

Chapter 6 Establishing the Dar es Salaam Transport Authority

This chapter presents the fully developed Dar es Salaam Urban Transport Authority (DUTA), based upon the analyses, concepts and structures detailed in previous Chapters.

Underlying chapter discusses three elements, important in the process of establishing DUTA, namely:

1. The organizational structure;
2. The operational structure; and
3. The resources required to establish DUTA.

Given the complexity of the subject and considering the objectives / responsibilities of the DART Agency, *Chapter 7* will discuss in detail the structural and organizational relationship between DUTA and the DART Agency.

6.1 DUTA development process

6.1.1 PHASE 1: Structural Phase

(1) Organizational changes

The efforts during the first phase of the development concentrate on establishing a practical framework for the Dar es Salaam Urban Transport Authority (DUTA), through structural adjustment phase. Its main function is to coordinate and liaise with the existing line agencies presently responsible for transport in the city. At this stage, DUTA does not (yet) have explicit authority over the city's transport system but acts as pivoting organization to increase efficiency and effectiveness of transport operations and development.

The concrete functions of DUTA in this stage are:

- Establish Board of Management and Secretariat;
- Set Strategic Policy and define levels responsibilities (interim & future); and
- Coordinate present players and establish liaison.

An important issue will be the Secretariat, in the field responsible for the interaction with the Line Agencies. This responsibility makes clear that these persons have to be skilled experts that are capable of interaction with the professionals in the different Line Agencies.

The concept of the structural phase is to better align the present structure with an executive planning/regulatory role of the Board of Management of DUTA, comprised of representatives of all public stakeholders at all levels

The establishment of the DUTA Board of Management is the first step to improve the level of coordination between all stakeholders (**Figure 6.1.1**).

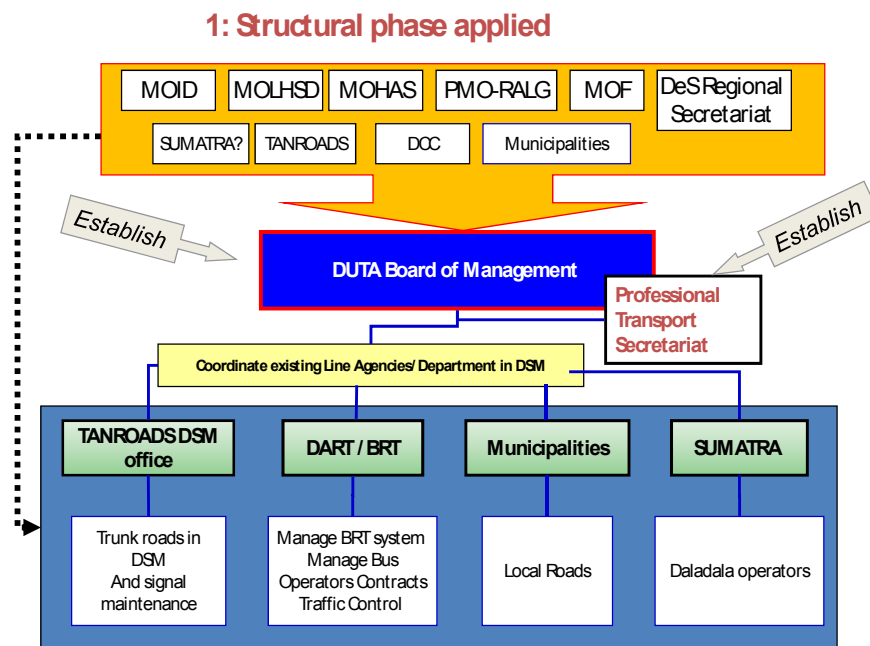


Figure 6.1.1 Establishing DUTA Board of Management (line agencies unchanged)

The prime objective of the DUTA Board of Management is to assemble all parties dealing with urban transport in Dar es Salaam in one coordinating unit. The proposed Board of Management consists of 13 administrative representatives representing:

1. Representative of the Ministry of Infrastructure and Development (MOID);
2. Representative of the Prime Minister’s Office - Regional Administration and Local Government Office (PMO-RALG);
3. Representative of the Ministry of Home Affairs and Security (MOHAS) also representing the Dar es Salaam police department;
4. Representative of the Ministry of Lands, Housing and Human Settlement Development (MOLHSD);
5. Representative of the Ministry of Financing (MOF);
6. Representative of Dar es Salaam City Council (DCC);
7. Representative of the Dar es Salaam Regional Secretariat (DeS-RS);

8. Three (3) representatives for each of the municipalities: Kinondoni, Ilala and Temeke;
9. Representative of TANROADS;
10. Representative of DART.

(2) Operational structure for the structural phase

The 13 stakeholder representatives meet as required and at regular intervals, for example once a month, to coordinate urban transport system development in Dar es Salaam. The board will be presided by the *Chairman of the Board*, one of the Board of Management appointed on a rotating basis and for a fixed period.

The principal activity of the Board of Management consists of streamlining, coordinating, and integrating:

1. *Regulatory framework* for city transport;
2. *Strategic policy* of the different stakeholders, in particular related to transport in Dar es Salaam;
3. *Investment planning* for upgrading of existing or development of new transport infrastructures in the city;
4. *Infrastructure maintenance* of infrastructures, including the budgeting of the maintenance programs; and
5. *Control and enforcement*, in particular procedures related to licensing, permits, policing of traffic, safety standards, etc.

At this stage in the development of DUTA, the role of the Board of Management remains limited to a consultative role, focusing on follow-up and steering of policy-making and activities. It is clear that the practical implementation of the consultative role of DUTA requires a permanent body of (transport) experts, the *Executive Planning Unit*, which collects information, analyses data and formulates improvements which support the consultative work of the Board of Management of DUTA. The Center for Transport Studies (CTS), which will be placed at National Institute of Technology (NIT), will be expected to be a supporting organization for this Executive Planning Unit.

Given the restricted mandate of DUTA and its Executive Planning Unit, it is recommended to establish the Executive Planning Unit as a small “expert task force” to which only a limited number of highly skilled persons are assigned.

The Executive Planning Unit interacts on a continued and regular basis with all stakeholders and for that purpose:

1. Collects information from all relevant sources;
2. Organizes consultations to collect concrete and up-to-date information and insights;

3. Structures, classifies and processes information to create a coherent and integrated overview of all issues relating to the Dar es Salaam transport system;
4. Amends and adjusts available information in line with concrete observations; and
5. Formulates for the different stakeholders recommendations that could improve the regulatory, institutional, managerial, and operational functioning of urban transport in Dar es Salaam.

The DUTA Executive Planning Unit also has no decision-making or implementation authority but executes within the boundaries of its mandate the decisions of the DUTA Board of Management via coordinating and consultative actions towards the Line Agencies and Departments in DSM, in particular towards:

- TANROADS – DSM Regional Office, for issues related to truck roads and signal maintenance along these infrastructures;
- SUMATRA, for all aspects of licensing and the management / reorganization of the daladalas;
- The Municipalities of Kinondoni, Ilala and Temeke for all elements covering local roads; and
- DART for all issues dealing with the development of the BRT system in Dar es Salaam and other (public) transport issues presently falling under the authority of the DART Agency.

Although the above four stakeholders are undoubtedly the priority counterparts for the DUTA Executive Planning Unit, coordination with and consultation of other Authorities, Institutions and representative organizations will fall under the mandate of the Executive Planning Unit.

In summary, this first conservative step towards the establishment of an integrated urban transport authority in Dar es Salaam leaves the present institutional framework unchanged but introduces a practical structure for effective coordination between and interactive consultation with all stakeholders.

(3) Resources for the structural phase

At this initial stage in the DUTA creation process, only limited human resources are needed, predominantly because of the limitations on the Authority’s mandate (**Table 6.1.1**).

Table 6.1.1 Phase 1 – human resources needs

Function	# persons	Origin	Remarks
Board of Management	13	Public Authorities	Each above identified Administration will have 1 representative on the Board, preferably a Senior Manager inside the respective Administrations.
Administrative Secretariat	2	Administration	Responsible for Minutes of Meetings of the Board and other secretarial duties, these 2 persons can be found within the large pool of administrative government workers.
Executive Planning Unit	7	Stakeholders / outside experts	Seven experts is the minimum required for the unit to efficiently execute its works. One expert should be selected from respectively DCC, TANROADS, DART, SUMATRA, and the three Municipalities. The three remaining experts could deal with all other urban transport issues. These three experts do not necessarily need to come from within the public Administration but can also be academic or private consultants.

There is no formal participation of foreign experts foreseen in DUTA, although it might be considered to engage foreign expertise in order to prepare Phase 2 where the transition from a structural organization to an Executive Administration will have to be accomplished.

(4) Concluding observation

The still limited role of DUTA, combined with the strong participation of all stakeholders will minimize both the start-up costs and the operational costs. Most of the staff dispatched to DUTA remains contractually under the umbrella of their original Administration / Authority and only a few will have to be contracted outside.

The principal objective of the structural phase is to establish a functional framework / working structure in which all stakeholders participate with the objective to establish over time a single organization with full authority over and responsibility for transport in the city of Dar es Salaam.

6.1.2 PHASE 2: Executive Phase

(1) Organizational structure for the executive phase

The efforts during the Executive Phase (Phase 2) focus on expanding the role of DUTA into a functional Authority that will gradually take over responsibility for urban transport in Dar es Salaam parallel to the step-by-step introduction of functional and operational structures.

The Authority (organization) will be the executioner of the decisions taken by the Board as it grows towards a truly functioning entity. The concrete role of the expanded DUTA is known to:

- Create the management organization within the authority;
- Establish the administration;
- Commence reassignment of responsibility & creation of agencies;
- Develop strategic policy for each agency within the overall strategic policy; and
- Develop budget plans.

Providing at this stage a detailed organizational structure for DUTA and a concrete time-line for its gradual transformation is very difficult if not impossible and can only be described in generic terms in the context of this Master Plan Study. The main reason is the *complexity* of the existing institutional and administrative system combined with the need for formal *commitment* to institutional change.

The transformation is particularly difficult because it requires reversing the present process of simultaneous centralization in favour of the national government and decentralization in favour of the three municipalities in Dar es Salaam to achieve *centralization in favour of the city*.

Phase 2 should start from the knowledge that historic and recent urban transport activity in Dar es Salaam is characterized by a wide proliferation of management bodies creating overlaps of authority and conflicts of interest in the provision and management of urban transport infrastructures and services and the enforcement of traffic laws and regulations.

As generically presented in **Figure 6.1.2**, the organizational structure should have in the end 3 (key) Divisions, which combined “characterize” the urban transport system in Dar es Salaam. These Divisions are respectively dealing with;

- *Public transport*, in particular BRT but also all other modes providing public transport services;
- *Non-public transport*, all forms of non-public transport such as non-motorized transport, in particular municipal and trunk roads as well as management of equipments such as signalling;
- *Transport development*, focusing the optimal realization of development projects via a thorough and prioritized investment planning.

However, the success of the Phase 2 transformation process does not exclusively depend upon the work *inside* DUTA. Success will equally and maybe even more depend upon the acknowledgement that institutional reorganization is also needed for the Line Agencies with the objective of introducing structure and coherence that facilitates the (future) functioning of DUTA.

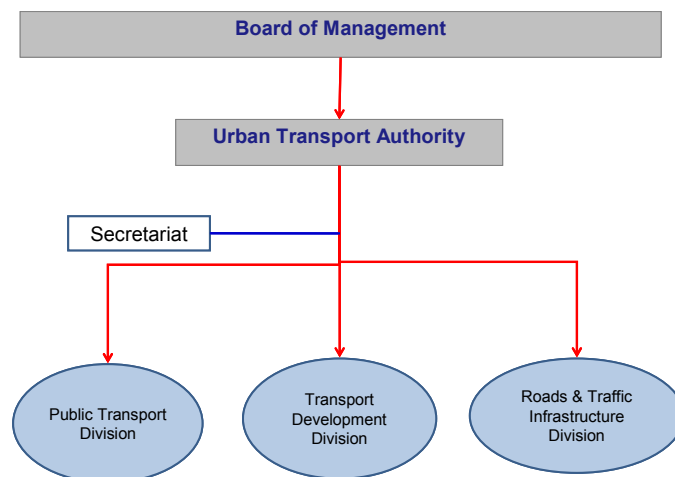


Figure 6.1.2 Establishing Divisions for the various sectors

The DUTA reform process thus needs to coincide with a parallel restructuring process *outside* DUTA, schematized in **Figure 6.1.3**, in order to:

- Transfer of daladala management activities (route planning, licensing and enforcement) of SUMATRA to DART;
- Streamline and integrate the activities of TANROADS and the Municipalities in respect to road traffic;
- Streamline and integrate the remaining stakeholders that are involved in city transport, traffic management, infrastructure development, etc.

2: Executive Phase Applied

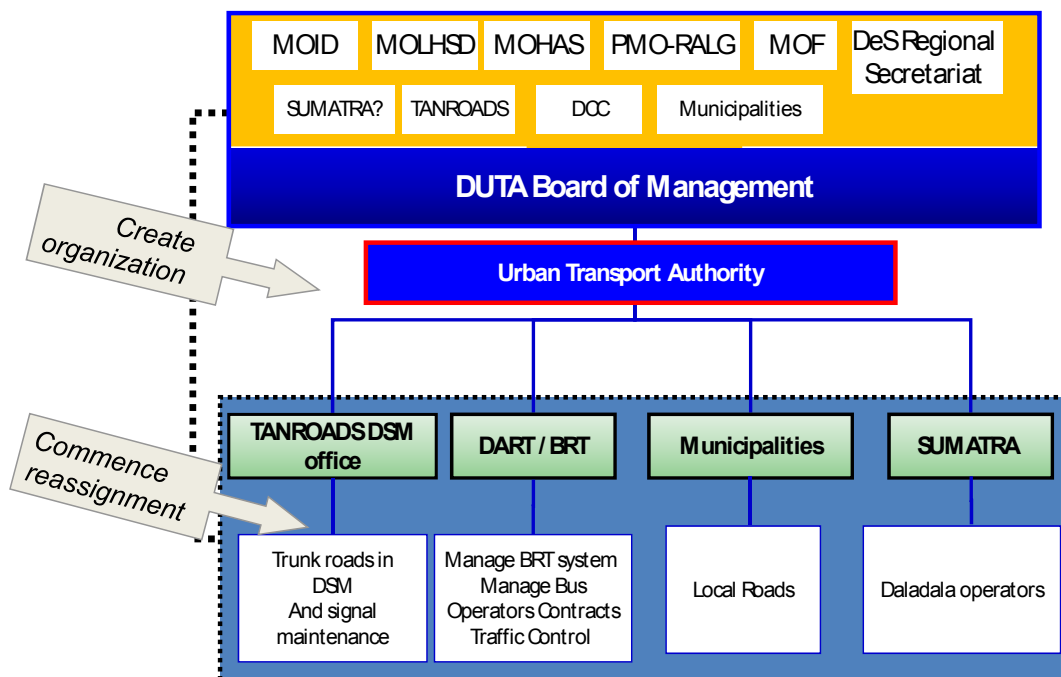


Figure 6.1.3 Restructuring the Line Organizations

The duration of Phase 2 is uncertain because the efforts intent is in structuring the relationship between DUTA and the Line Agencies and other stakeholders with the objective of increasing the coordination and functional and operational logic in dealing with the city's urban transport system. Assuming a fluid internal process, the actual duration of Phase 2 depends on the time needed to also complete the (external) reform efforts for the Line Agencies, a decision process outside the control of and fully independent from DUTA.

(2) Operational structure for the executive phase

During the second phase, the Dar es Salaam Urban Transport Authority is formally established under the supervision and control of the DUTA Board of Management. This process involves in practice the transformation of the *Executive Planning Unit* into a more comprehensive and structured organization which is DUTA.

The reorganization of Line Agencies for Dar es Salaam transport has 2 principal axes:

1. Restructuring and integration of authority / responsibility wherever there is an existing overlap or when present authority is complementary; and
2. Creating new Line Agencies / Departments for transport system areas where present authority is inexistent or unclear.

The institutional restructuring will in practice focus on reorganizing the existing diagram of authority

for (Dar es Salaam) city transport as schematized in **Table 6.1.2**. The wide range of involved agencies is further contradictory to proper integration and coordination, and Phase 2 strengthens the Authority to commence reorganization.

Table 6.1.2 Diagram of Authority (present situation)

Organization		Operation Functions		Policy and Regulatory Functions			
		Planning & Investment	Infrastructure management & operations	Draft legislation and regulations	Insurance of technical standards/transport license	Traffic order & safety	Negotiation of international agreement
1. MINISTRIES AND CITIES/MUNICIPALITIES							
Ministry of Infrastructure Development (MOID)		trunk Roads, road safety	X		X	X	X
Prime Ministers Office - Regional Administration and Local Government (PMO-RALG)		Urban roads			X		X
	Dar es Salaam City Council (DCC)	parking, bus terminals	X	X	X (bylaw)		
	Municipalities	Urban roads, bus, terminals, truck terminals	X	X	X (bylaw)		
Ministry of Public Safety and Security		Traffic law and regulations enforcement	X		X		X
Ministry of Finance		Motor vehicles registration, road toll			X		X
2. REGULATORY AUTHORITIES							
Surface and Marine Transport Regulatory Authority (SUMATRA)		Public transport				X	X
3. OPERATIONAL AGENCIES/ PARASTATAL ORGANIZATIONS							
DART Agency		BRT, Traffic Management	X	X	X	X	X
Tanzania National Roads Agency (TANROADS)		Trunk Roads	X	X			

Source: JICA Study Team

The Phase 2 principal task will be to internally organize the Authority and lay out in detail, the framework and functioning of the 3 proposed Divisions, a task which should be completed before commencing Phase 3.

The administrative *Secretariat*, added to the organization during the first phase, continues to function but is now attached directly to DUTA and no longer to the Board of Management. Its original function of writing and distributing Minutes of Meetings and other small administrative functions will gradually expand in line with the expected growth of DUTA' activities.

The experts in each Division will have to organize and coordinate:

1. The internal organization of each Division in creating the different Departments dealing with specific topics of the responsibilities assigned to the Division; and
2. The relationship with the Line Agencies, in particular coordinating with all stakeholders the gradual transfer of authority from the Line Agencies in pace with the efforts to reform these agencies.

(3) Resources for the executive phase

Taking into consideration the final generic structure of DUTA resulting from the efforts during the Phase 2 development process, some general indications can be given regarding the resources required at this stage (Table 6.1.3)

Table 6.1.3 Phase 2 – human resources needs

Function	# persons	Origin	Remarks
Board of Management	13	Public Authorities	No change from the achievements in Phase 1.
Administrative Secretariat	3	Administration / outside contracts	With the repositioning of the Secretariat under DUTA (the old Executive Planning Unit), the responsibilities expand as the Secretariat will also have to take on the secretarial and administrative responsibilities for the Urban Transport Authority in addition to the responsibilities already assigned to it in Phase 1. The starting point is that 1 additional administrative worker is added to the 2 employees previously assigned to the Board of Management (Phase 1); the total number of staff for the Administrative Secretariat would equal 3 persons at the completion of Phase 2. The administrative staff should in the first place be found within the large pool of administrative government workers but in case not all positions can be filled with existing staff, outside workers should be contracted.
Urban Transport Authority	7	Stakeholders / outside experts	As a principal guideline, it is suggested that during the second phase, 2 experts are initially assigned to each of the 3 Divisions. They will have the explicit assignment to finalize the development of the Divisions during Phase 3. One "coordinator" is added during the entire duration of Phase 2, bringing the total number of persons in the Urban Transport Authority to 7 experts.

The concrete establishment of the different Divisions within DUTA and the attribution of responsibilities to each will determine in the end the concrete staffing needs and the financial resources necessary for its operations.

The *critical path* in the process is the establishment of the Urban Transport Authority and its 3 Divisions and the necessary resources allocated to allow outlining in as much detail as possible its structure and functioning. The need for detail should not be underestimated, given the critical role of the Divisions in Phase 3. At the end of Phase 2, only the generic structure of DUTA will be in place. It will be the principal ask of the Divisions of completing the establishment of the Urban Transport Authority during the third and final phase by setting up the necessary structures both internally within the Divisions and externally among the executing entities which will be essential for the long-term sustainability of the DUTA.

(4) Concluding observation

Phase 2 is undoubtedly the most complicated and demanding process because it introduces concrete changes in organizational structures and in responsibilities / authority of different Line Agencies and

Departments currently dealing with urban transport issues in Dar es Salaam.

The successful completion of Phase 2 and its timing will depend upon the commitment of all stakeholders to establishing an efficient and effective Authority that is responsible for all transport aspect in the city.

6.1.3 PHASE 3: Consolidation Phase

(1) Organizational structure for the consolidation phase

Phase 3 is the final stage in establishing DUTA. Its main objective is to finalize the organizational structure of DUTA, in particular the 3 Divisions under control of the Director General, and to complete the reorganization of the Line Agencies, leading to the structure as presented in **Figure 6.1.4**.

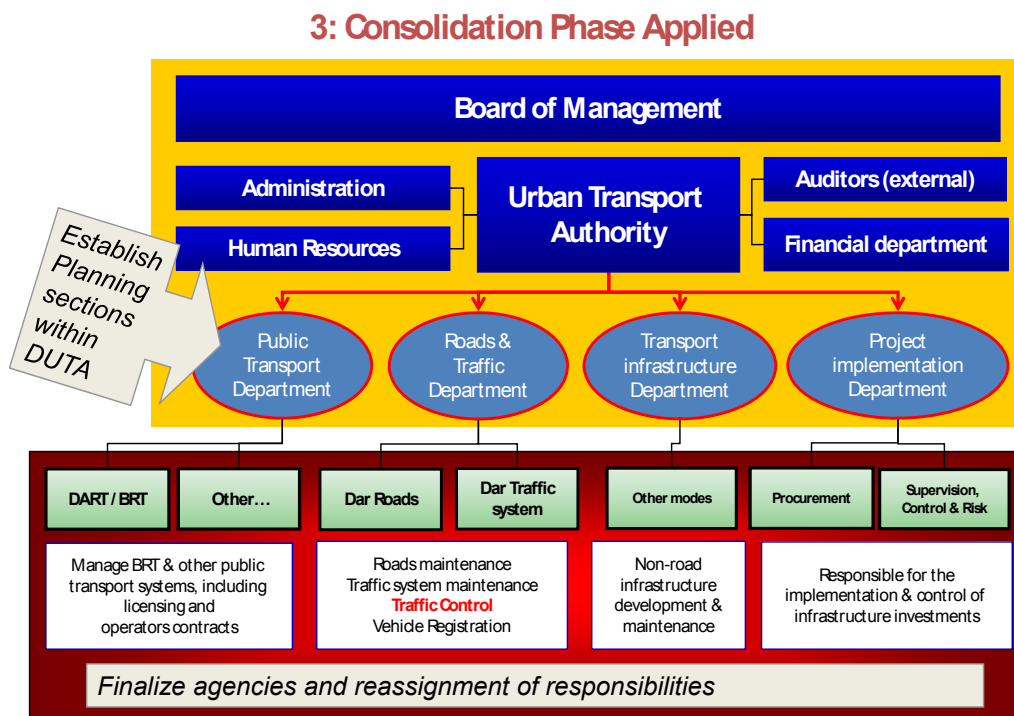


Figure 6.1.4 Final generic structure of DUTA (completion of Phase 3)

Three organizational issues are particularly important during Phase 3.

