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**« Gestion durable des déchets et de l'assainissement urbain »**

ACTION A.5b

"L'amélioration des services de la ville de Moshi, Tanzanie.  
Analyse de la demande et régulation du secteur."

**La régulation Institutionnelle**

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## **1. Introduction.**

Our study which includes a willingness to pay survey with its subsequent demand analysis, as well as that of financial and environmental regulation required an examination of the institutional framework to go with the reforms in the water and sanitation sectors. As our study was based on demand driven logic, it became imperative to examine whether there are institutional reforms, which would make the implementation of such logic not only possible but also sustainable.

Many actors in Tanzania are increasingly recognizing the importance of confronting sanitation problems. These actors include the government at central and local levels, donors and investors as well as habitants of urban areas who have become more aware of the deadly diseases, which can spread because of poor sanitation. Until mid 1990s non-governmental initiatives were not encouraged in the domain of public sanitation. Initiatives had to come from the government and from the ruling party in an ad hoc manner. As it happened urban governance in general and urban sanitation in particular were not high in the agenda. Consequently urban planning went down the drain. The planned parts of the City of Dar Es Salaam and the other big towns remained static; while in settlements growing to become towns they were non-existent.

As there are now concerted efforts to reforms leading to new initiatives, it becomes important to examine whether the institutional framework is facilitating such efforts. As Wright points out, the goal of institutional framework in strategic sanitation is to create incentives that are compatible with the goals of investment and operational efficiencies.

Incentives are needed for the participation of users at all stages, for transparency and accountability, for management at the lowest appropriate level, for the use of step by step approach and for competition and private sector participation (Wright 1997 p.29).

In the case of Moshi in Tanzania we need to examine whether the institutional framework for sanitation matches with the logic of reform which is occurring in the sector. Whether it recognizes and makes way for intelligent and useful initiatives on sanitation from different actors. We believe that for the institutional framework to be useful to the people of Tanzania in general and Moshi in particular, it must be based on the reality and real needs on the ground. International experiences and new techniques in sanitation need to be taken in, but these have to be translated to the Tanzanian situation. It is only in that context that reforms can be sustainable in the long run.

## **2.1. Objectives and hypotheses on institutional regulation.**

The aim of introducing the question of regulation in our analysis is to bring into the fore the need for good governance and the pursuit of coordination between public and private actors so as to ensure coherence in the implementation of sanitation policies.

We developed a number of research questions which we believed would facilitate the in the analysis of institutional regulation. In the first we ask as to what are the positions and logic of different institutions involved in the direction of sanitation. These institutions

include the Ministry of Water, the Urban Water and Sanitation Authorities (UWSAs), the Municipality and Ward committees.

Another research question sought to establish the fields of competence, the procedures of planning and control as well as legal and financial means available to official institutions dealing with sanitation. The third research question concerned the forms and conditions of developing coordination between different actors including the civil society.

The axis of regulation of the sector was guided by the principal hypothesis that the regulation of local public service cannot be reduced to just organizations and the measures they make. It is rather a complex process of coordinating different actors whose logic of action is influenced by economic, political, social and cultural aspects.

Without pretending to be exhaustive the study then proposed to look at a number of issues of coordination in the areas of finance, institutional framework and environment. In the domain of institutional regulation the main hypothesis was that the decentralization, which has created Urban Water and Sanitation Authorities (UWSAs), seem to be technocratic and based on the logic of supply rather than that of demand which is the logic of current reforms. We proposed to look at the authority in relation to its area of jurisdiction, its procedures of planning and control, its legal and financial means and its relations with other actors, namely the Municipality, Ward committees and the private sector. The logic and actions of MUWSA was to be examined in the context of urban development policies with its legacies and a new logic.

The objectives were two. The first was to establish the strengths and weakness of the institutional set up of Moshi Urban Water and Sanitation Authority (MUWSA) to deal with sewerage system in Moshi. The second was to look at the MUWSA and the Municipality set up in relation to dealing with the sanitation question in the whole of Moshi.

### **1.3. Methodology**

Since in institutional regulation we were seeking to establish the ability of the current institution framework to facilitate strategic sanitation, it became important to see whether previous barriers have been removed. In other words whether there is a qualitative break with the past. Legacies and other negative behavior have a tendency to be resilient in Tanzania even as reforms are being made.

It became important through literature to examine the logic of the reforms and how they differed from past both at the level of policy and in practice.

After that there were two sets of interviews, at the Ministerial and MUWSA levels and Municipality and sub-municipality levels. The purpose was to establish formal and informal relationships existing from the Ministry to the Municipality. It became important also to establish the type of and extent of initiatives being undertaken in relation to the magnitude of the sanitation problem in Moshi. The sanitation task in Moshi can not be reduced to the area covered by the sewage network operated by MUWSA. The areas not covered by the network, including some unplanned areas pose the most serious sanitation challenges in Moshi today.

### **3. The Logic of the Institutional Framework which established MUWSA**

Examining the logic of establishing UWSAS necessarily includes a critical look at the system, which it is attempting to replace. A system which for long and unsuccessful years tried to deal with sanitation problems in the urban areas of Tanzania.

#### **3.1 The Legacy**

With the establishment of UWSAs the supply of portable water and part of sewerage disposal have been put together. In a legacy set up since colonialism the supply of water has been the responsibility of the Department of water in the Ministry responsible for water. Sanitation for its part has been the responsibility of town councils or Municipalities in the local government system.

