
EDFU WATER AND WASTEWATER PROJECT

INSTITUTIONAL DEVELOPMENT COMPONENT:

PRELIMINARY DESIGN REPORT- MAY 1991

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2.1 INSTITUTIONAL DEVELOPMENT ISSUES AND THE IWCs

2.1.1 Background to Institutional Development

The Edfu Water and Sewerage Project is a pilot capital investment project, - the first Project in a 10 year Danida financed programme to assist in the improvement of social infrastructure and employment opportunities for the people of Aswan Governorate. The Project has the following outputs:

- extend and rehabilitate the water supply system of Edfu Town and several villages in Edfu Markaz,
- construct a completely new sewerage system for Edfu town with treatment works in the desert.

Additional project components will cover primary health care throughout the Markaz, including demonstration sanitary units.

If, however, the Edfu Project investments are to deliver the planned benefits over their working life they must be managed, operated and maintained effectively by the institutions responsible for them. Capital investment projects to extend, upgrade or rehabilitate assets are relatively easy to manage; projects to assist institutional strengthening to improve management capability are complex, time consuming, and difficult. Nevertheless they are essential to ensure long term sustainability of the service.

Institutional development to make the best use of limited human, material, and financial resources is currently a major issue in Egypt. A number of water and wastewater institutional strengthening programmes are being implemented to assist local government staff develop their management and functional skills, and re-appraise their internal structures and procedures.

Institutional development is not simple. It has clear political dimensions with respect to national and regional finance generation and distribution. These issues are briefly discussed as they provide a context for the recommended changes for the Edfu Project.

To be effective, action must be taken over a wide range of agencies and on the administrative processes of local government. Institutional development programmes have to be undertaken with the active agreement and support of all levels of Government. The administrative and political environment has a critical effect on the potential success or failure.

The sector objectives of institutional development for water and sanitation are to improve the effectiveness and performance of existing sector organisations; expand

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service coverage throughout the governorates; upgrade service levels; improve cost recovery thereby reducing Central Government subsidies; develop management capability; maximise potential health benefits at the lowest cost; implement GoE social policies in the sector.

The means to achieve these objectives include the internal strengthening of existing functions of the water utilities, and the external re-structuring of the sector institutions:

- Immediate internal measures for the Edfu Project will include staff training; the introduction of improved management techniques (including financial management and planning for O&M); personnel policies to improve staff incentives and professionalism; implementing effective O&M procedures.
- Longer term measures include the formation of an Independent Water Company (IWC) at Aswan Governorate level; many of the immediate measures can only be implemented within this wider context.

IWCs are semi-autonomous state owned enterprises that are legally inter-related with many government agencies and administrative units; these play an active role in management and control of technical, financial, and administrative functions of the IWCs. These relationships, although specified by law, are in practice still being worked out and interpreted by IWC managers on the ground.

The central Government of Egypt (GoE) has recently stated its intention of promoting further the formation of semi-autonomous water supply utilities in the Governorates, in addition to the three existing IWCs at Kafr El Sheikh, Beheira, and Damietta.

Reasons for this current interest in IWC's include: the possibility of decentralising responsibility for tariff design and increasing user water charges; more effective local management; better selection and remuneration of staff. Decentralising decision making powers to the utility management level is a world wide trend and is the basis of most performance improvement programmes

Since the Project commenced in February 1991 the Offices of the Governorate of Aswan have also declared their intention of establishing the Water Supplies services in the Governorate as an Independent Water Company (IWC). This move is fully supported by NOPWASD and the key Ministry of Finance.

This simplifies the task of improving the internal management structures and procedures of the Edfu Utility. But it also presents problems because of the longer time scale and Governorate wide geographic extent involved with IWC formation.

2.1.2 Edfu District Water Services

a./ Local Administration Structures

The basic geographic units of the Egyptian Local Administration system were defined under Law 42(1979). These units divide Egypt into a hierarchy of levels:

Governorates (al-Muhafaza). There are 26 of these, with urban governorates being divided into urban quarters(al-Hay) and provincial governorates being divided into Districts. Aswan is classified as a Provincial Governorate and also as a Frontier Governorate because it is adjacent to Sudan to the south. In 1981 GoE established a regional economic planning system for 8 governorates including Aswan.

There are at present twelve service ministries that have their field staff and budgets decentralised to the Governorate level, including the Ministry of Housing & Public Utilities; they still receive technical support (planning etc) from their central ministries, but in administrative terms are part of the governorate system.

Districts (al-Markaz). There are 163 Districts in Egypt; Aswan Governorate has 5 Districts. Each District contains a capital town (al-Madina) occupying a sub-District divided up into an urban area and surrounding subvillages which are usually contiguous with the main town. The capital towns are both the administrative centre of the urban areas and of all the village units in the District. Districts may contain more than one large town.

Edfu is the capital town of Edfu District with 6 subvillages, which are included in the Edfu infrastructure Master Plans and also are part of the Project urban component.

Village Units (Wahda al-Qarya). There are 906 village units throughout the country; Aswan Governorate has 24 villages of which Edfu District contains 8. The village units consist of a mother village, which is the location of the Local Administration offices, and a number of satellite villages.

Each administrative unit at each level is administered by an appointed Executive Officer supported by local government staff (Diwan) including staff directly working for the unit, and functional staff assigned by the various central Ministries. These staff are directly responsible for the implementation of central Ministry policies and plans. At the Governorate level the Chief Executive Officer is called the 'Governor'; the equivalent at the District and Village level is 'Chief'.

There are two councils at each level:

- a Local Popular Council elected every 4 years but made up mainly of government nominees. Their role is to approve plans and budgets; approve new utilities; impose local fees and duties; propose local taxes. In practice the Popular Councils seldom have an independent voice.

- and an appointed Executive Council made up from Ministry staff drawn from the central government functional Ministries. Their functions are: budget preparation; suggest capital spending plans; develop administrative plans; set regulations and performance standards for local services; monitor projects and services.

