,000 SD/tonne compared to the average rail tariff of 9,000 SD/tonne.

Domestic capabilities in road maintenance and civil works are still in need of further development in terms of capacity, skills development and investment in assets. International firms are still used for most major civil works contracts.

10.4.4 Recommendations for roads

The road sector in North Sudan needs improved planning and could benefit from greater private participation. [Our recommendations for the sector are:](#)

⁵⁷ The Bank of Sudan apparently provided easy loans to commercial banks (up to US\$ 100 million) to increase liquidity in the market to encourage the purchase of trucks by the private sector. By all reports this policy was a failure: it flooded the market with trucks when the capacity to absorb the supply was insufficient, a number of banks suffered as buyers failed to pay for the trucks, and road haulage tariffs plummeted this hurting the trucking industry. The site visit to Port Sudan demonstrated a hundreds of new trucks are still sitting on the quay,

- Contract for management of toll roads, including maintenance, using a bidding process
- Use private sector to design-build, maintain and where feasible, develop toll road concessions
- Classify Sudan's road network via a National Roads Classification SYSTEM
- Clarify institutional roles between Ministry of Transport, Roads and Bridges and MTR (GoSS)
- Enforce axle-load restrictions
- Consider penalties for vehicle-caused environmental damage
- Set-up a Roads Maintenance Fund, for lesser roads that cannot be managed by a private operator and engage in long-term maintenance contracts
- Establish a line ministry PPP division within the Ministry of Transport to promote and facilitate PPP contracts in the port sector, to work closely with the NG PPPU.

10.5 Rail

This section sets out available information on the extent, condition, and performance of rail sub-sector in North Sudan. In addition to information provided directly by the Sudan Railways Corporation (SRC), which is used as the base data for this Report, the principal sources used were the SRC Investment Plan prepared in November 2005 and relevant sections of the JAM Report on the railway sub-sector prepared in 2004 and 2005. These sources were supplemented by discussions with key officials and private sector operators.

10.5.1 Description of the network

Sudan has one of the largest and oldest rail networks in Africa, comprising 4,578 kilometres⁵⁸ of narrow-gauge single track as shown in the table below.

⁵⁸ Data from the JAM Report while SRC states that it has a 5,898km network..

Table 10.9: SRC rail network

Section	Construction Date	Km	Rail Weight <i>Lb/yard</i>	Closed Sections
Wadi Halfa-Abu Hamad	1898-1897	93/257	75/50	
Abu Hamad-Atbara	1898	244	75	
Atbara-Khartoum	1898-1900	313	90	
Atbara-Port Sudan	1904-1906	474	90	
Station No.10-Karima	1905	222	50	
Khartoum-Kosti-El Obeid	1909-1911	573/116	75/50	
Haiya-Kassala	1923-1924	347	75	Closed
Kassala-Gedarif	1924-1928	218	75	
Gedarif-Sennar	1928-1929	237	75	
Sennar-Ed Damazine	1953-1954	227	50	
Aradeib Junction-Babanousa	1956-1957	346/8	75/90	
Babanousa-Nyala	1957-1959	325/10	50/90	Closed?
Babanousa-Wau	1959-1962	446	50	Closed
Girba-Digiam	1962	70	50	Closed
Muglad-Abu Gabra	1995	52	50	
Total (kms)		4,578		1,880

Note: Does not include Malawiya-Tessenie (Ethiopia) line which is not in use

Source: JAM Report on Railway Sector

The main line runs from Wadi Halfa, via Khartoum, to El Obeid, with tracks also from Khartoum to Port Sudan, and from El Obeid to Nyala in Southern Darfur and to Wau in Southern Sudan. As the network was built mostly during the colonial period in the late 1800s, much of the network is in poor condition. Most of the rails are 50-75 lb/yard and up to 40% of the network is closed as presented in Table 10.10.

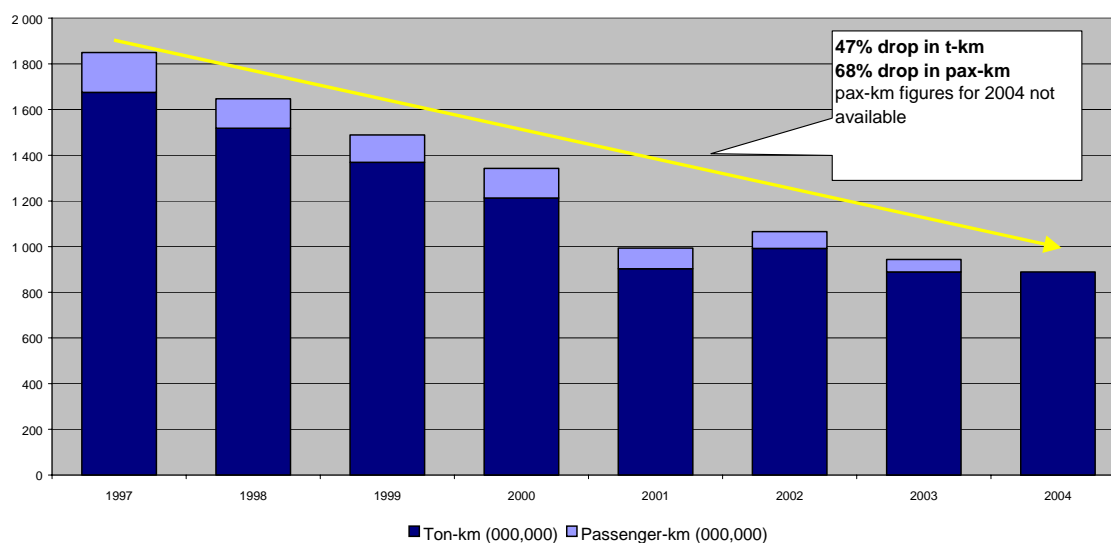
Table 10.10: SRC network in use and type of rail

	Km	%
Closed lines	1,880	41
Operational lines	2,698	59
	4,578	100
90 lb/yard line	805	18
75 lb/yard line	2,058	45
50 lb/yard line	1,715	37
	4,578	100

Source: JAM Report on Railway Sector

The JAM Report on SRC provides a thorough overview of the poor state of the sector. The following analysis presents some of the most salient features of SRC's performance.

In the last 25 years SRC's best performing year in moving freight was in 1980: 2.1 M tonnes and 1.9 B t-km. The best performing year for passenger traffic was achieved in 1982 (2.68 m passengers and 1.2 billion pax-km). Figure 10.3 presents a dire picture of declining performance, at a time when economic growth has been strong.

Figure 10.3: SRC traffic 1997-2004

Source: SRC

The freight movements are near their lows from the mid 1980s while the passenger traffic has hit its lowest levels ever. The rail sector's share of transport in Sudan has hit an all-time low. SRC's railway productivity, estimated to be 72,270 t-km per employee in 2003 is low even by Sub Saharan Africa (SSA) standards. SRC's motive power and rolling stock assets are in very poor condition.

As shown in Table 10.11 SRC falls short on every key performance indicator: high expenditure on staff salaries relative to key productivity measures, unsustainable debt levels, high levels of subsidisation by government, and low rolling stock and employee productivity which is lower than the already unacceptable SSA average. SRC is not a

financially sustainable enterprise. The operating ratio reached 130 percent in 2003. The future does not bode well given the trend of a greater proportion of expenses going to salaries while the revenue base falls. The high proportion of revenue spent on staff salaries is the root cause of lack of funds for maintenance and renewal. The reported increase in wage levels in SRC is likely to exacerbate the financial crisis in the railway.

Table 10.11: SRC productivity: 2000-2003

	Unit	2000	2001	2002	2003
Profit/Loss	<i>SD m</i>	-620	-1,106	-1,637	-1,920
GoSS subsidy	<i>SD m</i>	n/a	n/a	1,055	3,438
Debt load	<i>SD m</i>	2,605	3,955	7,808	9,924
Salaries/expense ratio	%	42%	50%	54%	60%
Operating ratio	%	108%	117%	125%	130%
No. of employees		14,021	13,698	12,936	12,301
T-km per employee	<i>m</i>	86	65	76	72
Annual net T-km/loco	<i>m</i>	20	17	23	17
Loaded wagon km	<i>m</i>	42	27	29	20
Wagon turnaround	<i>Days</i>	24	29	23	29

Source: JAM Report on the railway sector

SRC's central problems are common to most other SSA railways prior to PSP being introduced. SRC has poor management and lacks commercial orientation. It has difficulty in sourcing spare parts, low availability of rolling stock and motive power. Its traffic base is also eroding due to competition from road hauliers and poor track condition. The road building and rehabilitation programme will intensify competition from road hauliers and further erode SRC's traffic volumes. SRC's revitalisation challenge is enormous.

10.5.2 Regulatory and institutional setting

SRC operates under the Sudan Railways Regulation Act of 1973. SRC is an autonomous legal entity in perpetuity and falls under the supervision of the Minister of Transport, Roads and Bridges. SRC has a monopoly for providing rail services in Sudan. SRC's General Manager can recommend that the Minister issue a work permit for a private sector entity to conduct railway activities. In 2003 an Act was passed by Parliament under which SRC and other GoSS parastatals would become public corporations. The Act is not yet in force. It would seem that once the Act comes into force the Sudan Railways Regulation Act would have to be repealed and replaced with new legislation.

The JAM Report indicates that SRC is free to market its services and charge customers tariffs without interference from the Government⁵⁹.

The Ministry of Transport, Roads and Bridges is responsible for overall policy formulation in the rail sector. SRC has to submit performance targets before the start of each year. The Ministry of Finance and National Economy also has a role related to SRC. In particular, the resource sector in the Ministry has the task of coordinating GoSS

⁵⁹ The accuracy of this assessment is not known as parastatal rail organisations in SSA are periodically subject to government interference in rate setting.

capital inputs in the railway. This includes allocations of bilateral loans and credits for railway development or equipment negotiated by the Government. However, GoSS has channelled bilateral assistance to SRC (India US\$10 million) and stood as guarantor to loans for equipment (Islamic Development Bank US\$10.6 million, 180 wagons from Iran).

10.5.3 Existing role and potential for PSP in rail

SRC is charged with providing rail services on a monopoly basis and contracts with the private sector to provide certain services on the network. SRC reports that there are eleven⁶⁰ private sector freight operators. This number may actually refer to the number of Bidders that responded to the tender launched in 2001. That process produced 4 compliant Bidders that provided the required letter of credit. Some of the private sector operators are listed below:

- El Bazim Co. (Freight services Khartoum to Port Sudan)
- Free Zones Co. (Freight services Khartoum to Port Sudan)
- Sheikhu Rail Transport Company (Provides passenger and cargo services extending from Wadi Halfa and El Obeid-Nyala respectively via El Dabaibat).