The system established by colonialism survived the first decade of independence from 1961 to 1971 but would suffer from the decision by the Central Government to abolish the local government system in 1971. The local governments which included town councils for urban areas and District Councils for rural areas, were replaced by a 'decentralized" system which in reality was a deconcentration of the central government to the Regional and District levels instead of devolution of power to those areas. Central government cadres were sent to the levels as managers and they operated without elected councils of local people. Dar Es Salaam City became a region while major Regional towns became districts. The sanitation unit in the Municipalities became part of the new administration. Although still in the Department of health, the emphasis on preventive measures including cleansing was diminished. Sanitation had to get the

attention of Regional and District Directors whose priorities were more with implementing policy directives from above than with the local sanitation.

The consequences were a serious deterioration of urban services and infrastructures. According to Kironde decentralization made a bad situation worse (Kironde, 1999 p.110). The situation had reached crisis level in the capital Dar Es Salaam for everybody to see. By 1976 the government had set up a committee to study the situation and give recommendations. The logical solution was to recommend the re-establishment of local governments. Local government authorities were restored starting with Dar Es Salaam whose sanitation situation was seen as explosive. Indeed for the first time the country had seen the entry of cholera in 1976. It started in Dar Es Salaam and spread elsewhere in the country. The restoration of Dar Es Salaam city was done under an interim legislation in 1978 because of the urgency of the situation.

Permanent legislation restored the rest of the local government councils in 1982. The specific legislations were the local Government (Urban Authorities Act of 1982 and the Local Government (District Authorities) Act of 1982. Urban Authorities in the form of towns, municipalities and city councils, are charged with most day to day duties and responsibilities concerning sanitation. The 1982 Urban Councils Act give them mandate for both solid and liquid waste. This involves actual collection and disposal of solid waste but also to provide for the disposal of all sewage from all premises and houses. The urban councils can also make by-laws to ensure that residents participate in sanitation activities.

The institutional framework which guides MUWSA today which is based on autonomy and taking up a sewerage component came from trends which were emerging concerning the provision of portable water and sanitation services since mid 1980s but especially in the 1990s. The first trend was the recognition of the limitations of providing urban water through a central government department. In 1984 the National Urban Water Authority (NUWA) was established to deal with the supply of urban water. The legislation that established NUWA expected it to be responsible for the supply of water in all urban areas of Tanzania. In practice it ended up as an organization supplying water in the city of Dar Es Salaam. That fact was recognized and NUWA was transformed into Dar Es Salaam Water and Sanitation Authority in 1997, again a precursor to the Authorities to come. When NUWA was established other urban areas continued to receive water from the office of the Regional Water Engineer. The task of completing establishing Authorities was achieved when 18 UWSAs were established in 1998 to replace the Regional Water Engineers in the supply of Urban Water, leaving them with the responsibility of rural water supply.

The second trend was the renewed attention given to urban sewerage networks in the 1990s. This was partly donor driven in the context of increased global attention to urban sanitation problems and the need for strategic sanitation. In 1992 a Sustainable Dar Es Salaam Project (SDP) was established. It oversaw the formulation of policies related to waste management in Dar Es Salaam (Kironde, 1999, p.130).

In liquid waste management, the Dar Es Salaam Sewerage Sanitation Department (DSSD) was established with the assistance of the World Bank. The Department was



first located in the Ministry of Lands, Housing and Urban Development, since it was part of a wider Sustainable Urban Program. It was later transferred to the Ministry of Water before it became a semi autonomous department under the Dar Es Salaam City Council. These were the first step to link water supply and sanitation. The situation remained ambivalent as to whether it should be linked to the City or Municipality. We are going to argue that the ambivalence persists because despite a part of sewerage has been put under MUWSA the task of sanitation is wide and it falls under the Municipality.

The third trend is new form of decentralization. The trend towards autonomous organizations as opposed to departments of Central or Local Government. Such decentralization however allows for an increased rate of privatization as well the involvement of civil society organizations.

The establishment of UWSAs therefore followed logic of reform, which has been occurring in water supply and sanitation. The concern is efficiency in the supply of those services. It falls within the reform logic, which is the challenge for developing an institutional framework for the sanitation sector. The question is how one can achieve investment and operational efficiency with low transactions costs (Wright, 1997, p.32).

In the case of Moshi and 17 other towns the government of Tanzania decided on semi autonomous bodies in the form of UWSAs. In the case of Dar Es Salaam the problems of water supply and sanitation were deemed to be of such high magnitude that the solution would be sought in the form of privatization to involve a large international

corporation with experience in the domain. As it happened a British Company Biwater in collaboration with a German company HP Gauff won the tender after two French Corporation SAUR and Vivendi withdrew in the last minutes. If agreement is going to be signed the companies will run the activities of DAWASA for 10 years. Meanwhile there will be a program which will cost approximately USD 140 million to be financed by the World Bank, Africa Development Bank, French Development Agency, European Development Bank and DAWASA itself (Mtanzania, Newspaper, 5<sup>th</sup> October 2002).

