

Post-Conflict Countries Series: A Strategy for More Investment

This is the second note in a series of notes assessing the role of public-private partnerships and private sector participation in post-conflict reconstruction and infrastructure development. This series is extracted from a PPIAF-funded review of policy and institutional capacity to facilitate private participation in infrastructure for Sudan, which was prepared by Castalia Limited in November 2006. The full report is available from the [PPIAF website](#).

Using public-private partnerships for post-conflict reconstruction

People of post-conflict countries and fragile states often face a desperate situation, with little or no infrastructure. Networks, if any existed prior to the conflict, are often largely destroyed or rendered unusable by mines following the conflict.

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. Governments have the rare opportunity to avoid the known mistakes and take bold action. If natural resources such as oil or minerals are present, they also have the opportunity to use the impending investments to jump-start the necessary infrastructure development.

The question of what public-private partnership (PPP) arrangements are sensible is approached 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, countries are limited by what is financially possible and their pre-existing conditions for growth. Furthermore, the institutional capabilities of post-conflict governments to monitor PPP units, as well as mitigate extreme risks to potential service providers, need to be considered. Using the PPP assessment framework described in the first note of the PPP overview series, the high risk conditions in post-conflict countries with very low institutional capacity suggest that maximum private involvement coupled with major risk reduction/reallocation should be the recommended norm.

The framework will be applied to South Sudan as a case study for investment opportunities in post-conflict countries. Agriculture and the oil industry represent the most likely areas for growth in South Sudan. In light of this, three approaches to infrastructure development which directly impact on or are facilitated by growth in these industries are proposed:

- 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, improve incomes, and relevance to post-conflict countries in general. They have also been assessed according to the likelihood that they can be made to work, given the underlying risk and institutional conditions.

Improving markets

In many post-conflict countries, the population relies on agriculture to meet their basic needs for food and to earn a living. Ongoing trade with neighboring countries is one indication that there is, or could be, a sizeable agricultural surplus for trading. 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. Inadequate transportation, communication, and banking infrastructure must be addressed to improve farmers' market access and increase economic growth.

Rebuilding the road network in Southern Sudan

The experience of South Sudan highlights the challenges to encouraging private sector investment in infrastructure that continues to be impacted by the previous conflict. Southern Sudan has an area of approximately 650,000 square kilometers 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.

In the past, these roads were generally 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. Apart from a few kilometers 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. The government of South Sudan should consider employing private companies through contracts which pay per destroyed mine to speed up the process. 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 government should also consider this a priority issue in the development of market opportunities for the farmers of South Sudan, which it currently does at least in terms of overall policy.

Rehabilitating the road network

The World Food Program (WFP) has undertaken a program of road reconstruction to facilitate aid operations in South Sudan. Since the special operation for emergency road repair and mine clearance began in 2003, approximately 2,500 km of roads have been rebuilt.¹

The WFP role cannot, however, be viewed as a long-term strategy. Other agencies and institutions, such as the World Bank and US Agency for International Development, 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 PPP framework assessment indicates a preference for concessions over contracts requiring intense supervision. The two arterial roads linking South Sudan with Uganda and Kenya 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. Offering concessions over other parts of the road network, however, may not be feasible as the potential revenue is very low and the required subsidy would be very large. Tolls are also impractical on much of the road network due to its physical layout.

Potential investors also face general post-conflict risks and would most likely require guarantees and/or an explicit subsidy for extended periods before considering such a risky investment.² Although the cost to the government of South Sudan and governments of post-conflict countries in general may seem large or prohibitive, it should be measured against the following considerations:

- The government should provide preliminary designs and performance specifications which would include penalties for non-performance

¹ World Food Program Logistics

² 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.

- The government would subsequently not be responsible for road maintenance, thereby avoiding a long-term drain on the budget
- The government can avoid the possibility that road maintenance will become a political gravy train, a well established pitfall even in developed countries
- The government would, through the concession, mobilize private (probably foreign) capital into the country
- If the concession were correctly designed, the capital could be quickly invested.

In many post-conflict countries 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 the case of South Sudan, private contractors could be invited to design, build and maintain parts of the internal road network in a single contract. 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.

There is always the possibility that such contracts can be won through bribery or that other forms of corruption may result. As a consequence, it is recommended that the specifications for the rehabilitation of the road networks in post-conflict countries be determined very precisely, and with the assistance of donor expertise. Governments could consider instituting an independent road commission to supervise building and road maintenance outside of the political process. As this is unlikely to happen in the short term, outside control mechanisms are also necessary as a temporary step. There is also an important role for a potential PPP unit to establish viable contracts and an effective monitoring regime.