The introduction of private sector operators consists of the following terms:

- The private company provides its own locomotives and wagons⁶¹ and operates its trains using SRC employees
- The private company pay the SRC employees used for its service
- Fees are paid by the private company to SRC on the basis of 30% of 6,000 SD⁶²/tonnes hauled. The private operator is free to charge its clients over and above this level
- The tender process is not well understood except that it was managed in-house by SRC under its own procurement rules (which we were not able to review). SRC stated that the process was approved by the Board and the line Ministry.

SRC reports that passenger services are now provided by a private sector entity, El Sikakyoon Co. (passenger trains)⁶³, between some of the main centres of SRC, that is, Khartoum to Port Sudan and Khartoum to Wadi Halfa. The PSP entity markets the services, sells tickets, maintains and operates the trains.

All of the private sector firms use SRC staff for these activities and the SRC operations centre controls train movements and safety considerations. The PSP entities in freight carry about 30 percent of all originating tonnage on the system. The total PSP investment up to December 2003 was US\$11.5 million.

More recent data was obtained from the DAL group, which is the major user of the rail system. In 2006 it imported 1.2 million tonnes of wheat; rail carried 20 percent and the rest was carried by road. DAL would like to increase the proportion of rail traffic to 50%

⁶⁰ 9 Sudanese and 2 Saudi Arabian firms.

⁶¹ It seems as though this is not the only arrangement, it could be that rehabilitated SRC rolling stock is also used.

⁶² After tax (10% VAT).

⁶³ It appears though that this company is owned by SRC.

percent. Up to 2006 DAL alone invested up to US\$20 million in SRC's operations. This investment includes:

- Rehabilitation of GE locomotives in Iran
- Repair of flat wagons
- Financial guarantees to lease 18 Spoornet locomotives
- Financial guarantees to import 300 wagons from South Africa.

DAL asserts that the cost differential between rail and road is still substantial enough for them to continue with rail haulage even though the rail services are deficient in meeting their transport needs. Ultimately DAL wants to procure and use its own motive power and wagons.

According to the JAM Report the private sector is involved in coach maintenance using SRC staff and facilities. The terms of the contracts are not known. The main location for this activity is the coach maintenance facility at Khartoum. The number of coaches working on SRC has actually increased due to their refurbishment by the private sector companies.

A tentative introduction of PSP activities has now evolved. The Ministry indicated that a consultant has been engaged to develop a master plan and to evaluate the recent private sector experience. Private sector freight operators (PSP entities) are apparently free to charge whatever tariffs they desire from their customers and pay SRC the ruling tariff for the consignments (tonnage) carried point-to-point. In the case of passenger services the private sector operators charge tariffs with regulation by SRC based on their contracts with them.

On a small-scale basis the local private sector has responded to niche market opportunities in rail. It is less certain how capable the local private sector could respond to a large-scale PSP opportunity in the railway sector.

10.5.4 Recommendations for rail

Our conclusion is that until SRC becomes a commercially driven enterprise – whoever it is owned by – with minimal bureaucracy and clear commercial objectives the deep seated problems of SRC will not be resolved. In this respect, a clear definition of the regulatory and commercial objectives of the two governments needs to be codified in the law and the institutions in the rail sector, before the rail system can be rebuilt and provide viable competition to other modes of transport.

We strongly recommend that the NGU and the GoSS complete this framework using the principles and policy prescription set out in Section 3 before committing significant sums for investment, to ensure the investment is economically justified and well managed, and service providers (preferably private) are held accountable where they are a monopoly supplier.

With a clear policy and regulatory framework in place with defined reform objectives wider PPP arrangements should be sought for the operation, maintenance and development of the railway system. High priority should be placed on developing the full potential of the Khartoum-Port Sudan rail link.

We also recommend the establishment of a line ministry PPP division within the Ministry of Transport to promote and facilitate PPP contracts in the port sector, to work closely with the NG PPPU.

10.6 River transport

This section sets out available information on the extent, condition, and performance of river (usually termed inland waterway) network in Sudan. It includes a review of river transport services. In addition to information provided directly by the River Transport Corporation (RTC), which is used as the base data for this Report, the principal sources used were relevant sections of the JAM Report on the river sub-sector prepared in 2004 and 2005. The data for the river transport sector covers both North and South and our recommendations imply some degree of cooperation between the NUG and the GoSS.

10.6.1 State of the sector

Sudan has an extensive inland waterway system traversing south to north and provides an important inland transport route in areas which are poorly served by the surface transport modes. Its usefulness is governed by natural features: in the north it is repeatedly interrupted by un-navigable rapids, while in the south the White Nile meanders through the Sudd, a vast swamp with continually shifting channels. Manmade features also restrict its use, particularly the Jebel Aulia dam (km 47.5) and a railway crossing near Kosti (km 319).

Potentially the cheapest mode of transport, the existing river transport system covers about 1,746 km from Khartoum to Juba. The most important section is the 1,427 km stretch between Kosti to Juba, which at present is the only section offering regular commercial services. In 2003, a tributary of the White Nile, known as the Sobat River, was reopened to traffic. On the main Nile, a 287 km stretch from Kuraymah to Dunqulah (known as the Dunqulah reach) also offers commercial services although this is restricted during low water periods between February and March.

There are a total of 30 river ports between Khartoum and Juba. The three key river ports are Kosti, Malakal and Juba. Kosti is the most important northern dry cargo and passenger port of the southern reach. It is connected with Khartoum, Port Sudan and other major towns by rail and asphalt road. Malakal serves as the terminal station on the southern reach. Juba is the most important river port in the South. Ports of secondary importance include: Jebel Aulia, El Renk, Bentiu, Bor, Shambe and Gemmeiza.

The majority of transport assets operating on Sudan's waterways are owned by RTC as shown in Table 10.12 below.

Table 10.12: RTC fleet

	Notional Capacity	Capacity	Operational
	<i>units</i>	<i>tons or pax/unit</i>	<i>units</i>
Vessels			
Push Tugs	17	2,000	11
Launches	9		3
River buses	7	160	7
Passenger vessel	4	232	1
Subtotal	37		22
Barges			
Self Propelled Oil Barge	1	600	?
General Cargo Barge	76	500	46
Flat Deck Cargo Barge	11	120	4
Oil Fleet Barge	28	500	11
Passenger	3	?	3
Subtotal	119		64
Total	156		86

Source: RTC and JAM Report on Inland Waterways Transport

Passenger river transport grew from 86,000 passengers to over 200,000 passengers between 1960 and 1976. The trend in cargo traffic was not available, though it did reach just over 274,000 tonnes in FY 1981-82. Since 1984 until recently, only a few heavily armed and escorted convoys served the Malakal to Juba route.

Table 10.13: River transport volumes (Southern Region)

Year	Cargo (000 tons)	Passengers
2001	45	7,000
2002	50	8,000
2003	43	12,000
2004	35	10,000
2005	70	19,000
2006	22	1,000

Source: RTC as of April 27 2006

Today the RTC only operates on the Southern Reach. Private operators serve part of the Southern Reach (Renk to Malakal) and at times also operate on the tributaries of the White Nile.

10.6.2 Regulatory and institutional setting

Transport facilities on both the Northern and Southern reaches were operated after 1973 by the River Transport Corporation (RTC), a corporation, established in terms of the Public Corporations Act (last amended in 2003). Before that they had been run by the SRC, essentially as feeders to the rail line. The RTC serves as a river transport operator on the River Nile and its tributaries as well as the operator of river ports. It has its headquarters in Khartoum, but also one headquarters for the Southern Reach at Kosti and for the Northern Reach at Karima. RTC in addition maintains representation at the main ports along the Southern Reach, i.e. Renk, Malakal and Juba. It is estimated to staff 1,500 personnel.

The Inland River Navigation Directorate (IRND) is responsible for the public functions along the river, including safety, dredging, navigation aids and the registering of vessels and barges⁶⁴. It has a staff of 75, but lacks staff with the required qualifications. It is based in Khartoum. It is not self-financing and operates as a department dependent on annual appropriations which are insufficient to fulfill its mandate. The Ministry of Transport, Roads and Bridges is currently considering a proposal for transforming this directorate into a corporation in terms of the Public Corporations Act, to be named the Inland Waterways Corporation. It is also being proposed that the new corporation take over responsibility for the operations of river ports from RTC.

10.6.3 Existing role and potential for PSP in river transport

The Southern Reach is today also served by a number of private operators mainly based at Kosti and Malakal (there are 7 of them according to information provided by the WFP plus one other interviewed for this project), but the RTC, which had a monopoly by law until 1990, still appears to be the dominant operator. RTC and private operators use (push) tug boats and barges to move traffic. Some private operators have also taken the initiative to develop small river ports. The Sudanese River Transport Company is reported to have opened a small port⁶⁵ at Mallut and is in the process of opening a second facility at Malakal. This seems unusual given the under-utilized river port system already in place. Two new loading facilities near Juba port are currently planned by the private sector and are presently being constructed. This private sector response points to the RTC's lack of investment to maximize the use of existing facilities.

The private river transport assets operating on Sudan's waterways are owned by at least 8 companies. Up to 18 push tugs – greater than RTC capacity - and 30 barges are operational.

⁶⁴ Annual fees are paid to IRND by the private sector operators based on the type of fleet deemed to be safe to operate after inspection by IRND.

⁶⁵ This site was not visited, it may well just consist of a basic loading facility.

Table 10.14: Fleet of private river transport companies

Company	Fleet	Pusher Tugs	Barges
Garb el Nuer Pusher	Flattop barge of 400 mt capacity	1	1
El Mugren	Pusher of 400 mt, barges total 500 mt	1	2
River Engineering Transport	Barge of 900 mt		1
Jonglei State	Malakal pusher and hire barges of 450 mt	1	?
Hussein Rahman Adilan	1 self-propelled barge and fuel tank, 500 mt, 1 pusher of 1,400 mt capacity	1	3
Pushers for Peace	6 barges with capacity of 950 mt, 6 flattop barges of 750 mt	6	12
Shankin River Transport	Pushers of 600 mt and 100 mt capacity, barges of 450 mt capacity	2	2

Source: JAM Report ; Inland Waterway Transport Report (2004)

The barriers for entry seem minimal according to an interview with a private sector operator. An application is made with IRND and the main hurdle to overcome is the safety check of the vessels and barges in use. The fees paid by the private sector appear to be limited to: berthing fees collected by RTC at each of its river ports and a yearly fee paid to IRND based on the fleet used on the inland waterway system. The private sector operator indicated that its performance exceeds that of RTC in terms of efficiency, transit time and generation of back-haul traffic. Interestingly, the private sector operator indicated that access to local commercial financing to purchase new equipment is fairly easy and does not present an obstacle to developing its business.

Since there is already private involvement in the sector (indeed in many cases private operators are the only providers of service), both Governments should take advantage of this fact. They should also bear in mind that their ability to manage the system in any meaningful way is limited.