The *first* issue is the introduction of an *Advisory Board*. This Board incorporates experts which are not directly attached to DUTA but have a particular interest in urban transport in Dar es Salaam. Members of the Advisory Board are proposed by each of the interested parties and their appointment is approved by the Board of Managers.

In practice, the Board will include expert advisors from the Members of the Board of Managers as well as representatives from both the private and public sectors, not represented in the Board of Managers, such as the airport, the maritime port, Dar es Salaam police, DARCOBOA (representing the daladalas),

etc.

The second issue is departmentalizing the *Secretariat* assigning respective responsibilities for:

1. Administration/legal; would take over the administrative tasks of the Secretariat and would also consider the legal issues;
2. Human Resources: dealing with the staff of DUTA; and
3. Financial Department; responsible for the financial issues.

Furthermore, external auditors should be appointed which annually revise the financial state of DUTA and regularly control the financial transactions / activities of the Financial Department. Given the importance of the auditing function, it is strongly recommended to functionally attach the external auditors to the Board of Management that is in the end responsible for the financial performance of DUTA. Furthermore, it is strongly recommended to externally contract the auditing responsibility in order to guarantee transparency and accountability of financial transactions.

The *third* issue is completion of the reassignment of responsibilities between the Divisions and the Line Agencies leading to a coherent, integrated, and sustainable institutional structure responsible for urban transport in Dar es Salaam.

With the completion of Phase 3, a fully functional and well structured Authority will be available that is fully responsible for all aspects of Dar es Salaam's transport system. At that time, DUTA will have positioned itself as the coordinating intermediary between all stakeholders on the one hand and the city's transport system on the other hand.

As coordinating organization, DUTA will "convey" the concrete needs of the city's transport system to the national government and "translate" the national (urban) transport policy into concrete actions on the ground. An important part of its intermediate responsibilities, DUTA will ensure accountability of the Line Agencies and other executors and guarantee transparency on investment priorities to ensure a coherent and sustainable development of the urban transport system.

The detailed structure, concrete role, and functioning of DUTA will be discussed in more detail in Section 6.2.

(2) Operational structure for the consolidation phase

With the completion of Phase 3, DUTA will (should) have achieved the establishment of a fully operational Authority as well as the full restructuring of the Line Agencies to ensure efficient and effective management of the Dar es Salaam urban transport system. As sole coordinator for and manager of the Dar es Salaam transport system, DUTA will require an adequate structure for executing its tasks.

This means in practice that the organization can guarantee:

1. Effective policy making / guidance and control over DUTA activities (*Board of Management*);

2. Efficient administrative and financial management (*Administrative Departments*); and
3. Effective and efficient coordination and management of executive duties (*Divisions*).

Operationally, the *first* task of DUTA, and in particular the Divisions, is to finalize the *external* restructuring of the Line Agencies, a process that was commenced during Phase 2. The final layout of the Line Agencies will in turn determine the final design of the different Divisions that deal with the control and coordination of the Line Agencies activities.

The *second* task will be to complete the *internal* organization of the Divisions according to sectoral responsibility and the oversight of the line agencies under its purview. Various smaller departments can be established under each division as is required according to the fields of responsibility.

The specific responsibilities of each Division are as follows:

1. **Public Transport Division** is responsible for all public transport in Dar es Salaam and divided according to the different public transport services provided:
 - a. Bus Rapid Transport (BRT) Department is the system manager dealing with the different private companies operating the various BRT lines as well as the (privatized) feeder bus services;
 - b. Private Services Department deals with the range of privately operated public transport services such as daladala, vipanya, and taxi services. Given the explicit intention of privatizing the city's bus service, this Department will in time also take responsibility for the privatized bus operators;
 - c. Consumer Service Department will provide information to consumers on public transport services and will in time install a call centre where the general public can obtain information on public transport and deposit complaints regarding that same transport;
 - d. Transit Department is responsible for public transport service improvement and development in the city. This Department concentrates on studying, planning, and supervising the entire basket of public transport services operating in the city;
2. **Road & Traffic Infrastructure Division** is responsible for all non-public transport in Dar es Salaam and for the management of city traffic, including equipment and operating systems required for efficiently managing this traffic. It will also organize maintenance of the infrastructure and infrastructure improvements. Given the wide range of responsibilities, several Departments are necessary, among which:
 - a. Research Department has an important role in collecting information on traffic in the city and use this information to improve traffic via short, medium and long term traffic developments;

- b. Licensing and Registration Department concentrates within one Department all the administrative processes for issuing licenses and permits to provide (public) transport services within city boundaries and for managing vehicle registration.
 - a. Roads and Traffic Department will oversee the agency responsible for non-public transport and traffic. The Department will coordinate and ensure routine maintenance and emergency maintenance of all transport infrastructure (roads, bridges, tunnels, pedestrian facilities, parking, etc); will manage motorized and non-motorized traffic via the traffic control centre and organize maintenance of traffic management equipments and tools such as traffic lights, signalling, etc;
3. **Project Planning Division** is responsible for the integrated, coordinated, and structured development of the city's transport infrastructure. This Division will take responsibility for designing the urban transport system and estimate the necessary budgets for its implementation. The Division has 2 specialized departments:
- a. Planning Department, which takes account of the different needs of the city's urban transport system and translates that into a coherent long-term investment plan with regularly updated medium- and short term (annual) investment needs;
 - b. Budgeting Department develops the annual investment budget based upon the investment plan. The available financial resources will be allocated to the different needs on the basis of a coherent prioritization process.

At the end of Phase 3, DUTA will be fully operational and will require the necessary administrative, financial, and secretarial support. The role of the existing Secretariat will therefore be limited to traditional secretarial services while administration and legal affairs and financial affairs will each be assigned to a dedicated Department. An external auditor will also be installed to ensure transparency and accountability within DUTA.

(3) Resources for the consolidation phase

The final number of staff for DUTA can only be determined during the execution of Phase 3 and will be defined by the final layout of DUTA. However, based upon the above basic layout, some indications can be given on the minimal number of staff required for operating efficiently, summarized in **Table 6.1.4**.

This does not include the staffing of the sectoral Divisions which are discussed specifically in later sections.

By the end of Phase 3, the total number of full-time supporting staff for DUTA would reach 18 persons. The 14 members of the DUTA Board of Management and the representatives in the Advisory Board are not considered as full-time staff.

Table 6.1.4 Phase 3 – human resources needs (Full-time supporting staff for DUTA)

Function	# persons	Origin	Remarks
Board of Management	14	Public authorities	The Director General of the Urban Transport Authority, supervising the Divisions, is added to the existing 13 representatives.
Advisory Board	Undefined	Stakeholders	Assembles a relevant selection of public and private stakeholders to advise the Board of Management.
Office of the Director General	2	Stakeholders	With the establishment of the different Divisions and Departments, supervision becomes imperative. For that reason, A Director General and an Assistant Director General will be appointed by the Board of Management to take executive responsibility for DUTA.
Secretariat	4	Public Administration	Secretarial works (2 persons); telephone standard and reception desk (2 persons).
Administrative / legal Department	5	Administration / outside contracts	An Administrative Director (Department Head) will be assigned to supervise all administrative activities. The Administration will continue to have 1 person per Division, complemented with 1 legal expert bringing the total number of staff for the Department to 5 persons at completion of Phase 3. However, in line with the gradual increase of responsibilities of DUTA, the number of administrative staff might increase. The Administrative Director should be assigned from the pool of administrative government workers, preferably originating from city-level administration.
Financial Department	4	Administration/ outside contracts	A Financial Director (Department Head) will be assigned. Under the control of a Department Head, one person is assigned to each of the 3 Divisions. The selected persons should have the necessary financial know-how and preferably reassigned from within the existing Public Administration.
Human Resources Department	3	Administration	Two persons would be assigned to managing the staff, while by the time Phase 3 is completed, a third person could organize and coordinate staff training, an important aspect for the efficient working of DUTA.

(4) Concluding observation

The completion of Phase 3 implies that the Urban Transport Authority for Dar es Salaam (DUTA) has been established and is fully operational.

Given the complexity of the process and the importance of the required institutional changes, the exact completion time is uncertain and largely depends upon the commitment of all stakeholders in making this effort successful. While much of the efforts will be initiated during Phase 2, the completion of the reforms will be achieved during Phase 3.

6.2 Roles and responsibilities

The DUTA Board of Management, the Office of the Director General, the Advisory Board, and the Supporting Departments each has its specific function: respectively strategic policy, strategic action, advice, and support. As such some tentative staff allocations can be surmised, and have been outlined in the following sections.

Assigning staff to the Divisions is more complicated and depends upon the final layout of the Divisions and Departments. Taking into consideration the above-explained principles, a tentative staff matrix can be developed for the four Divisions and outlined in the relative sections.

6.2.1 DUTA Board of Management and Advisory Board

Reporting structure

As DUTA is a semi-autonomous authority, and while it is likely to be under the framework of DCC responsibility for city transport management, in its functional capacity it liaises directly with the national ministries, particularly the PMO-RALG and the MOID. This relationship is shown in **Figure 6.2.1**. It therefore has multiple reporting structures, both to national ministries under the national policy and also to the DCC.

Set Strategic Policy

The principal assignment of the Board of Management is in conjunction with the DCC, to develop a strategic transport policy for the city, in line with the city goals and guided by the national transport policy as applicable. Under this policy specific policies for each line agency will be developed to coordinate their efforts.

Monitoring

At the same time, the Board will, through the Divisions, monitor the transport system and collect operational information to assess the quality of the transport system. The collected information will allow the Board adjusting its standing transport strategy and formulating regulatory, institutional, managerial recommendations to the Prime Minister's Office as well as drawing up investment budgets for infrastructure and transport service maintenance and development.

Board representation

The Board of Management will include 13¹ representatives of each of the principal public authorities and the Director General of the DUTA who shall be a full time member of the Board. However, given he is accountable for executing the Board's strategy; he will have no voting power in the Board and is therefore incapable of influencing decision-making processes. The Director General will be appointed

¹ The actual number of Board members may vary in order to achieve good representation, but should not be too large an unwieldy. Only critically necessary stakeholders should be selected with other options being representation on the advisory board. The Board should function as a relatively small and effective decision-making team. SUMATRA may wish not to be included if it wishes to maintain its regulatory independence.

by the Board and his appointment has to be approved by the Prime Minister. The Chairman of the Board is selected for defined period of time (e.g., 1 year) out of the Members of the Board to preside over the meetings of the Board of Management. The Board will assemble at regular intervals (e.g., once a month) or whenever the situation requires via Extraordinary Meetings.

The decision-making procedure in the Board includes general decisions and strategic decisions. The former relate to day-by-day aspects of DUTA activities and requires a simple majority (50%+1 vote). The latter are critical decisions and include but are not limited to the selection of the Chairman of the Board, the appointment of the Director General, the annual operating budget, approval of the auditor's report, investments recommended to the Prime Minister's Office for financing, and approval of the evolving Urban Transport Strategy. For critical decisions, either an absolute majority (75%) or a consensus vote (100%) can be considered.

The role of Director General

The day-by-day functioning of DUTA is the responsibility of the Director General and his Assistant. He translates the strategic policy of the Board of Management in concrete operational initiatives and is fully accountable to the Board. He will report at regular intervals to the Board on his activities and is fully accountable to the Board for his management decisions. In the case where the Board is in disagreement with the way the Director General is executing his tasks, an extraordinary meeting of the Board can decide to terminate his appointment. It is strongly recommended that this option be considered as a last resort decision to avoid a too hasty replacement of the Director General, thereby weakening his authority and disturbing the smooth and continued functioning in the role.

The Advisory Board

The public authorities assembled in the Board of Management are not the only stakeholders in the transport system of Dar es Salaam. An Advisory Board is therefore recommended, assembling into a coordinated structure representatives of all other public and private service providers, operators and of the transport users.

The principal objective of the Advisory Board is to protect the rights of operators, service providers, and transport users by monitoring the working and decisions of the Board of Management and DUTA as a whole and by formulating recommendations and suggestions to the Board of Management. The Advisory Board will internally organize its structure and functioning. It is recommended that an official representative is selected, e.g., Chairman of the Advisory Board, who will attend all meetings of the Board of Management as a non-voting member, defending the interests of the Advisory Board and transferring the results of board meetings to the representatives in the Advisory Board.

Financial responsibility

One important issue is the financial responsibility of DUTA. At its full completion in Phase 3 and after starting privately operated BRT and bus feeder services in Dar es Salaam, DUTA will receive financial revenues from these services and / or will provide financial support to these services. In practice, the

revenues will be collected by DART who will also be the final beneficiary of possible subsidies. The financial responsibility will be with DUTA through the Financial Department.

6.2.2 Supporting departments for DUTA finance and administration

The supporting departments in DUTA are an essential component in the working of DUTA in securing the efficient working of the Divisions by taking over, centralizing and streamlining administrative tasks.

The *Administrative Department* has 2 main responsibilities: secretarial activities; and DUTA administration. Secretarial activities include: occupying the reception desk, answering telephone calls, taking Minutes of Meetings during Board Meetings and other secretarial duties. The Administrative responsibilities consist of: management of the archives and the library, organizing Board and other important meetings and providing all other administrative tasks which might be required.

The *Human Resources Department* is responsible for all aspects related to the DUTA staff, including employment contracts, sick leave, etc. One of the important tasks of the HR Department is to ensure that all staff has the right qualifications for their position and deals with the development and provision of training programs to DUTA staff. This issue will be discussed further in Chapter 8.

The number of staff for DUTA as discussed in this paragraphs are absolute minima and more staff could be necessary with the increase of responsibility and workload. It will be the responsibility of the Human Resources Department to assess the workload of staff and to evaluate the need to increase staffing. In that context, the HR Department will handle the practical hiring and firing of staff, subject to approval by the Director General.

The *Financial Department* deals with all financial aspects of DUTA. Its role is important and the quality of its activities will be a critical element to guarantee transparency and accountability of DUTA towards third parties. In addition to the normal accounting activities, the Financial Department will each year estimate the budget for the working of the Urban Transport Authority, including the two executive agencies, DART and DAR Road and Traffic Agency and will supervise the yearly investment budgets which are drafted / proposed by the Project Planning Department (see further).

As a guiding principle, it should be avoided to create a wide range of financial flows between different hierarchical levels either inside or bypassing DUTA, therewith reducing the controlling and coordinating role of DUTA and endangering the principles of transparency and accountability.

It is therefore strongly recommended that DUTA, via its Financial Department acts as single financial platform, responsible for the collection of revenues from BRT, permits and licenses, etc. and the transfer of possible financial aid to cover losses generated by PSO obligations or controlled fares. The eventual imbalance between operational revenues and operational expenses, emerging in the DUTA accounts and confirmed by the external auditors, will be covered by the national government.

The centralization of financial responsibility within DUTA with the accounts controlled by an external auditor increases transparency of financial management and installs full accountability of the Financial Department, represented by the Director General. This approach is common in public companies

worldwide. For example “De Lijn”, the public company responsible for all public transport services in the Flemish part of Belgium, operates under principles of commercial profitability. However, its public service obligation (PSO) that was made explicit in its performance-based contract with the Flemish government, does not allow it to make profit. Based upon the annual accounts, the Flemish government provides each year operational subsidies to compensate the company for loss making services and impacts of government -set fare levels.

A central part of the responsibilities of the financial department is providing regular financial reports to the Board of Management and drawing up the annual budget plan which is submitted to the Board of Management for approval. Its working will be supervised by an *external fully accredited auditor* who has to approve the accounts of DUTA.

6.2.3 Divisions and their respective departments

This section details the respective relationships, responsibilities and reporting lines of each of the internal divisions of DUTA. Each diagram shows hierarchal connections to the PMO-RALG and MOID and functionally this is correct, but does not eliminate the role of DCC as a facilitator of DUTA.

Public Transport Division

The ‘Public Transport Division’ deals with all public transport issues. Its organizational and operational structure is presented in **Figure 6.2.1**.

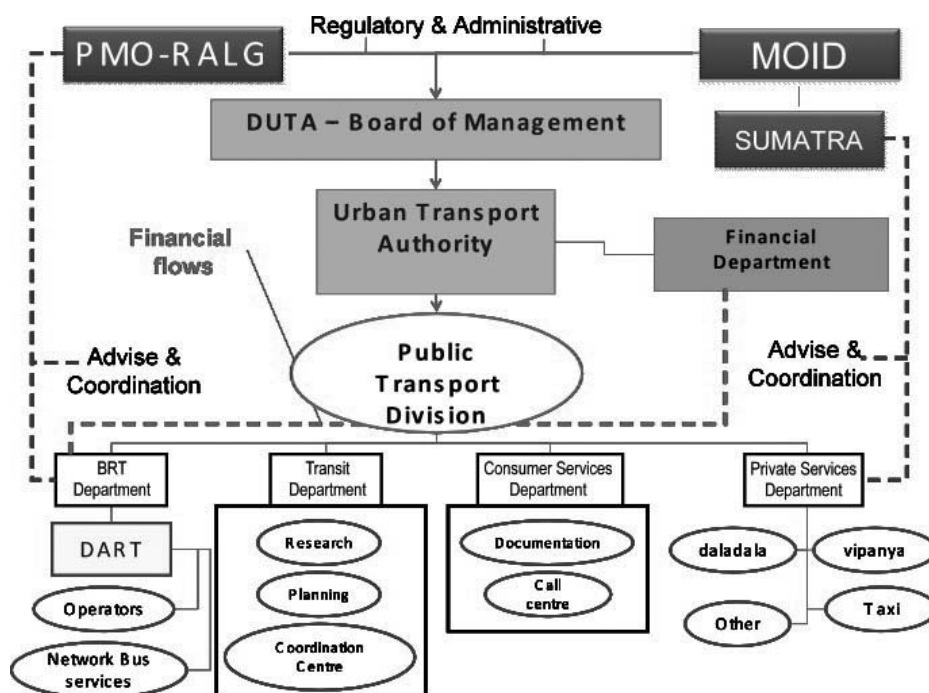


Figure 6.2.1 Organizational and Operational structure of Public Transport Division

The Public Transport Division is divided into 4 Departments each with its specific responsibilities.

The *BRT Department* is the chief liaison with the DART Agency and deals with the DART Agency, in

lieu of the present reporting structure to the PMO-RALG.

DART's role as an executing agency is outlined in its establishment order whereby it is designed to operate as a semi autonomous body under a commercial business framework. As such it is largely able to operate independently without direct control from above, but a factor in its success will be a favourable operating environment and therefore will rely on DUTA to coordinate external factors. In that vein, the division responsible for DUTA acts as a facilitator to ensure DART is not obstructed from its objectives and can operate as integrated part of the transport system as a whole. As DART will contract operators to provide services to the system replacing many of the operating licenses, DUTA has in fact very little (if any) authority over the contracted operators under DART as their behaviour and service delivery is governed by the terms, conditions and service specifications of the DART contract.

The *Private Services Department* will be responsible for managing other public transport services which are provided by a wide range of private operators that do not come (or have not yet come) under the contracts of DART. These services include the daladala, the vipanya and taxi services that are presently regulated by SUMATRA.

With the introduction of the fully functional DUTA, the present responsibility taken by SUMATRA in regulating and managing (by default) public transport will be transferred to DUTA. SUMATRA can then exercise its legislated responsibility as a regulator of standards and service delivery. It can also provide advice to DUTA to assist DUTA to meet the required standards and to ensure that policies are harmonized.

The role of the Private Services Department is therefore predominantly:

1. *Organizing an efficient control system.* This control system will need to control licenses and operation permits; the respect of allocated routes or areas on or in which the operators are allowed to provide services; price settings, service levels; etc.
2. *Restructuring the sector.* Managing and controlling a sector which involves thousands of actors is nearly impossible. Working with the operator associations like DARCOBOA is essential and partly this will be aimed at formalizing operators as either separate license holders for profitable service (no subsidy) or preparing them to be able to formalize under contracts to DART.

With the continued development of the public transport network and services, quality and efficiency of services will become increasingly important to guarantee success. For that reason, two additional departments are created within the Public Transport Division.

The *Transit Department* is responsible for service efficiency and integration and will gradually have to ensure:

- a. The continued studying of the public transport system to investigate its functioning, identify shortcomings and analyse solutions for improvement;

- b. The planning of services to maximize integration and interconnectivity and improve the attractiveness and quality of the public transport offer; and
- c. The monitoring centre which continuously monitors the different public transport services to ensure that the system functions as planned and intervenes – or organizes the intervention – wherever obstacles of any kind hinder the continued and uninterrupted flow of public transport vehicles.

The *Consumer Services Department*, liaison between consumers and service provider(s), is responsible for monitoring the public transport system from both the side of the service providers and the side of the consumer. The former is supervised via regular performance evaluations while the latter is predominantly evaluated via consumer feedback surveys. The Department will organize full information disclosure to enable the general public to appreciate the functioning of public transport in the city. The department will finally provide information (general information) on public transport services, including the second-line function of transferring information on BRT (timetables, route maps, etc.) as provided to the Department by DART. The Department will thus not have the obligation of providing first-line information to customers (such as timetables our route maps) on BRT or related bus services which fall under the responsibility of DART. In time and parallel with the growth of the public transport system, the Consumer Services Department might consider establishing a *call centre* where the population can obtain general information and deposit complaints.

(1) Staffing

The proposed staffing is only for DUTA and does not consider the staffing needs of the different Line Agencies. The principal reason for not providing staffing estimates for the Line Agencies is that the final outcome of the restructuring process remains uncertain and this process directly influences the staffing needs of these agencies. The needed employees for the Public Transport Division are estimated in **Table 6.2.1**.

The total number of employees proposed in above table are a strict minimum and to be employed as soon as the respective Departments are fully operational. It should be noted that in time the work in the departments is going to increase with the expanding role and authority of DUTA, pressing for an appropriate increase in work force.

It is recommended that the restructuring of the private services is done in cooperation with the Licensing and Registration Department to ensure consistency between the private operator's activities and the registration of these operators via a license scheme discussed in next paragraph.

Table 6.2.1 Human resources needs for the Public Transport Division

Department	# persons	Description
Public Transport Division	2	Director for Public Transport and Assistant Director for Public Transport. Supervising the functioning of the Departments and accountability to the Director General.
BRT Department	4	The BRT Department is the supervisor of DART Agency and monitors the activities of DART in light of the agency's mandate. The department will initially employ 2 persons dealing with BRT, 1 with the feeder bus services and 1 with the other bus services in the city (assuming this responsibility remains under DART).
Transit Department	5	The Transit Department has 3 principal functions that are research, planning, and coordination. Initially, 2 employees are recommended for research and coordination, and 1 for planning.
Consumer Services Department	4	In the initial period, a total of 4 persons are sufficient. One person can be permanently assigned as liaison with DART while the 3 other persons could carry out on-the-ground inspections and monitor performance of the different public transport services. With the expansion of the public transport network and increase of services and providers, the Consumer Services Department could gradually increase its number of staff to install a permanent <i>call centre</i> and to increase the frequency and coverage of the inspections and monitoring.
Private Services Department	6	The restructuring of private public transport is highly complicated due to the number of stakeholders and the lack of structure. Restructuring this sector will require 3 persons exclusively dealing with daladala, 2 persons dealing with redesigning the taxi services and 1 person dealing with all other privately offered public transport services.