In technical terms the Egyptian local administration system operates under a dual control principle, which gives the central Ministries significant technical and supervisory powers and responsibilities over the staff assigned to lower levels (including career advancement), -whilst at the same time Governors have been granted administrative and some operational authority over these same staff.

In political terms the system tries to unify the policy making functions of the key central Ministries with the wishes of the locally elected bodies which are intended to represent the interests of the public. However the Popular Councils generally are expected to endorse the plans and budgets submitted to them.

b./ Edfu Municipality Water Supply.

Edfu Town Water Supply is the responsibility of the Engineering Affairs Department under the direct supervision of the Chief of the District. The service staff work within the framework of Edfu Municipality, not as a service department of MHPU.

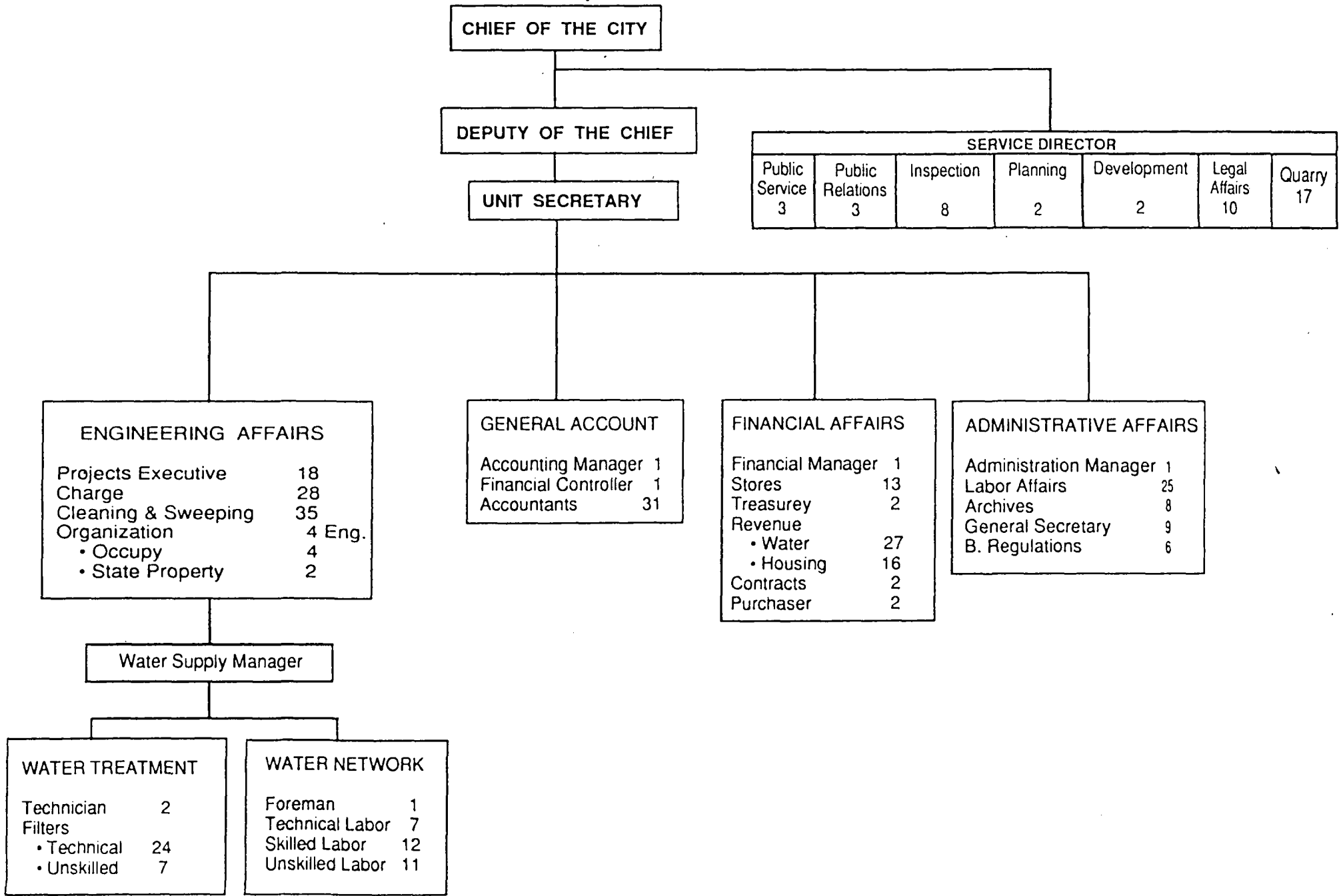
This has important consequences in the effective management of the service because O&M is budgeted and controlled through the Financial Affairs Department of the District and Governorate. Water service needs are therefore in competition with other town services for scarce financial resources to finance O&M.

The organisational structure of Edfu's Water Service is shown in Fig 2.1. System operation is the responsibility of the Water Supply Manager, who plans and supervises the work of the following sections:

- Water Production, including the pump station on the Nile
- Water Distribution, including the repair of the distribution network; installation of new connections repairs to the system etc.

A separate town department is responsible for water meter

TABLE 2.1 Edfu Municipality Organisation Chart



2-5

readings, billing, and accounting. Revenues collected are consolidated into District level accounts. Expenditures are also consolidated into District level accounts together with the other services, making cost analysis of the individual services very difficult to estimate.

Currently there is a plan to separate the management of the network into two areas covering the north and south of the town, but this plan has not yet been implemented.