10.6.4 Recommendations for the river sector

Our specific proposals for the River Transport sector are to:

- Develop PPP and concession models for the river ports including clearing the river ways and managing the ports
- Investigate and promote private provision of river port facilities, with light handed regulation to ensure there is open access to facilities for river transport operators and to implement a transparent access fees arrangement
- Privatize the RTC. (*We understand a privatization committee is studying this option and its report will be submitted in November/December 2006*)
- Establish a line ministry PPP division within the Ministry of Transport to promote and facilitate PPP contracts in the port sector, to work closely with the NG PPPU.

10.7 Seaports

This section sets out available information on the extent, condition, and performance of seaport assets in North Sudan. There are no seaports in Southern Sudan although it is worth noting that the port of Mombasa on the Kenyan coast serves as a transit port for traffic⁶⁶ entering southern Sudan. In addition to information provided directly by the Sudan Sea Ports Corporation (SPC), which is used as the base data for this Report, the principal sources used were the Ports Statistics prepared by SPC in 2005 and relevant sections of JAM Report which was prepared in 2004 and 2005.

10.7.1 State of the sector

The Sea Ports Corporation (SPC) operates all ports on the coast of Sudan except for the crude oil export facility at Bashayer, 25 km south of Port Sudan, which is operated by the Ministry of Energy. There are ten ports in Sudan although many are little more than anchorages or creeks and do not, at present, make any significant contribution to the economic well-being of North Sudan. We focus on the three main ports operated by SPC, namely the general cargo, container and bulk port at Port Sudan, the newly constructed import/export berth for refined oil and related products at El Khair, 5 km south of Port Sudan, and the passenger/ferry, yachting, livestock and gas export port at Sawakin, 65 km south of Port Sudan.

The seaports of Sudan are relatively well-developed. Port Sudan is the country's major commercial port as presented in Table 10.15.

⁶⁶ This transit traffic amounts to approximately 75,000 tonnes of cargo per annum.

Table 10.15: Seaports in Sudan (2005)

Seaports	Traffic		Berths	Quay length	Quay depth	Cargo
	Tonnes	pax				
SPC Ports						
Port Sudan Harbour:						
- North port	5,476,200		14	98.3-825	8-10.7	General, liquid bulk and RoRo
- South port ¹	1,100,401		4	108-420	10.7-12.6	General, grain and containers
- Green port	n.a.		2	548	14.6	Dry bulk
Elkhair Oil Terminal	n.a.				14.5	Oil
Osman Digna Port (Sawakin)	197,122	312,646	7	67-156	8-8.5	RoRo, coastal and passengers
Total	6,773,723	312,646	27			
Ministry of Energy Port						
Bashayer Oil Export Terminal ²	n.a.					Oil

Notes: 1. Includes petroleum traffic; does not include container traffic tonnage

2. Handled average exports of 160,000 barrels/day in 2001.

Source: SPC

Due to its strong revenue flow SPC has succeeded in self-financing some of its port development activities. According to SPC, 25 percent of revenue is allocated to development projects and new equipment each year, 25 percent is paid to the Ministry of Finance as a contribution to Government and 50 percent is used to cover operating expenses. The latest revenue figure of US\$80 million (reported in 2003) would mean that up to US\$20 million is slated for development projects. As a result, the main working ports are in good to excellent condition, with a number of important new berths and infrastructure projects initiated and executed in recent years. SPC seems to have the financial capacity to invest in new tugs, pilot boats, mooring boats and other marine craft to provide marine services. The main weakness of North Sudan's port sector lies in the relatively high port costs. It also appears that the ports are used as a source of general revenue for the government, which is ultimately a tax on exporters and importers. The negative impact of such a tax on trade has not been evaluated.

In spite of these high costs port traffic has grown considerably in the last five years. The number of full containers shipped through North Sudan increased at an average annual rate of 21 percent between 2001 and 2005. Cargo traffic grew at an annual pace of 20 percent per annum between 2001 and 2005.

10.7.2 Regulatory and institutional setting

The activities of the ports are supervised by the Sea Ports Corporation (SPC), a government institution created in 1974 and subject to provisions of the Corporation Act as amended in 2003. SPC is responsible for the construction, development and

maintenance of ports, harbours and navigation aids in Sudanese waters. The Maritime Administration Directorate (MAD), with primary responsibility for policy and regulatory matters relating to shipping and seamen. These organisations are under the oversight of the Ministry of Transport, Roads and Bridges. It is responsible for overall policy in the port and maritime sector. Annual performance of the corporations is based on the conformance with targets submitted to the Ministry before the start of each year. Not surprisingly these targets are set relatively low to as wage bonuses are allocated according to performance.

The Marine Environment Protection Administration (MEPA) comes under the Ministry of the Environment and Physical Development and is responsible for protection of the marine environment in a broad sense.

10.7.3 Existing role and potential for PSP in seaports

All berths at Sudanese ports are government owned and operated. However, private interests have been established in this sub-sector:

- Marine operations at Bashair port. A joint venture with SMIT terminals is currently in place
- Cargo handling at North Quay (Port Sudan). In 1995 SPC started to grant stevedoring licenses to private sector operators for bulk goods handling. Port land is also leased to selected operators; the average length of the leases is 15 years. This has introduced a degree of competition into the services provided
- Private companies have also established three separate bulk cement handling operations at the North Quay in former cargo warehouses.

Several large companies such as Elnefeidi and DAL are already demonstrating an interest in the wet and dry port sub-sectors. Smaller service companies have already entered the stevedoring market and it seems capable of further development. Foreign interests would be better placed to take on large-scale terminal concessions and BOT projects.

The availability of contractors and consultants in Sudan who can contribute technical know-how to the work of SPC appears to be limited. For this reason SPC brought in a German company to introduce the required computer methods at the container terminal and contracted a British company to carry out the assessment of port and terminal security, preparation of port security plans and training. It has also used Chinese companies for construction of berth extensions, the new deepwater Green Port berths and the El Khair Oil Products Terminal.

10.7.4 Recommendations for seaports

In the 1990s, Africa began examining how port authorities could improve their productivity and competitiveness. In order to meet the new demands of the market in a climate of budget constraints - and in many cases under strong pressure from the international financial institutions - the port authorities undertook reforms aimed at reforming ports to run on autonomous and commercial principles through the concessioning of various services.

Ports in Africa are placing increasing emphasis on PPPs in order to obtain additional financial resources for port modernization and to take advantage of the experience of private, mainly foreign, companies to improve port management and productivity. The first privatizations were launched in the late 1990s and were concentrated in the east and southern Africa region. To date, there are several countries where the private sector - chiefly international multi-port operators - is involved in terminal management and port services: Djibouti, Mauritius, Mozambique, Tanzania, Cameroun, Nigeria (in progress),

Egypt, Ghana (in progress) Ivory Coast, and Togo. Preparatory studies for introducing PPPs are underway in countries such as Sierra Leone and Kenya.

Each of these countries has a different conception of the type of participation, the operations and the equipment involved, and of the reform process itself. The Box below presents the landlord port model and its introduction in the Nigerian port sector.

Box 10.3: Nigerian Port Reform: the Landlord port model

The Federal Government of Nigeria decided that a radical reform of the Nigerian port system was necessary given the continued inefficiency of the ports which harmed industry by making imports more costly and reducing the international competitiveness of exports.

In line with the Government's overall economic thinking, the reform and restructuring of Nigerian ports was underpinned by increased participation of private capital and initiative in the ports. The policy framework of the current port reform is built around the concept of public-private sector partnership, under which the day-to-day operations of Nigeria's ports are left to private actors, while ownership of the ports and the regulation of the port system remain with the Government.

A number of studies were conducted before Nigeria finally adopted the landlord port model, which separates ownership and regulatory functions from operations. The landlord port model is based on the separation of roles and tasks between the public and private sectors. The concession approach allows the Government to transfer operating rights in Nigerian ports to the private sector to ensure their efficiency. This is while still retaining ownership of port land, thereby becoming the landlord, as well as keeping responsibility for licensing operators and regulating their activities.

Short of outright privatisation, port concession, which grants private operators full control of terminal operations, is possibly the most effective means of facilitating the emergence of Nigeria as the transshipment hub for the West African sub-region.

The success of the port concession programme depends on proper delineation of roles between the major parties and the creation of sufficient incentives for private sector participation. The port reform needs to be underpinned by appropriate institutional, regulatory and legal infrastructures. Possible challenges to successful implementation of the programme also have to be addressed. These include existing inconsistent laws, the future status of the Nigerian Port Authority, labour concerns, multiple agencies in the ports, and the issue of cross-subsidisation of smaller deficient ports, which potentially could distort the competitive advantages of the other ports.

Source: Port and Harbour Development in Nigeria, Nigerian Ports Authority, 2005

Our recommendations for the Seaport sector are to:

- Transform Sea Ports Corporation (SPC) into a landlord port
- Develop PPP arrangements for: container terminal management, all stevedoring services, and port services such as towing and mooring where financial feasible
- Establish a line ministry PPP division within the Ministry of Transport to promote and facilitate PPP contracts in the port sector, to work closely with the NG PPPU.

10.8 Air transport

This section sets out available information on the extent, condition, and performance of airport sub-sector - this includes an overview of air transport services in North Sudan. In addition to information provided directly by the Civil Aviation Authority (CAA), which is used as the base data for this Report, the principal sources used were United Nations Joint Logistic Centre (UNJLC) Bulletins prepared in 2004 and 2005, and

relevant sections of the JAM Report prepared in 2004 and 2005. Some of the data relate to the South as well and our recommendations are intended for the GoSS as well.

10.8.1 State of the sector

North and South Sudan have 18 airports, including 300 airstrips which are not certified or licensed and therefore are not deemed safe. Three of these are designated as international airports, including Khartoum, Port Sudan and Juba. Table 10.16 presents available data on Sudan's airports as of 2003.

Table 10.16: Data on airports in Sudan (2003)

Airport	Runway Length	Runway Surface	Air cargo	Passengers
	<i>m</i>		<i>tonnes</i>	
North				
Khartoum	3,000	Tar	39,648	1,436,343
Port Sudan	2,500	Tar	2,264	113,286
Kadugli	2,550	Tar	712	1,335
El Obeid	3,000	Tar		
El Damazin	2,500	Tar		
El Fasher	2,000	Tar	1,606	35,032
Nyala	3,000	Tar	2,446	48,629
Kassala	2,500	Tar		
El Geneina	1,800	Gravel	978	23,782
Wadi Halfa	2,000	..		
Dongolo	3,000	..		
Merowe	3,000	..		
South				
Juba	2,400	Tar	3,058	20,300
Malakal	2,000	Tar		
Wau	2,330	Dirt, poor	2,698	31,617
Total	...		53,410	1,710,324

Source: Data from WFP, JAM and UNMIS Reports

A number of airstrips cover air traffic for humanitarian aid assistance, mainly in South Sudan (including Yambio, Rumbek, and Yei), for the oilfields north of Bentiu, and for personal and cargo transport. The United Nations Advance Mission in Sudan (UNAMIS), the UN organization responsible for monitoring and overseeing the implementation of the peace accord in the field, has targeted the following airports for its peace-keeping operations: Khartoum, Juba, Wau, El Obeid, Kadugli, Malakal and El Damazin.