### **3. MUWSA and the Ministry of Water**

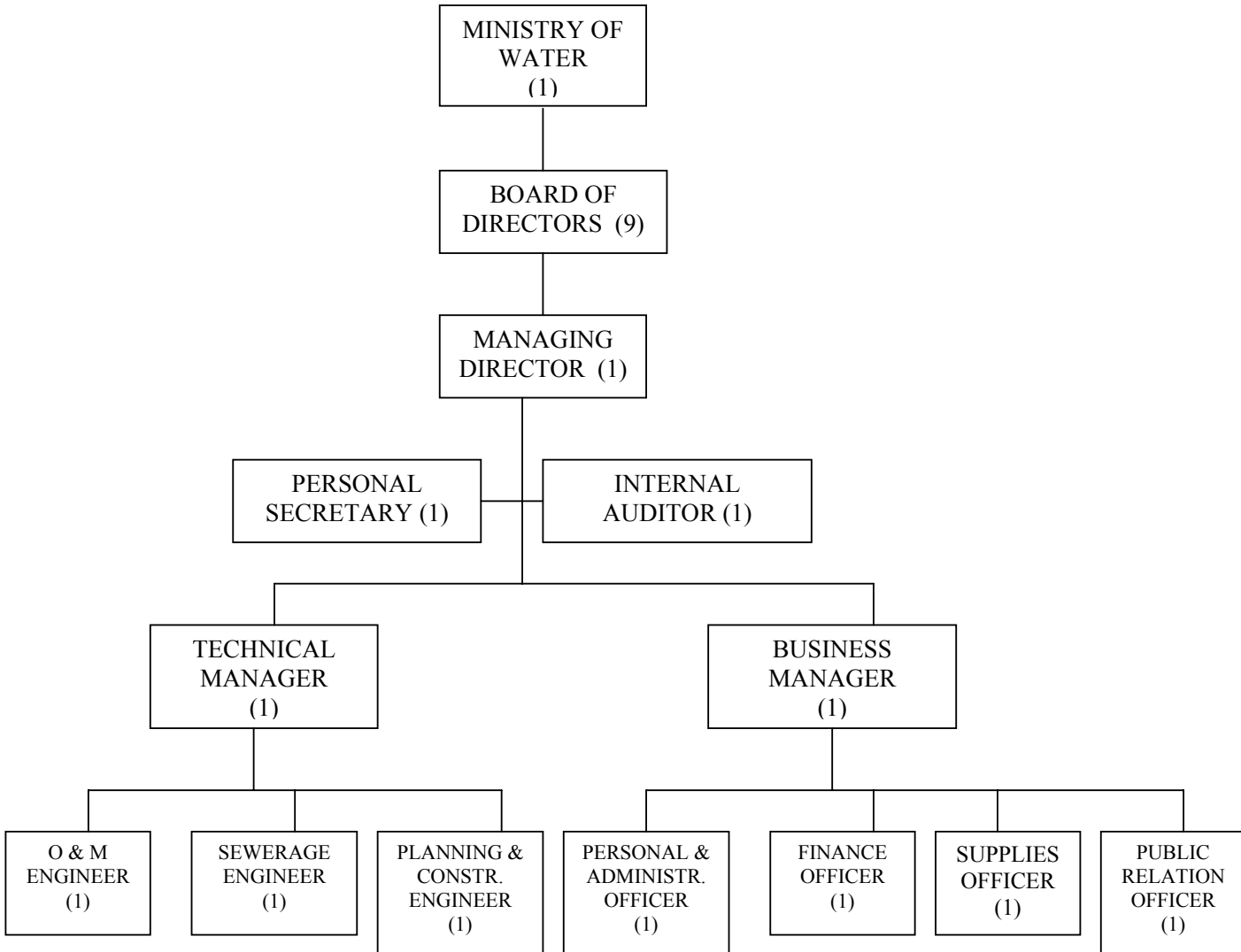
As indicated above the task of sanitation in Moshi is the responsibility of two institutions MUWSA and Municipality. The establishment of MUWSA in 1998 falls in the process of reform, which is going on not only in Tanzania but also else where in developing countries concerning the sanitation sector. This has occurred through recognition of the great importance of the improving sanitation in the urban areas. It is recognized that there are 3 strategies to ensure investment and operational efficiency in the sanitation. These are first applying commercial principles. Secondly, broadening competition and thirdly involving non-formal institutions. In achieving the required results in public sanitation utilities, a number organizational tactics are proposed and one can choose the variant be used. One could use performance agreements, using such criteria as service quality, productivity and administrative and financial efficiency. Another mechanism however could be corporatization or giving the enterprise the same independent legal status as a private firm. Corporatization is supposed to insulate utilities from government constraints and pressures while allowing the government to continue to set out base goals (Wright, 1997, p.32).

MUWSA is an example of corporatization. It has been given a good degree of autonomy when some people, including workers of MUWSA believe that MUWSA is autonomous in relation to the Ministry of Water the status of MUWSA send it was completely and that the Ministry of Water had no jurisdiction over it.

The Director of MUWSA recognizes that the Ministry of Water is responsible for policy including selecting the organizational form of UWSA's. The 1997 Ordinance provided for different bodies from which one could chose one for providing water and sanitation services. The final choice was for autonomous bodies, but it could have been a public company, a private company or a water association (United Republic Tanzania-1997).

The MUWSA organizational charts shows the Ministry is at the top.

**MOSHI URBAN WATER SUPPLY AND SEWERAGE AUTHORITY  
ORGANIZATION CHART**



The Director therefore recognizes this in that the Ministry could decide to privatize the activities. That would however come if the authorities performed poorly. Recently, the Minister for Water reiterated that the authorities are likely to continue for sometime. Another area where the autonomy of MUWSA is limited concern capital investment. UWSAs are not permitted to take loans to make capital investment without the permission of the Ministry of Finance (Kasonta, June 2002).

The necessity to consult the Ministry of Finance arises because the government is trying to avoid entering into liabilities, which it is, not aware of. It becomes even more important if the investment involves private actors. Agreements are important concerning the ownership of capital investments. The current trend is for the government to be the eventual owner and private investors to be given the right to use the infrastructure for a specific period. It is the case in Dar Es Salaam where loans from Will be used to rehabilitate the Dar Es Salaam infrastructure while private companies will operate for an agreed period.