During the Preliminary Design Phase of the Edfu Project an assessment was made of the internal O&M Management Capability of the existing Edfu water service. The major problems perceived by Edfu managers are the delays and difficulties of obtaining funds for O&M, and the very low salaries which force staff to take second jobs to make ends meet. Many of the weaknesses perceived were considered resolvable only if an IWC is formed. (Annex ^{**})
A

Edfu Town also operates a septic tank emptying service using vacuum trucks. This service is also under the control of Edfu Town Engineering Affairs Dept and is a separate department to water supplies.

c. Edfu District Village Water Supplies

Water supplies for Edfu District villages are the direct responsibility of the MHPU office in Edfu District who assist in the technical O&M. The Village water supplies are the administrative responsibility of the Village Chiefs who supervise the staff assigned to village support sections as follows:

- Engineering Section which carries out routine O&M of the system with support from District Housing Service Department
- Financial Affairs which prepares the budget proposals for all village service sections, including water supplies; responsible for meter reading and bill collection

Although most of these services are operating they suffer from poorly maintained equipment; the systems have been planned on a piece-meal basis which makes operation more complicated than can be managed; O&M funding is inadequate and the systems provide a low water quality supply.

2.1.3 Need for Institutional Development in Edfu Project

The discussion above shows the wide recognition in Egypt for continued efforts to improve the performance of the water and wastewater sector; decentralisation is seen as the appropriate means:

- The Upper Egypt Consultants Study (1987) analysed the strengths and weaknesses of existing institutions and gave detailed institutional development proposals for Aswan and Qena Governorates using the IWC concept.
- The Danida Appraisal Mission Report (May 1990) proposed a less ambitious approach; it considered that the experience gained from the three semi-autonomous water utilities in Egypt would be difficult to assimilate because of time constraints.

The Mission Report stressed the importance of strengthening the internal O&M capability of the Edfu management, including the need for a separate accounting and budgeting system to monitor the financial performance of the water and sewerage schemes.

The perceived weaknesses of the water and sewerage services in Egypt are rooted in the fragmentation of responsibilities for long term planning, O&M management and budgeting, personnel policies, and finance and tariff structures:

- Capital investment needs for long term planning (under the 5 year Plans) are assessed by NOPWASD although allocations are made to at least eight national government agencies in addition to the 26 governorates. The bulk of investment goes to the large metropolies; only 26% goes to the provinces which have 76% of tthe population of Egypt.
- O&M management and budgeting is the responsibility of the municipal councils for urban areas, and MHPU for most rural systems. The annual budgetary process is largely controlled by the Ministry of Finance.
- Personnel policies and training programmes are the responsibilities of the Governorates, the CAO A and Min of Manpower; training is not planned in response to local needs and is carried out by both NOPWASD and the CAO A. A major weakness in Egyptian local government is the often cited problem caused by the guaranteed employment policy for school leavers and graduates which has led to gross overstaffing and low pay.
- Tariff levels and structures are a highly political item; the current set of tariffs was decided at the national level by a Supreme Committee for Policy and Economic Affairs in 1985; the tariffs do not allow services to even cover O&M costs.

2.1.4 Issues in the Decentralisation of Public Utilities.

Decentralisation of local government, including the formation of the IWCs, raises a complex set of issues which go to the heart of the debate about how Egypt should progress. These issues are common to all countries and at all times:

a./ National Development Issues

Every modern state has institutions through which state officials and employees provide public services and functions on a day to day basis. Local administration is dispersed throughout the country for revenue and tax collection, the administration and management of utilities and services, the maintenance of law and order, and to carry out government policy.

The administrative structures and processes of the modern state contain the conflicting needs of maintaining the hegemony of the state, in the form of policy making, coordination and control,- against the demands of the population for local autonomy and participation in the processes of government. This conflict is inevitable.

There is no theoretically optimal way for goods and

services to be produced and distributed within an economy. Present arrangements are a result of historical circumstance; the exigencies of nation building; the legacy of ideas -especially the legacy of the nationally planned economy; and international political pressures.

This is true also for the water supply and sanitation sectors which are tied into the local government system. The established semi-autonomous IWC model with its reasonably successful track record contains considerable potential for improving the performance of water utilities. The issues are complex and sensitive.

b./ Decentralisation of Authority Issues

Local government systems in Egypt can be analysed theoretically in legal and administrative terms, but their practice can be best understood as the resolution of conflict between the bureaucratic rationalism of the centre, and the diverse interests of groups making up the Egyptian body politic. Local Administration shapes and is shaped by the political economy of Egypt- the competing families, classes, regional groups etc with their different agendas. Decentralisation strategies are equally affected by these themes.

Centralisation of power is an old tradition in Egypt and the old monarchical regime was a target for reform during the Nasser era . Local Government was restructured in 1960 to eliminate rural feudalism, mobilise rural support, to allow a rapid extension of central government services, and promote rational planning and budgeting.

Decentralisation of decision making to the regions was a means to carry out central policies and gain support for the state at the local level, largely by seeking the support of the rural middle class through the elected Popular Councils. However observers conclude that the elected councils and budgetary processes still largely serve the interests of the centre. The slow progress in setting up additional IWCs since 1985 may be a consequence of this.

Decentralisation of decision making to the service regions is advocated for reasons of administrative efficiency because of the distances involved. An argument against is the loss of economies of scale. Several studies on the IWCs existing in the richer and more highly populated Delta areas have recommended the joining together of additional governorates to gain increased scale economies for planning, purchasing, and O&M functions. This may suggest that Aswan and Qena Governorates could consider combining to form a single IWC in the future.

The shortage of trained and experienced staff is also used as an argument against decentralisation; there is a fear

that local leaders, administrators and sector staff cannot handle development projects as effectively as the centre. Skilled staff tend to gravitate to Cairo for career and increased opportunities.

This argument is a self-fulfilling prophecy, however, because low career opportunities in the regions force able staff to leave, further reducing the capability of regional offices.

There is an obvious need for a more effective top down-bottom up systems of Planning, Programming and Budgeting (PPB) in all local government services and functions. These would use the special expertise at the centre for coordination and policy making, and allow the regions to take increased responsibility for day to day general operations. Support for changes of this sort extend across several ministries (including NOPWASD).

c./ Local Government Finance Issues.

The authority that local government officials have over Local Government finance reflects the real nature of the decentralisation of administrative power. It is in the actual authority to make decisions over revenues and expenditures in the budgetary process that effective decentralisation can be said to exist.