All of Sudan makes up one Flight Information Region (FIR) with the Area Control Center (ACC) located in Khartoum. Khartoum is linked to all major airports in neighboring countries by way of a fixed network for phone and text messages. Radio

communication within the country is mainly by VHF-radio for speech relying on satellite communication, some-times supplemented by HF-radio. There is no radar for surveillance purposes, so the ACC relies on contact by radio. Air traffic management is thus by voice communication, and partly handled by the aircraft themselves, by way of HF radio and transponders and TCAS22 equipment to identify other aircraft with transponders. One shortcoming of the present system is that the radio system does not cover the entire country; as such there are some black spots. According to UNJLC airspace management is insufficient in Sudan, this includes general aviation safety, search and rescue capabilities, and so on. Both the GoSS and GoSS have limited capabilities in the sub-sector.

Air services within Sudan are limited. There is one private company providing domestic scheduled passenger services at present, including between Khartoum and the South. The shares of the national carrier, Sudan Airways are 100 percent owned by government. It is the main operator in domestic services serving 13 national destinations. Sudan Airways reports that it moved 335,000 passengers and 8,000 tonnes of cargo in 2005. Sudan Airways is the only designated Sudanese airline in scheduled international operations, it serves up to 22 destinations. Its fleet consists of 7 passenger aircraft, including two leased Boeings, two leased Airbuses and one B707 freighter, which it owns outright. Its liabilities include a US\$65 million debt to MoFNE to cover retrenchment and other related costs. It appears that this debt was forgiven when a new Board and Management team was installed in 2004. MoFNE recently provided a US\$20 million guarantee for the purchase of 5 Fokker 50s and ground handling equipment.

International cargo operations are already liberalized. In the domestic market only an operator's license is required for performing scheduled services.

Given the vast size of the country, the generally poor quality of its road and rail networks, and the insecurity that prevails in certain regions, air transport is a practical option for transporting goods, passengers and equipment for humanitarian and private use. In general, although there are a number of firms, they all know each other well and tend not to compete on price. At present, there is sufficient business for all of them. The cost of air transport is relatively high owing to the lack of competition and the small size of the market.

10.8.2 Regulatory and institutional setting

The Civil Aviation Authority (CAA) is the central organization for aviation in Sudan. It employs some 5,000 persons. It appears that the reporting function no longer falls under the Ministry of Aviation but rather to the Ministry of Presidential Affairs. It is both a regulator and an operator. It is responsible for: enforcing the aviation safety and security system, operating all airports; the communications, navigation and surveillance (CNS) and air traffic management (ATM) systems; carries out accident investigations; and provides the training of most professions required by the aviation sector. The CAA is reported to have in-house capacity to both design systems and works, and also to implement projects, including civil works. The CAA also bids for construction works, e.g. to build airfields servicing the oil companies.

The CAA suffers from the same constraints as other authorities in North Sudan in that, staff are employed on civil service conditions and revenues earned have to be handed in to government. Financing is hence by appropriations. It was reported that CAA has been able to reach an understanding with the government that the revenues it collects from over flight and similar charges should be used in order to develop the CNS/ATM and other critical infrastructure components of the system.

10.8.3 Existing role and potential for PSP in air transport

Sudan Airways indicated that it has already outsourced non-core units such as ground equipment, special flight services (for VIPs) and catering. While the units are still owned by the carrier they are permitted to serve other customers. It is not clear how the outsourcing to the private sector was implemented.

Ground handling services at major airports in Sudan are no longer a monopoly of Sudan Airways, it now includes several private operators: AHBA Handling Services, Swissport, United and some airlines cater to their own needs.

There is an expanding market for air freight and air charter services in Sudan, covering all of the major cities. There are eleven⁶⁷ private sector air freight and air charter companies within Sudan: Air West, Badr Airlines, Bentiu Air Transport, Helilift, Juba Air Cargo, Marsland Air Transport, Mid Airlines, Sasco, Sonata Air Cargo, Trans Attico and United Arabian Airlines. Of particular note is the Jamah group, which comprises the following firms: Juba Air Cargo, Ababeel, Marsland Aviation, Air West, and Helilift. These firms do not compete with each other on price and refer business to each other. They will cooperate to form loads to specific locations.

All firms, in this sector, offer charter of their freight and passenger aircraft. This service always includes aircrew. Charges are either charged on a per-hour basis, or a fixed price to a destination. Except for one firm, per-hour charges and per-destination prices are inclusive of fuel, landing charges and other costs. Some firms also offer an airfreight service, where clients can send their goods by air, without chartering an entire aircraft themselves. This is charged on the basis of per-ton, by destination. Except in a few specific cases, air freight flights are not scheduled. The aircraft flies when there is a sufficient amount of cargo to make the journey cost-effective. There may, therefore, be a wait of several days between a firm taking delivery of freight, and it being sent to the destination.

10.8.4 Recommendations for air transport

Our recommendations for the air transport sector are as follows:

- Privatize Sudan Airways (*already decided in principle*)
- Contract-out air traffic control services
- Develop Concession models for all airport terminal management where financially feasible.

11 Policy Action Programme (PAP)

In this section, we bring the substantive recommendations made in the report into a series of policy action matrices which can be used by decision makers in government, in the Sudanese private sector and in the World Bank/MDTF.

As this PPP/PSP project is one of three commissioned by the World Bank, the policy matrices and the recommendations will obviously have to fit into the overall policy action programme eventually accepted by the governments.

For this reason we have not attempted to establish a timetable for the PAP set out below. The decisions on timetabling the implementation of the recommendations from the three Bank projects will have to be made after acceptance of the recommendations.

⁶⁷ Source: United Nations Joint Logistic Centre (UNJLC) Sudan, 2005

Table 11.1: Policy Action Matrix - Government of National Unity (*policies for both North and South Sudan*)

Policy Announcement	Ministerial/Ministry Responsibility	Implementation Components	Recommendation References
1. Establish Private-Public Partnership Units in Government	Joint Ministers of Finance, and Investment	<ul style="list-style-type: none"> ▪ Determine role of PPPUs ▪ Determine location of PPPUs ▪ Establish link to PSF ▪ Prepare PPP Rules ▪ Establish Procurement Rules for PPP contracts ▪ Establish Monitoring Unit for PPP contracts 	<p><u>Recommendation 1</u></p> <p><u>Recommendation 18</u></p> <p><u>Recommendation 9</u></p>
2. Undertake a Review of Infrastructure Reform in all sectors to ensure PSP in infrastructure investment through PPP is maximized	Ministers of Finance, with support from Ministers responsible for infrastructure sectors	<ul style="list-style-type: none"> ▪ Review each sector given the principles ▪ Establish if change to sector reform process and/or decisions need change to get best form of PPP ▪ Establish if subsidies needed for poverty reduction and/or provision of infrastructure services 	<p>Flows from <u>Recommendation 1</u>, in line with principles set out in Section 3</p> <p><u>Recommendation 19</u></p> <p><u>Recommendation 20</u></p>
3. Initiatives to build Sudanese private sector capacity for PPP involvement	Ministers of Finance and Investment, Private Sector Forum and Sudanese business organisations	<ul style="list-style-type: none"> ▪ Establish joint partnership between governments and private sector, to promote local involvement of PSP in infrastructure ▪ Liaise with MDTFs to promote local PSP in aid delivery 	<p><u>Recommendation 22</u></p> <p><u>Recommendation 24</u></p>

Source: Castalia

Table 11.2: Policy Action Matrix - Government of Sudan (for North Sudan)

Policy Announcement	Ministerial/Ministry Responsibility	Implementation Components	Recommendation References
1. Establish Private-Public Partnership Unit in Government	Joint Ministers of Finance, and Investment	<ul style="list-style-type: none"> ▪ Determine location of PPPU ▪ Prepare PPP Rules ▪ Establish Procurement Rules for PPP contracts ▪ Establish Monitoring Unit for PPP contracts 	<p>Recommendation 7</p> <p>Recommendation 9</p>
2. Review the role of infrastructure regulatory agencies and best forms of regulating PPP contracts	Minister of Finance, with support from Ministers responsible for infrastructure sectors	<ul style="list-style-type: none"> ▪ Establish if regulatory frameworks need change ▪ Improve risk management processes 	<p>Recommendation 8</p> <p>Recommendation 21</p>
3. Announce sectoral decisions to promote PPP/PSP	Ministers of Finance and Investment, with sectoral Ministers in each case	<ul style="list-style-type: none"> ▪ Electricity ▪ Water ▪ Telecommunications ▪ Roads ▪ Rail ▪ River transport ▪ Seaports ▪ Air transport 	<p>Recommendation 10</p> <p>Recommendation 11</p> <p>Recommendation 12</p> <p>Recommendation 13</p> <p>Recommendation 14</p> <p>Recommendation 15</p> <p>Recommendation 16</p> <p>Recommendation 17</p>
4. Jointly announce with UN and World Bank the intention to widen Sudanese PSP involvement in delivering services to humanitarian and UN operations	President of Sudan Republic, UN Special Representative and World Bank Country Representative		<p>Recommendation 24</p> <p>Recommendation 23</p>

Source: Castalia

Table 11.3: Policy Action Matrix - Government of South Sudan (for South Sudan)

Policy Announcement	Ministerial/Ministry Responsibility	Implementation Components	Recommendation References
1. Establish Private-Public Partnership Unit in South Sudan Government	Joint Ministers of Finance, and Commerce, Trade & Supply	<ul style="list-style-type: none"> ▪ Determine location of PPPU ▪ Prepare PPP Rules ▪ Establish Procurement Rules for PPP contracts ▪ Establish Monitoring Unit for PPP contracts 	Recommendation 7 Recommendation 1 Recommendation 9
2. Rehabilitate road network using PPP	Minister of Transport, Roads and Bridges	<ul style="list-style-type: none"> ▪ Implement best form of PPP contract ▪ Review case for independent Roads Commission 	Recommendation 2 Recommendation 3
3. Reforms to foster telecommunications investment	Ministers of Finance and Telecommunications and Postal Services	<ul style="list-style-type: none"> ▪ Review regulation machinery ▪ Implement spectrum regulation 	Recommendation 4
4. Create Water and Irrigation Cooperatives	Ministers for Water Resources & Irrigation, and Cooperative and Rural Development	<ul style="list-style-type: none"> ▪ Encourage community cooperatives ▪ Create fund for credit 	Recommendation 5
5. Facilitate infrastructure development with PPP around oil producing regions	Ministers for Finance and Commerce, Trade & Industry	<ul style="list-style-type: none"> ▪ Build infrastructure for local communities 	Recommendation 6
6. Jointly announce with UN and World Bank the intention to widen Sudanese PSP involvement in delivering services to humanitarian and UN operations	President of South Sudan, UN Special Representative and World Bank Country Representative		Recommendation 24 Recommendation 23