MUWSA therefore has enough autonomy to avoid day to day government interventions and pressures. In this, a Memorandum of Understanding guides MUWSA between the Board of Directors of MUWSA and the Minister of Water. The Board of Directors has much say in most matters concerning the running of MUWSA. It appoints all personnel except the Managing Director who is appointed by the Minister. The Board however makes the initial selection and interviews of candidates and then forwards 3 names to the Minister with their comments on each name. The Minister therefore is influenced by the board on the choice of the Managing Director.

The Board of Directors therefore has much say in the running of MUWSA. This signifies a considerable degree of autonomy. The memorandum of Understanding mentioned above prevents government interference in the day to day running of MUWSA. One typical interference what had plagued public utility companies in the past had been government intervention in the provision and payment for services. Usually some government departments and institutions such as the army were insulated from paying for the services. The Board of Directors at present set the tariffs for services their own and government departments which are not paying up are disconnected from the services.

The idea of water boards started in 1994 as a measure of decentralization of water services, especially are regards setting tariff for water services. The Department of Water would propose members chosen from among “stakeholders” in the regions who would make up the Water Board. These stakeholders included big consumers of water (Corporations and Public Institutions) and small consumers mostly domestic.

One general criticism of the Water Boards is that it is the representatives of the “stakeholders” are appointed rather than selected democratically. The water Department and the Minister of Water have a lot of say in the selection. The criteria might be well intended but the selection of the actual people is not transparent. From the beginning the idea of reforms was not popular participation, rather it was “technical competence” This logic has been questioned but the spirit of establishing the Boards seem to have been to protect and pursue the interests of water authorities and not to oversee them. According to the MUWSA Director one control mechanism is to ensure

that members are competent because if board members are weak the authority will perform poorly, which would imply insecurity for the Managing Director who is judged on the basis of performance.

In the Board of MUWSA three people out of 10 enter by virtue of their positions. These are the Municipal Director, the Mayor and the Regional Administrative Secretary. The first two represent the Municipality. Although the link between MUWSA and Municipality does not seem to be hierarchical in the eyes of the MUWSA Director, the presence of the two top municipal leaders in the MUWSA board means that the Municipality would always be aware of what is happening in the Authority. The Regional Administrative Secretary represents the Regional Commissioner who is the head of the central government in the Region.

Although appointment of Chairpersons has political overtones, political control in Tanzania had been linked to ruling parties' appointees. At present appointments might have political influence but those appointed are expected to perform competently. In the Municipality politics are being played in the Municipal Council when councilors come from different parties. At the Departmental level appointments are usually based on technical competence and merit.

Institutionally therefore there is a hierarchical link between the Ministry of Water and MUWSA and apparently not with the Municipality which is under the Ministry of Regional Administration and Local Government. The concept of autonomy however as it exists is strengthened by the relative financial independence of the authority. As

shown in the discussion of Financial Regulation the Ministry closely monitors the performance of UWSAs. They have to write weekly flash reports and monthly reports and each year there is a report evaluating the Authorities under different categories and then in terms of overall performance.

In the 1999/2000 financial year for example each authority was supposed to submit 52 weekly flash reports and 12 monthly reports. Although many reports were submitted later than the agreed time all 52 weekly reports and 12 monthly reports were nevertheless received at Coordinating Unit in the Ministry (Ministry of Water and Livestock Development, 2001, p.6).

One can say that the monitoring is quite excessive yet it is important in light of earlier experiences concerning sanitation services, which was unsatisfactory. The Ministry has to see how the authorities are performing every year otherwise they are likely to slide backwards. Up to now there might have been improvements but the performance is still fragile.

In the case of Moshi it was observed that although they provided adequate water to 65% of the population for at least 12 hours per day still 48% of the water could not be accounted for. It had 8,745 customers out of which 5,252 customers were active. Concerning the sewerage connections it had 843 connections. From these connections the authority collected Tshs. 16.3 million which was 25.9% of the total value of bills prepared of Tshs. 63 million. The authority fared better in collection of water bills. The bills were worth Tshs. 646.6 million and it collected Tshs. 477.8 million, which was 79%



of the targets. The overall grading of MUWSA after evaluation of 34 performance indicators put the Moshi authority at 52% which is quite average.

MUWSA was advised to ensure that water quality should conform to WHO standards and to reduce water lost by replacing old pipes. It was also advised should reduce other charges which make 55% to increase operation and maintenance costs (MWLD, 2001, pp.19-20).

While some UWSAs scored highly the general observation of the report was that no remarkable achievements had been achieved by UWSAs. It was recommended to them that they should introduce extensive metering to reduce unaccountable for water, they should also expand the customer base and improve the quality of water to WHO standards. Although MUWSA is one of the authorities which are self sufficient on own funds, close monitoring is required because as the discussion of Financial regulation has shown that the situation is still precarious.

In the area of sanitation performance is inadequate. There is also indication that the Ministry of Water is not very concerned with sanitation. The reports give much more attention to water than to sanitation. One result of the performance evaluation and precariousness is the tendency to avoid risks. Certainly it is more so in the sanitation area. MUWSA is content to operate in the areas sewage network. Even here it does not have an aggressive strategy to ensure more and more connect to the system. Such a strategy to succeed it needs to reduce costs. The head of the sanitation unit strongly

believed a proposed technology proposed to efficient but also reduce the costs paid to that time.