6.2.4 Road and Traffic Infrastructure Division

(1) Organization

The “Road and Traffic Infrastructure Division” concentrates within DUTA all aspects of urban transport that are not defined as public transport.

Its scope and scale of activities is designed for better integrated planning and management and reduce the number of interdepartmental interfaces between components of city transport. The role of this Division shall be extended to all other related transport infrastructure such as parking and pedestrian facilities or the management of city traffic.

Its detailed organizational structure is proposed in **Figure 6.2.2.** and comprises 3 departments under this division.

The *Licensing and Registration Department* will manage vehicle licensing of all road operating vehicles that provide public transport services in Dar es Salaam and act as the local branch of the national vehicle registration service. It will therefore continue coordinating with SUMATRA who is responsible for the country’s vehicle registration system.

The department also has to manage the licenses and permits issued to private operators for public services, such as taxi, daladala, small buses, and any other form of public transport service offered to the public on a commercial basis. However this licensing task does not include contracted operators under DART. In other words, the Licensing and Registration Department will look after all service providers who are *not contractually bound to DART*.

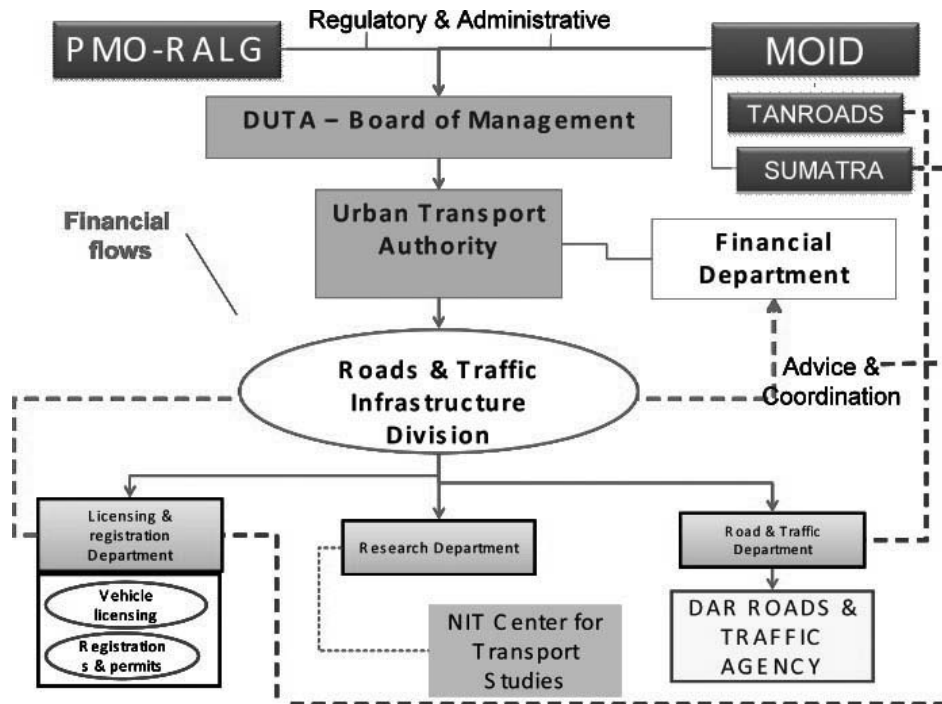


Figure 6.2.2 Organizational and Operational structure of Road and Traffic Infrastructure Division

However, coordination between DART and the Licensing and Registration Department is required because the possibility exists that private transport services are in a practical way supporting BRT services, for example by providing indirect feeder services or issuing special tickets for BRT passengers, and therewith (required to) operate according to certain specifications defined by DART.

The introduction of a license and permit system controlled by the Licensing and Registration Department for the provision of public transport services in Dar es Salaam outside the BRT system brings several important benefits. As a principle, all present and future operators will have to register as transport service provider within the city limits and will have to pay for exercising their profession. The *first* benefit is a better control over this sector and its actors. The *second* is an opportunity to set (quality) standards and price levels for vehicles and services. The *third* benefit is that it can enforce annual vehicle inspection to ensure a minimum operational quality of vehicles used for transporting passengers. The *fourth* benefit is that it allows DUTA to enforce routes and areas in which individual operators can provide their services. The final benefit is that operators have to pay a one-time registration fee and an annual permit fee, bringing revenues to DUTA. The exact amount of these fees will have to be determined in consultation with all stakeholders involved.

The *Research Department* is an important component in the Division because it will investigate the transport system as a whole and study individual components of the system where necessary. They will have to monitor the functioning of the urban transport system, collect information on traffic and services, investigate the relationship between supply and demand, and formulate recommendations to eliminate observed bottlenecks and inefficiencies. Their conclusions and recommendations will be the basis for the annual adaptations to the city's long-term strategic transport plan and for the annual investment and maintenance budget DUTA submits each year to PMO-RALG for approval.

Although the Research Department is an independent entity and part of DUTA, a close relationship with the Center for Transport Studies could be considered. The framework of such relationship should be determined during the time when the Research Department is established but the principle of a close collaboration and exchange of data and research information will benefit the work of the department.

The *Road and Traffic Department* is responsible for the management of all components of the transport system that are not considered part of the city's public transport system. The Department covers a wide range of elements, among which the most important responsibilities include:

- *Parking facilities*, both public and private on- and off-street parking facilities;
- *Non-motorized transport*, including bicycles, carts, and other vehicles participating in the city's traffic;
- *Pedestrian facilities* including the use of these facilities such as the commercial activities on the sidewalks (shops and stands) or illegal parking.
- *Roads* including maintenance of both urban roads (transferred from the Municipalities) and the trunk roads (transferred from TANROADS), and in a later stage the expressways;
- *Bridges and tunnels*, predominantly on the road network but also bridges and tunnels serving other transport modes or pedestrians;
- *Traffic management system* including signalling, traffic lights and all other equipments used for the management of urban traffic;
- *Traffic Control Center* responsible for the continued control of traffic in the city;
- Planning & supervising of infrastructure development;
- Procurement and contracting.

As controlling authority, the Road and Traffic Department has a supervision role while the executive responsibility falls under the DAR Road and Traffic Agency (RTA), the Line Agency that is created to execute the strategic transport and traffic policy of DUTA, excluding the strategic policy for urban transport which falls under the executive responsibility of the DART Agency.

Although the final and detailed layout of the DAR Road and Traffic Agency will be decided during Phase 3 of the DUTA development process, the Agency needs to structure along a number of components which will be essential in the development of the city's transport system, in particular:

1. The management and control of traffic via the Traffic Control Center that in time will use Intelligent Transport Systems (ITS) and automation to manage traffic;
2. The functioning of non-motorized traffic², an issue that will continue to grow in importance as a consequence of the constant growth of traffic in the city; in particular the efficient management of carts which are a traditional and pollution free method of distributing goods the inner city.
3. Infrastructure maintenance which is a critical element in guaranteeing efficient transport infrastructure and which has to introduce modern technology and methods for the organization and budgeting of the maintenance programs; and
4. Road maintenance, a complicated and difficult task if executed correctly and covering all roads in the city, from the local roads over trunk roads to the future expressways. In this area it will work closely with the municipalities who presently manage road maintenance.

The relationship between the RTA and the municipalities with regards to road maintenance is unclear and will require a concerted effort to coordinate a workable relationship. On one hand the RTA could take over the task completely or otherwise take on a coordinating role allowing the municipalities to continue their local road construction and maintenance functions. Whatever the solution it must be structured so that maximum coordination and clear responsibility is assigned to deliver the best outcome. Underwriting this decision is the fact that the financial flows from the government roads fund should be channeled through the Road and Traffic Agency either to manage the task or allow it to assign or contract the function through the municipalities.

It will be a principal task of the Road and Traffic Department within DUTA to ensure that the Agency fully applies all the principles of good governance and is fully accountable for its activities.

The DAR Road and Traffic Agency will cover in time a wide range of responsibilities of which some might expand to a level where it can be considered to detach particular activities to independent Agencies under the Road and Traffic Department. In particular the role of the “Traffic Control Centre” (TCC) might become in time so important that this step can be considered to improve not only its functioning but also guarantee clear accountability in terms of the city’s traffic management.

The separation in time might be relevant given the wide range of responsibilities and the complex interconnectivity of a fully functioning traffic control system operated by the centre that includes **(Figure 6.2.3)**:

- Traffic information dissemination system;
- Emergency help and information system;
- Driving safety support system;

² The conflict between non-motorized transport and cars is a common occurrence in where roads space is a premium. New York presently encounters conflict between cars and pedicabs and there is a call for these to be banned (a call countered by pedicabs they claim to be relieving congestion). In Dar es Salaam this is an important issue as the use of carts and a high number of pedestrians is commonplace and all people have equal rights to use the public road space.

- Public transportation priority system; and
- Environmental protection management system.

Another responsibility that in a distant future could be separated is the urban expressway system. The access-controlled (toll-based) Urban Expressway network would, once completed, provide high speed and a smooth and comfortable automobile ride over a total distance of about 60 km. A special organization might become necessary to manage the expressway because operations and maintenance require special techniques and expertise, different from those needed for ordinary trunk roads and streets. The establishment of an “Urban Expressway Agency” under the Road and Traffic Department can be considered therewith introducing as special purpose organization for managing and operating the urban expressway network in Dar es Salaam city area. It should be made clear here that the introduction of toll-based Expressways in Dar es Salaam would also generate financial streams between the Agency responsible for the expressways and DUTA, similar to the ones generated by DART.

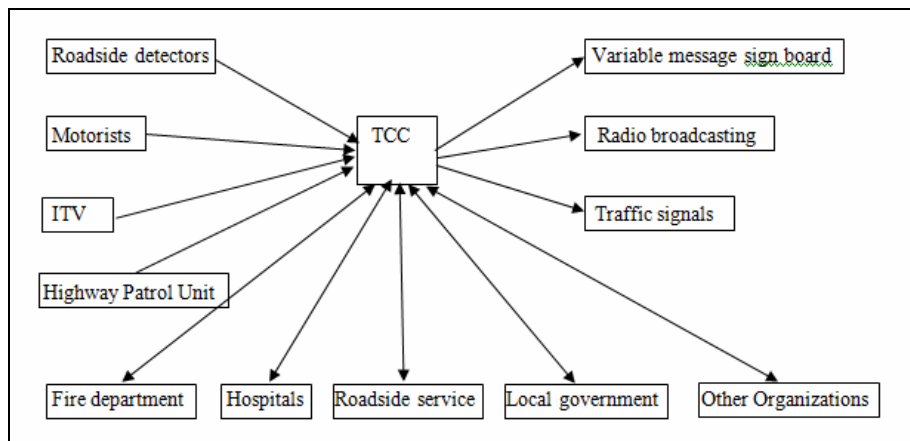


Figure 6.2.3 Traffic Control and Emergency Management responsibility of TCC

(2) Staffing

The proposed staffing is only for DUTA and does not consider the staffing needs of the DAR Road and Traffic Agency because the staffing needs of the agency will be the responsibility of the person(s) appointed for the establishment of the DAR Road and Traffic Agency.

The employees needed for the Road and Traffic Infrastructure Department are provided in **Table 6.2.2**.

Table 6.2.2 Human resources needs for the Road and Traffic Infrastructure Division

Department	# persons	Description
Road and Traffic Infrastructure Division	2	Director for Roads and Traffic and Assistant Director for Roads and Traffic. Supervising the functioning of the Departments and accountability to the Director General.
Licensing and Registration Department	7	The scale and scope of the department's task suggests the department is headed by a Department Head to coordinate and control the department's activities. The department will initially employ 2 persons dealing with the vehicle registration, while 3 persons should be assigned to the section responsible for licensing of private transport service providers and to issue the permits for these registered operators. One final employee will be responsible for the motor vehicle inspection in the city, which is physically performed by the DAR Road and Traffic Agency. It should be clear that the number of staff should increase parallel with the growth in private vehicle ownership and with the increase in private operators providing controlled transport services.
Road and Traffic Department	15	The scale and scope of the department's task strongly suggests the department is headed by a Department Head to coordinate and control the department's activities. The Road and Traffic Department responsibilities are wide and diverse, making it difficult at this time to estimate the minimum number of employees necessary. As a guiding principle, following staff is required to supervise the executive work of the Agency <ul style="list-style-type: none"> • Roads : 2 • Non-motorized traffic : 2 • Traffic Control Center : 2 • All other responsibilities : 7
Research Department	4	In the initial period, a total of 4 experts for research purposes are sufficient if support from the Center for Transport Research Studies is obtained.

The total number of employees proposed in above table is tentative and should in the end be determined on the basis of the final layout as well as the scope and scale of activities of the DAR Road and Traffic Agency.

6.2.5 Project Planning Division

(1) Organization

The Project Planning Division is responsible for budgeting and planning and is therefore closely related to the two other Divisions in DUTA. Based upon the information provided by the divisions responsible for respectively public and private transport in the city, the Project Planning Department will work out the annual budget required for new investments /developments and for maintenance. Its structure is simple and includes 2 Departments, one for planning and one for budgeting, see **Figure 6.2.4**.

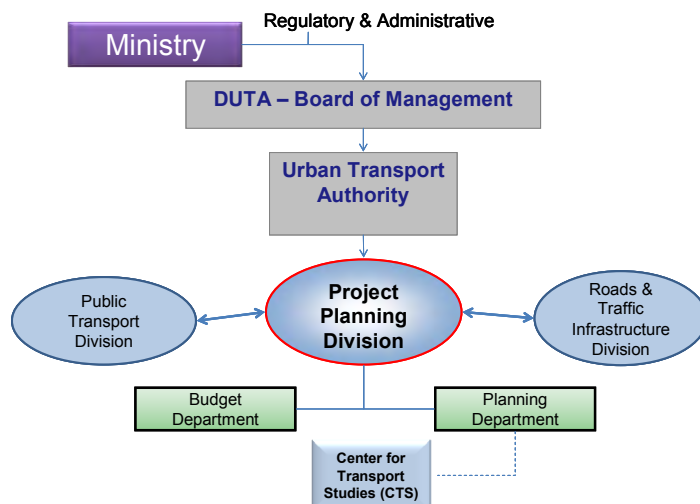


Figure 6.2.4 Organizational and Operational structure of Project Planning Division

The *Planning Department* will plan infrastructure development projects in the city through an Annual Development Program (ADP) to cope with the day-by-day increasing growth of traffic in the city. The annual program will prioritize the different maintenance, rehabilitation (comprising reconstruction and improvement) and infrastructure development programs. In addition, non-infrastructure projects that contribute to improving traffic flows and / or traffic services should be included in the ADP.

With the expansion of the road network and the introduction of the expressway network in time, the maintenance of roads will become increasingly central in the planning and the introduction of modern planning methods will become imperative. For this purpose, the Planning Department should develop over time a database system with continued collection and processing of data about the condition of roads, tunnels and bridges, as well as traffic volume characteristics. The Department could consider therefore the introduction of the *Highway design Module (HDM)* evaluation and analysis software with special modification to meet the local condition of Dar es Salaam. Sponsored by the World Bank, several donor organizations and universities are involved in the development of this efficient software tool, presently HDM 4 (Figure 6.2.5).

HDM 4 is an analytical tool for engineering and for the economic assessment of road investments, maintenance strategies and for transport pricing and regulation. The approach is based upon physical and economic relationships derived from extensive research on road conditions, the effects of maintenance activities, and vehicle operation and user costs, see Figure 6.2.6.

The data input should be organized via an annual “Road Network Maintenance and Rehabilitation Needs Assessment” for all the roads, bridges, and tunnels. This road infrastructure information will be central in the annual budget and complemented with identified investment needs for other transport modes or services.

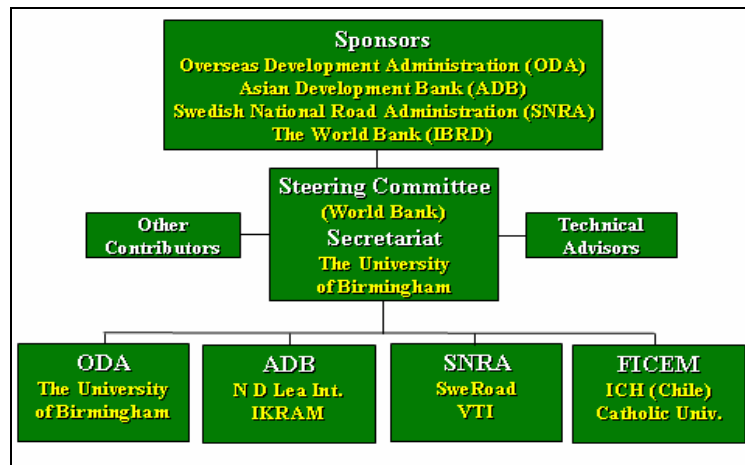


Figure 6.2.5 Organization for the development of HDM 4

The *Budget Department* translates the infrastructure investment plans developed by the Planning Department into concrete annual budget needs. This annual investment budget for infrastructure developments, rehabilitation, and maintenance and for transport services and traffic management will consider the prioritization made by the Planning Department in relation to the expected available financial resources.

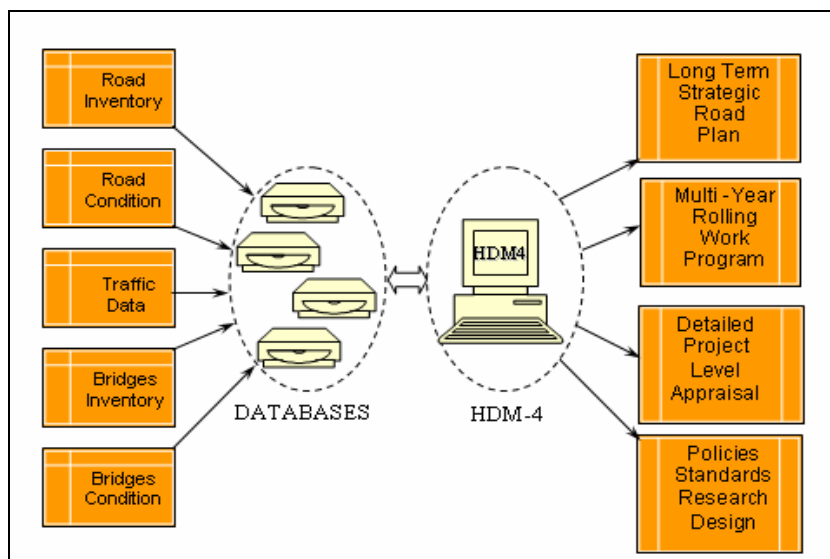


Figure 6.2.6 HDM 4 System Architecture

The prioritization should take into account a wide range of considerations, requiring therefore a thorough analysis that also includes non-quantifiable variables in addition to economic and financial variables. For the non-quantifiable variables, costs and benefits will in the traditional cost and benefit analysis (CBA) be “...identified, quantified and given a realistic monetary value, if possible. If this is difficult or impossible this costs and benefits should be quantified at least in physical terms for a

*qualitative appraisal*³ by means of a multi-criteria analysis (MCA).

The CBA is a means-end assessment defined by economic circumstances. The conditioned evaluation cycle of an input generating a result decides over the relevance of the investment. As far as components are quantifiable, the CBA (can) incorporate(s) creative thinking to translate less-tangible parameters into “quantifiable” decision parameters. Whatever the level of creativity, CBA upholds the principle that a final calculated recommendation can only be made based on a numerical (formal) evaluation that uses mathematical algorithms without any distorting interventions, minimum the Economic Internal Rate of Return (EIRR), the Net Present Value (NPV), the Benefit/Cost Ratio (BCR) and the pay-back period.

Once the costs and benefits known, a review of non-quantifiable decision factors is imperative to evaluate and rank the different project using a type of multi-criteria analysis (MCA) such as the Goal Achievement Matrix (GAM). The MCA includes as part of the evaluation process non-financial considerations and added to economic and financial variables that are part of the classic CBA, allows a reasoned investment decision / recommendation.

However, entirely replacing the economic rationale of CBA by the supportive rationale of MCA such as GAM would be dangerous because there “... *is nothing in the GAM providing the planners with a foundation for questioning ... results and criticizing ... allocation of public means.*” An economic rationale is imperative as a leading principle to avoid investments guided by personal agendas⁴ but combining economic principles with non-economic ideas allows decision-makers to formulate reasoned decisions under consensus conditions.

6.3 Conclusion

The above description to establish over time DUTA as an accountable and transparent Authority responsible for the transport system of Dar es Salaam and provides the framework for both the implementation process and the organization of DUTA. It remains, however, a conceptual design because many implementation details such as staffing and concrete responsibilities will be decided the moment when specific steps are taken.

The concept described above should be considered as principal framework because it describes the process of transforming the present chaotic situation into a structured approach to transport system development and management, approaching as much as possible the optimal structure. **Figure 6.3.1** outlines the full structure of DUTA showing the alignment with the theoretical concepts discussed in *Chapter 5*.

This logical and hierarchical structure also benefits the accountability and transparency, three principal objectives of *good governance* because:

³ Evaluation Unit of DG Regional Policy, European Commission. *Guide to cost-benefit analysis of investment projects*, 1987, revision, p 31, *cit*

⁴ Tore Sager, Rationality Types in Evaluation Techniques: the Planning Balance Sheet and the Goals Achievement Matrix; in *European Journal of Spatial Development*, Jan 2003 number 2, p 9 *cit*

1. It clearly sets authority / responsibility and accountability;
2. It provides controllable financial flows; and
3. It clearly distinguishes between public transport and other transport.

On the one hand, there is the hierarchical ladder of authority and control, starting from the Prime Minister('s Office) all the way down to the executing Line Agencies and private operators, passing all levels in the DUTA organization. Mirroring this structure is the ladder of accountability, which starts at the execution level of operators and Line Agencies rising via the various levels in DUTA to the Prime Minister (see Figure 6.3.1).