Government revenues are collected from a wide variety of sources at all levels of the administration. Central government has access to the highest yielding sources, such as corporate taxes, customs duties, income tax, which have a high collection efficiency from high income sectors. Local government, however, has access to local revenues which have a low yield and are difficult to collect. Water Utility tariffs are one of the few local charges amenable to enforcement because of their high use value to individual households and the ability to identify users.

In Egypt revenues collected by all levels of government accrue to the centre. Central government is perhaps understandably reluctant to devolve spending authority to the regions because they want strict control over spending in order to reduce central government deficits from increasing subsidies to the regions.

Local government in Egypt has a growing dependency on central funding. The centre appears to believe that local revenues have little potential for expanded collection. For the operating utilities dependent on central allocations the consequence is that O&M is poorly financed; many of the assets are being depreciated in the process.

Observers suggest, however, that local populations in fact are willing to pay more for local projects provided that the benefits reach them directly and immediately,

rather than wait for the allocation from the centre.

The only locally raised tax that can be spent locally without the approval of the center is the Local Services Development tax. This obtains some revenues from a range of taxes on local services and profit making ventures. But there is little guidance on its effective use and some pressure at national level to absorb it into central accounts. It is being used by one Water utility in Egypt for O&M funding and may be a feasible model of a valuable medium term source of local revenues for O&M supplementary financing at Edfu.

The main argument for central control over local administration finance is the potential for redistribution to the poorer regions of centrally collected income, and the ability of the central government to enforce its investment policies at the local level. The equity objective could still be achieved, however, with a mix of central and local revenues.

The main argument against this central control of budgeting is the 'dependency' it creates at the local level, and the stifling of local management initiative, -especially in the public utilities. It may also be argued that central funds could be dispersed as a block grant to the Governorates for locally perceived needs, rather than as a general grant applied through the line Ministries.

There is a complete separation between the revenue and expenditure sides of the local government budgetary process in Egypt. Local government services can spend the O&M funds budgeted to them with some flexibility, but they cannot get more. This presents serious problems for the efficient management of municipal public utilities where sudden breakdowns of plant or equipment can be repaired only after exhaustive applications at Governorate level and long delays (delays of up to five months are reported at Edfu)

d./ Bureaucratic Culture Issues.

Water utilities are a process industry with steady-state operating service levels and standards to meet. They need an effective management system, however, that allows greater intelligence in corporate planning and operation.

A major problem of improving existing services, even if laws, regulation and operating practices are changed, lies in the difficulty of altering the bureaucratic culture of local government organisations. Staff and employees have learned by experience to adopt a no-risk, genuflectual and no-confrontation approach to their superiors rather than use their initiative to sort out the shortcomings they see in their jobs.

Incentives, both financial and professional are required.

Institutional change is a slow process and needs long term support at all levels. Interviews with staff at Edfu and Aswan suggest there is a strong desire for change.

Some of the weaknesses of the existing municipal services have already been discussed. They come under the administrative umbrella of the governorate offices which themselves are complex, large scale organisations with a multiplicity of objectives. The services operate under a dual supervisory system - technical direction and finance from the central ministries, but administration and management direction from governorate offices that have few specialist skills in the service sectors.

There are potentially serious policy problems which arise with the decentralisation of authority to the local level. Socially progressive externalities (such as subsidised costs to low income groups) may be lost without the insistence of the centre, especially if the services become more profit oriented. This may be a potential source of resistance to the IWC concept.

2.1.5 Independent Water Companies in Egypt

a./ Reasons for IWCs

The Independent Water Company(IWC) concept for a unified water and wastewater organisation at Governorate-level is seen as a remedy for many sector weaknesses. IWCs have been conceived as a part of a programme to rationalise, coordinate and unify the sector covering all water supply services in Egypt to meet the following objectives:

- to establish clearly defined financial objectives and performance criteria, reduce the web of detailed time consuming administrative regulations, and give the managers more authority to manage the utility.
- give the IWCs a free hand to design a personnel policy for recruiting and hiring staff, and balance staff numbers and skill categories more closely with needs.
- improve the manpower training system to develop competent management, technical and financial skills
- develop and improve the O&M procedures and systems, including staff training; planning, programming and budgeting for annual O&M costs; increased cost recovery
- establish effective communications between the water and sewerage sectors to coordinate planning and O&M.

b./ Experience with existing IWCs

The IWC model was expected to remedy most of the problems of external fragmentation between Ministries and poor internal management of O&M at utility level. Although the IWCs will remain public companies they enjoy a much greater measure of operational autonomy than other municipal services and have less outside interference. Their performance will continue to be monitored by NOPWASD.

Only three Governorate level IWCs have been formed in Egypt so far out of a total of 24 Governorates. These are in the relatively well developed Delta region with reasonable local facilities and access to spares, skilled staff, and close to Cairo.

A recent survey carried out in 1990 on the IWCs drew the following conclusions:

- IWC Autonomy and Decentralisation. As they exist now the IWCs are not autonomous - nor do they exercise decentralised decision making powers. The annual budgets must be approved by NOPWASD, the General Assembly and the MoF. They have not appointed an official Chairman and Board of Directors - who are needed if the IWCs are to take full advantage of an autonomous status such as increasing tariffs to meet the real costs and taking on investment loans. MoF audits the accounts.
- Financial Viability. The IWCs produce about 60-80% of the revenues needed if they are to cover O&M costs. The cost accounting procedures are not effective in developing the annual budget. Budget estimates are made based on historic allocations with incremental increases. There are no capital reserve accounts for future investments.
- O&M. The existing IWCs are undoubtedly better managed than those still in the local government sphere, -able to get materials for maintenance when they need it. However they do not have effective preventative maintenance programmes with record keeping and accountability for materials, parts and time spent on maintenance. Assets are poorly maintained and depreciate quickly. The staff do not yet receive the necessary training. Workshops and stores are considered to be inadequate.
- Personnel Management. Employees are treated the same as in other Government Departments under the same Laws. Incentive payments are being made but these are comparable with bonuses in other government agencies. Staff professionalism, job placement and morale are higher in the IWCs, although this will depend on the skills of the General Manager.