MUWSA is happy to leave autonomous sanitation to the Municipality, even the potentially profitable cesspit emptying. The challenge which lies ahead is whether the performance of MUWSA would be adequate to stave of her forms of operation, including privatization, as will seen be the case in Dar Es Salaam city, whose problems are considered too complicated to be operated by DAWASA as an Authority.

The inadequacy of the activities of MUWSA in sanitation can also be looked in terms of the fact that there are considerable parts of Moshi, which are not covered adequately by both MUWSA and the Municipality. There are critical areas whose inadequate sanitation services lead to serious health problems including such diseases as typhoid. It is important therefore to examine the mandate of MUWSA vis-à-vis the municipality in the area of sanitation including autonomous sanitation. It is also important to look at institutional arrangements, which can facilitate sanitation in the autonomous sanitation areas.

#### **4. Institutional Relationship between MUWSA and the Municipality in the Area of Sanitation**

The legal framework, which created MUWSA, gives it, clear protection especially as regards water production and supply. The sewerage component is now part of UWSA

but it does not get much attention. At the same time the Act does not nullify the overall responsibility of the municipality concerning sanitation.

The 1982 Local Government (Urban Authorities Act) which has not been amended, gives the municipality mandate for both solid and liquid waste. It is responsible for collection and disposal of solid waste and all sewage from all premises and houses.

There have been numerous amendments to the Local Government Act of 1982, the most extensive can be found in the Local Government Laws (Miscellaneous Amendments) Act of 1999. These amendments however, deal with the democratic aspects of the Municipality as well as the relationship between Local government and the Central government. The sanitation aspect remains intact.

The Municipality therefore has the overall responsibility of over sanitation activities including sewerage because it is in charge concerning the process of disposal of waste. The municipality is also responsible for making the people of Moshi to participate in the disposal activities as well adhering to correct sanitation. One human observes that the Municipality is readily accepting that sewerage be transferred to MUWSA. For its part MUWSA seems content with the sewerage network and going beyond it to other sanitation activities is not their priority. Essentially the Municipality is expected to monitor the activities of everyone, including MUWSA concerning sanitation practice.

In the Municipality there are three departments which have responsibility for solid and liquid waste management. These are urban planning, engineering and health. The

planning department is supposed to play an important part in terms of showing the direction to be pursued in order to improve sanitation. The Planning Officer of the Municipality however recognizes that planning is lagging behind development (Moshi Municipal Planning Officer, Feb. 2002).

Indeed the fact that urban planning is lagging behind is easily seen because of the mushrooming of unplanned urban areas. Cities have Master Plans funds for specific surveys are lacking but there is enormous pressure by people to have the land before land is made available properly. In Moshi this is compounded by the fact that the town is surrounded by farmland of a people who are highly conscious of the importance of land and holds steadfast to it. As a result the Municipality has limited land at its disposal. This is in spite of expansion of its area from 23-sq. km. to 585-sq. km. in 1973. The Municipality has been forced to negotiate with the neighboring District of Hai to get a site for building a solid dump to be financed by the World Bank.

In the municipality houses takes 50.2% of which 35.1% are located in planned areas. Areas for recreation makeup 20.6% while public buildings make up 15.2%. Industrial area covers 6.6% while commercial and transport takes 6.9% of the land (Cooperative College, DANIDA, 2001). The planning Department is constrained because adhering to plans would lead to breaking unplanned areas which would have serious consequences to people.

The other department responsible for sanitation is engineering. This department is responsible construction works and maintenance of sanitation trucks. Since sewerage

has been transferred to MUWSA it does not have much construction works related to sewage. It has however construction responsibilities related to solid waste dumps including maintenance of roads to the dumps.

The Health department is central to sanitation in the municipality, which falls under its jurisdiction. The Department has three sub-departments namely, Curative, Preventive and Social Welfare. The Sanitation unit is tucked in the Preventive sub-department. The logic of sanitation in the Health Department is that of cleansing. That is cleaning to ensure that no communicable disease epidemics do occur. The question of recycling of waste does not come into the picture.

The institutional weaknesses manifest themselves when heavy investments have to be made. In such situations the capacity of the sub-department has been found inadequate and investors and the government have tended either to move the Ministerial level or to create new organizations such as UWSAs.

The Urban Sector Rehabilitation Project (Water and Sewerage Component) finally leaned towards the Water Department. Although the project rehabilitated water and sewerage systems in seven municipalities, in the final analysis the responsibility for the services were given to the authorities under the Ministry of Water. The US\$ 40 million project raised capacity building and institutional strengthening of UWSAS (Ministry of Water 1999).

The Municipality is expecting to come into the picture through the building of a solid waste dump because solid waste management is still within its jurisdiction. In the sanitation sub-department there is no indication of animosity between them and MUWSA. Indeed members of the unit inform MUWSA when there is leakage in the sewerage network. It would seem therefore that the unit is happy with the sewage network being transferred to MUWSA in light of the limited capacity of the unit (Head, Sanitation Unit, July 2002).

In terms of sanitation regulation however the responsibility lies with the Municipality. The waterworks regulations act of 1997 does not take the overall responsibility of sewage from the Municipality in the sense that it is silent about it. The main focus in water and sewage comes only as an appendage. It comes only in the UWSA's Operation Guidelines. One gets the impression that sewage was put into the Act as an afterthought.

Related to the question of responsibility there could later raise the question of ownership. The Director of the Municipality acknowledges the good relationship between MUWSA and the Municipality, especially since the Director and the Mayor are members of the MUWSA Board. While the Director of MUWSA did not recognize the existence of formal relationship between the two, the Director of the Municipality believes that in the final analysis MUWSA is owned by the Municipality and certainly the oxidation plant at Mabogini. It is however paying MUWSA for having their trucks to discharge at Mabogini. MUWSA argues that the revenue is needed because after a number of years the plant will need a major cleaning of silt at the bottom.