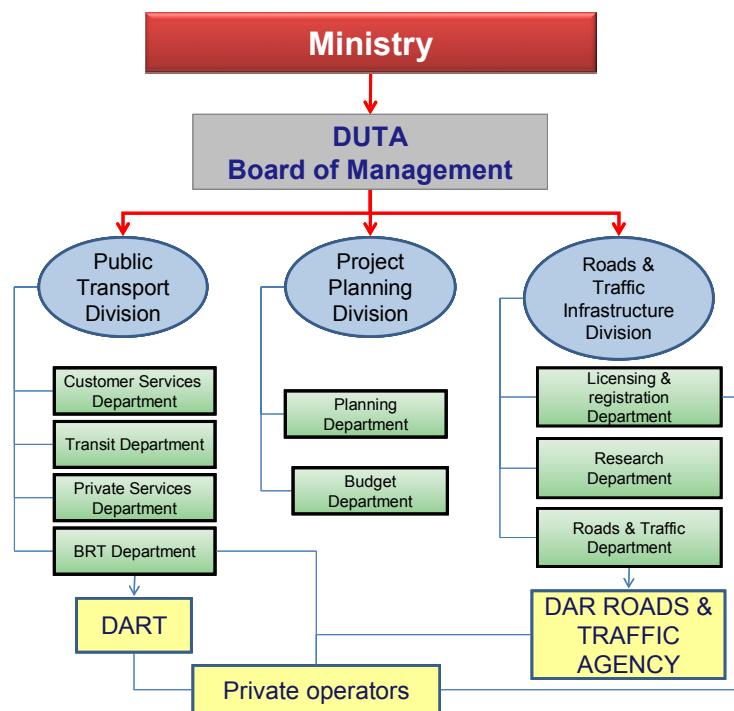


Figure 6.3.1 The final structure of DUTA

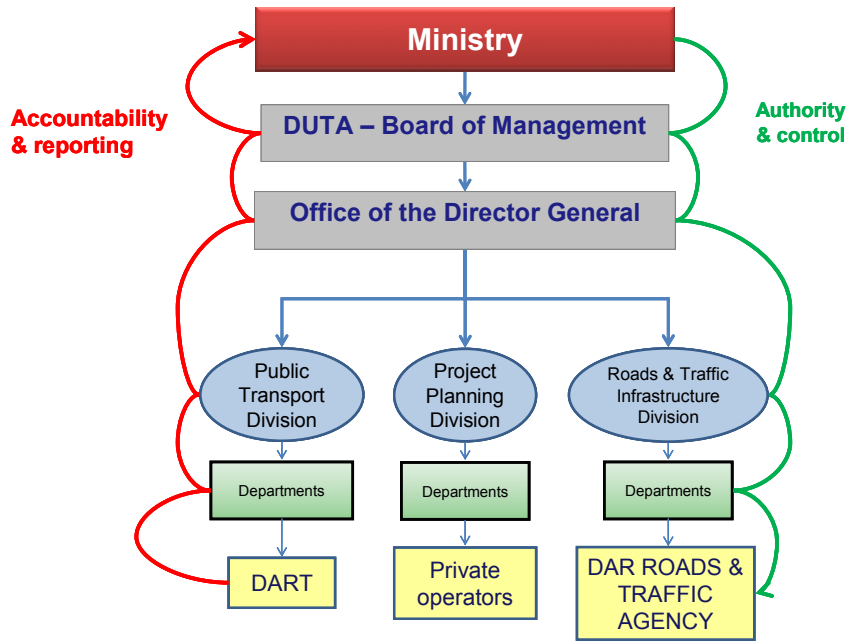


Figure 6.3.2 The logical structure of the proposed setup

In conclusion, it is argued in this Chapter that, although the time of implementation is uncertain, the framework structure and basic operational principles are without doubt. The continued increase of traffic in Dar es Salaam and the planned development of a modern public transport system concentrated around the BRT design will gradually increase the pressure for an efficient management system. It is therefore highly recommended to rapidly start the institutional reform process to allow sufficient time in each phase to install the best structure possible. Too long delays or too long hesitation in the decision-making process could endanger the successful outcome of the reform process and consequently endanger the functioning of the city’s transport system and ultimately its long-term social and economic development.

6.4 Implementation issues

The transformation of the present situation cannot be achieved overnight. The establishment and functioning of DUTA will require a learning curve during which mistakes will be made. However, four (4) principles should be addressed from the beginning to minimize the impact of possible mistakes (Figure 6.4.1):

1. Expertise: available expertise in the different public authorities involved should be utilized and future need for outside expertise a-priory accepted;

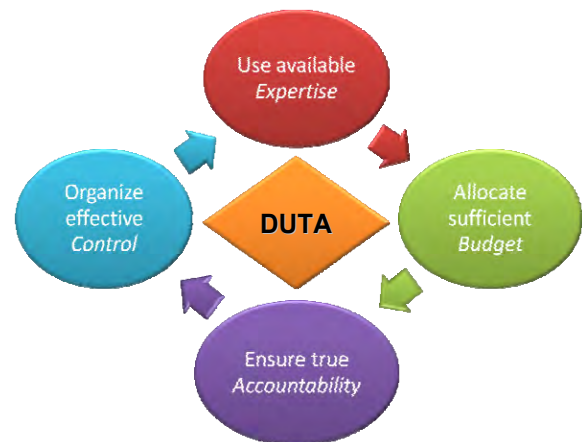


Figure 6.4.1

2. Budget: financial implications of introducing DUTA should be acknowledged and necessary budgets foreseen, not only for the capital investments but also for long-term operations;
3. Accountability & transparency: is a critical component to ensure efficiency and effectiveness of DUTA. Processes should be integrated in DUTA policy according to which DUTA members are accountable. Accountability can only work if this concept is accompanied by financial, managerial, and operational transparency with complete insight in the policy-making processes; and
4. Control: an effective control structure has to be established from the beginning to ensure that the efforts of creating DUTA does not remain a paper-based effort but has real authority to act under controlled conditions.

Chapter 7 The DART Agency

7.1 Introduction

This section discusses the proposed framework of Public Transport Management in Dar es Salaam, namely the role and responsibilities of the DART agency in the establishment and operations of the Bus Rapid Transit system; its organizational structure and relationships within the framework of the city's transport related institutions and the relationship between DART and the concessionaires contracted to provide services to the BRT system.

The study team acknowledges that the establishment of DART was instigated to implement and manage the BRT system and as such can serve as a pioneer to the further development of capable transport management in Dar es Salaam. Given this specific role it is understandable that DART has been given a wide range of responsibility, perhaps wider than it normally would be. For DART to be truly effective requires clarity of purpose (the strategic direction of its Executive Order) and a sustainable and functional business model that sits capably in the wider framework of city management.

7.2 The background of DART and its institutional arrangements

In 2002 the Dar es Salaam City Council in collaboration with the Institute of Transport Development (ITDP) and the Urban Authorities Support Unit (UASU) – PMO-RALG prepared the proposal for a BRT system, which was subsequently supported by the Global Environment Fund (GEF). In 2003 it was endorsed by the Dar es Salaam City Council and in 2004, the Project Management Unit (PMU) was formed within the Council with a concept design for the system being completed in 2005.

In 2006, the DART Agency was established as an Executive Agency operating under the PMO-RALG under the Executive Agencies Act 1997 (and amendments) and is primarily charged with the establishment, implementation and operation of the BRT under principles of commercial business management.

Particularly relevant in understanding the role of DART is that the Establishment Order outlines a semi-autonomous and commercial role for DART to manage the transport system role on a day-to-day basis; through a commercially viable operation, effective management to deliver quality service, operational efficiency and financial performance (surplus). These objectives are contained in the performance criteria set out in the charter to be monitored by the Ministerial Advisory Board. Its semi-autonomous status implies that it is not subjected to direct political pressure or influence other than the strategy policy formally set by the Permanent Secretary and the Ministerial Advisory Board. DART

also contracts concessionaires to deliver services, being fare collection (and station management), bus operations and trust fund for revenue.

7.3 The role and responsibility of DART

The role and function of the DART Agency is outlined in the Dar es Salaam Rapid Transit Investors Document April 2008, quoted as follows:

“The DART Agency, a public agency, will be the regulatory authority that manages the DART System and ensures quality control. Following are the functions that the DART Agency will undertake:

- *Oversee the bidding process and award contracts for operations of the DART system to the bus operators, fare collection company, and fund manager;*
- *Make contracts and concessions as required;*
- *Develop a marketing strategy for the DART system;*
- *Set operational standards and monitor the DART bus operators, fund manager, and fare collection company;*
- *Ensure the system balances the need to be self-financing and profitable for the operators with the need to be affordable to the citizens of Dar es Salaam while providing a good quality service:*
 - *Plan the bus routes, schedules, and frequencies (which together determine the total number of kilometers to be distributed between the bus operators),*
 - *Set the technical fare and explain the assumptions used in the calculation to the board of directors and private operators,*
 - *Provide information required by the fund manager to determine the payments to the operators, and*
 - *Manage special events or emergencies that may cause disruption to services or require changes to the bus schedule or operations, fare collection system, or the disbursements of payments;*
- *Facilitate the resolution of any disputes that may arise between the system actors;*
- *Report to the Ministerial Advisory Board (MAB) on all matters regarding the administration and management of the DART system;*
- *Implement all policies and regulations as directed by the MAB;*
- *Make recommendations for the enactment of necessary legislation to the MAB;*
- *Collaborate with SUMATRA and TANROADS on all matters relating to regulation and infrastructure of the DART system;*
- *Advise the MAB on the future expansion of the DART system; and*
- *Collaborate with all the key stakeholders in the DART system, including the government ministries and the private sector.*

Eventually, the DART Agency will oversee the entire transport system in Dar es Salaam, with duties including general traffic management and planning.” (end quote)

There are two areas of concern in respect to the institutional and organizational set up of DART.

1) Relationship with other agencies in the institutional frameworks of transport management

The DART Executive Report shows that DART has multiple linkages to institutions (TANROADS, SUMATRA & DCC) who report to three different ministries (see **Figure 7.3.1**). This raises the question how DART can be held singularly accountable (under KPIs) when it may be confronted with competing objectives and multiple agendas from other parties that hold co-responsibilities and report to different masters. While the DART charter outlines specific requirements for DART’s effective management, it is unlikely that DART will be able to control many of the cross-cutting issues of various line ministries, departmental and municipality responsibilities. If priorities or policies of the various sister agencies are not coordinated, it could be problematic for DART in reaching its objectives. The establishment of an *Urban Transport Authority* (discussed further in *Chapter 6* of this report) substantially addresses this issue as the UTA would serve as an overarching authority of the various agencies to coordinate and harmonize their operations. Note that the relationship between DART and DUTA and also between DART and its service providers is essential contractual which ought to significantly reduce the regulatory burden on SUMATRA.

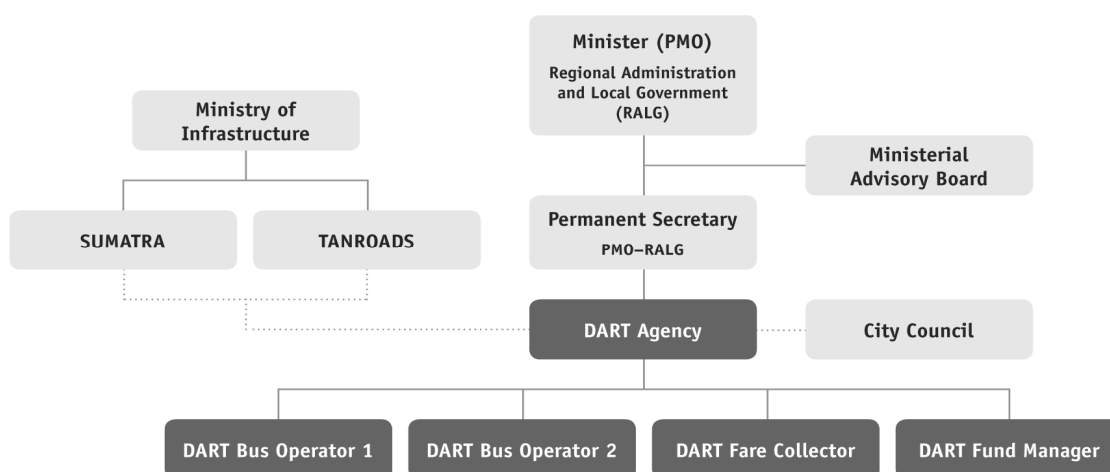


Figure 7.3.1 DART Institutional set up (proposed under DART planning)

Source: *Dar es Salaam Rapid Transit investors Document April 2008*

2) Span of management over traffic issues

The second issue relates to the responsibilities outlined in the key result areas (KRAs) of the Establishment Order, where the DART Agency has been given wider powers and responsibilities to ensure orderly traffic flow on urban streets and roads of Dar es Salaam. This function normally belongs to a roads and traffic agency and has most likely been allocated to DART on account of its relative importance to DART’s success (being able to control traffic issues) and also due to the lack of a designated agency¹ in Dar es Salaam for this roads and traffic task. By including this responsibility

¹ The TANROADS agency looks after national trunk roads that intersect the city and they also repair traffic lights, but so not have a traffic planning or management role. Also the municipalities manage local road issues to an extent.

under the DART organization gives DART two major control centres; one managing BRT and the other managing urban traffic (see **Figure 7.3.2**).

The idea of the DART Agency being a type of ‘de-facto’ roads and traffic agency is somewhat misleading as its responsibilities do not include urban road maintenance which appears to be left under the management of TANROADS and municipalities. Under 3.5 Goals of the Act (mobility) it is stipulated that DART must provide 120 km of walkways and bikeways for non-motorised transport (NMT), which indicates a construction role, and under 3.6 Objectives (point 5), that ‘intersections be redesigned and rebuilt by 2008’ implying that it does have a responsibility for roads (but perhaps only in relation to traffic management). The inclusion of ‘maintenance of structures’ implies DART is responsible for stations and signaling, but it is not clear who is responsible for the maintenance of the busway.

This responsibility should be made clear as it is inefficient and duplicitous to have multiple agencies managing a single area of responsibility. Also TANROADS while an effective agency, carries the responsibility of national roads and could be overstretched with the task of maintaining the urban road network. This issue is addressed in *Chapter 6* with the development of a Roads and Traffic Agency under an Urban Transport Authority.

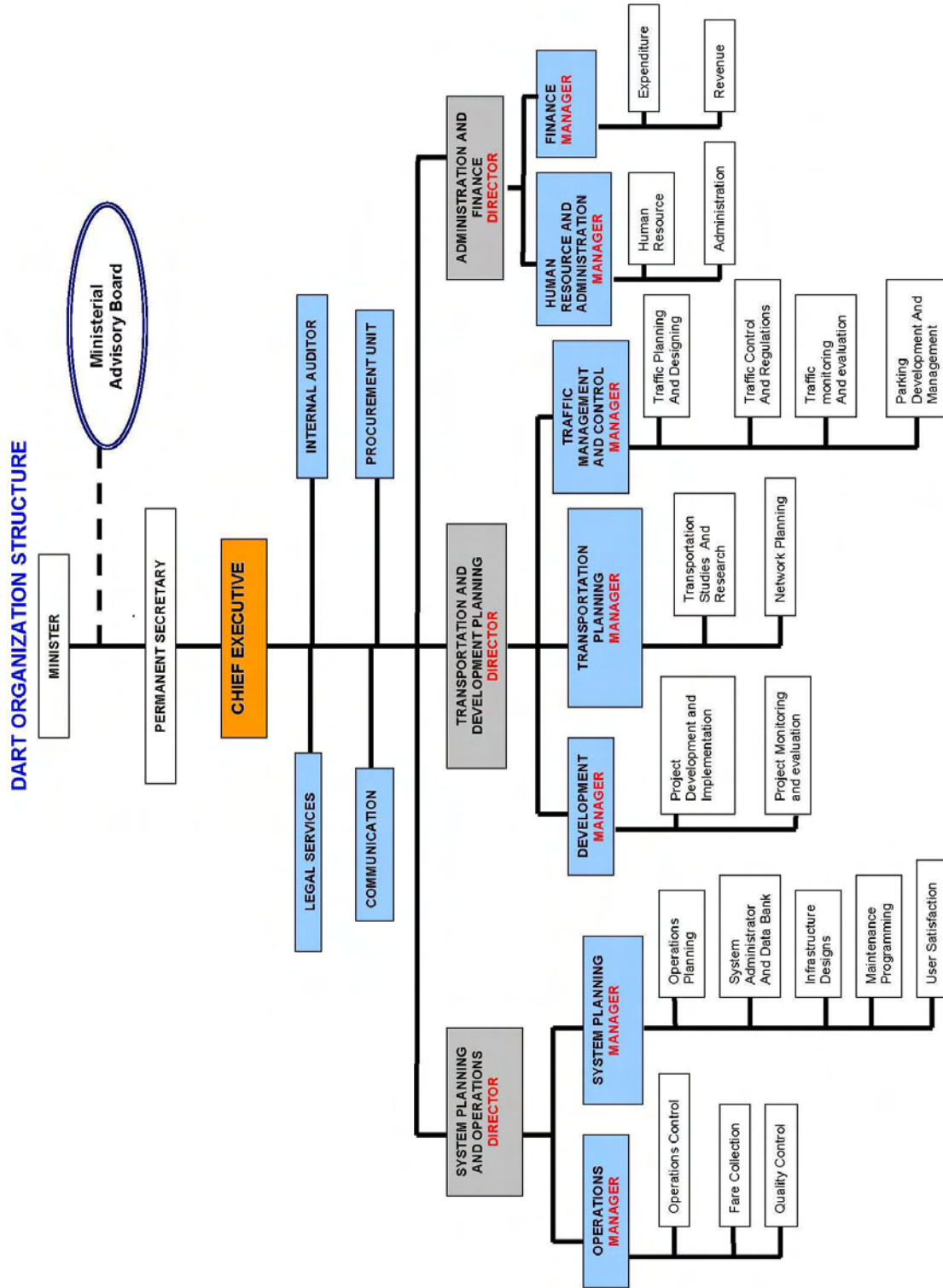


Figure 7.3.2 DART Organization Structure (proposed under the Establishment Order)

Source: Dar es Salaam Rapid PMU

7.4 The DART business model

The Establishment Order (2007) for DART provides a good strategic policy framework under the direction of the Ministerial Advisory Board, outlining the functions of the agency and its responsibility and accountability to ministerial level. The DART charter has a strong objectives-based focus and shows clear intention of outcomes.

However, a successful DART will depend on its business model which dictates primarily:

- 1) how it manages the business and
- 2) how it manages the contracts under its control.

The business plan of DART should define its key functions and specifically its relationship with contractors, requiring a clear assignment of risk under detailed contractual frameworks. This will result in a clear and unambiguous relationship between contractors and the contracting agency and that the business and risk environment is understood by investors.

It is apparent in the planning and commission of the DART organization that it is to be commercially oriented, subcontracting its various service delivery functions to contracted bus operators, a fare collection company and an independent fund manager respectively. These relationships are discussed in a risk analysis for DART (see *Technical Report 2 Chapter 14*).

7.4.1 Contract issues for the BRT operations – concessions, contracts and risk,

The success or failure of the system is dependant on the type of contract and conditions under which the operator concessions are granted; specifically the risk carried by each party in the contracts as it influences the behaviour of the involved parties² directly affecting service quality.

The basic principle to follow is to assign respective risks to the party that can best manage it. Poor outcomes result when parties are contracted to assume a risk they cannot control or manage (the present daladala being a good example).

It is understood that Phase 1 BRT proposes to develop 2 BRT bus operating entities who both will operate both trunk and feeder services. This concept is supported as it will provide a comparison between operators and also avoids DART being wholly dependant on one operator alone.

The following discussion defines the differences between concessions and contracts giving supporting background for the decisions made by DART in this respect. An analysis and comparison of risk between options is shown in **Table 7.4.1** and **Table 7.4.2**

Concessions

The terminology of a ‘concession’ is distinct from that of a contract as a concession is typically an arrangement where the operator takes a considerable (if not all) operational risk, whereas the DART draft tender bid document clearly shows the intention for a gross cost kilometre-based contract for bus

² This works both ways; being that a government that carries no risk may be dismissive of the problems of the passenger transport system (can blame operators if things go wrong) and the operators on the other hand, will do anything to survive economically; even to the point of endangering public safety.

operators, where DART assumes the operating risk. Concessions can be exclusive (limiting competition) or multiple concessions can operate to provide some competition; either in separate areas or operating in parallel.

Concessions are favored where governments wish to divest operational risk (but may provide a set level of subsidy) but this option relies on government to find a willing investor to take the risk and operate the business. Concessions work when the business condition is somewhat predictable, sufficient for the investor to see an opportunity of return. Rail operations are an example where a more controlled environment creates an acceptable risk profile and where a concession can be used. However, despite a level of segregation, the BRT is impacted by external factors (such as intersection management) that implies risk for its operations. This is why a more simple operating contract is usually recommended for BRT.

While not recommended, it is feasible to use concessions as a means to enlist operators to perform bus services so the option is briefly discussed as follows:

A single concession is a monopoly contract where government through its contracting agency (DART) gives operating rights to a single operator who takes all the investment and operational risk for the whole system. For Dar es Salaam the creation of a single concessionaire would see all existing operator stakeholders (performing both trunk and feeder services) being incorporated into one large entity. Despite the disadvantages of a monopoly, there are some advantages for the rationalization process.

Multiple concessions are problematic as they can cause undesirable competition in the market (fighting for passengers) and where they operate in distinct and separate areas, will work against system integration as operators act to ‘protect their turf’. This is not to say these systems cannot work in certain conditions such as suburban bus services, but they do not work successfully in achieving the objectives of a mass transit system. As such, this discussion will set aside the option of multiple operator concessions.

The option of a single concessionaire (monopoly operator) is evaluated, to assess the risk profile against the multiple operator contract option. Given the nature of the daladala/bus industry in Dar es Salaam not all the following features may apply but in a general sense, the advantages of a single concessionaire are:

- It creates a structure where all existing operators are merged (operators who perceive ongoing rights and expect to be part of the system);
- Government has to deal with only one operating entity;
- Pools the experience & expertise of the existing operators (has more developed management capacity or the means to contract professional management);
- Large consortiums or shareholdings are able to pool financial resources;
- Economic scale reduces the risk of business failure;
- The operator is more involved in service development planning and striving for a return on investment through winning passengers and building revenues. This creates added social value;

- Transfers risk to the operator (advantage for government);
- Requires less agency involvement in service development.

Disadvantages include:

- Requires a ‘buy-in’ from all existing operators and assumes that stakeholders can find a way to come together as a consortium;
- High dependence by the agency on a single BRT operator (all eggs in one basket);
- Stronger operator negotiating position (more able to hold agency to ransom);
- Less scope for the agency to adjust services to meet demand (where the operator may demand disproportionate compensation);
- No competition on quality with only one operator (no comparison between operators);
- Little incentive to integrate with wider services if they exist (will protect own turf);
- Operator may not necessarily have the ability to develop services and focuses on cost cutting;
- The agency would be in a weak position to enforce service quality standards and specifications and it would be difficult to remove a poor performer;
- Industrial action impacting the monopoly concessionaire (labour strikes) would impact on total BRT system;
- For bus operators the disadvantage is a lack of control over external factors such as traffic management which may impact on bus speeds and operational efficiency (driving up operating costs);
- Concessions are driven by profit incentive (over the term of the concession) and the agency cannot assume the concessionaire will internally cross- subsidize to provide social service levels above that included in the initial contracts. It may therefore call for subsidy / payment to provide (loss-making) community service obligations.

Multiple Operator Contracts

These contracts are often referred to **Performance-based contracts (PBC)** and best described as a contract that procures for the contracting agency, kilometres of bus operation for a fixed sum per kilometre. The ‘performance’ aspect comes from the conditions within the contract where the operator can be penalized for failures in service delivery, (or conversely be rewarded for excellent service delivery). Ultimately the terms and conditions of the contract are enforceable, giving the contracting agency a strong hand in managing service outcomes.

There are two types of contract; a **gross-cost contract** where there is little risk for the operator as they are paid for kilometres operated although some penalties may be incurred for service failures, contract breaches and operational misdemeanors. The role of the operator is to provide services to set standards and to control their costs. Under a **net-cost contract** (where operators are paid for passengers carried) there is more incentive to win passengers and these net-cost contracts are more suitable in feeder services where an operator is designated a service area and can develop the business.

The common misconception that net-cost contracts rely on fare box revenue is not correct, as the system pays the operator on a ‘per passenger’ basis (not a per km basis). This allows the operator to tailor services according to the needs of the community in the most efficient way. The contracting agency is obliged to pay the operator to provide non-commercial services (such as late night services) if it required non-profitable services to be provided under a public service obligation (PSO).