2.1.6 Combined Water and Wastewater Utilities

a./ Existing Situation

At present water and wastewater services are run as separate operating divisions within the municipalities. None of the existing IWCs have a joint water and wastewater utility. Because wastewater has a low priority and there are few operational plants this is understandable.

Problems with wastewater utilities are universal:

- the status of wastewater is inferior to that of clean drinking water supplies,
- the status and qualifications of employees is also inferior.
- despite the 50% permitted surcharge for wastewater few municipalities charge the appropriate tariff and there has been little effort to educate the users on the needs for better wastewater disposal

b./ Reasons for Combining Water and Wastewater

The advantages of combining water and wastewater utilities under a common management are :

- efficiency gains by combining management and administration for tariff collections, financial control bulk purchase of common items such as chemicals,
- allows joint sharing of facilities such as repair shops training centres, administrative buildings
- specialist staff can be pooled and shared on a rotating basis between the services
- possible source of income from commercial use of waste water in high value-added crops in the desert.

There are also disadvantages:

- water supplies may get preferential treatment by the IWC because subsidies are more easily forthcoming;
- possible reluctance to accept wastewater facilities.
- potential contamination through shared equipment/tools.

Of the existing IWCs only Kafr El Sheikh is in favour of a joint Water and Wastewater service, largely because they are the beneficiaries of a major programme of sewer rehabilitation. The biggest obstacle is the cost of running the wastewater service. Edfu management have expressed their reluctance to take on Edfu wastewater services within an IWC for the same reasons.

2.1.7 Aswan IWC - Implications for Edfu Project

Decentralisation. The main advantage of the IWC is the increased autonomy to make decisions and plan the system on a local basis. MoF will still finance a large part of the

O&M costs but local revenues stay within the utility accounting system. This may be a reasonable way to balance state mandated effectiveness and equity objectives with utility efficiency objectives. It is not clear how the existing IWCs negotiate their subsidy requirements with MoF.

Aswan Governorate in a meeting with Edfu Project staff on 17th April 1991 expressed a strong interest to form an IWC for Aswan Governorate and requested assistance. All staff interviewed within the water sector approve strongly of the IWC concept for professional and remuneration reasons

Time Needed to form an IWC. It takes at least 2 years to form an IWC, taking into account the work that has to be done to train staff, value the assets, set up systems etc.

Management. Utility managers at governorate and District levels are less constrained in making decisions without constant referrals to higher levels. This includes the effective use of a cost accounting system at Edfu as part of an O&M planning, programming and budgeting system.

Staff Performance. Measures can be taken to improve staff performance by locally agreed incentives, training programmes, redeployment of redundant staff, flexibility in manning levels based on actual needs. Edfu staff may be re-assigned between the water and wastewater service.

Conflict with other GoE Agencies. MoF has declared its support for the IWC concept so there will be no resistance from higher authorities. However at the local level resistance may be expected from other local government units that will not receive the same benefits.

Joint Water/Wastewater Organisation. There are obvious reasons for combining the water and wastewater components of the Edfu Project in a single organisation. For Edfu, where wastewater facilities do not yet exist, a joint operation would allow staff to be spread between the two services and limit the demand to hire a new set of staff.

7.5 Edfu Project : Institutional Development

7.5.1 Water Utilities - Strategies for O&M Improvements

7.5.1.1 Need for IWC at Aswan.

The Institutional Study was designed to research and recommend administratively feasible ways of strengthening the Edfu water supply institutions to ensure long term sustainability - ie the system should continue to deliver an acceptable service long after the Project is completed.

Critical external factors include the control of O&M finance by the MoF; fragmented responsibilities for management of the system within Aswan Governorate and between local government agencies at Edfu; staffing appointments and staff numbers decided without considering the real needs of the Edfu system; tariff levels set by Central Government at a subsidised level without fully compensating the service for the costs involved.

Internal factors at Edfu include lack of trained staff; poor management systems and practices; lack of spares, tools, materials; run down assets. Many of these internal factors will be strengthened during the Project. These problems are not unique to Edfu.

This Study concludes that:

- the major institutional weaknesses of the Edfu Project, - fragmented responsibilities, can only be handled if an IWC is set up at the Governorate level. The IWC administrative vehicle has been accepted in Egypt and it will not be possible to develop a similiar system for Edfu only.

- potential changes have no value except in the specific conditions bought about by the actualisation of the IWC. Setting up the IWC means setting up the systems.

- individual activities at Edfu to improve the accounting systems and O&M Budgetary Framework must be part of a programme of longer term changes at Aswan if they are to be effective. If not they will be at best a paper exercise; the main question about all management systems is who will use the information.

- care must be taken that the potential benefits of an IWC are not swallowed up by increased salaries for staff.

The IWC organisation consists of a Head Office at the governorate level, and Divisions at the District level. Decision making is decentralised to the levels at which authority is to be exercised within the governorate. The

Decrees and Regulations for the IWCs allow the IWC Board a wide range of powers, including external borrowing. In reality it must be expected that the IWCs will develop their corporate ability slowly over a period of years.

This Section focusses on the specific Management Information Systems (MIS) to improve O&M Management in the context of an Aswan IWC; it covers the Cost Accounting System and O&M Budgeting Framework which allow real costs to be assessed and budgeted for. Developing these systems also requires work on a wide range of management activities and tools, such as financial and personnel management.

Better O&M Management implies that the causes of current fragmentation are addressed. Improvements to MIS at Edfu will also be used throughout the Aswan Governorate IWC.

7.5.1.2 Improving Edfu O&M Systems.

a./ Problems with O&M Management.

