

An Assessment of the Build - Operate - Transfer (BOT) Model for Infrastructure Project Financing in Tanzania

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Abstract

Build -Operate-Transfer (BOT), as a means of applying private capital to infrastructure development, has gained more and more attention from the governments. The main reasons for this are as follows: first, the governments try to tap the activity and creativeness of the private sectors by means of BOT, improve efficiency and productive forces by interest drive and settle the ubiquitous problems of the inefficiency in the operation of infrastructure; second, the governments attempt to solve the problem of the capital shortage by means of BOT in the case of financial deterioration and the weakening of investment ability; last, public works and public facilities could be shifted to the track of private-ownership by means of BOT.

This paper makes a critical assessment of the BOT concept with major focus on identifying possible issues that need special consideration and attention in the course of adopting the BOT model in Tanzania. In addition, an assessment of the current status of affairs with respect to environment conducive for BOT project is made. This paper is based on a questionnaire survey of key technical officials in the government.

The paper concludes that the BOT model could be used as a mechanism to provide opportunity to finance infrastructure projects. However, the paper suggests some necessary preparatory measures. Firstly, BOT legal and regulatory framework has to be put in place with the intention to protect and guide investors, the government and users tailored for BOT projects from start to finish. Such policy should incorporate probable solutions that will address most of the issues that have been identified in this paper. Secondly, for successful implementation of the BOT strategy, a credible and efficient administrative framework has to be ensured. It may require set up of an institution to handle the BOT projects. Thirdly, creation of awareness among all stakeholders is an important preparatory measure. Seminars, campaigns, and other deliberate efforts to educate the public on the BOT concepts and their effects are extremely crucial for smooth adoption among the public at large. Fourthly, long and short-term training, study tours, and on-job training of personnel tailored to handle BOT projects are important aspects for the long-term capacity building.

Key words: *Infrastructure; Private Sector participation; policies; build-operate-transfer.*

INTRODUCTION

Investing in public infrastructure such as roads, bridges, ports, power plants, and public utilities has traditionally been the responsibility of governments, both in capitalist and socialist economies. Governments have been using tax revenue and/or loans from commercial banks or international finance institutions such as the World Bank to fund infrastructure investments.

Given the current economic states of many developing countries and in order for governments to maintain adequate investments in infrastructure, an enormous burden is placed on public finances. Developing

countries now spend around US\$200 billion a year on infrastructure investment, of which more than 90 per cent is government-sponsored (Pahlman, 1996).

Faced with increased economic constraints on capital spending, reduced borrowing capacity and the need to service debts, the Government of Tanzania (GOT) has been exploring ways to enhance its key infrastructure projects and has stated that it is to adopt the BOT model (Ngumbulu, *et al.*, 1998).

Build - Operate - Transfer (BOT) is a relatively new approach to infrastructure development, which enables direct private sector investment in large-scale projects such as roads, irrigation, telecommunication, bridges and power plants. According to the United Nations Commission on International Trade Law, (UNCITRAL) BOT is also increasingly being utilized for medium and small-scale projects (UNIDO, 1996).

In its basic form, a BOT project is one in which a government grants a concession for a pre-determined period of time to a private consortium to build, operate and manage the project. The consortium recoups its investment costs and profit through charges or tolls (such as road tolls or electricity sales). At the end of the concession period, the project is transferred to the government at such a state and conditions as stipulated in a predetermined contract agreement.

Objectives

This paper therefore presents a summary of a study performed to assess the BOT concept to identifying possible issues that may require special consideration in the course of adopting the model in Tanzania.

The study performed addressed the following objectives:

- General experiences on the BOT concept worldwide have been documented;
- BOT project proposals in Tanzania have been explored and probable areas that could suit the BOT model have been identified;
- Issues that may need attention before adopting the BOT model have been identified; and
- The study has finally suggested some countermeasures to enable smooth adoption of the model.

The paper presents views and opinions based on literature survey as well as opinions obtained from relevant technical people, economists, potential road users and officers concerned with legal and policy issues from various relevant institutions.