Source: Castalia

Table 11.4: Policy Action Matrix - Sudanese Private Sector

Policy Announcement	Ministerial/Ministry Responsibility	Implementation Components	Recommendation References
1. Initiatives to build Sudanese private sector capacity for PPP involvement	Ministers of Finance and Investment, Private Sector Forum and Sudanese business organisations	<ul style="list-style-type: none"> ▪ Establish joint partnership between governments and private sector, to promote local involvement of PSP in infrastructure ▪ Liaise with MDTFs to promote local PSP in aid delivery 	<p>Recommendation 22</p> <p>Recommendation 24</p>

Source: Castalia

Table 11.5: Policy Action Matrix - World Bank, Multi-Donor Trust Funds and UN Agencies

Policy Announcement	Ministerial/Ministry Responsibility	Recommendation References
1. North Sudan: jointly announce with UN and World Bank the intention to widen Sudanese PSP involvement in humanitarian and UN operations	President of Sudan Republic, UN Special Representative and World Bank Country Representative	Recommendation 23
2. South Sudan: jointly announce with UN and World Bank the intention to widen Sudanese PSP involvement in humanitarian and UN operations	President of South Sudan, UN Special Representative and World Bank Country Representative	Recommendation 23
3. Initiatives to capitalize on Sudanese private sector capacity for PPP involvement in the delivery of services to humanitarian and UN operations	Private Sector Forum and Sudanese business organisations	Recommendation 24

Source: Castalia

Appendix A: Sudan Data Profile

Sudan Data Profile			
	2000	2003	2004
People			
Total Population, million	32.9	34.9	35.5
Population growth (annual %)	2.1	1.9	1.9
Life expectancy at birth, total (years)	55.9	56.4	56.5
Fertility rate, total (births per woman)	4.6	4.3	4.2
Mortality rate, infant (per 1,000 live births)	65.0	..	62.6
Mortality rate, under-5 (per 1,000)	97.0	..	91.4
Births attended by skilled health staff (% of total)	87.0	..	..
Malnutrition prevalence, weight for age (% of children under 5)	40.7	..	..
Immunization, measles (% of children ages 12-23 months)	47.0	57.0	59.0
Prevalence of HIV, total (% of population ages 15-49)	..	2.3	..
Primary completion rate, total (% of relevant age group)	38.9	46.8	48.8
School enrolment, primary (% gross)	51.3	57.7	60.1
School enrolment, secondary (% gross)	26.3	33.2	32.8
School enrolment, tertiary (% gross)	6.1	..	..
Ratio of girls to boys in primary and secondary education (%)	..	85.6	88.4
Literacy rate, adult total (% of people ages 15 and above)	..	..	60.9
Environment			
Surface area (millions of sq. km)	2.5	2.5	2.5
Forest area (sq. km)	704,900	..	..
Agricultural land (% of land area)	56.3	56.6	..
CO2 emissions (metric tons per capita)	0.2	..	..
Improved water source (% of population with access)	..	..	..
Improved sanitation facilities, urban (% of urban population with access)	..	..	..
Energy use (kg of oil equivalent per capita)	418.8	476.7	..
Energy imports, net (% of energy use)	-50.7	-62.3	..
Electric power consumption (kWh per capita)	63.0	81.2	..
Economy			
GNI, Atlas method (current US\$, billion)	10.3	15.4	18.7
GNI per capita, Atlas method (current US\$)	310.0	440.0	530.0
GDP (current US\$, billion)	12.2	17.8	21.1
GDP growth (annual %)	6.5	6.0	6.0
Inflation, GDP deflator (annual %)	8.4	8.2	10.6
Agriculture, value added (% of GDP)	39.8	42.1	39.3
Industry, value added (% of GDP)	20.0	20.4	24.6
Services, etc., value added (% of GDP)	40.2	37.5	36.1
Exports of goods and services (% of GDP)	15.5	14.7	18.0
Imports of goods and services (% of GDP)	18.0	18.9	21.2
Gross capital formation (% of GDP)	17.9	18.2	20.0
Revenue, excluding grants (% of GDP)
Cash surplus/deficit (% of GDP)

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States and markets			
Time required to start a business (days)	..	38.0	38.0
Military expenditure (% of GDP)	2.7	2.2	..
Fixed line and mobile phone subscribers (per 1,000 people)	12.5	42.0	58.5
Internet users (per 1,000 people)	0.9	26.9	32.1
Roads, paved (% of total roads)	..	..	..
High-technology exports (% of manufactured exports)	3.8	0.0	..
Global links			
Merchandise trade (% of GDP)	27.6	30.5	37.2
Net barter terms of trade (2000 = 100)	100.0	103.6	120.7
Foreign direct investment, net inflows (BoP, current US\$, million)	392.0	1,300.0	1,500.0
Long-term debt (DOD, current US\$, billion)	10.9	11.9	12.2
Present value of debt (% of GNI)	..	..	151.0
Total debt service (% of exports of goods, services and income)	9.7	7.2	6.0
Official development assistance and official aid (current US\$, million)	225.4	616.6	882.3
Workers' remittances and compensation of employees, received (US\$, million)	641.0	1,200.0	1,400.0
Source: World Development Indicators database, April 2006			

Appendix B: List of people and organisations met and bibliography

List of People and Organisations Met		
Name	Position	Organization
Steven Crossky	Lead Engineer South Sudan, Emergency Roads Programme	World Food Programme (WFP)
Ahmed Mousa	Supervisor	DHL Express Sudan
Antony Murithi John de Tong Kual David Maganda	Technical Advisors	Directorate of River Transport, Ministry of Transport and Roads (GoSS)
Leslie Robertson	Chief of Party, Sudan Infrastructure Program	USAID
Antony Lino Makana	Minister	Ministry of Commerce, Supply and Trade, GoSS
Wonde Ade Kenyi	Director, Civil Aviation Director, Southern Sudan Airlines	Ministry of Transport and Roads (GoSS)
Ibrahim S.A. Albur	General Manager	River Transport Corporation (RTC)
Abdelmonim Awad Salama	Technical Manager	(RTC)
Mohamed Elfateh Ahmed Al Magid	Planning, Research and Information Dept	(RTC)
Adam Mohakar Hamad	Rehabilitation Manager	(RTC)
		Inland River Navigation Dept (IRND)
Modawi Eltiraifi Dafa Alla	Under-Secretary	Ministry of Transport, Roads and Bridges
Bakri Yousif Omer	Secretary General	Employers Federation
Dr. Daniel Wani	Undersecretary for Infrastructure	Ministry of Transport and Roads
Samir Williams Missak	Branch Manager	SDV (Bolloré Group)
Patrick Van Pee	Eastern Congo and Southern Sudan Development	SDV Transami Uganda

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List of People and Organisations Met

Magdi Mutwakil Ahmed Amin	Senior PSD Specialist	World Bank
Eng. Kamal El-Din M.A. Mansour	Deputy GM Planning and Development	Sea Ports Corporation
Omer Rahmtalla Adam	Owner/Manager	Sudan River Transport Company
Eng. Hamid Mahmud Wakeel	Director General	National Highway Authority
Ali Mahmoud	State Minister	Ministry of Finance and National Economy
Faiza Awad Mohamed	Director International Organisations	Ministry of Finance and National Economy
Gamal Osman Eltom	Director Research and Development	Sudan Airways
Hashim Awad Elkarim	Investment Manager	Sudan Railways Corporation
Abdelrahman M. Eltilib	Head of Director Advisor	Elnefeidi Group
Osama D. A/Latif	Chairman	DAL Group Company Ltd
Abdel Magid A. Rahman A.	Director of Airport Planning Directorate	Civil Aviation Authority
Eng. Ibrahim Abdalla Abdelkarim	Director, General Directorate for Planning and Development	Civil Aviation Authority
Khidir Abdullatief Rashied	Investment Unit	Civil Aviation Authority
Mohamed Elamin Ali Gabir	Coordinator for Transport and Telecommunications Sector	Technical Committee for the Disposition of Public Enterprises
Eladil Mohmed Khalfa Alla	Coordinator	Technical Committee for the Disposition of Public Enterprises

Appendix C: “Private Participation in Infrastructure Seminar (GNU)” held in World Bank Offices, Khartoum October 13, 2006

No	Name	Ministry/Department	Title
1.	Layla O. Beshir	Finance Ministry	Director General
2.	Awad E. Widaa	National Telecom Corporation (NTC)	Director Planning & Int'l Relations
3.	Mohd. El Hassan Abdul Karim	National Telecom Corporation (NTC)	Director, Research & Studies
4.	Amin Sid Ahmed Hassan	World Bank	Senior Advisor / PSD Program
5.	Moawia Bashir Hussain	Technical Committee for Privatization	Coordinator
6.	Abd El Rahim El Siddig	Ministry of Food & Agriculture	Deputy Director, Economic & Tech. Dept.
7.	Siddig Adam Mohamed	Ministry of Transport	Planning Director
8.	Salwa Musa Mohamed	National Electricity Corporation	Senior Financial
9.	Nagla A. Aziz Osman	MOFNE	Senior Inspector
10.	Sit Elnesa A. Mohammed	MOFNE	Financial Inspector
11.	Hind Hessian Hassan	Ministry of Finance	Financial Inspector
12.	Mohammed Khalid Khalil	Ministry of Finance a& Economy	Economist
13.	Bakri Yousif Omer	Sudanese Business & Employers Federation (SBEF)	Secretary General
14.	Abd Elazeem Khidir	Ministry of Labour	Governmental Officer
15.	Faroug Ismail Abd El Galil	Ministry of Industry	Deputy Dir., Investment Dept.
16.	Abdel Aziz Abu Talib	Ministry of Foreign Trade	Deputy Director