There should also be strict bidding processes in place for all contracts in post-conflict countries. The process need not be cumbersome and for smaller projects may 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 governments of post-conflict countries, and South Sudan in particular, should make rehabilitating the road network a priority. This will create jobs in the short term and will dramatically improve the ability of farmers to market their goods. In doing so, however, governments must be wary of the pitfalls of road contracting and keep the process as open and as simple as possible.

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 in a post-conflict environment, because there is a quick return on investment and 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.

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.

Governments in post-conflict countries with little previous telecommunication infrastructure should attract investment quickly by adopting priority policies that include:

- Creating no barriers to entry
- Avoiding regulation as far as possible, and constrain to access rules and interconnection arrangements where the parties cannot agree amongst themselves
- Adopting 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 government. However, in many post-

conflict instances, and South Sudan in particular, the resource is not in fact scarce as demand is often lower than the available spectrum. Therefore, there is no need to find a mechanism to remove spectrum rents from operators between competing users and allocation is needed solely for technical reasons.

If governments were to insist on using the licensing of spectrum as a revenue raising exercise, they 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 most post-conflict governments. If there is a need to raise revenue from telecommunications, it should be raised from consumers of telecoms services rather than the producers.

Governments in post-conflict countries with existing telecommunications infrastructure should focus on privatizing the sector, if this has not yet occurred. Although this may initially occur with minimal regulation, as the sector becomes completely privatized the regulatory framework will need to be established to ensure anti-competitive behavior and ownership concentration does not compromise a competitive environment that benefits consumers. Governments in these circumstances should begin a policy development process and establish an appropriate regulatory mechanism to address potential problems.

Small-scale irrigation and water infrastructure in rural areas

The dispersed nature of the farming population in many post-conflict countries makes the development of large networks for water and irrigation expensive and improbable. Nevertheless, putting in place irrigation networks could be a substantial boost to agricultural productivity. 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 by the private sector, the system users are the most likely investors in such small-scale schemes.

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

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 good 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 behavior of their supplier. Cooperatives 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. An individual farmer in a post-conflict country will likely be 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 labor but could draw from the neighborhood for additional labor as needed: this approach is one that post-conflict countries should seriously consider as a way of involving the private sector and facilitating self-help solutions in hundreds of villages and communities.

The emphasis must be on low tech irrigation and water solutions because 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.

Description of irrigation and water cooperatives

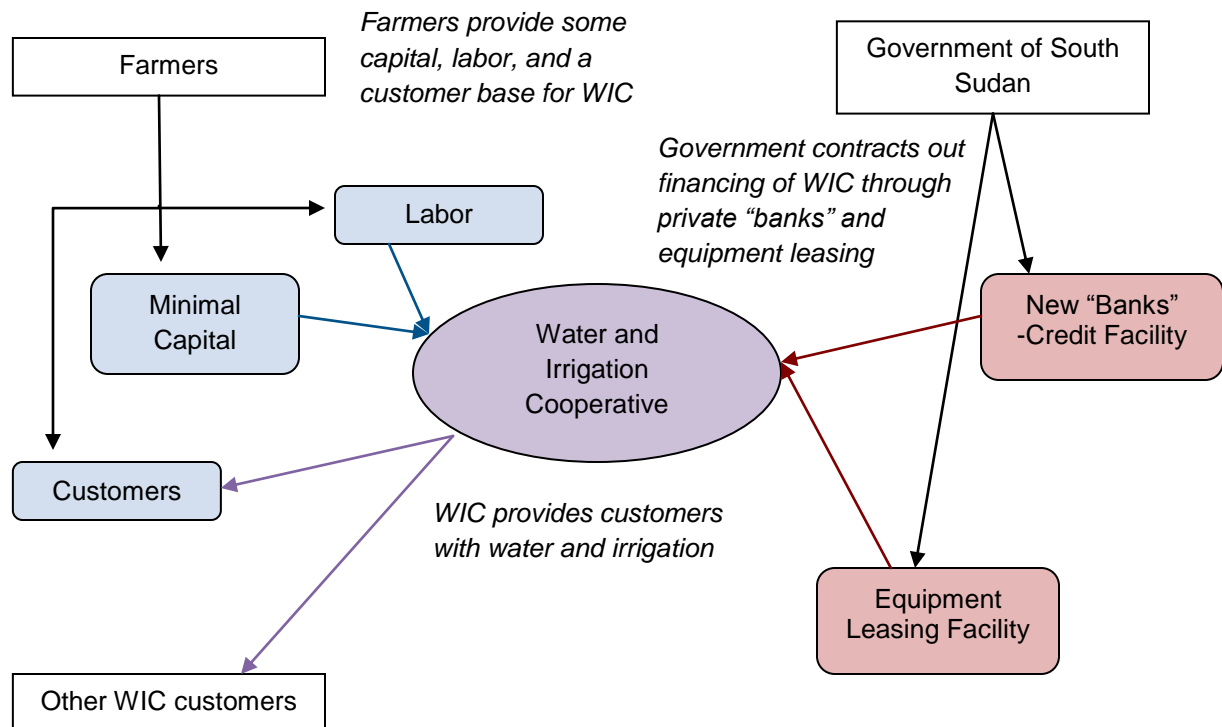
The relationships envisioned by this model are as follows. Groups of neighboring farmers would form WICs to help share risks, pool resources and manage the provision of water and irrigation services for their businesses. Governments could lend funds to other private operators, who would act as banks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