Edfu water service currently operates within the existing structures and processes of local government. Key problems with present O&M Management practices at Edfu are:

O&M Management Systems

- there are no guidelines on O&M policy and preventive maintenance procedures for the system at Edfu; the WWISP Project at NOPWASD has developed a standard O&M Procedures Manual for water and wastewater utilities but these are in draft form and do not describe how O&M planning is to be translated into practice.
- there are no records on assets, equipment or their condition; work order systems are not used; the stocks of spares, inventories and chemicals is completely inadequate.
- there are no planned procedures for O&M Budgeting and this is a major MIS component that should be developed.

Finance Management

- water service budgets are consolidated with the budgets of other services at municipality and governorate level and the service managers have few performance indicators to evaluate system effectiveness. The Cost Accounting System(CAS) will provide the basic data for all other financial management systems.

Personnel Management.

- under present regulations the managers have little real

authority over staff allocation, training or performance. The Edfu Project must design and carry out on-the-job training for administration and accounts staff and allow for incentive payments for performance.

b./ Improving O&M Management.

The approach to O&M Management performance improvement at the utility level is to:

- design achievable O&M management improvement programmes to meet the required objectives. The improved systems may be introduced on a step-by-step basis, gradually improving the most essential areas first.

- set up performance indicators for the system's functions and operating divisions which are the target for O&M Management performance improvement. This requires that workable improvement models and appropriate MIS systems have already been accepted within the utility.

- and assign the appropriate resources, including staff, training resources, technical assistance, finance.

A key problem is to identify workable indicators which cover both internal management and external social objectives, ie to measure gains in efficiency as well as the policy and social effectiveness of the service to meet GOE regulatory requirements.

The indicators can be monitored to evaluate the success or failure of the improvement measures; at the very least they focus the attention of the managers on the problem areas. At the governorate level they allow utilities to be compared, problem areas can be identified, and local improvements targeted.

Improvements to O&M Management need a broad range of improvement activities within the management functions-many at the governorate level. These have different potential impacts on O&M Management (Table 7.1) and they are inter-related in implementation and practice.

Table 7.1 lists activities to set up the management functions of any semi autonomous enterprise; many of these may also be used in a local government systems.

The tools are standardised plans, procedures, models, schedules etc that managers use to manage effectively. The Cost Accounting System is an essential tool and is a building block used in most of the other functions. The PPB process integrates a diverse set of tools.

TABLE 7.1 Management Functions, Activities and Tools.

Management Functions	Activities	Tools
O&M MANAGEMENT : OPERATIONS		
Operations	<ul style="list-style-type: none"> - get Manufacturer's manuals - develop operating rules for all system components - develop control rules - plan for quality standards for water/wastewater output - develop task schedules and staff responsibilities - develop standard reporting procedures - daily maintenance schedules - monitoring procedures - sampling and analysis required for system process and outputs - organise communication systems within management and staff 	<ul style="list-style-type: none"> - Operation Manuals on all plant, equipment - Charts and diagrams - Regulatory Reports - Organisation Charts, Job Descriptions for tasks - Report Forms, Logs - Schedule Lists with minor maintenance tasks - Schedule Lists and Responsibilities - Forms, Procedures Manuals - Staff Responsibility Manual
MAINTENANCE MANAGEMENT PPB		
<ul style="list-style-type: none"> - Planning - Programming - Budgeting 	<ul style="list-style-type: none"> - develop maintenance strategy - collect data on all assets equipment, stores, materials - make inventory of all resources, including staff, materials, finance - define maintenance tasks - define task standards for both preventive and other work - schedule maintenance tasks - develop programme to meet maintenance targets - compute resources needed - estimate costs for the coming period 	<ul style="list-style-type: none"> - Preventive Maintenance Plan - Asset Inventories and Condition Assessments Schdls - Assessment Summary Sheets - Daily, Weekly, Other Schedules - Task Performance Standard Sheets - Work Order System - Maintenance Programme Worksheet - Materials, Equipment and Staff Sheets - Maintenance Budget

TABLE 7.1 (cont) Management Functions, Activities and Tools.

Management Functions	Activities	Tools
FINANCIAL MANAGEMENT		
Planning/Budget	<ul style="list-style-type: none"> - identify service objectives - develop O&M strategy - develop O&M programme budget 	<ul style="list-style-type: none"> - Maintenance Manual for Assets - CAS,PPB System, -
Revenues/Tariffs	<ul style="list-style-type: none"> - monitor UAW, accounts receivable,customer connections - develop cost recovery plan using surcharges approach 	<ul style="list-style-type: none"> - Metering,Collection,Billing System and Records
Procurement	<ul style="list-style-type: none"> - develop purchasing policies - materials use programme 	<ul style="list-style-type: none"> - Purchasing Rules and Regins - IWC Procurement System
Accounting	<ul style="list-style-type: none"> - set up CAS with IWC staff - redesign financial control systems for utility 	<ul style="list-style-type: none"> - CAS Models - Financial Statements, MIS Systems
Cash Mangmnt	<ul style="list-style-type: none"> - forecast cash flows - invest surplus cash 	<ul style="list-style-type: none"> - CAS, Billing Projections - Investment Regulations
Debt Mangmnt	<ul style="list-style-type: none"> - (currently IWCs do not manage their debts) 	
PERSONNEL MANAGEMENT		
Planning	<ul style="list-style-type: none"> - establish staff needed - inventory of staff resources - manpower development progmn 	<ul style="list-style-type: none"> - Organisation Plan - Human Resources Development Policy for IWC - IWC Plan
Training	<ul style="list-style-type: none"> - assign staff to new works - planning for joint W&WW organisation - establish training needs - task analysis for system - training schedule - develop curricula - estimate costs 	<ul style="list-style-type: none"> - Job Descriptions - NOPWASD Programme
Management	<ul style="list-style-type: none"> - select staff for jobs - employee relations - design benefit structure - promote career development 	<ul style="list-style-type: none"> - System Tasks - Personnel Policy Statemenmt - IWC Benefits Policy

The detailed design of the functions depends on the scope of control wanted by the Aswan IWC and the resources available. In practice MIS will be introduced slowly with the most basic components first.