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No	Name	Ministry/Department	Title
17.	Bashier El Gaili Ahmed	Ministry of Foreign Trade	Director Multilateral Trading System
18.	Faiza Awad	MFWE	Director of Int'l Cooperation
19.	Adam Mohammed Adam	Taxation Chamber	Director of Int'l Relations
20.	Adla Mohd Babiker	Microeconomic Directorate MFWE	Monetary Sector Dept.
21.	Wail Fahmi Bedawi	Microeconomic Directorate MFNE	Head of Economic Research & Int'l Dept.
22.	Ahmed Mohd El Makki	Ministry of Finance	Financial Inspector
23.	Asma Agabna Iz Elarab	Ministry of Finance	Monetary Sector Dept.
24.	Dr. Asha Abdel Rahim	Freelance Consultant	Senior Inspector
25.	Yousif M. A. Bashier	MOFNE	Economist
26.	Omer M. A. El Hag	CDF Project	Executive Manager
27.	Abdl Malik M.A.		Sudanese Employers Federation
28.	Ilham Naseem	S.B.E.F.	Ad. Director
29.	Mohd Elhassan Shaa Eldin	S.B.E.F.	Regional & Int'l Treaties
30.	Abdel Magid Abdel Rahman	Civil Aviation Authority	Planner
31.	Mohammed Ahmed Sharief	Alsunut Dev. Co.	Infrastructure Design Manager

Appendix D: “Private Participation in Infrastructure Seminar (GNU)” held in Juba. October 5, 2006

No	Name	Organization	Address
1.	Jacob Lewak O’Angass	BOSS	Bank of Southern Sudan
2.	Angamomo Ajigi Abton	BOSS	Bank of Southern Sudan
3.	Augustine Kenyi	MCT & S – GOSS	P.O. Box 73 Juba
4.	Gaar Yuang Bior	MCT & S – GOSS	P.O. Box 73 Juba
5.	Mary Akech – Taban	PSD Director MCT & S – GOSS	P.O. Box 73 Juba
6.	Akuei Deng Akuei	MCT & S – GOSS	P.O. Box 73 Juba
7.	Mawa David Kwaje	MCT & S – GOSS	P.O. Box 73 Juba
8.	Christopher Adams	VEGA	
9.	Ngor Ayuel Kaigor	SSCCIA	Chamber of Commerce
10.	Safiya Daniels	VEGA	Ministry of Commerce
11.	Dr. Santino Tito Tipo	South Sudan Chamber of Commerce, Industry & Agriculture	Juba
12.	Russell Shockley	VEGA	Juba / Wau
13.	Susan Pratt	VEGA	Wau
14.	LokosSang Lemi	Min. of Transport – Juba	GOSS – Juba
15.	Antonym Murithi	LBG	MTN – Juba
16.	Wondea kenyi	Ministry of Transport	GOSS – Juba
17.	Hon. Gier C. Aluong (| Minister)	Ministry of Telecom	GOSS – Juba
18.	Kidi Samuil	Ministry of Commerce	MCT \$ & GOSS – Juba
19.	William Warigo	S.S.C.C.I.A – Juba	Juba

Appendix E: Investment required by transport sector

Roads

The National Highway Authority prepared a Final Report in November 2005 entitled *The National Comprehensive Plan for Roads and Bridges in Sudan*. The National Comprehensive Plan ("Plan"): assesses the investment requirements, coordinates projects at the national and state level to ensure alignment with the Peace Agreement priorities and integrates road development with the plans and programs of the Comprehensive National Strategy.

Under the Plan the selection and phasing of projects was formulated primarily based on the anticipated level of benefits, such as: vehicle operating cost savings, removal of isolation and poverty eradication, improving the marketability of the local products and the facilitation of providing basic services. The required level of traffic to justify the road standard is based on the construction cost, assumed annual social discount factor and the level of VOC savings per light vehicle. Five design standards are assumed based on threshold traffic levels.

Table E.1: Cost of construction (*SD million per/km*)

Design Standard	Type of Soil (<i>SD m/km</i>)			Traffic volume <i>000 tons/year</i>	No. of light trucks <i>per Day</i>
	Silty Soil	Clay-Silty Soil	Lateritec Gravelly Soil		
A. Three Lanes Asphalt Concrete Road	810,000	855,000	786,000	1,689	782
B. Two Lanes Asphalt Concrete Road	540,000	570,000	524,000	846	391
C. One Lane Asphalt Concrete Road	270,000	285,000	262,000	423	196
D. Gravel Road	143,000	151,000	139,000	220	102
E. Improved Earth Road	40,000	42,000	39,000	84	39

Source: NHA, 2004

Based on these calculations NHA has developed an ambitious US\$ 3.2 billion road widening program up to 2018 as set out in the table below.

Table E.2: NHA road widening programme

Target	Length	Construction Cost	Construction Cost
	<i>Km</i>	<i>SD million</i>	<i>US\$ m</i>
Widening to 3 lanes by 2011	525	112,219	641
Widening to 2 lanes by 2011	1,085	154,913	885
Widening to 2 lanes by 2018	2,811	308,300	1,762
Total	4,421	575,432	3,288

Source: NHA

In addition to the road widening program NHA has developed a four-phased Investment Plan for Northern Sudan and two phases for the Southern Sudan as set out in the figure below. This ambitious program covers over 23,000 km of upgrading, rehabilitation and construction over a 20+ year horizon at an estimated cost of US\$9.5 billion. A description of each phase, including the type of intervention by route and cost, is not available. The two programs put together would cost US\$12.7 billion.

Table E.3: NHA Road Investment Plan

Phases	Time of Execution	Length	Cost	Cost
		<i>km</i>	<i>SD million</i>	<i>US\$ m</i>
Phase I for the North of Sudan	2006-2011	5,853	405,688	2,318
Phase I for the South of Sudan	2006-2011	2,686	191,378	1,094
Phase II for the North of Sudan	2012-2018	2,941	209,546	1,197
Phase II for the South of Sudan	2012-2018	2,284	162,735	930
Phase III for the North of Sudan	2018-2025	2,289	163,091	932
Phase IV for the North of Sudan	2025 +	7,484	531,605	3,038
Total		23,537	1,664,043	9,509

Source: NHA

NHA estimates that half of the paved road network is badly in need of rehabilitation and more than 100 km require immediate reconstruction. An uncertain number of road projects are currently underway in North Sudan, perhaps up to 2,854 km⁶⁸, at various stages of construction. Some efforts to improve connections to the north and south of Khartoum are in progress although the route, length and costs are not available. These improvements are being funded largely by grants and concessionary loans from governments and institutions in the Middle East. In addition, after several months of work, the highway linking Ethiopia and Sudan was reopened in 2002, permitting expansion of bilateral trade. In 2004 it was reported that there were also plans to build a new highway from Port Sudan to Atbara, a shorter route than the existing highway through Kassala, funded by the Islamic Development Bank (IDB) and the Arab Bank for

⁶⁸ Source: NHA, although this seems to quite high. JAM Report (2004) estimated this figure to be 1,800 km.

Economic Development in Africa (BADEA). BADEA is financing the Atbara-Haya road (274 km) and the Gedaref-Doka-Galabad road (155 km), while IDB is financing the road from Haya to Port Sudan, the Hoi-En Nahud road and the Umm Rwaba-Abu Ibekah road (structures).

The JAM Action Plan for the road sub-sector establishes the following short-term priorities:

- To rapidly establish and build up a functioning road management capacity in the South. The medium to long-term objectives of the road sub-sector include the development of a functioning public road administration⁶⁹ in the South and intensifying development of the rural access road network
- To improve critical roads in the South to facilitate repatriation of internally displaced persons (IDPs), to improve food and health security and facilitate the administration of the South
- To initiate studies to prepare for the building of a core road network that can support economic growth in a sustained way in the South, Darfur and three other war-affected areas
- To revive agricultural production by planning for how to improve rural access and mobility
- De-mining of strategic routes would be necessary as a prerequisite for any road intervention and should be given absolute priority.

The JAM program includes 10 projects at an estimated cost of US\$ 870 million to be implemented in two phases over six years as set in Table E.4.

Table E.4: JAM costs of road projects (US\$ million)

Id	Project	Phase 1	Phase 2	Total	km
ROAD1	Renk to Malakal road (paved)	15.0	75.0	90.0	70
ROAD2	Main roads in the South	61.4	400	461.4	350
ROAD3	Emergency rehabilitation (WFP)	29.0	-	29.0	
ROAD4	Roads development in Darfur	5.2	120	125.2	185
ROAD5	Road development in other war-affected areas	0.2	64	64.2	65
ROAD6	Rural roads; North and South	1.1	69	70.1	
ROAD7	Road maintenance; South	5.1	20.4	25.5	
ROAD8	TA to GoSS	1.5	3	4.5	
ROAD9	TA to NHA	0.4	-	0.4	
ROAD10	TA to local construction industry	0.6	-	0.6	
Total		119.5	751.4	870.9	670

Source: JAM Report on Roads, 2005

⁶⁹ According to JAM, in the medium term the road management authority in the South, located initially in the proposed Aide Management Agency, would assume responsibility for roads and would act as the Employer/road administrator in a contractual setting.

The South would be the main beneficiary of ROAD1, 2, 6, 7, 8 and 10 projects – up to 420 km of roads would be rehabilitated. The long-term need for roads development in the South was based on a target for a minimum core road network comprising 3,000 km of paved roads and 3,000 km of gravel surface roads. It has been assumed that this target network could be reached by year 2015. The remaining road development program would be implemented in war-affected areas. Long term need for roads in Darfur is estimated at 2000 km of which a half would be gravel roads.

The World Food Programme (WFP) has taken on a leading role in the effort to improve road access to the most strategic locations in South Sudan. WFP acts as a total service provider in an agreement with GoSS and coordinates activities in the sector in cooperation with GoSS. Phase 1 of the WFP road rehabilitation activities covered about 900 km of main road routes, including two of the major road connections to Uganda and Kenya, the Kaya-Rumbek road and the Narus-Juba road. At the end of May 2004 about US\$13 million had been spent of an estimated total cost of about US\$22 million. Emergency repairs have been carried out on trouble sections to ensure access for vehicle transport and thereby reducing cost of access to food and food production, stimulate commerce and self-sufficiency, facilitate IDP/Returnee movements, show peace dividends and reduce transport cost of humanitarian operations. The major part these emergency type road rehabilitations have been carried out without detailed engineering survey or designs.

WFP has planned a Phase 2 of road activities, at an estimated total cost of US\$ 60 million. Phase 2 would, according to information received, cover sections on major roads totalling about 1300 km, giving an average rehabilitation cost of about US\$ 46 000 per km. Together the WFP Phase 1 and 2 roads will cover approximately 2,200 km of major road routes in South Sudan, or more than 40 percent of identified priority trunk and primary roads.

A Report on Infrastructure prepared by Lual A. Deng, Daniel Wani and Yongo-Bure in June, 2003 proposed a program for rehabilitation of primary roads as shown in the table below.

Table E.5: Programme for rehabilitation of primary road - South Sudan

Time-frame	km	Cost (US\$ m)	
		low	high
Immediate	2,254		
12-18 months	1,981		
18-60 months	2,784		
Total		375	500

Cost: Based on cost ranging from US\$ 75-100 million/year

Source: Sudan JAM: Sub-sector Note on Roads, 2004

The total length of the proposed program would be 7,019 km to be implemented over a 5 year period. The Report suggests that a realistic time of construction for such a road program could be 8 to 12 years, giving an output of US\$ 75 – 100 million US dollars per year.