The question of ownership still comes up. In other words even if UWSA is at present autonomous, if it comes down to privatization of the installation the Municipality would claim ownership because although built with World Bank loans, they are located on Municipal land. The tug of war would most likely be between the Municipality and the Ministry of Water and in such a situation the central government would be the one to decide. The fact remains however "autonomous" MUWSA it is still owned by the government the only shareholder. Such a situation is yet to come. What is becoming evident as a problem however is dealing adequately with the magnitude of the sanitation problem.

Both solid waste management and liquid waste management are considered inadequate. Concerning solid waste it is estimated that 120 tons are generated daily within the central business district and Municipal retail markets. On average the Council collects only 70 tones which are crudely dumped at Kaloleni dumping site. The remaining 50 are uncollected and one can add into that other waste uncollected especially from the unplanned areas (Cooperative College/DANIDA 2001).

Concerning liquid waste management the study on Moshi municipality states that of 7,000 cubic meters discharged daily only 33% is disposed through the central sewerage system at Mabogini Oxidation ponds the rest is out of its orbit. It is observed that most residents in the peri urban wards use pit latrines whereas those the urban wards use septic tanks. The management of these is not always correct although Municipal trucks are used to transfer some of this liquid waste to the oxidation ponds.

The make shift pit latrines are considered offensive, environmentally dangerous and a breeding ground for flies, mosquitoes and other vermin that are vectors for the spread of diseases such as dysentery and malaria (Cooperative College/DANIDA 2001).

What it means that there is considerable liquid waste problems not covered by MUWSA and which the Municipality are not prone to deal with adequately. The head of the sanitation unit described the situation as not very bad but not adequate. The situation is worse in squatter areas where even accessibility is a problem. The trucks find it hard to reach places such as Njoro, Kaloleni and Mji Mpya. However, since 1997 Moshi has been spared of serious epidemic diseases (Kombe, July 2002).

The Municipality therefore is responsible for autonomous sanitation. This includes cesspit emptying and the whole sector of different types of latrines. Trucks do cesspit emptying. While these are doing a seemingly adequate job the activity is not financially viable as the section on financial regulation shows. In reality it is likely that not all revenue paid for the services find their way to the coffers of Municipality. Such practice was widely observed in Dar Es Salaam before the entry of competition from private operators.

The function of cesspit emptying which covers mostly the accessible areas could be taken by MUWSA, which can have trucks which they could better monitor the trucks which is not done adequately by the Municipality. It is likely to meet opposition from those responsible for operating the trucks because they are likely to be benefiting from



that activity. At the same time MUWSA is not very eager to capture such activity being contented with operating the sewage network.

The institutional set up of MUWSA has allowed increased efficiency in the running the sewage network, but MUWSA is not for a profit maximization organization and therefore expansion is not a critical issue to them, especially expanding to areas where profitability is not clearly assured. Second MUWSA is not bound to expand into more areas of Moshi. Certainly expanding into the latrine areas is even less likely.

These are prevalent in the unplanned residential areas of Moshi. The latrines pose environmental hazards including the danger of ground water pollution. The latrine areas raise a number of institutional issues. First, it is important that there should be clear responsibilities and mandate to improve sanitation in those areas. In the present framework the municipality is responsible for those areas but their approach is not frontal. They have construction models to advise people who wish to build latrine and other sanitation structures. Most areas involved are however considered to be squatters, and typically in planners mentality sanitation campaigns in these areas would be construed as justifying the existence of the unplanned areas. There are also no concerted efforts to sanction people responsible for dangerous sanitation practices. There are by laws against such practices but implementation in the unplanned areas is limited.

Secondly there is need to think of widening technological options and the organizational forms which can go with it. One such technological option, which can be tried, is the

condominal system. In the unplanned areas of Moshi where residents have to face daily sanitation inconveniences, such as sewage flowing in the streets or on neighbors' plots, it might be an alternative solution. There have been efforts to raise the status of some unplanned areas, through people contributing land to allow for such infrastructure as roads and power lines to be contacted. One such example occurred in Longuo Moshi where residents were working to raise the status of their squatter area. They paid for a survey to draw an upgraded plan, they however met resistance from the Municipality Planning Department (Lerise, 2000).

In the case of sanitation some people with a bit more land than others could offer space for condominal systems. According to the Head of the Sanitation unit, what would be crucial there to the adoption of the condominal system will be the sensitization of the technology but also having lower costs compared to other alternatives. She argued that people in the town were very cost-conscious. It explains also why very same people in the MUWSA network areas are not connecting they compare the connecting costs to that of trucks (Kombe, July 2002).

The introduction of a condominal system would also depend on the appropriate non-formal institutions to go with it. It is recognized that non-formal institutions can fill gaps in service in urban areas, especially in areas where formal institutions do not reach (Wright, 1997, p.34). There is a possibility of emerging small neighborhood companies, which can take condominal installations. These could be assisted by NGOs or by donors interested in improving sanitation in these areas.

The third institutional issue concerns the relationship between the Municipality and Community Based Organizations (CBOs) at the ward and street levels. At present the Municipality is encouraging the emergence of such organizations. The increase of sanitation committees and organizations at ward and street level require attention because the offer important opportunities for improved sanitation in the problem areas.