The Edfu Project is in a usefull position to be a pilot project for improvements to other water systems in the Aswan Governorate IWC because:

- the Project will develop a complete data base on pipe networks, plant, equipment; this data base, and the way it is made, can be a model for the other systems. It will include Equipment Records.
- a complete stores and a spares inventory will be established, including Inventory Control Records,
- staff will be trained and a new office constructed; technical support will allow on the job training for two years after Project construction, including the use of the MIS set up during the Project,
- many of the current NOPWASD proposals can be reviewed, implemented or tested,
- the performance improvement activities at Edfu will be made in parallel with the activities to set up the IWC in Aswan Governorate and both programmes can be run in parallel,

7.5.2 Edfu Project - Immediate Project Tasks.

7.5.2.1 Cost Accounting System

A Cost Accounting System (CAS) for the water and wastewater sector in Egypt has already been proposed by the WWISP Project (Cost Accounting Procedures:CG-10/Sept '91). The CAS will initially be set up in parallel with existing GoE accounting procedures, categories and line items, and is an essential management tool for monitoring costs within the utility activity areas.

a./ Present Accounting System.

The GoE system for control and accountability in local government is worked out through the Annual Budgetary process. Budget categories and line items provide the common denominator for expenditure and revenue accounting at all levels. The water services currently operate under the same process, using the same categories and line items.

The Local Administration Finance system is governed by Law

43 (1979) and Law 145 (1988), which determine the various sources and levels of revenues that can be obtained by each administrative unit and at each level.

The budgetary process itself, like most local government systems, is malleable within certain limits; it can be shaped if senior staff are willing to exert their authority.

Revenues from municipal water services are deposited to central treasury accounts and are not used within the utility or as signals to local government staff on how much the sector should spend; there is no incentive to maximise revenues from user charges.

Budget expenditures are decided at the central government level, with some flexibility for discretionary transfers at governorate level. Local services cannot be managed as enterprises with their own accounts under the current system. Usually the historic budget sums are used for predicting the next years budget. The water systems work on a 'cash available' basis.

Budgetary accounts in Egypt consist of sets of account categories (or Babs), with four Babs on each side of the budget equation. Each Bab consists of a number of line items which are consolidated into global sums as the budgetary process works up to the central level (Table 7.2). The new Cost Account System must work with these existing line items where possible.

The existing system of records of cash received and disbursements made is detailed, but difficult to disaggregate even at the utility level. Historic costs are not easy to interpret.

b./ Need for Cost Accounting System

The present financial management system does not emphasise the importance of costs as key information for decision making. Few managers are cost conscious nor are they expected to be by the system they work within. Cost information is not used in planning O&M activities, primarily because O&M funds are rationed. Cost awareness must be developed at all levels of the system.

A CAS is built around individual Cost Centres; these are selected functions, operating components, or projects within the utility against which costs can be assigned as they are used. Typical Cost Centres will include Intake Works, Treatment Plant, Maintenance Districts, Staff Administration, Departments for Billing etc, and will include the costs of staff, materials, power. The detailed selection of the Cost Centres must be made at the

Table 7.2 Budget Line Items : GoE Local Administration

Current Revenues	Current Expenditures
<p><u>Bab I : Sovereign Revenues</u></p> <p>I.1 Agricultural Land Tax I.2 Building Land Tax I.3 Entertainment Tax I.4 Motor Vehicle Fees & Taxes I.5 Share of Common Revenues I.6 Share from Joint Fund I.7 Share of Suez Canal Taxes</p>	<p><u>Bab I : Expenditures</u></p> <p>I.1 Salaries Wages Benefits Allowances</p>
<p><u>Bab II : Local Revenues</u></p> <p>II.1 Locally Operated Utilities II.2 Collections/ Service Directorates II.3 Local Fees and Charges II.4 Productive Project Profits II.5 Quarry Revenues II.6 Misc. Fees and Charges II.7 Special Funds</p>	<p><u>Bab II : Local Expenditures</u></p> <p>Group 1- Physical Requirements</p> <ol style="list-style-type: none"> 1. Raw Materials 2. Fuel Oil, Power 3. Parts and Equipment 4. Packing Material 5. Stationary and Books 6. Water, Light, Elec, Gas 7. Fittings and Small Equipment <p>Group 2- Service Requirements</p> <ol style="list-style-type: none"> 1. Maintenance Cost 2. Costs of Operation 3. Research and Experiments 4. Publicity 5. Stationary and Printing 6. Transport and Communication 7. Rent of Equipment 8. Subscriptions and Foreign Taxes 9. Cultural and Foreign Cooperation 10. Training Costs 11. Contingencies 12. Various Services 13. Agency Service Costs

governorate level so that costs can be monitored and compared on a common basis.

The Cost Accounting System will provide regular and accurate records on the real costs of running the utilities that can be used in all aspects of financial management and reporting, including:

- collects cost data from the Stores Inventory Control, Work Order System,
- checking on problem areas as they arise and likely shortages of spares, materials etc which will limit the programmed O&M . Cost Centre data will be reported on a regular basis, usually once a month.
- annual Financial Statements showing the performance of the system; this will be used by the IWC Board and Assembly, and GoE auditors. Foreign Donors or lending Banks may be expected to show keen interest.
- the annual O&M Management Budget for submission to the governorate and MoF; the CAS provides realistic values of historic costs.

c./ Structure of CAS

The CAS provides a systematic process of collecting, summarising, and reporting costs. The WWISP Report provides a basic and standard structure of the system:

- Sources of cost data: salaries paid; purchases made; cost of materials used; and internal shared costs and transfers out of the system.
- Data Processing; the collected data is processed and summarised in monthly reports for each Cost Centre; this is used to compare the planned expenditure for the Centre with the actual costs.
- Management: the cost information in the reports is used in internal documents which managers can interpret to plan any remedial actions.