Rail

It is estimated that between 1958 and 1994 SRC received close to US\$300 million in loan financing and credit support through donor, co-financing and parallel financing arrangements. These funds were used in large part to expand and upgrade the network. Though SRC has a long history of development assistance projects there have been none since the early 1990s. Further, economic sanctions imposed on Sudan in 1997 by the USA badly affected SRC's capability to procure spare parts, the railway's throughput and revenues have suffered as result. SRC has taken several measures to stabilize throughput by hiring locomotives and buying new rolling stock.

The most important step is that SRC has initiated private sector participation (PSP) in the railway is discussed elsewhere. Nevertheless SRC's current situation is unsatisfactory and not sustainable and is characterized by: deferred maintenance of infrastructure and rolling stock, low equipment utilization and revenues, high staff costs and financial losses. It is unable to compete with road transport. The latter now carries 85 per cent of freight available. The forthcoming peace will result in traffic between North and South Sudan. According to the JAM Report findings the only firm forecast for the next six years is the petroleum, oil and lubricants (POL) demand of the UN peacekeeping forces.

SRC Investment Plan prepared in 2005 presents its "*Strategic Projects Awaiting Finance*". SRC has prepared a US\$1 billion two-phase program that places emphasis on: rehabilitation of track infrastructure; overhauling and reconditioning of existing rolling stock fleet; acquisition of new rolling stock; procurement of modern workshop equipment, machinery and tools; and modernization of signalling and telecommunications. The rationale for the projects include: to support peace and development; to access funds earmarked in Sudan's development budget; to reconstruct and rebuild the country; to provide a direct and urgent effect on increasing the carrying capacity of SRC; and to enhance SRC's efficiency.

Phase I objectives (US\$350 million):

- Increase tonnage handled from 1.3 million tons to 2.2 million tons
- Raise trains speed to 60 Km/hour
- Improvement of wagons turn-around time to 10 days on the main corridor and 15 days on other corridors
- Improve railway passenger services
- Meet the transportation requirements of after-peace reconstruction and resettlement projects in the Southern States and other war-affected areas.

Phase II objectives (US\$668 million):

- Enable SRC to handle 4.5 million tons
- Raise train speed to 80 – 100 Km/hour
- Reduce turn-around time of wagons to 7 days on the main corridor and 10 days on other corridors
- Introduce reliable and punctual passenger trains services.

Almost half of the investments target track rehabilitation, one-third targets new rolling stock, 10 percent targets telecom and signalling and just under 10 percent targets rolling stock rehabilitation. Table E.6 presents the Investment Plan by each category.

Table E.6: SRC investment plan by category

	<i>US\$ million</i>	No.	Km	%
Locomotive investment (new)	185	79		18
Locomotive investment (rehab)	72	84		7
Wagon investment (new)	147	1,926		14
Wagon investment (rehab)	17	1,350		2
subtotal	421			41
Track investment (rehab)	463		3,681	45
Track investment (new)	19		55	2
subtotal	482			47
Workshop investment	14			1
Telecom and signalling investment	100			10
Technical assistance	3			0
Total	1,019			

Source: SRC

For a railway in such dire financial circumstances the SRC Investment Plan is unrealistic and not necessarily based on commercial considerations. Some examples include:

- According to the plan SRC would take one year (2005-2006) to rehabilitate 44 locomotives and 600 wagons. This is an impossible task
- The timing of the track rehabilitation program is also unrealistic: SRC calculated that it would take four years (2005-2009) to rehabilitate 3,681 km of track
- Many Phase II investments are timed to occur during Phase I when logically each Phase should occur sequentially and not in parallel
- The investment decision for rolling stock should be driven by commercial viability: given the current and projected traffic levels SRC is planning to overcapacity several times over
- Greater emphasis could be placed on rehabilitation of rolling stock rather than new purchases which it cannot afford. The current fleet – once rehabilitated – can more than meet SRC's short to medium term traffic demand. In fact if a proper scrap metal initiative were implemented for dead assets the program could help to pay for itself given the high price of steel
- Track rehabilitation should focus on corridors that are commercially justified. Is necessary to focus on the rehabilitation of 3,681 km when only 2,600 km of line is operational? The plan to rehabilitate the unused line to Wau is complex and more of a political decision as the level of traffic that it could generate is minimal⁷⁰ and the expected peace dividend is uncertain as the line was used to support the civil war effort

⁷⁰ JAM Report estimate is 80,000 tonnes per year.

- Telecom and signalling investments could well be driven by a Concessionaire and at much lower cost – SRC expects to spend US\$100 M. Why invest in expensive fibre optic technology when much cheaper and more effective satellite and GPS technology is available?

In the short to medium term the Government should focus on critical investments based on commercial, financial and economic viability. For example:

- The Port Sudan-Khartoum rehabilitation project: this is certainly the most important and critical investment and should be given top priority
- SRC PSP study
- Development of inter-modal links to the river transport, port and road networks should be given top priority. While the Plan gives priority to a US\$16 M link to Sawakin port (handling passenger and coastal ships) while no inland intermodal hubs are considered in the Investment Plan is unclear. For example, the rail link to Kosti river port is no longer operational and urgent investment is required. This is an important oversight, more so because the investment cost is modest against the economic multiplier effect that would be felt across all sectors
- Encourage private sector operators to procure (rehabilitate, purchase and/or lease) rolling stock as required by market driven commercial considerations
- SRC should focus on track rehabilitation. The private sector will not invest in an asset – that is, track – that belongs to the State.

The JAM Report presents a more modest US\$129.1 million 6-year priority investment program as presented in the table below.

Table E.7: JAM cost of rail projects (US\$ million)

Id	Project	Phase 1	Phase 2	Total
RAIL1	Study of PSP	0.4	2.0	2.4
RAIL2	Babanousa-Wau Line	21.0	-	21.0
RAIL3	Port Sudan-Khartoum Line	0.1	96.5	96.6
RAIL4	TA and equipment of workshops	6.1	0.4	6.5
RAIL5	Other TA and Studies	1.0	1.6	2.6
Total		28.6	100.5	129.1

Source: JAM Report on Railways, 2005

The JAM Report also identifies six co-financing (SRC, private sector and UNAMIS) projects as shown in Table E.8.

Table E.8: JAM identified SRC and private sector rail projects (US\$ million)

Id	Project	Total
PRI1	Ballast locomotives and wagons	6.9
PRI2	Quarry equipment	2.2
PRI3	Reach stackers	3.3
PRI4	Ten 2,000 HP and four 1,350 HP locos	29.5

Confidential

PRI5	Skeletal container carrying wagons	22.0
PRI6	Tank and general purpose containers	27.5
Total		91.4

Source: JAM Report on Railways, 2005

It has been reported that GoSS has been discussing new railway links to the Kenyan and Ugandan network. The construction would be in difficult terrain and the quantum of investments is likely to be very large. These would all be unviable without equally large, firm, traffic commitments.

River

The JAM cost estimates of river sub-sector investments is the only investment framework that was made available. It is not certain whether RTC or the Government has produced a comprehensive Investment Plan.

The following information was provided by RTC through a series of interviews with management:

- A €31 million Dutch loan to government will cover the following investments: construction of 46 barges (flat-top, passenger and oil); construction of two floating docks (300 MT and 600 MT); and the construction of a slipway
- A €8 million German loan to government will cover the following investments: rehabilitation of two 500 HP push tugs and rehabilitation of two passenger vessels
- The main steps that need to be taken by Government to attract the private sector include: river clearing and dredging, aids to navigation investment, river port repairs and investment in handling facilities
- The private sector apparently cannot compete with RTC although the information that was reviewed during the mission indicates that the private sector is probably more agile and responsive than RTC
- A river dredging study will be undertaken by a Dutch company.

The JAM preliminary cost estimates are organized along three streams over two phases at a cost of US\$ 140 million. These projects are presented in the table below.

Table E.9: JAM costs for inland waterways transport projects (US\$ million)

Id	Project	Phase 1	Phase 2	Total
IWT1	Policy and institutional development	0.3	0.3	0.6
IWT2	Emergency rehabilitation: Kosti to Juba RTS	5.0	-	5.0
IWT3	Upgrading of the Kosti to Juba RTS	4.8	130.0	134.8
Total		10.1	130.3	140.4

RTS: River transport system

Source: JAM Report on Inland Waterway Transport, 2005

Under JAM, all inland waterways transport projects will primarily benefit the South, as they will result in lower cost of transport to, from and within the South:

- **IWT1 (Phases 1 and 2): Policy and institutional development.** The study would focus mainly of defining the roles of the various stakeholders in the inland waterways transport sub-sector, including that of the GNU and the GoSS. This will include an examination of the role of the private sector and the financing arrangements of the sub-sector
- **IWT2 (Phase 1): Emergency rehabilitation of the Kosti to Juba river transport system.** The project is envisaged to comprise two components, one for identifying an action plan for rehabilitating the Kosti to Juba river transport system, and the other for financing of the identified action plan. The project is expected to cover the expenses of rehabilitating some vessels, barges and tugs, the rehabilitation and provision of new port equipment, the positioning of some navigation aids, and perhaps some dredging
- **IWT3 (phases 1 and 2): Upgrading of the Kosti to Juba river transport system.** In the first phase a feasibility study and a hydrographic survey and production of charts is envisaged. The second phase would be the implementation of the recommended course of action. Phase 2 sub-components include: (i) navigation aids (US\$30 M); (ii) dredging (US\$ 35 M), (iii) river port investments (US\$ 14.5); and (iv) telecommunications/radio facilities and a slipway at Kosti (US\$ 6 M). The river port investments of 14 ports was evaluated at US\$ 118.5 M by Gibb Africa a much higher figure and one that will need to be evaluated under the planned feasibility study.

Seaports

When all donor support ended in 1989 SPC became self-financing. SPC managed to construct green port at a cost of US\$ 30 million under favourable financing terms. The Ports Strategic Plan for 2002-2007, (which we were unable to obtain a copy), covers the following developments:

- Expansion of Sawakin port: 10 berths
- New container terminal: 800 m in length and 16 m depth at quay
- MIS development: HBC (Germany) has already installed an information system for tracking containers. SPC plans to introduce an EDI system
- Study on SPC operations including the commercialization of activities. HBC submitted the Final Report in May 2006. SPC is considering moving to a landlord port model

- Plans for a new port under development 50 km from Port Sudan close to a free zone area. The cost is estimated at US\$180 million to construct 2 berths. SPC is considering a BOT structure to develop the port.

SPC expects Port Sudan to reach full capacity of 10 million tonnes by 2010 and thus it needs to start planning for its future expansion. SPC asserts that the cycle time for construction of new berths is 2 to 3 years.