BOT Projects

Although the term Build - Operate - Transfer is relatively new, the practice of permitting private concerns to develop and operate infrastructure projects has been around for several years. By October 1992, there had been over 70 projects valued at USD 30 Billion in 14 countries that had been financed since mid 1980's. At least another 100 projects in 33 countries (mostly in Europe) worth USD 160 Billion were identified as being in some stage of planning or development. In Europe, such projects were called "Concessions". The government, in such projects would establish the major objective of a particular project and assume the role of defender of the public interest, but would allow a private company or consortium to design, finance, construct and operate the particular project for a certain concession period. The concessionaire would assume responsibility for the completeness of design, any risks associated with construction, and the control of operational costs, all of which would be recouped through the collection of revenue from those benefiting from the use of the finished project.

The concessionaire would be granted a specific concession period, after which time the contract might be renewed at the option of the government, or title would be transferred from the concessionaire to the government or government agency (Levy, 1996). The basic principle that makes BOT projects work is that of a "bankable franchise". In other words if a facility has the potential to generate sufficient revenues to cover both its capital and operating costs plus a competitive rate of return to investors. If the private team

proposing the project can negotiate an acceptable long-term franchise agreement, then private capital in form of debt and equity can be raised to build the project (Poole and Sugimoto, 1993).

Due to the fact that BOT concept is relatively a new approach to infrastructure development, a number of questions may be asked such as:

- Can BOT be suitable for Tanzania now?
- How best can we adopt BOT in Tanzania?
- What kinds of projects are best suited for BOT model?
- Can we really benefit from BOT model?
- Does the government have an institutional capacity and capability to handle BOT?
- Is BOT legal framework in place?

Such questions needed to be addressed as the GOT looks forward to adopting BOT model. It is therefore the objective of this paper to present results of a survey conducted in an attempt to respond to the questions raised above.

Survey Methodology

A number of techniques were used to accomplish the study. These included: desk studies of the existing reports and other publications; interviews based on a structured questionnaire method; and response based on filled questionnaires.

Views were obtained from relevant technical persons such as economists, potential road users and officers concerned with legal and policy issues from relevant institutions. Previous knowledge of the respondent on BOT concept and knowledge on related policy and legal issues were the main criteria for selection of respondents to the study. The institutions included the Ministry of Works (MOW), Tanzania Electrical Supply Company (TANESCO), Tanzania National Parks (TANAPA), and Ngorongoro Conservation Area Authority (NCAA). Other institutions included the Tanzania Association of Tour Operators (TATO), Tanzania Investment Centre (TIC), and National Income Generation Programme (NIGP). Table 1 summarises the responses and characteristics of the respondents.

Table.1: Responses of Personal Interviews and Questionnaires

METHOD	Respondent Characteristic	Target	Actual	Responses	
				Distribution	Total
Interview	Civil engineers	10	4	4	10
	Electrical engineers		1	1	
	Policy and Legal officers		2	2	
	Economist(s)		1	1	
	Road user group		2	2	
Questionnaire	Civil engineers	20	12	11	15
	Electrical engineers		2	1	
	Policy and Legal officers		2	1	
	Economist(s)		2	1	
	Road user group		2	1	

BUILD - OPERATE - TRANSFER CONCEPT

Main Parties of BOT

BOT projects involve a number of elements, all of which must come together for a successful project. These are illustrated in Figure 1 showing a typical BOT project structure and their interrelationships between the various parties.

Roles of the Host Government

The BOT approach requires varying degrees of government support depending on the type, size and complexity of project and host country's economic and regulatory conditions. The government may need to provide various types of support to the project, including special legislation or exemption in the areas of taxation, labour law, immigration, customs, currency convertibility, profit repatriation and foreign investment protection. Thus, the first subject for review is the general legal and regulatory framework that guides the BOT project from start to finish.

The host government then has to authorize the project in question, a process that can require special legislation and government approvals. Next, it selects and administers a procurement process. It may also have to conduct a preliminary feasibility study to satisfy itself of the economic viability of the project to prospective bidders. Most countries have found it essential to draft a clear request for proposals and to adopt a transparent well-defined bid and selection process.