#### **4.1 Organizing Sanitation at the Ward Level**

The study at this level used purposive sampling in pilot studies in a number of cases. The visits allowed for discussions with Ward Executive Officers, members of Ward Development Committees and members of Community Based Organizations involved in improved sanitation. The area of study included Njoro, Longuo, Majengo, Kiboriloni and Kaloleni.

To understand the administrative structure at the municipal and sub-municipal levels it is important to understand that there are central government and local government structures. Moshi town is both a District and a Municipality. The central government structure is the District under a District Commissioner, who is mostly responsible for law and order issues and the coordination between the central government and the local government in that geographical areas.

Below the District we find the Division which is the lowest central government unit. Moshi town has two divisions, Moshi East and Moshi West each under a Division Secretary with a similar law and order mandate as the District Commissioner. Below the division one finds wards. The Wards are however Municipal administrative units,

although many people do not make a distinction between the central and local government institutions at the sub- District level. Six wards are located in Moshi West Division. These are Kiusa, Kilimanjaro, Korogoni, Karanga, Longuo and Rau. Moshi East has 9 wards, namely, Bondeni, Mawezi, Njoro, Msaranga, Majengo, Mji Mpya, Kiborloni, Pasua and Kaloleni.

The Wards are under a Ward secretary and has an elected ward committee. The Land Committee is therefore an important participatory institution of the Municipality. Below the ward there are street administrations responsible for dealing with different problems facing people in the areas. There is the street elected Chairman and its committee.

It was observed by respondents that individual sewage disposal systems receive little attention from local authorities. At the same time owners often do not conduct adequate maintenance once the units have been constructed. The systems have tended to create health hazards through contamination with water supplies or through exposure of excreta to rodents and insects. It is observed that the pits are generally utilized for reception of both sludge and excreta reducing expectation life of the pits. The process also can lead to the overflow of the effluent when local resident's fails to afford emptying the contents. These aspects were observed in an earlier survey of Milanese. In his sample 65% of the residents used traditional pit latrines while 16% used ventilated latrines and 19% used water closets. Most of the VIP latrines were decayed. Those with more than 15 years made up 60%. It was also observed that 63% of latrine owners used the pits to dispose of wastewater (Milanese, 2000, pp. 8-9).

The disadvantages of pit latrines are most evident in commercial-cum-residential areas of the town. Pits have repeatedly been dug until there is little space for fresh pits. This is observed in Majengo and Njoro areas. Contaminated water often flows along the roads and in open spaces.

The ward leadership recognize the existence of the problems but there is little in the form of strategic sanitation improvements. This is required for both solid waste and liquid waste. The four refuse vehicles for emptying dustbins are considered inadequate. There is also the problem of uncontrolled disposal of solid waste which encourage fly and rat breeding. Dustbins in low and medium areas are usually emptied only twice a week instead of daily basis. Many respondents reported that the emptying of septic tanks is problematic. Sometimes it can take up to a two months for septic tanks to be emptied since the problem has been first reported to the people responsible for the Municipal trucks.

Regulation by ward leaders becomes problematic because there are no clear by-laws which focuses on the sanitation behavior. Every household has to have at least a latrine. However, when the latrine is full the owner usually gets away with only verbal warning instead of harsher sanctions.

Some respondents stated that while by-laws for sanitation existed in the municipality MUWSA did not have them. There are respondents who do not find the roles of MUWSA and the Municipality to be complementary. Some even suggested that the

Department of Health in the Municipality should be disbanded and its activities to be handed over to MUWSA.

It is unlikely however that MUWSA would be happy to be handed over the whole sanitation task in Moshi. Autonomous sanitation comports serious incertitude concerning profitability of the sanitation activities. Indeed efforts by the Municipality to entice the private sector to participate in solid and liquid waste disposition have not been very successful. Twice the Municipality invited private operators to take up solid waste disposal activities. There were no responses. Many businessmen believe that solid waste disposal is unlikely to be profitable because many people would be poor payers for sanitation services. Some operators were involved in cesspit emptying but did not last long. They abandoned the activity after a short time because of low profitability. (Kombe, July 2002).

There is potential for Ward Development Committees to be involved in sanitation improvement and regulation. What is needed is adequate transfer of knowledge of sanitation and correct methods of pursuing sanitation improvement. Already a lot of the committee members are involved in the sustainable environmental program of the municipality. The weakness of the program is that it does not give adequate attention to sanitation. There is therefore potential in bringing sanitation into the core of the activities of the Ward Development Committee and the Ward Secretary.

Other potential actors are Community Based Organizations. There are many groups, which mobilize voluntary contributions for the construction of roads or seeking to deal with, such infrastructure needs as electricity and water availability.

However organizations to improve sanitation are only slowly emerging. Many start as environmental groups and then move to sanitation. In Moshi West Division there are 15 environmental CBOs in Moshi East there are two which have registered as NGOs in the wards of Rao and Kilimanjaro (Cooperative College/DANIDA, December 2001). The environmental CBO of Rao is the pioneer in taking up sanitation (Kombe, July 2002). Most of the other groups are dealing with tree planting and preservation of water sources. They are however occasionally involved in general cleaning. The Rao group has taken up the task of dealing with solid waste in their area and in the industrial sector at a cost. Bondeni group is also showing interest in sanitation and has contacted the Municipality to see to which task they might take up.

Since our study has shown the presence of willingness to pay for improved sanitation services, what is important is to identify the appropriate technology, which can be, proposed, the organizations, which can undertake such tasks and the institutional framework to facilitate such efforts.