A PBC is a simple contract where the operator performs services according to the specifications and standards of the contract. There is a clear client/principal relationship in place and very clear rules and expectations stipulated in the contract so the agency can enforce the condition and service requirements under contract. There is less risk for operator (main task is to deliver quality service and manage costs) whereas the agency takes responsibility for service levels. A key incentive for the operator is not just to avoid penalties but the prospect of contract renewal.

The role of the operator under a simple PBC is to:

- Provide bus services according to specifications and quality standards outlined in the contract;
- Provide operational staff (drivers and controllers) to man the buses for operation;
- Clean, fuel and maintain buses;
- Manage the maintenance contract with the vehicle supplier for repair and maintenance of buses; and,
- Make reports to BRT system manager.

Typically the strengths and advantages of a Performance-based Contract are:

- Essential system planning functions is retained with government offering integrated and unified system control and management under single (accountable) agency;
- As responsibilities of both parties are clearly defined and contractually enforceable it provides a sound basis for investment;
- Risks are allocated where they can be managed with less risk for operator (main task being to deliver quality service and manage costs);
- Bargaining position between Agency and operators is more balanced;
- Market competition is maintained as operators bid for services;
- Revenue is centrally controlled and spread equally across the system;
- Contractors supply service to quality standards and at efficient cost with accountability under contract, being paid for services provided;
- Provides an incentive for performance (avoiding contract penalties and the prospect of contract renewal);
- Rights and obligations are detailed in contracts and contracts are enforceable by law; while service specifications are outlined in a more flexible framework to adapt to service needs;

- Where per km prices are realistic and cost indexes are included, contracts are likely to be commercially viable increasing the prospect of investment and finding sources of finance.
- Develops benchmarks and comparisons (and possibly competition) on service quality between operators;
- Substitute operators can provide service continuity in case of operator failure;
- Identifies better quality operators for short listing for further phases in BRT.

The disadvantages (as opposed to a large monopoly operator) are:

- Financial resources spread thin across various operators;
- Business expertise and experience spread across multiple entities;
- Ability of smaller entities to raise finance may be problematic;
- BRT authority must deal with multiple operators.

Performance-based contracts can be used for multiple larger and smaller operators who are providing services on: 1) an allocated busway route shared with other operators, 2) on a flexible basis where the agency contracts a set amount of kilometres with an operator and the agency can assign those kilometres to any number of busway routes to adjust for variations of demand or 3) providing feeder services in a designated service area. For busway operations Option 2 is the better option as it allows a high level of flexibility to the agency to change service specifications without having to continually renegotiate contracts.

Regulatory procedures manual

A key mechanism to manage the contracts is a Regulatory Procedures Manual being a standard manual of procedures and processes under which the government administers control and management over the bus contracts. It serves as a guide for the management of system issues and the monitoring of the contracts under which bus services are provided.

A Regulatory Procedures Manual (RPM) while being a consistent yardstick of procedures is open to periodical amendments through proper process, but not needing changes in law. The RPM is a document that DART as the system manager will operate under and is a key instrument that will assure contracted operators of fair treatment.

Guidelines included in the manual relate to the following areas:

- Procedures for tendering and eligibility criteria for operators;
- Responsibilities and duties of the agencies;
- Responsibility of the operators;
- Funding guidelines and methods to set fares;
- Adjustment to routes and service parameters;
- Procedures for extraordinary occurrences;
- Enforcement methods and dispute resolution procedures;
- Monitoring guidelines and requirements; and
- Reporting procedures.

Regulatory procedures should be explicit, offering clear guidance so as to reduce the amount of ‘ad hoc’ and arbitrary decisions that need to be made with individual operators and reduce the scope of matters that need to be individually decided (or open to influence from operators).

The RPM must set high standards and define the role and responsibilities of the DART Agency to show their compliance with procedures and to build confidence in the regulatory and planning process to other stakeholders. Procedures defined in the manual include all of the rights and obligations of the parties as well as all tasks, adjustments, and considerations placed under the scope.

The risk analysis of **Table 7.4.1** showed that assigning risk to a concessionaire does not come without its own risks and inherent costs. A number of severe risks have been identified namely that much of the control is also transferred to the concessionaire. Such a transfer of risk (and control) could have seriously poor outcomes for the government. **Table 7.4.2** showed that a Performance-based contract option addresses many of the negative aspects of a concession type contract.

Table 7.4.1 Preliminary Risk Analysis for Concession-type Contract

S/No.	Risk	Understanding	Established Management and Controls	Likely impact	More analysis
1.	Difficulty in obtaining wholesale 'buy-in' of existing operators to form a company to bid for a single concession.	The industry is diverse with many players who need to be rationalized and negotiated into the new framework. This could be a lengthy process	It is not yet clear who is taking responsibility for this. It cannot be DART as they are the contracting agency. It has to be an industry body like DARCA/BOA	Could delay implementation	Yes
2.	International partnerships are not forthcoming	Overseas investors will look carefully at the risk profile and will look for tangible and assured incentives to participate in the market. International companies are exposed to commercial risk, exchange rate risk and policy risk.	None	Low – as local investors are likely to be available	
2.	Concessionaire performs poorly and neglects service development	There is no competition in the marketplace and the concessionaire controls the market, severely limiting the power of the agency to improve service quality and coverage without pressure for more funds.	DART agency – but has limited power under a weak negotiating position.	Severe	No
3.	Industrial unrest causes service disruption	Employee dissatisfaction could lead to industrial action and creates a strong position for trade unions (complete system shutdown)	None	Severe	No
4.	Difficult to negotiate service variations and avoid compensation demands	The concessionaire has made the investment and needs to maximize returns. Any changes to service can constitute a claim that profits are negatively affected thus creating compensation claims	Relies on a goodwill relationship with the agency	Medium	Yes – to determine parameters for negotiating perpetual contract changes
5.	Operator has financial difficulty	This could be a result of internal or external factors and may or may not be under the control or influence of the agency. It could lead to total system shutdown or a massive bailout by government.	Pre-screening operators financial capacity may avoid this situation but may not address a situation where prolonged loss-making creates a subsidy demand.	Severe – leading to collapse or operator or a subsidy/ bailout demand.	No
6.	Lack of market competition causes weak negotiating position for the Agency	The incumbency of a large operator with no competition may create difficulties for the agency if it wishes to alter services, add services or change the operating conditions. However, allowing competition in the concession area undermines the concession agreement and creates undesirable in-market competition.	Limited, as inevitably future requirements will not be included in the original contracts and a negotiation will be needed (with the agency possibly being in the weaker position).	Medium – likely higher prices	Yes – investigate possibilities to expose the concessionaire to competition where variations may occur.

Table 7.4.2 Comparison Risk Analysis with Performance-based Contract Option

S/No.	Risk	Concession option	Performance-based contract option
1.	Difficulty in obtaining wholesale 'buy-in' of existing operators to form a single or form part of an international partnership.	Very large process to bring all players into a single concession	Operators can voluntarily form companies under the direction and assistance of industry groups like DARCOBOA
2.	Concessionaire performs poorly and neglects service development	Single concessionaire, with no competition limits the ability to secure marketplace pricing for additional services. The strategic power of the agency is weakened.	Multiple operators can bid to provide additional services
3.	Industrial unrest causes service disruption	With a single operator any industrial action could cause a complete system shutdown.	Problems limited to one operator will not cause system shutdown as other operators can provide contingency capacity.
4.	Difficult to negotiate service variations and avoid compensation demands	The concessionaire has made the investment with significant risk and needs to maximise returns. Any changes to service can constitute a claim that profits are negatively affected thus creating compensation claims	Multiple operators have invested in fleets to provide services on a per km basis under a low risk, giving the agency the capacity to make changes as necessary
5.	Operator has financial difficulty	This could be a result of internal or external factors and may or may not be under the control or influence of the agency.	The operator is more easily replaced if they cannot make a success of the contract (buy-out by neighbors)
6.	Lack of market competition causes weak negotiating position for the Agency	The incumbency of a large operator with no competition may create difficulties for the agency if it wishes to alter services, add services or change the operating conditions. However, allowing competition in the concession area undermines the concession agreement.	The agency is in the controlling position as it can negotiate within the terms of contracts with any operator and can negotiate with a number of operators to secure best prices.

7.4.2 Discussion on options

Some policy advisors hold that bus operators must carry risk in order to make them market sensitive and commercially accountable. This opinion has developed from an era where bus services were publicly funded through operating subsidy which often caused them to become unresponsive to passenger needs relying on government subsidy for financial survival.

When more risk was placed on the operator it created a more business-like approach and a renewed interest in developing services to grow passenger numbers and revenue. At the same time governments realized that while operators were expected to be more commercial, subsidy was needed to promote social aims (making public transport affordable) and the emphasis changed from operating subsidies to a ‘user subsidy’. Consequently governments now regularly contract out services to operators with a subsidy component that reflects the difference between commercial fares and regulated fares. The operator thus operates on a true commercial footing without blurred objectives of competing social and economic aims.

However, while the above scenario works in a setting where an operator provides bus services in a suburban community (say in a franchise area), it is not necessarily appropriate for a mass transit system. A mass transit network must offer passengers a system whereby they can access a wide array of destinations quickly and easily. This cannot be achieved when multiple operators are competing and protecting their own interests (interests which often are actively working against the system). Integrating fares is also difficult as operators will need to agree on a revenue sharing for passengers travelling across operators areas.

Consider the risk exposure upon a bus operator and then look at how much of this risk he can effectively manage. **Table 7.4.3** shows that much of the operating risk is out of the operator’s scope of influence.

Table 7.4.3 Risk allocation for a typical bus operator

<p>The Government controls: <i>Rules of engagement</i> <i>Route planning</i> <i>Roads and infrastructure</i> <i>Fare levels</i> <i>Traffic management</i> <i>Competition levels</i> <i>Land use planning</i> <i>System promotion and marketing</i> <i>Road works</i></p>	<p>Operators control: <i>Customer service</i> <i>Bus operation</i> <i>Spending decisions</i> <i>Revenue collection</i></p> <p>Market forces controls: <i>Fuel cost</i> <i>Cost of finance</i> <i>Vehicle purchase</i> <i>Spare parts and repair</i> <i>Wage levels</i></p>
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There could be a prevailing opinion between policymakers that DART should not take all of the operational risk, and that the government can perhaps devolve some risk through an operating concession.

This concern can be answered in two ways:

Firstly, the role of DART is as a semi-autonomous (depoliticized) and capable agency managing the

business of the BRT and in this role is a fully commercial and accountable. It effectively works under a contract with government (the strategic policymaking authority) to manage the BRT business. Appropriate funding support will be needed if DART operates below a commercial fare level, but DART's survival is heavily dependant on cost recovery through fares, and the efficient management of the operating contracts. On this basis DART is deemed capable of assuming the business risk and being able to manage it.

Secondly, as the following section will explain, there is a far greater risk when government loses control of service delivery when it assigns risk to a concessionaire. Numerous conflicts emerge under concession arrangements and the government may find itself in a weak negotiating position to influence public transport outcomes.

7.4.3 Recommendation

A capable and strong system manager

It is clear that to develop an integrated mass transit system the role of a system manager is paramount, and the system manager through its role and function is not only able to effectively manage the business but is also best placed to assume the risk.

The institutional arrangement must actively develop the strength and capacity of the system manager by keeping it free from political pressure and interference, be held financially accountable and maintain a strong and contractually sound management of the bus operations.

A performance based contract

The ideal contract for the bus operator is a straightforward contract to provide bus transport services on a kilometre-paid basis, holding the operator fully accountable for service delivery to the standards and specifications set out in the contract. This gives the system manager a strong hand to manage and enforce the service delivery through contract obligations abut also creates a clear and understandable business environment for the operator.

7.4.4 Present DART planning status

Current planning is favoring the option of two large operating consortiums contracted under a Performance-based contract for the Phase 1 operation (see **Figure 7.4.1**). This idea is supported as it provides competition and also provides the economic scale under which to consolidate the many smaller players. The operating entities will also provide both trunk and feeder services.

A benefit to having operating entities operating both trunk and feeder is that it provides a mix of business that ensures comparable resources are provided for both service types. This includes depot and parking space, workshops and maintenance facilities and provides some economies of scale in terms of management and administration. The following section explores the issues in incorporating existing industry into the new operating framework and how to facilitate this process.

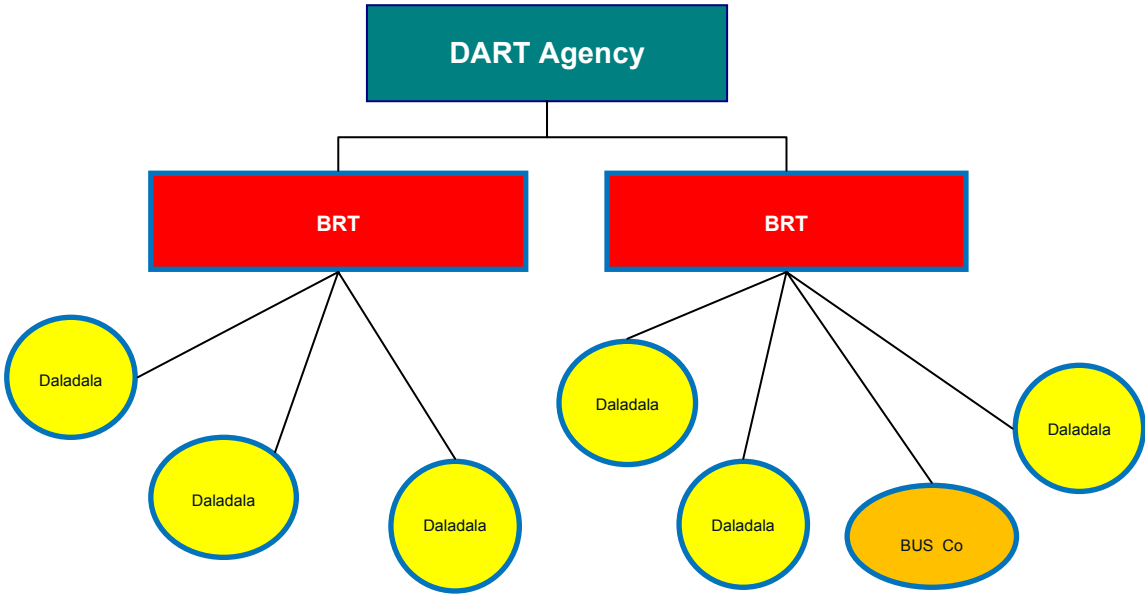


Figure 7.4.1 Multiple operators formed from existing groups

Conclusion

It cannot be overemphasized that the probability of engagement of such private sector partners is dependant on the way risk is managed. The competence and reliability of DART as a business manager and as a competent administrator is critical both in terms of perception and also in reality for investors to see this as a viable business opportunity. DART is responsible for patronage growth, and must prudently manage the passenger transport business to be able to fulfill it obligations to pay private sector operators. It is likely that the government may want to consider a financial safety net that hold funds in escrow as contingency for DART so it can meet its obligations in unforeseen circumstances.

Similarly operators will want tangible comfort in knowing that the government will not arbitrarily limit fares to suit its own social aims, thereby squeezing DART and consequently the operators into a position where costs cannot be covered.

7.5 Realization of the DART vision

In an institutional sense the DART organization fits comfortably into the proposed institutional arrangements of the Master Plan as it has an accountable and businesslike charter under which it operates.

However the inclusion of sundry traffic and construction responsibilities should be no more than a short term accommodation in lieu of the lack of other agencies to competently handle the task. Giving DART a mandate which cuts across the responsibilities of other agencies will create a potential conflict. Trying to improve integration by placing all functions under one agency is counterproductive if it overburdens that agency from its main tasks and responsibilities.

By establishing a under DUTA, a dedicated Roads and Traffic Agency alongside DART, is a better way to ensure coordination and integration, thereby allowing DART to concentrate its full energy to managing the monumental task of bringing public transport delivery to a quality standard and inclusive for all existing industry participants.

DART is still in its relative early stages and heavily optimistic on the forecasts of the operational plan with its attractive design concepts. Realization of this plan however is heavily dependant on a realistic appraisal of the probability and possibility of engaging with the private sector who are to be involved for various service delivery aspects, particularly fare collection and ticketing, and bus operation. A risk analysis of key areas of business model design and operational issues is contained in *Technical Report 2 Chapter 14*.

While BRT development traditionally promotes private sector involvement based on the successful Latin American models, DART will do well to assess the possibilities in the local context and be prepared to modify where necessary its plans so that risk is managed and investment in the project is thereby made feasible and more attractive. A robust risk assessment conducted by DART and made known to investors is also a demonstration of good faith, and will inform what action needs to be taken to address risk issues.

In conclusion it should be stated that in a macro perspective, the DART Agency addresses conclusively the requirements for a successful public transport operation and its chances for success are be considerably improved by the upstream organization of an Urban Transport Authority and the proper placing of DART in the context of the wider supportive Transport Master Plan. The secondary routes providing a well integrated network as outlined in the Public Transport Development Plan (Technical Report 2) are also vital in supporting the viability of the BRT operation but also distribute the wider benefits of BRT to the broader network.

Chapter 8 Implementation Monitoring: Indicators and Role of DUTA

This Chapter on implementation monitoring discusses the indicators used for the assessment of progress and the important role of DUTA in this progress evaluation process. The accent in the discussion will be on the evaluation of progress in the realization of the Dar es Salaam Transport Policy and System Development Master Plan. However, because the improvement of the city’s transport system is part of a wider perspective of economic and social progress, the discussion is broadened with a generic discussion of the methodology and indicators necessary for monitoring the city’s long-term development.

8.1 Introduction

The year 2003 National Transport Policy underwrites the principle of achieving “... efficient and cost-effective domestic and international transport services to all segments of the population and sectors of the national economy with maximum safety and minimum environmental degradation”¹, therewith underwriting that initiatives taken in its policy, economy, society, and environment will define the nation’s or a city’s long-term development.

This view on the contribution of transport to economic and social development of the city of Dar es Salaam needs framing within a wider perception on the long-term future of the city.

The Dar es Salaam Transport Policy and System Development Master Plan starts from the assumption that the city of Dar es Salaam will be the key driver for economic growth and sustainable social progress and therefore requires a comprehensive and integrated long-term vision that embodies the key components of the Tanzania Development Vision – 2025.

The aims and goals of the Tanzania Development Vision – 2025 and the central role of Dar es Salaam in realizing that vision allows expressing the Dar es Salaam Development Vision – 2030 in a gradual evolution to become a “*World City*”, a gateway for the region for tourism, economy and culture/sports.

The city undoubtedly has natural advantages upon which to build:

- Political Stability;
- Educated workforce;
- Geographic location:

¹ United Republic of Tanzania, Ministry of Communications and Transport. *National Transport Policy*. 2003, (p1)

- Port access to eastern Africa;
- Close sea access to markets of Asia;
- Regional service centres;
- Tourism / culture / sports potential:
 - National Parks;
 - Zanzibar;
 - Coast line;
 - Dar es Salaam new football stadium;
 - Heritage and culture.

It should however be clear that the transformation of Dar es Salaam into a regional gateway requires coordinated action to attract economic investors, develop touristic attractions, improve existing sport facilities, and stimulate cultural events with international appeal. It will also require substantial efforts to improve the basic infrastructures for transport and communications and to implement extensive institutional reforms to improve the management of the city and its individual components.

8.2 The path towards World City Status

8.2.1 Dar es Salaam: the *Gamma* vision

World cities emerged from the globalization of trade, commerce, and leisure and are driven by on-line communication and computing technologies and are a “new” breed of cities with characteristics surpassing these of the well-know “mega-city”.

Although many classification methods exist, the service-based classification for world-class status is the most recent one with a focus on selected services the city provides. Using firms with a global competence, their presence in cities across the world is enumerated to empirically define (calculate) global capacity of a city – or “world city-ness” – in terms of aggregate scores and interpreted theoretically as concentrations of expertise and knowledge. The focus for this classification was on four key services: accounting, advertising, banking and law although other economic activities is also be considered.

According to this service-based approach, there are 3 groups of World Cities, complemented by 3 groups of cities evolving towards becoming a world city (**Table 8.2.1**).

Table 8.2.1 Classification of principal World Cities

Established World Cities				
Classification		ALPHA CITY (α city)	BETA CITY (β city)	GAMMA CITY (Γ city)
<i>Description</i>		<i>Full service world cities</i>	<i>Major world cities</i>	<i>Minor world cities</i>
Examples	<i>First level</i>	London; New York; Paris; Tokyo	San Francisco, Sydney, Toronto, Zurich	Amsterdam, Boston, Caracas, Dallas, Düsseldorf, Geneva, Houston Jakarta, Johannesburg, Melbourne, Osaka, Prague, Santiago, Taipei, Washington
	<i>Second level</i>	Chicago, Frankfurt, Hong Kong, Los Angeles, Milan, Singapore	Brussels, Madrid, Mexico City, Sao Paulo	Bangkok, Beijing, Montreal, Rome, Stockholm, Warsaw
	<i>Third level</i>		Moscow, Seoul	Atlanta, Barcelona, Berlin, Budapest, Buenos Aires, Copenhagen, Hamburg, Istanbul, Kuala Lumpur, Manila, Miami, Minneapolis, Munich, Shanghai
Emerging World Cities				
Relative strong evidence	Athens, Auckland, Dublin, Helsinki, Luxembourg, Lyon, Mumbai, New Delhi, Philadelphia, Rio de Janeiro, Tel Aviv, Vienna.			
Some evidence	Abu Dhabi, Almaty, Birmingham, Bogota, Bratislava, Brisbane, Bucharest, Cairo, Cleveland, Cologne, Detroit, Dubai, Kiev, Lima, Lisbon, Manchester, Montevideo, Oslo, Riyadh, Rotterdam, Seattle, Stuttgart, The Hague, Vancouver, Ho Chi Minh City.			
Minor evidence	Adelaide, Antwerp, Aarhus, Baltimore, Bangalore, Bologna, Brasilia, Calgary, Cape Town, Colombo, Columbus, Dresden, Edinburgh, Genoa, Glasgow, Gothenburg, Guangzhou, Hanoi, Kansas City, Leeds, Lille, Marseille, Richmond, St Petersburg, Tashkent, Tehran, Tijuana, Turin, Utrecht, Wellington.			

Source: J.V. Beaverstock, R.G. Smith and P.J. Taylor. A Roster of World Cities. in *Cities*, 16 (6), (1999), pp 445-458

According to all classification methods, London, New York, Paris, and Tokyo are prime examples of world cities but there is extensive discussion regarding the classification of other cities. Generically world cities can be defined by ten (10) criteria and Dar es Salaam already meets several of these criteria (**Table 8.2.2**).

Table 8.2.2 World City criteria and Dar es Salaam

<i>World City Criterion</i>	<i>Present status</i>
Name familiarity	OK (although improvement is necessary)
International events and world affairs	NO
A fairly large population	OK
A major international airport	OK (but can be improved further)
An advanced transportation system	Under development
International cultures and communities	OK
International business and stock exchanges	NO (only very few international businesses are present)
Advanced communications	Gradually improving
Cultural institutions and events and a lively cultural scene	Partly
Powerful and influential media outlets	NO

8.2.2 Benchmarking the evolution toward a *Gamma* city

However, world cities are much more than just service centers and proper consideration for all criteria is essential when evaluating the world city-ness of Dar es Salaam. It is, however, unrealistic to assume that Dar es Salaam will transform, even in the long-term future, into a city similar to London, Paris, or New York. A more realistic long-term target for Dar es Salaam is to become a *Gamma World City*, a city that is similar to what Barcelona, Miami, or Shanghai are today.