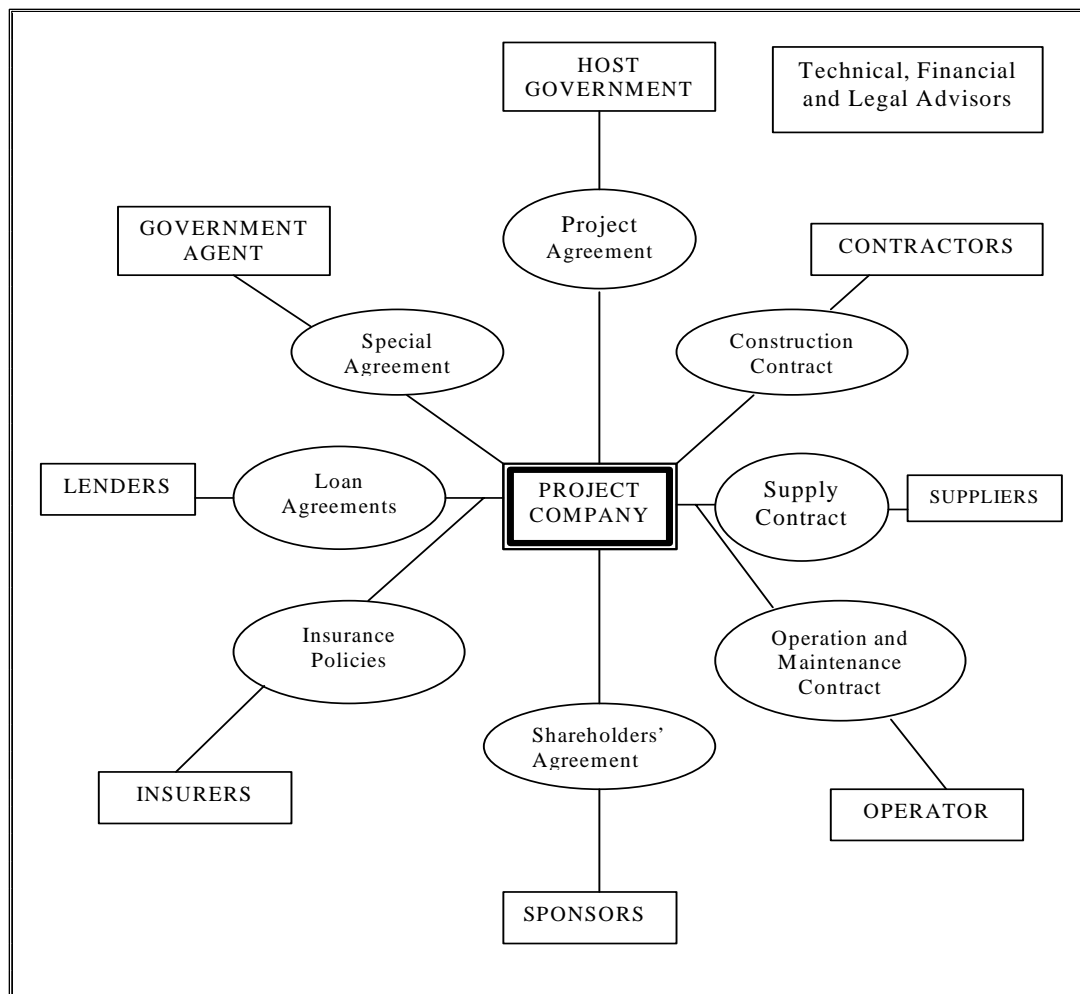


Figure 1: Structure of BOT Projects (Source: UNIDO, 1996)

Further, the host government should, from the outset, appoint a focal point or a specific body for the BOT project and give it sufficient authority and political influence to shepherd the project through the various administrative, regulatory and legislative challenges. These challenges may include opposition from government authorities or agencies that would have been responsible for the project if it were not being done on a BOT, privately sponsored basis. It is crucial for a government's financial, technical and legal representatives to have enough experience to protect and enhance the national interest during project development. Both the government and the private sponsor must be flexible and prepared to accommodate their respective interests in a balanced and equitable manner.