The JAM prioritized program of activities, as shown in Table E.10 focuses on four projects at an estimated cost of US\$7.8 million.

Table E.10: JAM costs for ports and maritime projects (US\$ million)

Id	Project	Phase 1	Phase 2	Total
MARI1	Policy and institutional development	0.3	0.5	0.8
MARI2	TA and equipment for combating of pollution	0.1	3.0	3.1
MARI3	Support to SPC	0.8	0.8	1.6
MARI4	Survey and navigation aids	0.1	2.2	2.3
Total		1.3	6.5	7.8

Source: JAM Report on Ports and Maritime Affairs, 2005

Key components of the JAM program include:

- **Policy and institutional development under MARI1** JAM recommends that the Ministry of Transport set up a committee and engage an international consultant to assist the committee to develop a proposed integrated strategy and long term plan of action for the port and maritime sector in Sudan. The deliverable would identify organization re-structuring, economic regulatory policies and arrangements, capacity building requirements and long term investments needed to increase the efficiency of the sector. It should also address outstanding needs for ratifying international conventions relevant to the development of the port and maritime sector
- **Support to SPC under MARI3** This component includes the development of a Ports Master Plan, preparatory work needed to transfer the container terminal to private sector management under a long term concession, and SPC training needs plan.

Air

In view of the size of Sudan, the colossal distances, the underdeveloped and also damaged overland transport infrastructure, aviation is often the sole means of transport in order to reach many locations. During the reconstruction period aviation will likely remain important to the development and cohesion of Sudan. In the South, dependence on aviation is expected to grow not only due to humanitarian operations but demand will also be driven by commercial demand.

The CAA's Strategic Plan (2003-2027) was not made available. CAA's investment plans extend to improving aviation infrastructure all over the country:

- One of the newest airports in Sudan is at Malakal, in the south
- Improvements and upgrading are also taking place at Juba

- A BOT project was launched for an airport in Wau. The development cost is estimated at US\$10 million. CAA is still negotiating the terms of the contract with the Preferred Bidder Badr
- Thirty miles to the southwest of Khartoum, construction is under way on a new international airport. The government tried to tender the project as a BOT but this process failed, instead the project is government financed. The first of three development phases will be completed within three years. It is planned to accommodate ten million passengers and approximately 200,000 tons of cargo annually. Plans for the new airport include two runways, two passenger terminals, service utilities, and administrative offices. Supporting infrastructure will include roads and bridges, and a brand new highway connecting the new airport to the centre of the city
- Building a new centre for air navigation
- Petroleum companies are authorized to build airports with CAA authorization.

The airstrip at Rumbek is currently being upgraded as part of a WFP program of rehabilitating the transport infrastructure in the South. A very limited number of other strips in the South are also being upgraded or have been upgraded, including the ones at New Site, Padak and Kauda.

Table E.11 provides an overview of the costs of the civil aviation projects that fall under the JAM framework. All the indicated costs are assumed to be financed by donors, with the exception of parts of the investments in airports in the South and Darfur to be covered by CAA. It is emphasized that this only reflects part of the investments in the civil aviation sector during the coming 6-year period. CAA and UNAMIS will invest in other projects.

Table E.11: JAM cost of civil aviation projects (US\$ million)

Id	Project	Phase 1	Phase 2	Total
CIVA1	TA to GoSS	0.5	0.8	1.3
CIVA2	VHF-equipment	0.4	-	0.4
CIVA3	Airstrips in the South	6.0	6.0	12.0
CIVA4	Airports in the South & other war-affected areas	0.5	24	24.5
CIVA5	SAR needs and FCR vehicles	1.2	2.1	3.3
CIVA6	TA and Training	0.4	2.0	2.4
Total		9.0	34.9	43.9

SAR: Search and rescue; FCR: Fire, crash and rescue

Source: JAM Report on Civil Aviation, 2005

CIVA2, 5 and 6 are of benefit to the entire country while CIVA1, 3 and 4 are mainly for the benefit of the South. CIV3 includes preparatory works to plan for the upgrading of up to six airstrips in the South plus works and supervision.

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Appendix G: SRC railways investment plan

SRC Investment Plan

Phase I											SRC Plan	
No.	Project Name	Traffic level	km of line		New RS		Rehab RS		cost USD 10 ⁶	JAM USD 10 ⁶	start	end
			rehab	new	locos	wagons	locos	wagons				
1	Babanousa / Wau line Rehabilitation	closed	446						21		2005	2007
2	The Green Port Link	new		?					3		2005	2006
3	Reconstruct 105 Feets Bridges Span		0.03						1		2005	2006
4	P.S.P option Study								0.04	2.4	2005	2006
5	Construction of Salloom / Swakin Line 55 Kms	new		55					16		2006	2008
6	Khartoum / Port Sudan Line rehabilitation	dense	800						96	96	2005	2007
7	Babanousa / Nyala Line rehabilitation	closed?	335						21.2		2006	2006
8	Acquisition of New Locomotives					23			43	**	2006	2006
9	Acquisition of New freight Wagons and Tank Wagons						1426		107	**	2006	2007
10	Acquisition of Workshops Equipment								9	**	2006	2006
11	Rehabilitation of Mainline and Shunting Locomotives							30	26		2007	2009
12	Rehabilitation of Freight Wagons and Tank wagons							600	8		2006	2006
Total in each category			1581	55	23	1426	30	600				
Total cost									351.24	220.5		

Note: ** indicates that JAM identified modest funding in these categories but not according to the projects identified by SRC

Phase II											SRC Plan	
No.	Project Name	Traffic level	km of line		New RS		Rehab RS		cost USD 10 ⁶	JAM USD 10 ⁶	start	end
			rehab	new	locos	wagons	locos	wagons				
1	Upgrading Aredeiba Junction / Babanousa Section	modest	354						60		2007	2008
2	Rehabilitation of the Section Khartoum / El Obeid	modest	689						95		2007	2009
3	Rehabilitation of the North Section of the network	light	830						125		2007	2009
4	Rehabilitate Sennar / El Damazine Line 227 Kms	closed	227						44		2007	2009
5	Modernization of Signalling and Telecommunications								100		2007	2009
6	Acquisition of New Locomotives					30			68.5		2007	2009
7	Acquisition of New Freight Wagons and Tank Wagons						500		40		2007	2009
8	Rehabilitation of Mainline and Shunting Locomotives							44	35		2006	2006
9	Rehabilitation of Freight Wagons and Tank Wagons							650	7.8		2007	2009
10	Acquisition of New Light Locomotives					26			73.3		2005	2006
11	Rehabilitation of Locomotives and Wagons							10	100	12.3	2005	2006
12	Line T.A and Workshops Equipment								4.5		2005	2006
13	Training, Other Studies & T.A								2.6		2005	2006
Total in each category			2100	0	56	500	54	750				
Total cost									668			

	km of line		New RS		Rehab RS		cost USD 10 ⁶
	rehab	new	locos	wagons	locos	wagons	
Overall total in each category	3 681	55	79	1 926	84	1 350	
Overall total cost							1 019

Appendix H: Africa risk profile



Source: Euromoney, 2005

KEY TO SYMBOLS

COUNTRY RISK RATINGS

- 80-100: Low risk
- 60-80: Medium-Low risk
- 40-60: Medium risk
- 30-40: Medium-High risk
- <30: High risk

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INDUSTRIES MOST AT RISK

- Oil & gas
- Power
- Pulp & paper
- Mineral extractions

CORRUPTION RISK

- Corruption risk

Denotes high levels of systemic corruption as rated by Transparency International's Global Corruption Index 2004. For full details see reverse or visit www.transparency.org

POLITICAL VIOLENCE RISK

- Political violence risk

Denotes high levels or likelihood of political violence as rated by various sources including US State Department's travel advisory 2004

CONVERTIBILITY RISK

- Convertibility risk

Denotes high levels of potential currency convertibility and/or transfer risk as rated by various sources including Euromoney

Appendix I: Transportation data (Various)

Table I.1: Number of private and commercial vehicles (*000 vehicles*)

Year	Passenger		Light trucks and buses		Medium and heavy trucks		Total	Annual growth
	no.	% share	no.	% share	no.	% share	no.	%
1997	667	62	266	25	143	13	1,076	-
1998	714	61	295	25	158	14	1,167	8
1999	808	62	328	25	176	13	1,312	11
2000	1,349	63	553	26	234	11	2,136	39
2001	1,695	63	701	26	298	11	2,694	21
2002	1,815	56	855	26	557	17	3,227	17
2003	2,319	63	803	22	541	15	3,663	12
2004	2,461	60	975	24	697	17	4,133	11

Source: National Highway Authority, 2005

Table I.2: SRC motive power and rolling stock performance: *1999-2003*

	1999	2000	2001	2002	2003
Main line locomotives					
▪ fleet	114	114	111	111	111
▪ in operation		62	52	44	52
▪ <i>availability</i>		<i>54%</i>	<i>47%</i>	<i>40%</i>	<i>47%</i>
Shunting locomotives					
▪ fleet	43	41	41	41	41
▪ in operation	11	15	12	12	10
▪ <i>availability</i>	<i>26%</i>	<i>37%</i>	<i>29%</i>	<i>29%</i>	<i>24%</i>
Freight and tank wagons					
▪ fleet	5,219	5,219	5,157	5,157	4,621
▪ in operation	3,470	2,771	2,609	2,227	2,366
▪ <i>availability</i>	<i>66%</i>	<i>53%</i>	<i>51%</i>	<i>43%</i>	<i>51%</i>
Coaches					
▪ fleet	167	167	167	167	167
▪ in operation	76	76	131	131	131
▪ <i>availability</i>	<i>46%</i>	<i>46%</i>	<i>78%</i>	<i>78%</i>	<i>78%</i>

Source: JAM Report on the railway sector, 2004

Table I.3: River transport volumes (by origin-destination)

Year	Kosti-Malakal		Kosti-Juba	
	Cargo	Passengers	Cargo	Passengers
	<i>000 ton</i>	<i>000</i>	<i>000 ton</i>	<i>000</i>
2001	1	7	29	-
2002	22	8	28	-
2003	9	12	34	-
2004	18	10	17	-
2005	26	17	44	2
2006 ¹	12	1	10	-

Source: RTC as of April 27 2006

Table I.4: River traffic from 2001 to 2005 (trips)

Traffic	2001	2002	2003	2004	2005
Empty	42,262	43,664	50,061	72,311	105,842
Full	78,439	85,411	106,546	133,200	167,543

Source: SPC

Table I.5: North Port Import and Export Traffic from 2001 to 2005 (tonnes)

Traffic	2001	2002	2003	2004	2005
Imports	2,624,227	2,638,025	3,021,666	3,330,745	5,476,200
Exports	391,569	475,644	386,853	373,922	343,780
Total	3,015,796	3,113,669	3,408,519	3,704,667	5,819,980

Source: SPC



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