Even with a moderate long-term objective, the evolution towards a true world-class (*gamma*) city will be for Dar es Salaam a long-term process with different hurdles to pass. The process should therefore be closely monitored, as much as possible quantified and the progress benchmarked on a regular basis.

Table 8.2.3 provides possible monitoring criteria to make a quantifiable and weighted appreciation of the evolution of Dar es Salaam towards world city status.

Table 8.2.3 Examples for quantifiable progress verification criteria

World City item	Criteria 1	Criteria 2	Criteria 3	Weighted average score
<i>Name familiarity</i>	Economic	Politics	Tourism	WAV(criteria 1,...,3)
<i>International world affairs</i>	International political organizations	Regional political organizations	Hosting international events	WAV(criteria 1,...,3)
<i>Large population</i>	Total population	Annual growth	Long-term projection	WAV(criteria 1,...,3)
<i>International airport</i>	# international airlines	# passengers / year	Volume of cargo / year	WAV(criteria 1,...,3)
<i>Advanced transportation</i>	Length of paved road network	Public transport passengers / year	Vehicle trips / year	WAV(criteria 1,...,3)
<i>Advanced communications</i>	Computers / household	Internet speed	# of private operators	WAV(criteria 1,...,3)
<i>Cultures and communities</i>	# identified cultural groups	Ratio nationals / foreigners	# of international visitors / year	WAV(criteria 1,...,3)
<i>Business and stock exchange</i>	# of registered international businesses	Annual FDI	Annual turnover of stock exchange	WAV(criteria 1,...,3)
<i>Cultural scene</i>	# international cultural events	# theatres & cinemas	# international sporting events	WAV(criteria 1,...,3)
<i>International media outlets</i>	# global news agencies	# of regional news agencies	# international radio / TV events	WAV(criteria 1,...,3)

As argued several times, the evolution towards “world city-ness” is a long-term process with stepwise successes with at the end of the process the achievement of equivalent or higher scores for each of the ten criteria as compared to the (*gamma*) benchmark cities. To control these progressive steps and to avoid disappointment caused by wide gaps between reality and objective, it is strongly recommended to use different cities as benchmark, starting with one or more cities demonstrating minor levels of world city-ness, then cities with some evidence to finish with a number of cities with strong evidence. Once the first level is passed and equal or higher scores are reached than the benchmark cities with minor evidence of world city-ness, these cities can be eliminated from the benchmark table and replaced by real world cities of the *gamma* class which is the ultimate objective.

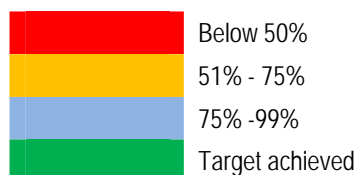
A generic template for the analytical matrix is presented in **Table 8.2.4**.

Table 8.2.4 Dar es Salaam Benchmark Matrix for World City-ness

World City category	DARES SALAAM	Minor evidence			Some evidence			Strong evidence			GAMMA QTY		
		Antwerp	Hanoi	Cape Town	Manchester	Ho Chi Minh City	Cairo	Helsinki	Mumbai	Tel Aviv	Berlin	Manila	Shanghai
	Weighted average	%achieved			%achieved			%achieved			%achieved		
Name familiarity	WAV(criteria 1,...,3)												
International world affairs	WAV(criteria 1,...,3)												
Large population	WAV(criteria 1,...,3)												
International airport	WAV(criteria 1,...,3)												
Advanced transportation	WAV(criteria 1,...,3)												
Advanced communications	WAV(criteria 1,...,3)												
Cultures and communities	WAV(criteria 1,...,3)												
Business and stock exchange	WAV(criteria 1,...,3)												
Cultural scene	WAV(criteria 1,...,3)												
International media outlets	WAV(criteria 1,...,3)												
AVERAGE SCORE	Average of $\Sigma(5-14)$	Av %	Av %	Av %	Av %	Av %	Av %	Av %	Av %	Av %	Av %	Av %	Av %
		Average of $\Sigma(1-3)$			Average of $\Sigma(1-3)$			Average of $\Sigma(1-3)$			Average of $\Sigma(1-3)$		

A table similar to **Table 8.2.3** is made for each of the reference cities, and the weighted averages for each criterion for Dar es Salaam is then compared with the weighted averages of each of the reference cities, leading to a percentage of progress achieved. Once that value is 100% or more, the objective of reaching that level of world city-ness is reached and work can commence to progress towards the next level. However, reaching for example minor-evidence of world city-ness is determined by comparing the average score of Dar es Salaam with the average score of the three reference cities and once the score is 100% or equal, that level has been reached and the benchmark cities for that level of world city-ness can be eliminated from the analysis.

If a more thorough monitoring of progress is preferred, the average scores in the bottom of **Table 8.2.4** can be replaced by colour indicators for each value of percentage achieved, for example a 4 level colour scale as follows:



In case of a thorough progress evaluation procedure, proceeding to the next benchmark level is only possible if ALL cells for each of the three benchmark-cities are coloured green, meaning that for each of the criteria, Dar es Salaam scores 100% or more.

8.3 Monitoring the development of transport in Dar es Salaam

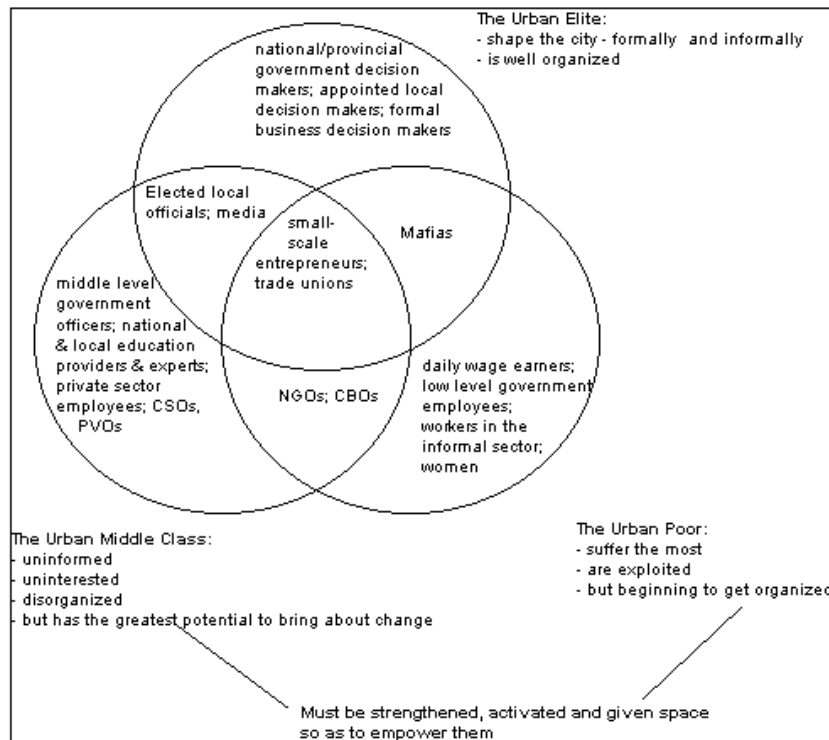
8.3.1 Good governance

As can be derived from above approach, transport is only one out of ten criteria but is without doubt one of the principal ones, its importance defined and determined by the weight attributed to its evaluation criteria in the Benchmark Matrix.

The establishment of the Dar es Salaam Urban Transport Authority (DUTA) and its efficient functioning will undeniably be instrumental in lifting the city’s transport system to world city levels.

Monitoring the performance of DUTA is therefore a high priority and requires a highly structured methodological approach.

One of the principal reasons for needing a comprehensive monitoring system is the range of interconnections between actors involved in urban governance, pictured in **Figure 8.3.1**. Combined, these actors define the framework conditions for good governance.



Source: United Nations Economic and Social Commission for Asia and the Pacific

Figure 8.3.1 Actors in the urban environment

According to the UN Economic and Social Commission, good governance is participatory, consensus oriented, accountable, transparent, responsive, effective and efficient, equitable and inclusive and follows the rule of law. Applying good governance assures, according to the Commission, that corruption is minimized, the views of minorities taken into account, and that the voices of the most vulnerable in society are heard in decision-making processes while being responsive to the present and future needs of society.

The monitoring of good financial governance / performance is formally introduced in the organization via the external auditor, who controls the financial flows and accounting practices in DUTA (see previous chapter of this Technical Report 3). As part of its auditing mandate, the external auditor will control the utilization of allocated public budgets, distinguishing between operational budgets and investment budgets, considering the financial flows via DUTA between up-stream ministries and the two principal Line Agencies (including donor funds), and the revenues generated from issuing licenses and permits.

With the objective of maximizing good governance, also the managerial and operational performance of DUTA should be monitored.

Following performance-monitoring techniques will be briefly discussed and it will be explained how they can monitor good governance:

1. Logical Framework Approach and Project Cycle Management;
2. Output Based Management and Performance Based Management; and
3. Risk Management.

It will be up to the decision-makers in DUTA to decide what method will be the most appropriate for assessing the Authority's performance.

8.3.2 Logical Framework Approach and Project Cycle Management

(1) Description

The *Logical Framework Approach* (LFA) was adopted in the sixties as a planning tool for overseas development activities by USAID and originated from private sector management theories such as the “management by objectives”, popular in the sixties and is now widely used by donor organizations².

LFA is an analytical, presentational and management tool to:

- Analyse the existing situation during the preparation phase;
- Establish a logical hierarchy of means by which objectives will be reached;
- Identify potential risks to achieving sustainable outcomes;
- Establish how outputs and outcomes might best be evaluated;
- Present a summary of the project in a standard format; and
- Monitor and review projects during implementation.

A distinction is necessary between what is known as the Logical Framework Approach (LFA) and the Logical Framework Matrix (LogFrame). The approach involves the entire set of strategic processes in preparation of a concrete implementation while the matrix is the product of this analytical approach is the matrix that is used for the evaluation of projects, investments, and strategies.

An example of the LogFrame Matrix is presented in **Table 8.3.1**. The Logframe matrix has four columns and usually four or five rows, depending on the number of levels of objectives used to explain the means-ends relationship of the project.

- The *vertical logic* identifies what the project intends to do, clarifies the causal relationships, and specifies the important assumptions and uncertainties (columns 1 and 4).

² See European Commission, *Aid delivery Methods. Volume 1 Project Cycle Management, Part 2 Logical Framework*. March 2004, 3rd update. The first PCM manual was produced in 1993

- The *horizontal logic* defines how objectives are measured and the means by which the measurement is verified (columns 2 and 3). This provides the framework for implementation monitoring and evaluation.

Table 8.3.1 Example of LogFrame Matrix

Project Description	Indicators	Source of Verification	Assumptions
Overall Objective – The project’s contribution to policy or programme objectives (impact)	How the OO is to be measured including Quantity, Quality, Time?	How will the information be collected, when and by whom?	
Purpose – Direct benefits to the target group(s)	How the Purpose is to be measured including Quantity, Quality, Time	As above	If the Purpose is achieved, what assumptions must hold true to achieve the OO?
Results – Tangible products or services delivered by the project	How the results are to be measured including Quantity, Quality, Time	As above	If Results are achieved, what assumptions must hold true to achieve the Purpose?
Activities – Tasks that have to be undertaken to deliver the desired results			If Activities are completed, what assumptions must hold true to deliver the results?

LFA can be used throughout the activity management cycle in:

- Identifying and assessing activities that fit within the scope of country programs;
- Preparing the project design in a systematic and logical way;
- Appraising project designs;
- Implementing approved projects; and
- Monitoring, reviewing, and evaluating project progress and performance.

The usefulness of LogFrame thinking is supported by four principal arguments:

- It documents clearly the change away from activity/input to a project/output focus;
- The output orientation keeps clients at the forefront;
- Scarcity of resources requires priority setting, which in turn are based on specific objectives;
- Many applications have demonstrated that it works well in planning.

LogFrame is more than an output-orientated approach. A thorough application involves concrete specifications of intended impacts / objectives, bringing in a "hierarchy of objectives" which are intertwined by a set of hypotheses indicating the intended impact as a consequence of the utilization of resources and, ultimately, the resulting benefits. Realism and consistency are imperative to develop appropriate hypotheses and identify available resources.

By linking resources, outputs, and impact in a realistic and consistent manner, LogFrame based analysis is output and impact oriented and therewith

- Increases consistency, accountability and transparency;

- Facilitates co-operation; and
- Can be used by planners and decision makers at different levels.

Project Cycle Management (PCM), also known as Participatory Planning, is a similar technique to increase transparency and accountability and to maximize the efforts of introducing good governance in the workings of DUTA. The method is a more modern version of the original LogFrame from which it originated and which is still considered part of PCM by for example the European Commission³.

PCM became popular in the early nineties when JICA began its full-scale introduction of the method and also the European Commission fully adapted PCM as its primary set of project design and management tools, enhancing the standing Logical Framework Approach with the principles of Objectives-Oriented Project Planning. PCM is therefore very similar to the LFA and also involves a principal matrix, known as the Project Design Matrix (PDM), an example is presented in **Table 8.3.2**.

Table 8.3.2 Example of a Project Design Matrix

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal			
Project Purpose			
Outputs			
Activities	Inputs		
			Pre-conditions

PCM again applies a vertical and horizontal logic:

- Vertical Logic includes:
 - Project Purpose, objectives that the project should achieve within the project duration;
 - Overall Goal, direction that the project should take next
 - Outputs, strategies for achieving the Project Purpose;
 - Activities, specific actions taken to produce Outputs; and
 - Important Assumptions, conditions important for project success, but that cannot be controlled and its development is uncertain.
- Horizontal Logic includes:
 - Objectively Verifiable Indicators, standards for measuring project achievement;

³ See European Commission, *Aid delivery Methods. Volume 1 Project Cycle Management*. March 2004, 3rd update. The first PCM manual was produced in 1993. In Part 2, the LogFrame is explained as practical implementation tool for PCM

- Means of Verification, data sources from which indicators are derived;
- Inputs, Personnel, materials, equipments, facilities and funds required by the project;
- Preconditions, conditions that must be fulfilled before a project gets underway.

(2) Methodology assessment

The LogFrame and PCM are efficient tools for monitoring and evaluating DUTA management and operations. The methods are frequently described as logical, transparent, and consistent participatory problem-solving approaches for achieving:

1. Efficiency: The productivity in project implementation that reflects the degree to which Inputs have been converted into Outputs;
2. Effectiveness: The degree to which the Purpose has been achieved by the Outputs;
3. Impact; Positive and negative changes produced, directly or indirectly, as a result of the Implementation;
4. Relevance: The validity of the Overall Goal and Purpose at the evaluation stage; and
5. Sustainability: The durability of the benefits and development effects produced after completion.

However, the methods have some flaws; in particular both methods require a comprehensive preparation and detailed study of pre-conditions prior to establishing the evaluation and monitoring tool. Before implementing the monitoring system as practical tool, DUTA experts will have to pass six main stages⁴:

1. Clarify project scope – stakeholders, institutional capacity, project objectives, and resources;
2. Understand the nature of organizational relationships, management arrangements, and capacity constraints;
3. Determine the information needs of project implementers and other key stakeholders;
4. Review existing information collection systems and procedures;
5. As appropriate, develop and document monitoring system guidelines and formats; and
6. Provide training and resources to support systems development and implementation.

Furthermore, applying the LogFrame or the PCM Matrix to DUTA management and operations in a consistent and comprehensive manner as recommended by the EU Guidelines might become highly complicated because its requires in-depth and accurate structuring for each of the six above explained steps.

The wide range of preparation and the complexity and extent of the individual tools which combined make up the matrix might hinder a practical and continued application of the evaluation and monitoring tool, therewith missing the prime objective of transparency and accountability.

⁴ See European Commission, *Aid delivery Methods. Volume 1 Project Cycle Management*. March 2004, 3rd update. p. 102

The full application of the two techniques and the use of the matrix also requires the introduction of risk management techniques which in itself can be considered as a monitoring and evaluation tool in itself (see further).

8.3.3 Output-based Management and Performance Based Management

(1) Description

Output-based Management (OBM) originates from the international aid sector where it is known as Output-Based Aid (OBA), introduced to deal with the “... primary challenge ... to ensure that aid- and taxfunded spending reaches the poor, that the services this money finances respond to their needs and preferences, that these services are delivered efficiently, and that public funds are used in a way that leverages private financing of service delivery.”⁵

The principle of Object-based Management is to introduce a system that allows comparing the inputs with the outputs as schematized in **Figure 8.3.2**.

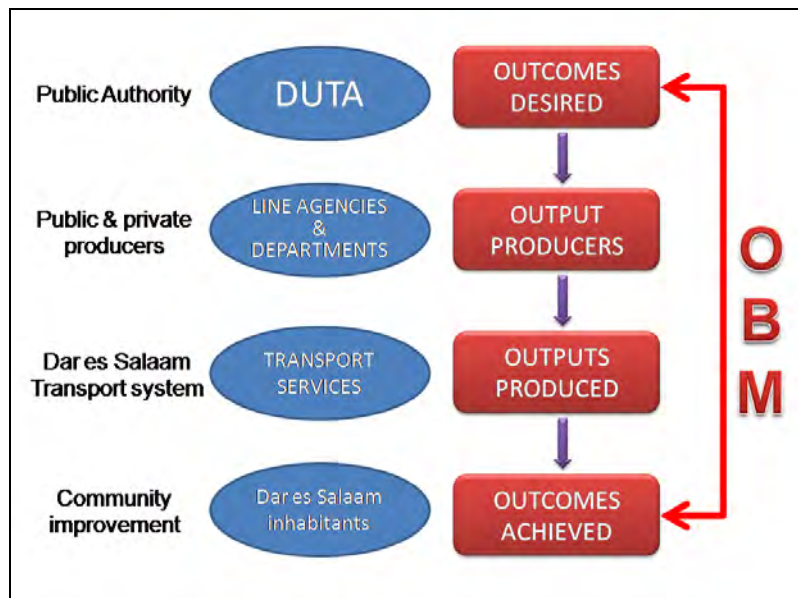


Figure 8.3.2 Output-based Management

DUTA is the principal Authority in policy, planning and funding of transport for Dar es Salaam but is also responsible for licensing, taxi regulation, subsidy administration, asset management, development of plans and policies, recommendations for funding, and works with all stakeholders to ensure effective ‘on the ground’ service delivery (by the Line Agencies, Departments and service providers). This broad responsibility implicitly imposes the need to monitor the working of the Authority and more specifically the necessity for comparing plans (desired outcomes) with implementations (outcomes achieved). Applying the Output-based Management methodology in the management system of DUTA would introduce a performance monitoring system using quantifiable and verifiable indicators to

⁵ World Bank; International Finance Corporation. *Contracting for public services - Output-based aid and its applications*. Edited by Penelope J. Brook and Suzanne M. Smith. Available on Internet

compare at frequent intervals the policy and investment results with the original plans on the basis of quantifiable indicators, therewith increasing transparency and allowing concrete accountability.

The essence of Output-based Management is that a result is expressed as the objective of an investment, a program, or a policy that requires planned intermediate activities to achieve that objective. OBM assumes that when planning is done properly, progress can be measured and results assessed. Consequently, the executors of the program can be held accountable for delivering results to its stakeholders/superiors.

Examples of OBM measurement criteria are:

- *Quantity*: such as volume, level of supply, or other units of measure;
- *Cost/price*: not only full accrual cost but where possible also unit cost;
- *Quality*; evaluated on the basis of pre negotiated and prescribed standards;
- *Timelines*; such as delivery/deadline, service response time.

Output-based specification and measurement provides critical performance information for:

1. Agency performance in identifying, costing and producing outputs in the most efficient and effective manner;
2. Government's selection and resourcing of the most efficient and effective outputs in a contestable (competitive) environment; and
3. Comparison of actual versus intended (resourced) output performance.

Performance Based Management (PBM) is used by USAID for planning and managing the process of assessing and reporting progress towards achieving a Strategic Objective. It is more in particular a critical tool for planning, managing, and documenting the collection and utilization of performance data and therefore complements the working of Outcome-based Management as preparatory tool⁶.

PBM is positioned one level above OBM as framework for implementing the performance evaluation on the basis of outcomes. PBM prepares performance evaluation by:

- Defining specific performance indicators, determining baselines and setting targets;
- Planning and managing the data collection process;
- Incorporating relevant data collection requirements into agreements;
- Planning related evaluative works;
- Estimating costs related to data collection and plan the financing; and
- Communicating expectations to those responsible for producing the outputs to cause measurable changes in performance.

⁶ USAID, Policy and Program Coordination Bureau. *The Performance Management Toolkit - A Guide to Developing and Implementing Performance Management Plans*. Version April 2003.

PMP thus contributes to the effectiveness of the performance monitoring system, see **Figure 8.3.3**.

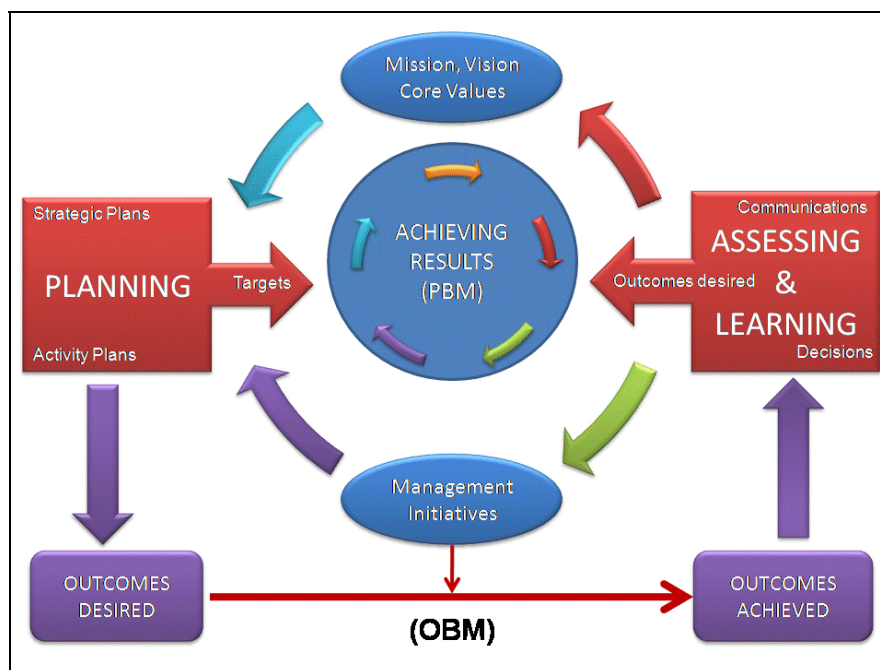


Figure 8.3.3 Integrating PBM and OBM in a single result-oriented vision

PMB is translated into practice with the development of the Performance Management Plan (PMP), which contains full documentation of the indicators used to track progress, their data sources, the quality of data available and responsibilities for collection and analysis of the data. PMP is thus a more elaborated evaluation framework than the one-page matrix often used in for example LogFrame.