VIP latrines and improved cesspits need to be encouraged in the areas of autonomous sanitation. MUWSA also will have to find more efficient ways of encouraging more people to connect to their network. Many residents are said to be very cost conscious. Sensitization and cost reduction is likely to be the test of an appropriate sanitation

technology. At the same time the municipality could exert some pressure on the residents to take up to correct sanitation practices. Sanctions on polluters can encourage them to understand the importance of proper sanitation and the needed investment have to make in order to ensure it. In such a way it could be profitable for private actors to enter into its business.

**Conclusion: Institutional Arrangements, which can facilitate improved sanitation in Moshi.**

All the above institutions have interest in improving sanitation in urban areas and there currently plans to establish programs to expand to rural districts. One can say that Sanitation in Moshi town is not the worst in Tanzania but it is also inadequate. The people of Moshi have been lucky in that since 1997 there hasn't been serious health crisis related to water pollution. Before that however there have been some cholera epidemics. There is no guarantee it cannot occur again.

The sewerage network needs to reach more people. There are also places where there are connections but there are still some problems. An example given are the Police barracks where residents are excessive in small houses and the link to the network receives excessive pressure from the high population in the quarters. The bigger challenge however concerns autonomous sanitation which fall squarely on the Municipality and is likely to remain so for quite some time to come.



MUWSA is unlikely to take the task of sanitation in those areas from the municipality because there is pressure from the Ministry to achieve certain performances. There are therefore two Ministries dealing with sanitation. The first of the Ministry of Water and Livestock Development and the second is the Ministry of Regional Administration and Local Government, which is located in the President's Office. The first oversees MUWSA while the second oversees the Municipality.

The two Ministries are connected by donors through programs, which deal with urban rehabilitation which have components of water and sanitation. Some of the programs are located in the Ministry of Water while others are located in the Ministry of Regional Administration and local government, because municipality is under that Ministry. The Coordination of these programs is not always evident. One example of that has been studies which have been done by consultants are no where to be seen. Like in many Ministries, programs are opportunities for Empire building.

In Moshi the extension of the sewerage network was done by donors, linking up with the Ministry of Water which is monitoring the performance of MUWSA who are running the network. DANIDA for its part is supporting an environmental program, which could have a component of sanitation. As it happened in the practice the program has very little on sanitation.

The Ministry of Regional Administration and Local Government need to give more attention to sanitation problems in the urban areas. At policy level there is need for

delineating more clearly the task of municipalities in on-plot sanitation monitoring. This however depends on appropriate technologies to be proposed for on-plot sanitation.

The relationship between MUWSA and the municipality is not very formal. The position of the municipality does not appear in the organizational structure of MUWSA. There is need to establish the formal link in the context of the global sanitation task of Moshi. Instead of the municipality being on the margins it should be responsible for charting out and monitoring the strategic sanitation issues of Moshi. Without marginalizing any actors or acting in contradistinction with MUWSA, it could chart out ways of involving appropriate actors in different aspects of sanitation in the different parts of Moshi municipality.

Instead of marginalizing the sanitation unit of the municipality it seems to us that it needs to be elevated so as to be able to chart out the sanitation policy of the Municipality as well as monitoring the different sanitation practices in Moshi in order to fulfill the mandate of the Municipality as contained in the Local Government (Urban Authorities) Act of 1982.

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## Appendix 1

### THE MANAGEMENT OF SANITATION SERVICES: THE CASE OF MOSHI JOINT RESEARCH UNIVERSITY OF DSM AND UNIVERSITY OF PAU (FRANCE)

The research, which has been going on for sometime now, has several components:

**Axis 1:** Analysis of household demand for sanitation services. (Household survey has been conducted).

**Axis 2:**

- (a) Institutional regulation
- (b) Financial regulation
- (c) Environmental regulation

#### Questions on Institutional Regulation

Purpose: Examine institutional arrangements pertaining to the different organizations involved in sanitation in light of the magnitude of the task.

1. What responsibilities still remain with the municipality in the area of sewerage after the creation of MUWSA.
2. Has the municipality any oversight powers over MUWSA as a way of regulation of sanitation activities.
3. What are the formal links between MUWSA and the municipality.
4. Traditionally sanitation has been undertaken by a sub-department in the Department of health. Is this organization set-up adequate today in light of the magnitude of the task.
5. At present MUWSA services covers only part of Moshi. How would you evaluate the adequacy of sanitation interventions in the other areas of Moshi not covered.
6. What other actors could intervene in the area of sanitation especially sewerage.
  - a) The Private Sector
  - b) Community Based Organizations (CBOs) which are currently active in the area of road construction.
7. Do you think people could come together to build local based sewerage systems (condominial) which then could be joined to the sewer network?
8. What is the contribution of Ward Development Committees to improvement of sanitation services?

## **APPENDIX 2: MANAGEMENT OF SANITATION SERVICES: THE CASE OF MOSHI**

### **QUESTIONS TO MUWSA: INSTITUTIONAL REGULATION**

1. How autonomous is MUWSA?
  - a) What are the formal links to the Ministry of Water/Local Government?
  - b) What are the formal links to the Municipality?
2. History has shown changes in the institutions and organizations dealing with Sanitation. The precursor to MUWSA, DSSD started in the Ministry of Lands and ended in the City in Dar. How stable do you think is the institutional framework dealing with sanitation.
3. At present MUWSA has the potential of reaching 37% of the population of Moshi Municipality – what are other actors could be used in conjunction with MUWSA to reach the population not yet reached.
4. Do you think there is room for other for profit private actors in the sanitation sector in Moshi.
5. Would you allow collective efforts of people to build local sewerage depots, which would then be joined to the network?
6. What role do you think the civil society can play to enhance sanitation in cooperation with MUWSA.