Roles of the Project Company and Sponsor(s) Consortium (UNIDO, 1996)

The private Project Company is the concessionaire of the BOT project; its rights and obligations are defined in the concession or project agreement with the host government. A consortium of private sector sponsor's (public/private partnerships are also possible) is formed early in the BOT process, before the establishment of the project company, to review the request for proposals, prepare a feasibility study and submit a bid. The selected sponsor or sponsors usually create a special purpose, limited liability Company known as the "Project Company" or the "Joint Venture Company". The Project Company will be capitalized with a limited equity contribution from each sponsor. A **sponsor** consortium includes parties that are interested in entering into one or more of the contracts, such as a large international engineering and construction firm, one or more large equipment suppliers, and a firm with expertise in operating and maintaining the particular type of project. These parties are willing to contribute equity to the project in the form of cash, manpower, and equipment.

Roles of Lenders /Banks

According to UNIDO (1996), the project company may include other equity investors, such as an investment banking firm or merchant bank that acts as financial advisor to the project, an international lending institution, or other institutional or even public investors. In special cases, equity participation of the host government is possible.

Role of Construction Company

The construction of the project may be undertaken by the Project Company itself, or by a separate company. The construction company participant in the project may also be a group of companies including, for example, materials and equipment suppliers. Usually the Construction Company assumes responsibility for design, construction and implementation of the project (Kilvington, 1996).

Role of Operator

According to Kilvington (1996), this role may also be undertaken by the Project Company where it has the requisite expertise, or by a separate company. The operator's responsibility is to operate and maintain the project facility after commissioning until the end of the concession period.

Suppliers are participants who provide equipment, raw materials and services.

Independent Checking Engineers

Given the size of many BOT projects it can be prudent for the Project Company to employ the services of an independent party to undertake the functions of supervising construction, checking quality and certifying for payment during the execution of the project (Kilvington, 1996).

Theory Underlying BOT Projects

There is limited literature stating the underlying theory of BOT concept. The most comprehensive of this has been published by UNCITRAL (1994) as follows:

1. In a BOT project, a government grants a concession for a period of time to a private consortium for the development of a project. The consortium then builds, operates and manages the projects for a number of years after its completion and recoups its construction costs and makes a profit out of the proceeds coming from the operation and commercial exploitation of the project after which the project is transferred to the government.
2. The repayments of any loans or returns on the investments made on the BOT project are not guaranteed by the government. Instead the repayments and returns on the investment depend on the revenue generated by the project.
3. Due to the fact that direct fund from the public budget are not required, the government will experience reduced pressure on public borrowing, while allowing the transfer of the industrial risks and new technologies to the private sector. Furthermore, since the project is built and then operated by the consortium during concession period the government gains benefit of private sector expertise in these areas.
4. Among the main characteristics of BOT project is that the respective government does not provide guarantees for the loans for the financing of the project and this necessitates non- traditional distribution of risks between a high number of contractually interrelated parties (UNIDO, 1996). This multiplicity of parties and their interrelated contractual relationships give rise to complex and time consuming negotiations.
5. The host government may, on occasion, furnish portion or all of the land required for the project or possibly grant partial tax relief in some form or another. According to Pahlman (1996), foreign investors are often unable to secure financing for large infrastructure projects in developing countries unless there is a significant level (e.g. 25%) of 'government equity' to ensure political commitment to the project. Many BOT projects are however, structured without any financial or other form of assistance (Levy, 1996).
6. Most BOT infrastructure projects are funded by project financing methods, which may be categorized as non-recourse, limited or full recourse. A pure project financing provides no recourse. This means that if project revenues are insufficient to cover debt service, lenders have no claim against the project sponsors beyond the assets of the project (Ho, 1996). The term 'project finance' as it has been used generally refers to the arrangement of debt and equity for the construction of a specific revenue generating facility in a capital-intensive venture (Tiong and Yeo, 1993).
7. An aspect that sometimes acts as a barrier in establishing BOT projects is lack of legal certainty in some states regarding the realization of particular aspects of a project (UNIDO, 1996). Experience suggests that proactive government policy to stimulate BOT infrastructure projects is inevitable in order to cross the barrier and that there is no general recipe for proactive government policy. There are however, certain essentials that have to be in place to enhance the private sector's interest in BOT infrastructure projects. These include the following (UNIDO, 1996).
8. An explicit national development policy that clearly commits the host government to promote private sector participation in infrastructure projects.
9. A credible legal and regulatory framework to facilitate a BOT strategy.
10. A credible administrative framework to expedite the implementation of BOT projects and to support such projects when they encounter the problems inherent in all large projects no matter how they are financed.
11. Incentives in various forms of government support to encourage the private sector to participate in BOT projects and a pragmatic approach to risk-reward issues.
12. A clear government commitment to conclude BOT deals within a reasonable time.
13. An orderly and transparent BOT procurement procedure has to be put in place before a country's BOT policy can be carried out. The success of a BOT project will depend to a large extent on what occurred before the sponsor group was selected.