The USAID Toolkit for PMB provides a “quick guide” on the entire process that includes three sequential parts / processes⁷ as follows:

Part 1: Plan for PMP Development

Tasks	Worksheets, Techniques, Helpful Hints
Assemble a PMP development team	Worksheet 1: PMP Development Team Skills Matrix
Collect and review background materials	
Develop a workplan	Worksheet 2: PMP Development Workplan
Conduct a team briefing meeting	

⁷ USAID, Policy and Program Coordination Bureau. *The Performance Management Toolkit - A Guide to Developing and Implementing Performance Management Plans*. Version April 2003.

Part 2: Develop PMP

Task 1: Review Results Framework

Sub-tasks	Worksheets, Techniques, Helpful Hints
Assess quality of results statements	Worksheet 3: Results Statement Assessment
Validate logic	Worksheet 4: Results Framework Assessment
Verify USAID's manageable interest	Technique: Assess Framework in a Facilitated Session
Ensure critical assumptions are identified	Helpful Hint 1: Facilitating Group Discussions and Decision-Making

Task 2: Develop Performance Indicators

Sub-tasks	Worksheets, Techniques, Helpful Hints
Develop list of potential indicators	Technique: Use Current Resources to Identify Potential Indicators Technique and Helpful Hint 2: Indicators for Hard-to-Measure Results
Assess potential Indicators	Worksheet 5: Performance Indicator Quality Assessment
Select best indicators	Technique and Helpful Hint 3: Performance Indicator Brainstorming Session
Document indicators in the PMP	Worksheet 6: Performance Indicator Reference Sheet

Task 3: Identify Data Sources and Collection Methods

Sub-tasks	Worksheets, Techniques, Helpful Hints
Identify potential data sources	Technique: Assess Results Framework in a Facilitated Session (also Helpful Hint 1)
Generate data collection options	Helpful Hint 4: Rapid Low-Cost Data Collection Methods
Select data collection option	Technique: Use Decision Chart to Select Best Data Collection Option Worksheet 6: Performance Indicator Reference Sheet
Develop data collection tools	

Task 4: Collect Baseline Data and Verify Quality

Sub-tasks	Worksheets, Techniques, Helpful Hints
Collect data	Technique: Storing Data in an Information Database, and Helpful Hint 5
Conduct a data quality assessment	Technique: Plan Data Quality Assessments Worksheet 7: Data Quality Assessment Checklist Technique: Assess Data from Data Sources, and Helpful Hint 6 Helpful Hint 7: Tips to Minimize Bias Worksheet 6: Performance Indicator Reference Sheet
Build commitment to and capacity for quality	Technique: Foster Organizational Commitment

Task 5: Establish Performance Targets

Sub-tasks	Worksheets, Techniques, Helpful Hints
Establish baselines	Technique: How to Establish Baselines when Information is Inadequate
Establish indicators	Technique: Conduct a Target Setting Meeting Helpful Hint 1: Facilitating Group Discussions and Decision-Making Technique: Approaches to Target Setting
Input baselines and targets into performance data table	Worksheet 8: Performance Data Table

Task 6: Plan for Other Assessing and Learning Elements

Sub-tasks	Worksheets, Techniques, Helpful Hints
Plan for data analysis and use	Worksheet 9: Performance Management Task Schedule Worksheet 6: Performance Indicator Reference Sheet Helpful Hint 8: Tips for Communicating Performance Information in Reports Technique: Chart Book Analysis Presentation Approach
Plan for performance reviews	Technique: Portfolio Review Approaches Helpful Hint 9: Questions to Guide Portfolio Reviews
Plan for evaluations and special studies	Technique: Planning for Evaluations (also Helpful Hint 4) Worksheet 10: Evaluations and Special Studies Planning Worksheet 11: Evaluation Scope of Work Planning
Plan for performance reporting	Technique: Plan for Annual Report Reporting
Plan for ongoing data quality assessments	Technique: On-going Data Quality Assessments Worksheet 7: Data Quality Assessment Checklist

Part 3: Use, Review and Revise PMP

Tasks	Worksheets, Techniques, Helpful Hints
Implement PMP	Helpful Hint 10: List of Official SO Team Files
Review PMP	Helpful Hint 9: Questions to Guide Portfolio Reviews
Revise PMP	

The implementation of PMP is then done via the OBM process where the performance of the Departments and Line Agencies are assessed as described in previous section.

(2) Methodology assessment

The combined method will create a comprehensive framework for a structured and coherent evaluation method and process, by structuring not only the evaluation process itself (OBM) but also the preparation and the execution of the evaluation process (PBM).

PBM will in the first place assist DUTA strategic managers in creating the appropriate evaluation and monitoring process combined with a structure for supervision and control of the evaluation process itself.

OBM is the tool for the physical monitoring of performance. The tool is particularly suited for performance monitoring in the fields of transport and land use⁸ because the approach is based upon assessing quantifiable performance indicators therewith facilitating the measurement of improvement / progress while simultaneously reducing the risk for “result manipulation” and “human error”.

According to the World Bank, OBM (or OBA) is particularly efficient as management and evaluation method because it offers the possibility of incorporating the private sector in public services, even when these services are not profitable and therefore in principle not attractive to private investors. OBM namely facilitates output-based contracting and thus expands the scope for private participation and create new opportunities to leverage private financing of transport infrastructure. Performance-based Contracts is a tool, recommended for Dar es Salaam to set performance standards for DUTA, the Line Agencies, Departments, and public and private service providers. Applying OBM at the level of the transport authority (DUTA) will undeniably facilitate not only the evaluation of Line Agencies and Departments but also the utilisation of the evaluation results for reasons of accountability and transparency as well as for increasing disclosure of information.

Using output-based or result-based contracts to integrate the private sector is an efficient tool to

- Better target beneficiaries/outcomes;
- Strengthen accountability for performance; and
- Introduce incentives for efficiency/innovation;

8.4 Risk Analysis

(1) The concept of Risk Analysis

The concept of “risk” is based upon the fact that the decision to proceed with the implementation of a project, an investment, or a policy is based upon a set of assumptions. The initiative therefore can have more than one possible outcome depending upon the concretization of the assumptions. The need for risk assessment is therefore a direct consequence of the recognition of future uncertainty, which in turn is caused by the inability to know what the future will bring after the implementation of the project, investment or policy.

The risks are generated by a situation where a range of possible outcomes are available and each is based upon a set of assumptions (variables) which in some way are significant and could influence the final result. Risk thus becomes one criterion for deciding what course of action to pursue, requiring some form of risk analysis as part of the evaluation and monitoring process.

⁸ The Government of Western Australia applies OBM explicitly in the fields of transportation and land use planning, see Government of Western Australia. Department for Planning and Infrastructure. *Annual Report 2002-2003*.

When analyzing risks, it is important to understand that the risks are subjective and not objective. Objective risk is a risk for which the possible outcomes are known and although the outcome remains uncertain, can be precisely described based on theory, experiment, or common sense. Subjective risk is more complicated because the outcome is open-ended in the sense that the risk assessment can continuously be refined with new information, further study, or by giving weights to the impact of variables.

The concept of risk analysis is summarized in **Figure 8.4.1**.

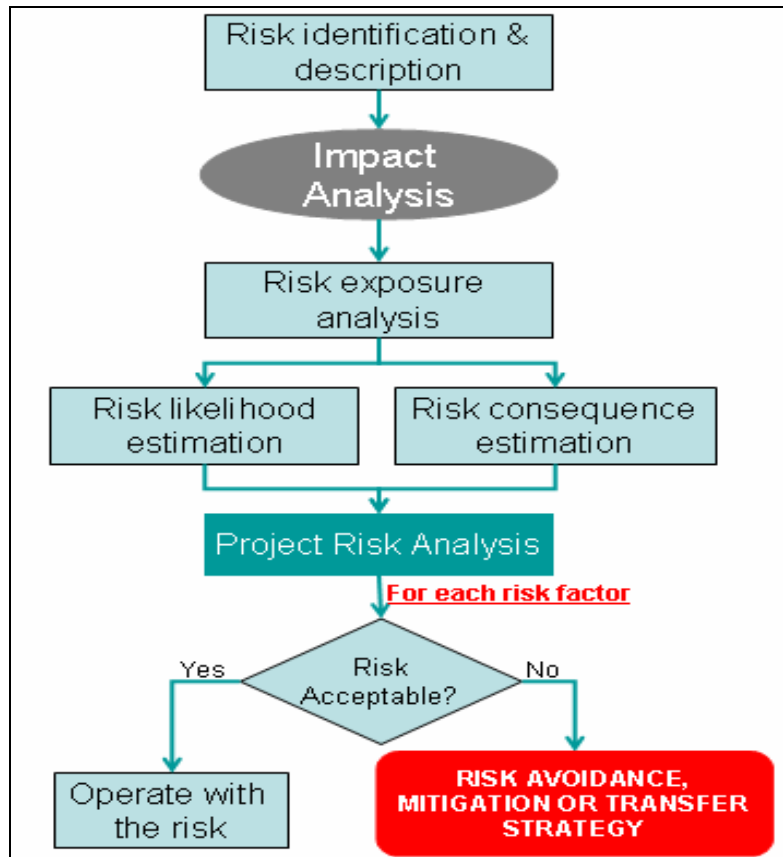


Figure 8.4.1 Risk analysis as part of a project risk strategy

Activating / realizing a project, investment or policy at a certain moment in time is a very significant action, confronted with risks because of the uncertainty of future conditions. Without knowing all details of the risks related to the implementation, a sustainable recommendation on how to proceed will therefore be unsubstantiated without a detailed risk analysis considering several critical success-factors.

Risk analysis could Single Point Risk Simulation (SPRS) and Monte Carlo Risk Simulation (MCRS) comprehensive Bayesian Risk Simulation (BRS). These three methods are the most used for risk assessments with the accent on four fundamental risks groups:

- Cost risk, risks of exceeding initial cost estimates;
- Revenue risk, depending on traffic volumes and revenue yields;

- Capacity risks, generated by fluctuations in operational true capacity of the infrastructure; and
- Demand risk; the major uncertainty when developing transport infrastructure and a reason of many failures in major development projects.

For each method, the process is similar. After the identification of all risk factors, their evaluation starts with determining their relative impact on the outcome, in other words, estimate the consequences of the risk occurring. Once the impacts estimated, the exposure to risk and the likelihood of each risk factor to happen need to be evaluated and combined with the impact on the results. For each of the critical risk factors, an assessment will determine whether the risk poses a major danger to the successful outcome and on that conclusion, possible mitigation strategies are developed / introduced. A critical part in the risk analysis is to determine the impact of occurring risk factors, estimated by changing the critical assumptions and variables that will consequently generate impact-determined results.

If the risk is not acceptable, risk control strategies will be proposed which can be grouped in 3 categories:

1. Elimination of the risk (avoidance strategy);
2. Reduction of the risk (mitigation strategy); or
3. Engineering or administrative measures to control the effects of the risk (transfer strategy).

(2) SPRS and MCRS

The "experimental" SPRS allows guided sensitivity testing of particular variables while “analytical” MCRS evaluates the risk using a probability distribution and has therewith a more realistic approach to risk impact.

Traditional SPRS estimates variables to predict a single result using standard spreadsheet modeling. Changing values (estimates) are given to the variables and for each changed value, the effects of that change on the outcome are investigated. Because anticipated or forecasted outcomes decide the implementation of an initiative, conservative and optimistic estimates, made for the variables, will determine the range of possible outcomes. The SPRS thus analyses the impact of changing conditions via sensitivity testing of the basic variables along a risk matrix as visualized in **Table 8.4.1**.

Table 8.4.1 Risk Assessment Matrix

Risk	Risk assessment			Risk Score	Risk level
	<i>Exposure</i>	<i>Likelihood</i>	<i>Consequence</i>		

In a final stage, the results of the SPRS risks are evaluated using weighting techniques as demonstrated in following Table 8.4.2. SPRS has substantial limitations because it does not capture the divergence between outcome estimates and real-life results. SPRS risk assessment based upon "expected" future results might at the end lead to the wrong decision, with the best decision never considered because the

risk assessment did not generate a more complete picture of all possible outcomes. For that reason, risks of larger initiative are investigated using Monte Carlo Risk Simulation (MCRS) that, contrary to the "experimental" approach of SPRS, uses probability distributions.

Table 8.4.2 SPRS Risk Assessment Model

Risk assessment*			Score	Level
<i>Exposure (E)</i>	<i>Likelihood (L)</i>	<i>Consequence (C)</i>	$E \times L \times C$	Extreme > 20 High > 10 Medium 3 – 10 Low < 3
Continued (10)	Almost certain (1.0)	Catastrophic (20)		
Frequent (6)	Likely (0.6)	Major (10)		
Occasionally (3)	Possible (0.3)	Moderate (5)		
Infrequently (2)	Unlikely (0.1)	Minor (2)		
Rarely (1)	Rare (0.05)	Insignificant (1)		

* Value between brackets is an imaginary quantified value of the risk weights

MCRS thus assesses implementation risks for an uncertain situation via quantifying all possible values a risky variable could take and determining the relative likelihood of each value. The risk analysis is based upon a set of arguments that specify a range of actual values and distribution of probabilities. MCRS computes all possible results for a variable by recalculating the data repeatedly, each time using different random sets of values for the probability distributions of each of the risk values and related formulas, thus computing hundreds or thousands of "what-if" analyses during one simulation.

However, in many cases and for complex and multi-dimensional initiatives, even MCRS is not the appropriate method to appreciate fully the risks attached and techniques that are more comprehensive are necessary to "investigate" the inter-related risks and assess the direct and indirect impact of changing structural factors.

(3) Bayesian Risk Simulation

Pending the complexity of the process to achieve a particular outcome, defined by the existence of a wide range of quantifiable and non-quantifiable risk factors, Bayesian Network Simulation is frequently used to assess risks instead of the more commonly known MCRS.

Bayesian Risk Analysis supports not only the evaluation of quantifiable risks but also allows diagnostic and predictive reasoning about non-quantifiable uncertainties using risk maps, known as Bayesian networks. A Bayesian network is a directed acyclic graph in which the nodes represent variables and arcs represent statistical dependence relations among the risk variables based upon local probability distributions given values of its parents. Nodes can represent any kind of risk variable, such as a measured parameter, a latent value, or a hypothesis and are thus not restricted to representing random variables as in MCRS. If the variable represented by a node is "observed", then the node is said to be an evidence node. For each node (variable), the set of all other nodes (variables) on which node *X* can directly depend is given by *X*'s Markov blanket⁹.

⁹ The Markov blanket for a node *X* in a Bayesian network is the set of nodes MB(*X*) composed of *X*'s parents, its children, and its children's parents.

After identification and specification of all nodes, the Bayesian network is constructed by connecting all nodes according to the principle that an arc from node A to node B makes variable B directly dependent from variable A, and A is called a parent of B.

In mathematical terms, this relationship is defined as follows:

If for each variable $X_i, i = 1$ to n the set of parent variables is denoted by parents (X_i) then the joint distribution of the variables is product of the local distributions:

$$\Pr(X_1, \dots, X_n) = \prod_{i=1}^n \Pr(X_i | \text{parents}(X_i))$$

If X_i has no parents, its probability distribution is said to be *unconditional*, otherwise it is *conditional*. In practice, the above mathematical approach translates into the creation of a “project risk map” (PRM) as visualized in **Figure 8.4.2**.

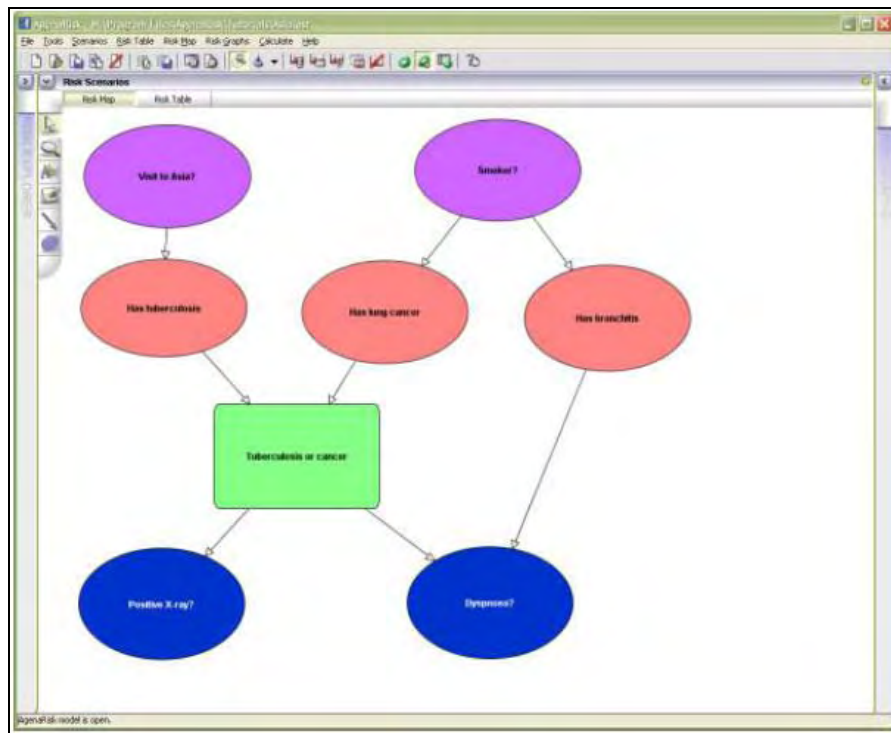


Figure 8.4.2 Bayesian Project Risk Map

Critical in building an accurate PRM is the identification of the risk allocated to each of the nodes in the map and its probability of occurring. Node Probability Tables (NPT) are generally conditional relationships with one or multiple parents and defined by its “conditional probability” which are probabilities that are different depending on the state that the parent node is in.

Probabilities may be based on historical / statistical information or, alternatively, could represent the subjective opinion of one or more experts in the field if no objective information is available. The NPT specifies the conditionality of each risk factor, which can be stochastic and similar to MCRS appreciations or it can be deterministic via SPRS appreciation.

Combining at the end the conditional and unconditional events into a single risk map will lead to a complex inter-related risk assessment framework as shown in **Figure 8.4.3**.

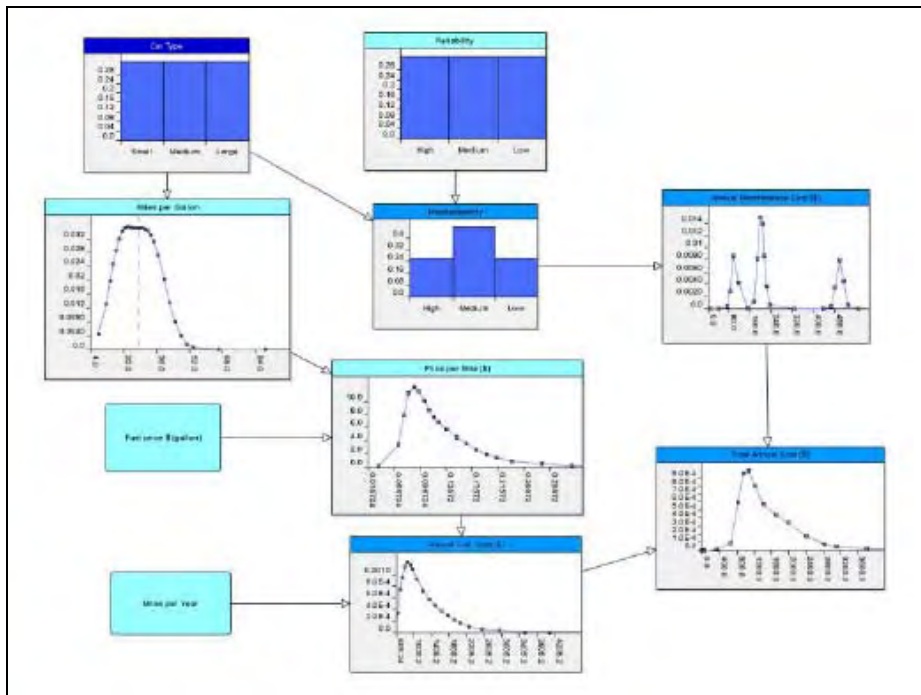


Figure 8.4.3 Bayesian Risk Map

Once the Project Risk Map is finished, the risk assessment is performed by building a risk table, consisting of a range of scenarios with hard evidence or soft observations.

(4) Methodology assessment

Depending upon the scale and scope of projects / investments and organizations, different levels of risk analysis can be applied, starting from basic spreadsheet manipulations for single point risk analysis to complex risk monitoring programs based upon mathematical risk tables.

Each of the methods has advantages and disadvantages and its application will depend on not only the scale and scope of the project, but even more so upon the available resources to evaluate and monitor risks. These resources consist of both human expertise and financial means.

Independent from the question whether resources are available, the growing complexity of transport system development and management and the increasing financial implications of that growth require at least the use of a basic risk evaluation method to investigate individual investments and projects.

8.5 Conclusion and recommendation

The responsibility of monitoring the city’s progress to reach world city status can be placed at different political levels, either national or city-level. In the context of underlying study, the evaluation method to assess progress towards world city status is not considered and therefore, only a general concept is presented on how this progress can be monitored.

A more detailed description of performance and progress evaluation methods is provided for the city's transport system. The responsibility of monitoring performance and progress and thus for the development and utilization of the evaluation model(s) is with DUTA, the Urban Transport Authority for Dar es Salaam.

The above described evaluation methods have their specific advantages and disadvantages. Common however is that the application of each of the above evaluation methods requires consistency and a firm commitment to evaluating the performance of DUTA including its Divisions and Departments, and of the Line Agencies and executing organizations / companies.

It should also be noted that other methods exist and could be used for the purpose of evaluating the performance. The selection of the three performance evaluation methods is based upon the inter-relationship between these methods which allows combining these methods into a single and comprehensive performance evaluation process.

As a conclusion, It is recommended to structure the performance monitoring and progress evaluation process as follows:

1. Outcome Based Management is recommended as overall performance evaluation method with the model itself "controlled" via Performance Based Management. A Bayesian Risk Analysis model can be considered to evaluate the risks of DUTA operations, therewith substantially improving the level of detail and accuracy of the monitoring process; and
2. LogFrame or Project Cycle Management is recommended for the evaluation of specific projects / investments. It is strongly recommended to complement project evaluations with Monte Carlo Risk Analysis, in particular to investigate the financial risks of the project.

Chapter 9 Centre for Transport Studies

9.1 Capacity Gap Assessment

A preliminary study on capacity development¹ identifies that the capacity of academic and training institution is limited, which lags behind in strengthening transport database management, conducting training on transport planning and infrastructure management, and conducting necessary transport researches and evaluations. In order to strengthen the transport-planning function of major urban authorities, there is a growing need for capacity building of the academic institutions in the field of transport planning, utilizing the transport database and traffic demand model to be developed by JICA.

The following discussion reveals the capacity gap of the urban transport planning skill, taking an example of the Centre for Transport Studies as one of the interventions of capacity development.

9.1.1 Necessity of Centre for Transport Studies

A focal issue, which will have to continue to be pursued to counter some of the problems, raised in 2003 National Transport Policy, is non-application of scientifically based planning methodologies fitting the environment coupled with non-existent data systems. In many countries, the academic and training institutions play a vital role in development of the comprehensive planning tools and provision of the skillful workforce. However, the capacity of academic and training institutions in Tanzania is limited, which causes a lag in strengthening of transport database management, conducting of training on transport planning and infrastructure management, and conducting of necessary transport research and evaluations. In order to strengthen transport-planning functions of major urban authorities, there is a growing need to establish the focal point for the transport studies in the field of transport planning, utilizing the transport database and traffic demand model to be developed by JICA.