The word “bank” may describe a two-man entity that travels to look 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.

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.

The relationship envisioned by this model is set out in Figure 1 using the example of South Sudan. 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, governments also allow different groups to take on a more specialized form of risk. These risk mitigating characteristics and the limited capacity for post-conflict government supervision suggests that ownership and operation of all the assets should be private, as set out in the following section.

Figure 1 Water and irrigation cooperatives³



Recommendations for post-conflict governments to increase private participation in the water sector include:

- Encouraging farmers to form WICs
- Creating a fund to provide credit to WICs through financial intermediaries

³ Castalia

- Licensing financial intermediaries (such as 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 governments would practically be able to supervise WICs scattered across a post-conflict country. At the same time, small WICs will have very little capacity to fulfill complex information requirements from the government. In South Sudan, it is recommended that the government impose no regulations, ensure no barriers to entry exist, and allow the market to set the price, given the current state of infrastructure for such services.

These recommendations are based on the assumption 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 the customers are the shareholders, and have every incentive to keep the costs of production as low as possible.

Use planned large-scale capital investments as anchors for onsite and nearby infrastructure projects

Post-conflict countries that possess natural resources can use the development of these resources to attract significant levels of private investment. The presence of large amounts of capital will have a signaling effect to other potential investors and provides an opportunity to develop the region by:

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

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

Southern Sudan has large oil reserves and the development of oil wells will bring billions of dollars in private investment. There are already plans to exploit this resource, with some initial investment already occurring in the Bentiu and Adar areas, in the Upper Nile Region. Given the current institutional capacity of the government of South Sudan, the PPP assessment framework suggests the optimal approach would involve maximum private involvement and minimum government supervision. PPP projects should therefore take the form of concessions or leases. The government does not have the ability to supervise management contracts for water or electricity, but it 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.

Box 7.1 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 aluminum 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 PPP 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 Mozambique-MOZAL plant 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. The Private Sector's Role in the Provision of Infrastructure in Post-Conflict Countries – Conflict Prevention and Reconstruction. Paper No. 16, August 2004.

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. However, if the first concern can be addressed then the second will be manageable.

In post-conflict countries, the prospect of peace is likely to cause refugees in neighboring countries to return. In South Sudan, large-scale investments by energy companies will be a signal to refugees, as well as internal migrants looking for increased employment opportunities, to relocate to these areas. Despite this logic, foreign investors may not be willing to invest because the risks, particularly payment risk, will be very high.

The recent experience in Nigeria provides is a lesson for post-conflict countries looking to develop their natural resources. 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 private operators. The obvious starting point is to ensure there is a good social and economic infrastructure for people settling in the area.

Governments can take a number of actions to reduce these risks to private investment. Some of these risks can be addressed through various cost-sharing arrangements, while others can be addressed by adopting the appropriate regulatory environment. Some of the possibilities are outlined in the following sub-sections.