Recovery of Project Costs by Investors

According to UNIDO (1996) the project must have a dependable source of revenue that will be sufficient to service principal and interest payments on the project debt over the term of the various loans. The revenue also has to provide a return on equity commensurate with whatever development and long-term project risk the equity investors are being asked to take.

In the case of a power plant, the revenue will normally be based on a long-term off-take contract with a government power authority. In the case of roads, tunnels and bridges, the revenue is market-based. The revenue in this case will normally be based on the tolls to be generated, with the traffic volume risk borne exclusively by the Project Company.

However, in both situations, a mixture of contract based and market-based revenue is often seen. Thus, power off-take contracts often combine a minimum fixed capacity fee with a variable fee for electricity actually purchased. Similarly, revenues for toll roads, bridges and tunnels could be based partly on a government commitment to pay either a minimum capacity fee or additional fees if a minimum level of traffic is not achieved. This approach takes some of the market risk out of primarily market-based project.

Practical Experience from BOT Projects

- a) Pahlman, 1996 asserts that despite the confident promises made by proponents, the supposed benefits of BOT model are based more on free market than on empirical evidence or fact. BOT has no track record. Less than a decade ago the concept was a little more than a curiosity. Given that concession periods are usually at least 15 – 20 years, there is to date virtually no major BOT project that has successfully completed all stages of the cycle (Build – Operate – Transfer) according to original plans. Several BOT ventures have already run into problems due to cost over-runs, unrealistic price and income projections, and legal disputes between private operators and the state. In virtually all these cases, it has been the state and the general public (not private operators) who have ultimately shouldered the cost of failure.
- b) Project risks include all factors of eventualities that cannot be definitively predicted and incorporated into project costing. The larger and more complex the project, the greater the risks. The major risks associated with a BOT project, particularly in developing countries typically include completion risk, cost over-run risk, performance risk and operation and maintenance risk. The list also include unreliable market and price risk, resources supply risk, interest risk, currency risk, political risk, and legal risk (Ho, 1996).
 - Completion, cost overrun, and performance risks collectively known as development or construction risks are concerned with possibility that the project cannot be completed on time, within budget or to required standard and performance, resulting in an additional development and/or loss of revenue.
 - Operation and maintenance risks are concerned with the possibility that the completed facility cannot be effectively operated and/or maintained to produce the expected capacity, output or efficiency, leading to loss of revenue and/or increased operating costs.
 - Market demand/unreliable market and price risks are concerned with the possibility that the operation of the facility cannot generate the projected revenues because of changes in market prices or demand for the product.
 - Resources supply risks is concerned with the possibility that the required resources for the facility operation cannot be available, or can only be available at a higher price, resulting in loss of output and/or increase in operating costs.
 - Interest rate risk is concerned with the possibility that interest rates increase forcing the project to bear additional financing cost (Beidleman, *et al.* 1991).
 - Currency risk is concerned with the possibility that changes in foreign exchange rates alter the home currency value of cashflows from the project.