Also, the National Transport Policy and Strategy Papers emphasize the importance to enhance the institutional capacity of the concerned authority to effectively coordinate urban transport management issues. The target is set to strengthen the transport-planning function of major urban authorities by forming a transport planning unit with requisite planning and logistic personnel by 2012, which is considered consistent with the idea of this Centre.

¹ The Progress Report for Dar es Salaam Transport Policy and System Development Master Plan, July 2007 (JICA)

9.1.2 Supply-side Analysis

According to a series of interviews with the stakeholders, the academic and training institutions, which may have the capacity to accommodate the Centre are UCLAS, CoET, DIT and NIT. A historical background and the general information, including the department and offered degrees, is summarized as below:

University College of Lands and Architectural Studies (UCLAS) became a constituent College of the University of Dar es Salaam in 1996. It was originally founded in 1956 as a Survey Training School and begun offering tertiary level education in the areas of Land Management Vocation. Later, areas of Architecture, Building Economics and Environmental Engineering were added. The Institute of Human Settlement Studies, which is an integral part of UCLAS, was founded in 1979 as the Centre for Housing Studies, a joint project between the government of Tanzania and Netherlands. The College now has two Faculties, one Institute, a Centre for Continuing Education and a Centre for Information and a Centre for Information and Communication Technology.

Table 9.1.1 Selected Department and Degrees at UCLAS

Institution/ College/ University	Department	Diploma/Degree
University College of Lands and Architectural Studies	Faculty of Architecture and Planning	BA of Science in Urban and Regional Planning BA of Science in Housing and Infrastructure Planning and Management BA of Science in Rural and Regional Planning BA of Architecture BA of Science in Interior Design BA of Science in Landscape Architecture BA of Science in Building Economics BA of Science in Building Surveying BA of Science in Construction Economics and Management
	Faculty of Lands and Environmental Engineering	BA of Science in Real Estate BA of Science in Land Management and Valuation BA of Science in Property and Facilities Management BA of Science in Environmental Engineering BA of Science in Environmental Science and Management BA of Science in Municipal and Industrial Services Engineering BA of Science in Environmental Laboratory Science and Technology BA of Science in Geo-informatics BA of Science in Geo-matics BA of Science in Geo-dectic Science Diploma in Geo-informatics MSc in Environmental Technology and Management MSc in Real Estate MSc in Land Management MSc in Geo-matics MSc in Urban Planning and Management MSc in Regional Development Planning and Management MSc in Construction Economics and Management MSc in Architecture Doctor of Philosophy
	Institute of Human Settlement Studies	Environmental Management (EIA, Water Supply and Sanitation, Pollution, Solid/Liquid Waste Management, Disaster Management, Energy) Settlements Development and Management (Land and Property Management, Infrastructure Provision, Governance and Policies, Urban and Rural Economy and Poverty, Urban and Rural Planning) Housing Development, Building Materials and Technology (Building Materials and Construction Technology, Building Design, Construction Management, Housing Provision and Consumption)
	Centre for Continuing Education	The programmes include short courses, seminars and workshops covering the field of Architecture, Building Economics, Environmental Engineering, Land Management and Valuation, Land Surveying and Urban and Rural Planning
	Centre for Information and Communication Technology	

Source: Prepared by JICA Study Team based on the Prospectus of UCLAS

The College of Engineering and Technology (CoET) comprises three Faculties namely Civil Engineering and the Built Environment, Electrical and Computer Systems Engineering and Mechanical and Chemical Engineering. The Faculties are constituted by 13 departments including the Department of Transportation.

Table 9.1.2 Selected Department and Degrees at CoET

Institution/ College/ University	Department	Diploma/Degree
College of Engineering and Technology	Faculty of Civil Engineering and the Built Environment	BA of Science in Civil and Structural Engineering BA of Science in Civil and Transportation Engineering BA of Science in Civil and Water Resources Engineering MSc in Construction Management MSc in Highway Engineering MSc in Structural Engineering MSc in Water Resources Engineering Postgraduate Diploma in Civil Engineering Doctor of Philosophy

Source: Prepared by JICA Study Team based on the Prospectus of CoET

The Dar es Salaam Institute of Technology (DIT) is an Institution of Technical Education established in 1997 through an Act of Parliament. DIT offers full and part time engineering courses leading to the awards of Ordinary Diploma, Bachelor of Engineering and Full Technician Certificate. These courses are delivered by 6 academic departments: namely Civil Engineering, Electrical Engineering, Electronics & Telecommunications, Mechanical Engineering, Computer Studies, and Laboratory Technology.

Table 9.1.3 Selected Department and Degrees at DIT

Institution/ College/ University	Department	Diploma/Degree
Dar es Salaam Institute of Technology	Department of Civil Engineering	Basic Technician Certificate in Building and Civil Engineering Technician Certificate in Building and Civil Engineering Ordinary Diploma in Building and Civil Engineering Basic Technician Certificate in Mining Engineering Technician Certificate in Mining Engineering Ordinary Diploma in Mining Engineering FTC in Civil Engineering FTC in Highway Engineering Higher National Diploma in Building Engineering and Transportation Engineering Bachelor in Building Engineering and Transportation Engineering
	Building and Civil Engineering	Short courses including: Supervision of construction works, Building construction and maintenance, Quality control, EDM and computing for site surveying, Civil engineering computer applications, Surveying for civil engineering and building technicians and engineers, Construction and maintenance low cost highway structures, Safety on highway work zones, AutoCAD for architectural design, Business management, Design of low cost water supply projects, Labour based road maintenance, Highway structures maintenance, Fire safety in building structures, Contract administration, Site management, Health and safety in construction sites, Traffic safety analysis, Solid waste management, Concrete Materials

Source: Prepared by JICA Study Team based on the Prospectus of DIT

The National Institute of Transport (NIT) is a Public Higher Learning Institution, established by the NIT Act. No. 24 of 1982. Currently the Institute is under the Ministry of Infrastructure Development. The history of NIT dates back to 1975, when it was formed for the purpose of training manpower for the transport sector and its allied activities. The complexity of the transport industry and intricacies involved in its management necessitated the introduction of comprehensive training programmes for the sector. Core functions of NIT are to: i) conduct trainings and ii) to carry out research, consultancy and publication services.

Under training, NIT conducts the following courses. NIT also provides other short-term courses related to Professional Driving, Vehicle Inspection, Transport Management and Vehicle Repair and Maintenance.

Table 9.1.4 Selected Department and Degrees at NIT

Institution/ College/ University	Department	Diploma/Degree Note: *the degree program starts in 2006/07
National Institute of Transport	Transport Management Department	Diploma in Freight Clearing and Forwarding Diploma in Logistics and Transport Management Advanced Diploma in Transport Management Advanced Diploma in Freight Clearing and Forwarding Bachelors Degree in Logistics and Transportation* Bachelors Degree in Transport Economics* Bachelors Degree in Transportation Engineering* Masters Degree in Transport Planning and Economics*
	Automobile Engineering Department	Bachelors Degree in Automobile Engineering* Advanced Diploma in Automobile Engineering Diploma in Automobile Engineering
	Road Safety Department	Short-term courses including Drivers and Transport Officers Course, Advanced Drivers Course, PSV Drivers Course, Engine Overhaul, Auto Electricity, Fuel Control and Tire Care and Maintenance, Vehicle Inspection and Driver Examination, Vehicle Inspection and Appraisal
	Research, Consultancy and Publications Department	

Source: Prepared by JICA Study Team based on the Prospectus of NIT

9.1.3 Demand-side Analysis

In a close consultation with the Ministry of Infrastructure Development and collaboration with other academic institutions, a consensus has been made on the agenda of CTS, which includes strengthening transport database management, conducting training on transport planning and infrastructure management, and conducting necessary transport research and evaluations, so as to enhance the institutional capacity of the concerning authority to effectively coordinate urban transport management issues. It is agreed that the following phases are necessary to establish the CTS:

Phase 1: Transport Training Centre

The Transport Training Centre will be initially created as a special unit attached to the existing academic and/or institutions. The Centre will be tasked to upgrade the capacity of, mainly,

government personnel concerned with transport through intensive and practical training in the fields of traffic engineering, planning and management.

Phase 2: Department of Transport Planning

The Department of Transport Planning will be established and expand the functions of the Centre to include transportation research. The Department will also offer the students the bachelor degree programme.

Phase 3: Centre for Transport Studies

CTS will be developed as a more independent body that strengthens both training and research functions. The Centre will conduct research and consultancy works in the various fields of transportation and administer graduate programs in transportation.

The following table shows the possible units taught in the Centre compared to the unit available at the candidate institutions and indicates a lack of transport modeling and planning expertise. When establishing such a Centre, the initial step of the capacity development plan should focus on the provision of expertise of transport modeling and planning, which may be accomplished through, for instance, the train-the-trainer programme at the candidate institutions.

Table 9.1.5 Possible Units at CTS and Availability at Candidate Institutions

Units	UCLAS	CoET	DIT	NIT
Core Units				
TRANSPORT AND ITS CONTEXT		X		X
QUANTITATIVE METHODS	X	X		X
TRANSPORT ENGINEERING AND OPERATIONS		X		X
TRANSPORT ECONOMICS		X		X
(TRANSPORT DEMAND AND ITS MODELLING)				
TRANSPORT POLICY				X
Optional Units				
HIGHWAY ENGINEERING		X	X	
ROAD TRAFFIC THEORY AND ITS APPLICATION		X		X
PUBLIC TRANSPORT POLICY, MANAGEMENT AND ENGINEERING				X
TRANSPORT SAFETY	X			X
(QUANTITATIVE TECHNIQUES FOR TRANSPORT ENGINEERING AND PLANNING)				X
(TRANSPORT IN DEVELOPED/DEVELOPING COUNTRIES)				
TRANSPORT INFRASTRUCTURE PROJECT MANAGEMENT (ADVANCED TRANSPORT MODELLING)	X	X		X
(UNDERSTANDING AND MODELLING TRAVEL BEHAVIOUR)				
TRANSPORT AND THE ENVIRONMENT	X	X		
RAILWAY POLICY, MANAGEMENT AND ENGINEERING (DESIGN OF ACCESSIBLE TRANSPORT SYSTEMS)				X
FREIGHT TRANSPORT				X
ASSET MANAGEMENT, PROJECT PLANNING AND MAINTENANCE		X		X
DESIGN OF ROADS, RAIL, BRIDGES, TUNNELS AND EMBANKMENTS		X	X	
URBAN AND REGIONAL PLANNING	X			
GEOGRAPHIC INFORMATION SYSTEM	X			

Note: Units in parenthesis are missing items.
 Source: Prepared by JICA Study Team

9.2 CTS Development Plan and Schedule

9.2.1 Progress on Centre for Transport Studies

Steering Committee for this Study was held on 24 July, 2007 and confirmed the importance of the Centre for Transport Studies. All the members of the Steering Committee agreed with the National Institute of Transport to absorb such a function of the center. Following the Steering Committee, Stakeholders' Consultative Meeting was hosted by the National Institute of Transport on 3 August and participated by the stakeholders from the Ministries and Local Government. This meeting confirmed the need for technical assistance from external agencies and prepared a draft application for same, through further consultations among the stakeholders. Stakeholders Consultative Meeting was once again held on 8 August and reviewed the draft application form for Japanese technical assistance, which was subsequently submitted to the MOID. At the Steering Committee on 4 December, JICA Official has confirmed the receipt of the application for technical assistance and that this application is under consideration at JICA HQ.

Box: Overall progress and activities towards Centre for Transport Studies in 2007

July	Steering Committee Meeting (24/July)
Aug	Stakeholder Consultative Meeting (3/Aug) - Draft Roll-out Plan Stakeholder Consultative Meeting (8/Aug) - Finalize and submit application form to JICA through MOF
Sep	NIT staff enrolled in short term training in Japan. NIT staff enrolled for MSc in Urban Planning at Ardhi University. NIT accommodates an office and equipments for CTS.
Dec	NIT requested JICA to co-host the technical seminar in Feb.

9.2.2 CTS Development Plan

(1) Overall Goal

The overall goal of the CTS is to enhance the institutional and individual capacity of relevant organizations to effectively coordinate and solve the urban transport management issues and problems. The target set in the Roll-out Plan is to strengthen transport-planning function of relevant organizations by forming transport planning unit with requisite planning and logistic personnel by 2012.

(2) Project Purpose

The purposes of the CTS are as follows:

- i) To educate and train the officials and potential professionals who will take charge of transport policies, planning, engineering and management, and

ii) To promote research activities in transportation to establish the basis with which we can scientifically plan and manage comprehensive transport policies to promote people's welfare and the nation's economy.

(3) Development Plan

Through the consultative meetings among MOID, DART Agency and NIT, the concrete development plan to establish the CTS has been discussed. It is agreed among these stakeholders that the following phases are necessary for NIT to absorb and develop CTS and it would take 5 years to fully function CTS:

Phase 1: Transport Planning Training Unit (TPTU) (2 Years)

Transport Planning Training Unit (TPTU) will be initially created as a special unit attached to the National Institute of Transport (NIT) in the department of Logistics and Transport management (L&TM). The Unit will be tasked to build capacity mainly of government personnel responsible for transport through intensive and practical training in the fields of transport planning and policy, traffic engineering, safety, transport environment and management.

Phase 2: Department of Transport Planning (3 Years)

The Department of Transport Planning will be established and expand the functions of the Transport Planning Training Unit to include transport research and Consultancy. The Department will also offer the bachelor degree in transport planning and transport engineering. The department will also offer short course training that will include the following:

- Traffic management for Law Enforcers
- Contemporary traffic management technologies
- Urban Transport Development course for Executives
- Environment and Transport course for Executives
- Regional Transport Development course for Planners

Phase 3: Centre for Transport Studies (CTS) (After completion of phase 2)

The department of Transport Planning will be developed to CTS which will strengthen both training and research functions. The Centre will conduct research and consultancy works in various fields of transport and administer graduate programs in transport, which will include;

- Master of Science in Logistics and Transport Management
- Master of Science in Transport Planning (Urban/ Regional)
- Master of Science in Transport Engineering
- Master of Science in Traffic Management
- Master of Science in Transport Economics

9.2.3 CTS Development Schedule and Monitoring Factors

NIT has developed the roll-out plan for establishment of CTS, which indicates the time-frame and financial requirement for the infrastructure development and capacity building. The following tables summarize the short-term roll-out plan and activities, agreed during the above-mentioned consultative meetings.

Table 9.2.1 Roll-out Plan (Infrastructure and Equipments Development)

Year	2008/09	2009/10	2010/11	2011/12	2012/13
Activities					
Research building - training at the existing building. - rehabilitating a research centre for CTS	—————→				—————
Research library - procure research materials - rehabilitating a research library for CTS	—————→			—————	
Computer lab - equipping computer/software - upgrading a computer lab for CTS	—————→				—————
Equipments					
- procure equipments					
- procure supplemental equipments and expendable supplies					
- procure research vehicles				1 research vehicle	1 research vehicle

Table 9.2.2 Roll-out Plan (Capacity Building)

Year	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Activities						
Development training programme	—————→					
Academic & research programs established and approved			—————→			
Training of trainers (executives)		10 executives	10 executives	15 executives	15 executives	20 executives
Short-term training in abroad		2 lecturers	2 lecturers	2 lecturers	—————→	
NIT equipped with necessary facilities (i.e., computers and software)		—————→				
NIT accreditation by NACTE to offer Master degrees					30 students	45 students
Long-term scholar programme in abroad			1 lecturer	1 lecturer	1 lecturer	1 lecturer
CTS equipped with necessary facilities (i.e., research building, library)			—————→			

NIT also established a monitoring system to monitor and evaluate the progress of CTS development. The following monitoring ideas are agreed as the monitoring elements during the above-mentioned consultative meetings.

- ① Academic and research programmes and training programmes are (re-) formulated;
- ② Trainers at the institutions are well trained and become capable of strengthening transport database management, conducting training on transport planning and infrastructure management, and conducting necessary transport researches and evaluations;
- ③ Selected trainers from NIT undergo special training courses and industrial tours in abroad; and
- ④ NIT is well equipped with necessary computer facilities and accessories, such as computer(s), server(s), CAD System, workstations, and software. In the long run, the programme will generate the following outputs.
- ⑤ NIT is accredited by the National Council Technical Education (NACTE) and will offer the master degree programmes (e.g., MSc in Transport Planning);
- ⑥ NIT trainers/students is trained on regular basis in abroad under the exchange programme which will be established in collaboration with oversea academic institutions; and
- ⑦ NIT is well equipped with necessary research and consultancy facilities, including test vehicles, office equipment and library materials.

Appendix A: National Transport Policy Issues

Chapter 3 raised a number of specific issues with the National Transport Policy that affect the likelihood of successful implementation. The following discussion contains a specific analysis of where the policy can be improved to ensure a better connection between policy and implementation.

The issues of the policy were:

- A disconnect between regulation & ‘on-ground’ reality (how realistic are regulations and can they be enforced?).
- A missing link in the implementation process being the lack of incentive, the means and accountability on the part of the implementing agency to perform in achieving the policy objectives.
- The lack of pragmatic & logical frameworks necessary to translate policy into action.

These policy/governance problems are not unique to Dar es Salaam, as they feature consistently in government policies worldwide. However, the relative problems of translating policy into action differ according to culture, education and the mind-set of the community and the strength of institutions.

The disconnect between regulation and reality

This first issue relates mainly to the strength of institutions; whether they can they enact and enforce the regulations. This goes further than just the strength of the agency in carrying out its task; it also dependant on the quality of the legislation or the particular regulations under which they operate. Institutional strength is dependent on sound legal frameworks, clear objectives and the means to enforce (*See Box 1*).

Box 1

For example: Consider that in many cities, rapid growth and urbanization has exceeded the capacity of the legal structures to keep up with changing circumstances, causing laws to become increasingly outdated and irrelevant. A classic example is where a Transport Act becomes outdated by rapid increase in traffic and the changes in public service delivery.

When this happens, the authorities are either hamstrung by inadequate legal frameworks, or begin to make arbitrary decisions and/or ad-hoc rules (e.g. ministerial directives).

Poor regulatory strength results in lax enforcement which develops a culture at street level which is more or less free of regulation, where the market then sets the rules. This also sets a climate for rent seeking by local enforcement bodies (bribe taking for minor offences or trumped up charges).

The ‘missing link’ in implementation

The second issue raises the question of what motivates agencies to implement policy successfully. It is relatively easy for governments to develop and enact policy; but getting this policy implemented so it achieves its objectives is a far more difficult task. Does success relies only on ‘goodwill and sincere efforts’? What options are available to government when its policy fails in implementation?

It is a common in almost all developing cities to see a large gap between policy and regulation and what occurs in reality. Strangely, when governments identify this gap, they often respond by enacting more regulations to attempt to repair the problems. While adding another package of regulation to already unenforceable regulations may be futile, it is also an error to regard enforcement as a way of addressing failing regulations. Doing so, is a ‘back to front’ approach, in the same way that the final exam will not fix a failed education system - yet this is a common to see this occurring (*See Box 2*).

More attention is needed on the implied (or real) contract between the parties, be it in the form of policy, charter, or directive, so that accountability is defined.

Box 2

For example: The operations of daladals and vipanyas being enforced by police where the regulatory structure is weak and ineffective and where there is insufficient monitoring and inspection. The Police then carry the burden of enforcement and any subsequent failures are then blamed on a ‘lack of enforcement’.

However, enforcement does not have the capacity to fix systemic structural problems; these can only be solved by structural improvements to regulation and management by the concerned agencies.

Police enforcement should only serve as a ‘report card’ on how the system performs, serving to punish ‘wrong-doers’ and testing the compliance of the system to technically set standards of behaviour and quality.

The lack of pragmatic and logical frameworks

Finally, the third point is another ‘disconnect’ between policy and its desired outcomes due to the lack of a logical framework. A common problem of development and restructuring is that policy strategies are often based on unrealistic or false (but popular) assumptions, which lack evidence of sufficient logic to achieve policy intentions. Sometimes the policy objective is overshadowed by the strategy, and the strategy ‘becomes the objective’ focusing attention on the strategy instead of whether the policy objectives are reached.

Most governments (and also development agencies) appear to be prone to this misplaced focus and this has become a learning curve on a worldwide scale. Solving state administration issues has become the realm of convenient ‘fixes’ (such as divesting responsibility through sell-offs), or a ‘cookie-cutter’ approach (one size fits all) and popular ideology-driven responses; these all being examples where there is preoccupation with the ‘method’ instead of the outcome.

A good example is the role of privatization as a ‘fix’ for solving inefficiencies of state-run enterprises (*See Box 3.*)

Box 3:

Certainly the private sector has much to offer, but the reasons that privatization works have more to do with incentives for efficiencies and defined accountability rather than their status of being ‘private’.

Privatization forces governments to address roles, responsibilities, costs and risk in their relationship with the private sector, thus forcing a more commercial approach to the provision of infrastructure and services.

People of all sectors respond and perform according to the 'rules of the game' and the public sector can perform equally as well as private industry, and perhaps can achieve more, as it balances a more sensitive social paradigm into its management.

Privatization of commercially viable instrumentalities and service delivery is a most favored option with some notable successes, but the privatization experience is littered with poor social outcomes and failures. Rizzo (2001)¹ commenting on the lack of information on economic impacts of privatization, concludes that “the emphasis upon the change of ownership without reference to post privatization performance turns privatization from a means to an end in itself” (p134). The vibrant private sector hoped for by the privatization advocates has proved illusionary.

To demonstrate the above observations, three examples of a lack of outcome based objectives and logical framework in the National Transport Policy (2003) are given here, to demonstrate where the policy ‘disconnects’ from achieving its objectives:

Example 1: (where indicators do not relate to the objective)

Section 2.6 Efficiency

Policy Objective: Promote efficiency in the transport sector

Policy direction/strategy: Promote privatization, establish regulatory bodies and agencies and transport associations.

Indicators: Presence of the private operators, regulatory bodies, agencies and associations.

Problem: Gives no measurement of efficiency, and assumes that these bodies will create efficiency. So, how to know if the objective is achieved? The indicators should be able to measure actual efficiency improvements.

Example 2: (where there is a lack of pragmatic frameworks to deliver the policy objectives)

Section 2.8 Acquire and Apply Modern Transport Technology &

Section 3.4 Improving Urban Road Transport Services:

Both these sections employ strategies that include private sector involvement, investment, coordination and facilitation.

Problem: Does not specify how these things will be initiated. What should be included is the development of a sustainable business model to create the climate and conditions for investment.

¹ Matteo Rizzo 2001 *Being taken for a ride: privatisation of the Dar es Salaam transport system 1983–1998 Journal of Modern Africa Studies*, 40 1(2002), pp.133-157 Cambridge university Press

Example 3: (where the policy is the strategy)

Section 2.9 Capacity building

Here the policy objective is to ‘foster capacity building’ so the policy objective is in fact the strategy.

Problem: The policy lacks a clear outcome except the assumption that fostering capacity building will improve capacity. Creating incentives for capacity building (for example, increasing accountability) and developing institutional focus on capacity building is a more logical linkage that connects the strategy to the ‘hoped for’ outcome.