Cost-sharing arrangements

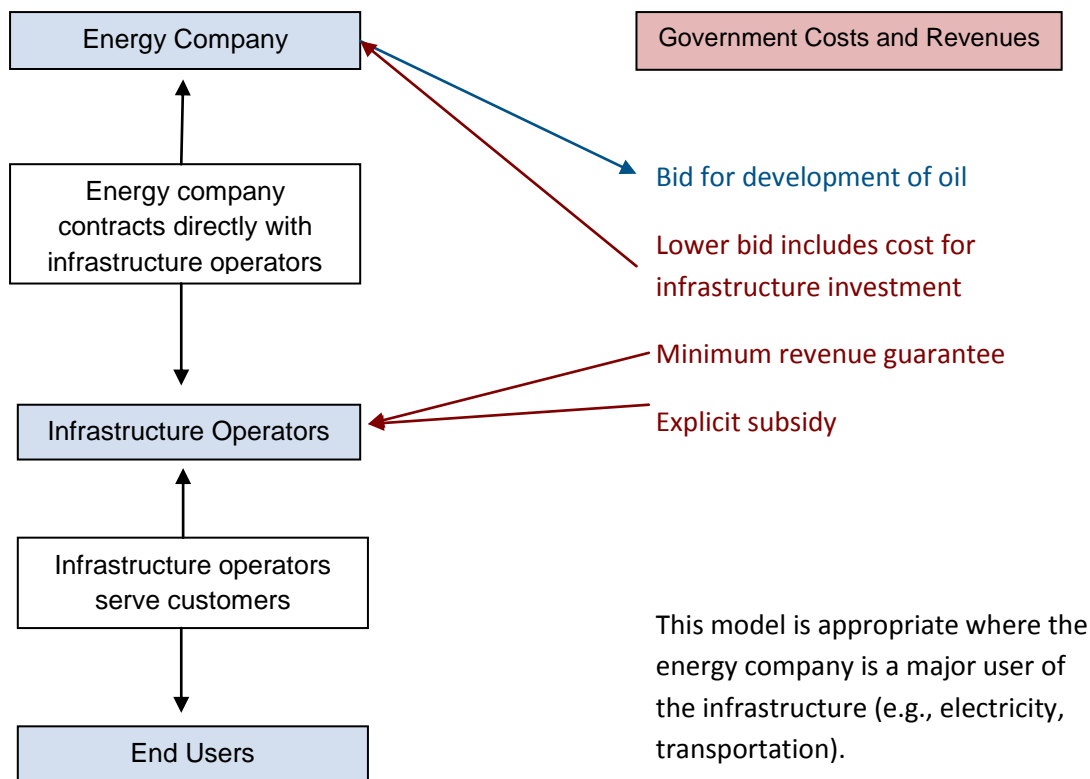
Governments need to consider the initial allocation of costs in three areas:

- 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 outlined below 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 most post-conflict governments need upfront access to cash and expertise.

Figure 2 provides one example of a model for cost allocation in a post-conflict environment. It describes a possible model where the energy company is a major user of the infrastructure. The company could be in any major sector of the economy, such as 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.

Figure 2 A model for cost allocation where an energy company is a major user of infrastructure⁴



⁴ Castalia

Consequently, 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.

Applying this model to South Sudan, the government 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 previously stated, 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 government 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, governments can attract such investors by asking for bids simultaneous with the natural resource 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.

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 post-conflict governments are unlikely to be able to develop and sustain for some time. It is also not necessary, since with initial large scale and risky investments, fixed guarantees, and subsidies, operators will not price themselves out of the market. 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. 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 governments able to focus on making sure that service is extended to as many people as quickly as possible in a sustainable fashion.

In summary, the recommendations for post-conflict governments to leverage large-scale private investments are:

- Build infrastructure facilities which companies use on a large scale into the bidding process for the natural resource development itself. This will result in lower bids for natural resource 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 private companies are investing on a large scale to attract investment in other infrastructure through a signaling 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 areas where natural resources are located; and
- Keep regulation to a minimum. Use contracts to implement service standards and a PPP Unit to monitor performance.

Administering aid to promote private involvement – reducing the aid trap

There is a danger that in delivering aid to post-conflict countries donors may crowd out the private sector. Donors often deliver lifesaving goods, such as food and medicine, but the infrastructure that they build or bring into the country is not being provided by the private sector.

Telecommunications, for example, tends to be provided by small ground satellites set up and operated by the donors, while electricity is supplied by generators that they import and run. In addition to the problems

associated with reduced aid flows that follow the initial post-conflict surge, donors may damage the private sector during the period of plenty. It is difficult for local entrepreneurs to fill gaps in the market if their competitors are highly subsidized, non-competitive donors.

Donors can adopt policies similar to those undertaken by post-conflict governments to encourage private sector participation, such as:

- 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, if the conditions warrant it, foreign private firms are more likely than aid personnel to remain in the country 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 post-conflict countries 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 for example, one of the major impediments to economic growth is non-functionality of the road network due to mines. The United Nations 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 on post-conflict countries, which often possess only fledgling governments. These interventions must be carefully managed to ensure that the impact is positive and maximized.