- Political risk is concerned with the possibility that a collapse of the existing political order in the host country or the imposition of new taxes, exchange transfer restrictions, nationalization or other laws may jeopardize the prospects of repayment and recovery.
- Legal risk is concerned with the possibility that the BOT project throughout the whole concession period cannot be properly protected by the less sophisticated legal systems in many developing countries. For examples dispute resolutions may be problematic; choice of foreign law may not be recognized; the ability to refer disputes to arbitration might be restricted.
- In most large BOT projects, the private sector has only been willing to participate if governments or International Financing Institutions (IFIs) assume a significant portion of the project risks or provide various forms of subsidies (Pahlman, 1996). typical subsidies include investment grants, low-interest loans, specific tax exemptions, land grants, and public financing of social and environmental mitigation measures and application of state controls to restrict competition and alternatives.

A case study on BOT power generation project in Malaysia has given a lesson on management of the project risks (Beidleman, *et al.* 1991). All identified risks were insured, transferred or guaranteed. This has shown that project-financing method could be used to allocate project risks among various project participants.

SUMMARY OF FINDINGS

The following are findings from both literature review and opinion survey of relevant respondents.

- The BOT concept, when adopted in a realistic and consistent strategy, could provide opportunity to finance infrastructure projects without involving public funds. For example, the private sector sponsors/investors generally provide equity financing in the amount of 10-30 percent of the total project cost and seek debt financing for the balance of the investment (Levy, 1996).
- It has been found that BOT model could also be suitable for other types of projects apart from power plants, roads and bridges. The projects include the tunnels, airports, ports, canals, water development projects, tourist hotels, telephone communication, office buildings and railways. Others include sewerage systems, and housing units that surround stadia and district or municipal markets.
- The GOT has pronounced its intention to adopt the BOT model. In the June – August 1999 parliamentary budget session, it was stated that four road projects had been proposed for BOT arrangement. The list of these roads and status of the projects has been summarized in Table 1 below.
- Table 2 includes the Pay-phone BOT Project (Business Times, 1998) as an example of a non-road BOT project reported to have estimated at USD 5.6Mill in 1998 and aiming at providing 10,000 payphones throughout the country.

Table 2: Selected BOT Project Proposals in Tanzania (as of November 1999)

S/No.	Project Name/ Description	Project Stage
1.	Kigamboni Bridge in Dar es Salaam	Proposal
2.	Dodoma - Manyoni - Itigi - Tabora - Nzega and Tabora - Kigoma via Ipole and Mpanda Roads in the Central Corridor	Proposal
3.	Mtwara - Masasi - Songea Mbamba Bay Road in the southern corridor	Proposal
4.	Makuyuni - Ngorongoro Road in Arusha.	Proposal
5.	Pay-phone BOT Project	Implementation

In general, current status of the project proposals indicates that there has been no substantial development since the onset of the proposals. Some modalities are being worked out and logistics are being sorted out to involve all stakeholders.

The study established that, there are inherent issues and problems that may influence BOT projects unless deliberate efforts are made to reduce their effects. These include:

- a) Costs may be exaggerated (project overpricing) by the contractor/project developer. In this context the contractor exaggerates the project cost for his/her own benefit, probably aimed at profit maximization.
- b) Unrealistic price and income projection - uncertain economic viability is among the issues that are likely to affect infrastructure projects. For example projection of traffic volume (used for revenue prediction) may be unlikely to be certain.
- c) Double charging - fuel levy already established in the country indirectly forms one of the road toll charges. Introduction of another direct or indirect road toll charge as a means to collect revenue for a BOT project (in the case of road infrastructure) is likely to bring about argument of double charging/taxing and hence resistance from road users tailored for the project. This issue is unlikely to be well understood unless necessary efforts have been made to educate the public.
- d) Low traffic/service volumes - in the case of road infrastructure, low traffic volumes characterize most of our roads. This may inevitably results in most of road projects being not commercially viable. The central and southern corridor proposals are typical examples that justify that most of our roads are not commercially viable due to low traffic volumes. The two project proposals have opted to get their revenue from additional fuel levy instead of traffic expected to use the facility. The proposals violate the basic principle underlying the ways to recover project costs by investors.
- e) Project risks - these include all factors or eventualities that cannot be definitively predicted and incorporated into the project costing. The risks include insufficient technical and economic data, unforeseen engineering problems (e.g. performance and completion or operation and maintenance), cost overruns, and currency exchange variations and unreliable market and demand projections.
- f) Long-term project sustainability - a facility may have reached almost its design life when the project reaches its transfer stage and sustainability may not be the concern of the private investor after the facility has been transferred to the host government. For most road projects an economic analysis period of 10 – 20 years is taken as a pavement design life while on the other hand, BOT project concession period is usually at least 15-20 years (Transport Research Laboratory, 1993; Pahlman, 1996). The private investors have little or no incentive to ensure long-term sustainability of the project after transfer unless compelled by legal framework that has to be put in place.
- g) Lack of BOT policy and legal framework - there is no credible legal and regulatory framework put in place to facilitate BOT project in particular except the investment act of 1997 which covers a general investment policy. The general investment policy has been covered by the Tanzania Investment Act of 1997. This is an act that makes provision for investment in Tanzania to provide for more favourable conditions for investors and for related matters including various incentives to private investors. However, there is no provision in this act that defines terms and conditions for BOT projects in particular. Legal and regulatory framework to facilitate BOT strategy is either not put in place or not clearly covered under the investment act. Issues that concern cost of project failure and disputes, indirect costs on environmental impact, and social dislocation and resettlement for BOT projects should categorically be covered by legal framework. Furthermore, accountability and transparency of private companies in a BOT project should as well be defined clearly in the legal and regulatory framework to cover the following aspects:
 - A clearly defined policy framework to ensure that the project cost bearer is defined;
 - Definition and quantification of the cost of environmental impact and associated social dislocation and resettlement requirements and who should be responsible for them; and
 - Responsibilities and accountability in case of failure to meet clearly spelt out objectives, strategies, plans and operations of the project developers.
- h) Lack of both expertise and specialized institutional set up for handling BOT projects is a problem that may hinder implementation of the projects from identification, negotiation, development, and operation through to transfer stage. Credible and efficient administrative framework is required for successful implementation of the BOT projects. As an example, experience from IRP has shown that most of the important reasons for delay of the projects, were delays in project procurement.

Procurement of the International Development Agency (IDA) components could take an average of 189 weeks for civil works and 90 weeks for consultancy against targets of 80 and 30 weeks for civil and consultancy services respectively (Carl Bro, International A/S/Consulting Engineers, 1997).

To sum up, BOT concept in a fairly well defined legal and institutional environment may offer benefits of stimulating investments and promoting privatisation of infrastructure facilities. In order to achieve best results however, the above-mentioned issues need to be addressed before the model is practically adopted and this may need time for preparation.

RECOMMENDATIONS

For successful adoption of the BOT model the following recommendations are made.

1. BOT policy and legal framework have to be established with the intention to protect and guide investors, the government and users tailored for BOT projects. This requires special legislation to be enacted for BOT projects or amendment of the existing legislation. Legal and regulatory framework, should among others, incorporate probable solutions that will address the issues that have been identified in this paper including BOT procurement procedures and regulations;
2. For successful implementation of BOT strategy, a credible and efficient administrative framework has to be ensured. This may be explored through organizational set up, and experience and procedures of the procuring administrative entity. The GOT may wish to engage a specially trained team from either civil service and/or local consultant to accomplish this. For the effective and efficient performance, the institution has to have clearly defined legal mandates and functions. This team, among other things, has to monitor the performance of the private company starting from design stage through to operation stage. The team may also look into the logistics of hand-over to safeguard mutual benefits.
3. Creation of awareness among all stakeholders is an important preparatory measure. Seminars, campaigns and other deliberate efforts to educate the public on BOT concepts and their effects are inevitable if smooth adoption of the model by the public is required.
4. Long and short-term training, study tours and on-job training of personnel in the institution tailored for handling BOT projects is inevitable. Strategic and transparent training program should be put in place for long-term capacity building and strengthening of the institution. The training should focus on BOT practical concepts and management of projects in those countries implementing BOT models.
5. Further research in BOT legal and regulatory aspects, procurement aspects including the selection of sponsors and other aspects is suggested.

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