The design of the CAS should be simple enough for the Edfu staff to understand and use, but be comprehensive enough to provide an Accountancy Framework for the later development of monitoring systems for the Aswan IWC. It should be based on standard procedures and forms in a CAS Manual.

d./ Implementing the CAS at Edfu

The CAS must be designed in parallel with future work to set up the Aswan IWC, and in close collaboration with the various ministries and agencies who may use the information. A review of the Standard CAS in other IWCs will be a usefull first step; a study of the difficulties and problems will show how to plan the work.

The finance staff who will use the CAS at both Edfu and Aswan should be closely involved in the design of the system and the preparation of the Manual. Much of the accounting data is considered very sensitive by local government and the Cost Centre approach will need carefull explanation if the data gathered is to be usefull.

7.5.2.2 O&M Budgeting Framework

An O&M Budgetary Framework for the Edfu Project will involve considerable effort at both Aswan and Edfu. O&M management tools, procedures and systems can only be developed within a policy of preventive maintenance. This is operationalised through the Planning, Programming and Budgeting (PPB) process.

The Framework will allow the present conditions of the utility, - its physical state, resources available, user demands etc, and the plan for the system, to be considered as an input to a proposed programme of O&M activities. The Framework links together the staff, regulatory parameters, and agreed administrative procedures for the IWC.

The Framework provides a basic supporting structure; the PPB process can be developed a step at a time starting with the appropriate parts of the complex model given in Table 7.1. It allows the condition of the water supply systems to be measured and upgraded through multi year programmes. This will be very usefull for the other utilities in Aswan that are in poor condition, although Edfu itself will be as-new at the end of the Project.

The WWISP Report on O&M (CG-13/ Oct'90) has addressed the problems of O&M but has not considered fully how O&M needs can be translated into budgetss. Experience in other IWCs and utilities in Egypt shows that most organisations do not plan for O&M in a systematic way.

It is important that the O&M Budgeting Framework is within the capabilities of the staff who will use it. Experience worldwide shows that institutional improvements take a long time to take root and considerable support may be necessary at all levels.

a./ Present O&M Budgetary System.

The present budgetary system is based on "funds available" allocations from the central government budget directives. The sums are related to historic allocations rather than actual system needs. In theory the water services are expected to present budget proposals for the next year based on their own estimates, but in practice they follow MoF guidelines on revenues to be collected and expenditures allowed.

The consequence of poor O&M budgeting is that assets are depreciating too quickly, the systems are run on a crisis management basis, and the service delivered to users is not as good as it could be.

The budgetary system is complicated further in that the allocated O&M budget passes through the municipal offices who are responsible for a number of urban services. There is an inevitable competition for funds.

b./ Need for O&M Budgetary Framework.

Ad-hoc budgeting and lack of funds for O&M are perceived by Edfu managers as a major problem in maintaining the service effectively; this opinion is widely shared across utilities in Egypt.

An O&M Budgetary Framework assists managers make rational plans for O&M performance improvement and gain some control over the way that funds are budgeted. It allows assets and the system's service to be improved over time. Any variations in work to be done or funds available can be handled more rationally.

c./ PPB Process

The PPB process is the heart of O&M management and is carried out in three iterative stages: planning for appropriate levels of preventive maintenance following an agreed policy; programming work schedules and resources to be allocated; developing a cost budget to meet the programme. The process is multi-year because programmes, standards and resources from one year will feed into the next year's plan.

Planning for O&M contains the following basic activities and tools:

- asset inventories and condition assessments for pipes, equipment, plant, including consideration on how the assets are to be maintained and the immediate need for maintenance. This information is used to build up a Record System in which all future work on the items is listed. The Records include plans, diagrams, summaries, and all

relevant data. The condition assessment is used as an indicator to quantify the status and improvement of the assets.

- a resource inventory of vehicles, tools, workshop facilities, stores, chemicals; spare parts in stock; cash available for the next year's O&M.

- identification of the tasks for the coming year to achieve agreed O&M standards for each item following the O&M strategy. Tasks and their anticipated frequency are named and listed. A Work Order System(WOS) may be developed to detail and manage the maintenance work and as a data base for the CAS using weekly, monthly etc timings. In a small water utility the scope of the WOS can be limited to recording work actually carried out, although standard tasks can be reported on pro-formas.

Programming and Budgeting for O&M translates the plans into a feasible work programme which can be funded:

- estimate resource requirements to implement the chosen O&M plan for the system components for the coming year; this is based on the inventory of assets, maintenance task definitions and task standards.

- schedule tasks over the budgeting year, or years for a multi-year programme.

- calculate costs for the programme and compare with resources available; this programme may be altered if funds are inadequate or if emergencies occur.

d./ Implementation of O&M Budgetary Framework.

The O&M Budgetary Framework for Edfu may provide a model for other water utilities in Aswan Governorate for the IWC.

The O&M Budgetary Framework for Edfu must be agreed with the Aswan Governorate office. The systems chosen should fit in with Aswan and NOPWASD requirements for essential data; standards to be achieved; staff available. The PPB process at Edfu will develop O&M budgets which have to agree with Aswan plans for investment for the next year.

The PPB process is made up of component parts whose structures can be copied from existing systems and modified to suit the needs of the Edfu system and Aswan IWC. A review of the reports on the water and wastewater sector, however, suggests that few water and wastewater utilities make much use of PPB processes because of lack of easily applicable models, lack of management staff with the

success of improving the Edfu O&M management ability, and the use of the CAS and O&M Budgetary Framework tools, depends on the potential changes made possible by the IWC structures.

How to set up an IWC at Aswan is an administrative question which must be answered by the Aswan Governorate staff and by GoE ministries. It requires a full understanding of the issues by all involved and full commitment.

The time scale for the establishment of an IWC is at least two years- to complete the inventories and valuation of assets, carry out staff training, develop the appropriate tools and procedures, design operating rules, organise accounts etc.

8.5 Software Components

a./ Institutional Study Origins

The Dangroup Proposal (Oct 1990) suggested additional consultancy inputs to those given in the TOR, covering a study of financial and institutional aspects. Meetings with Danida after the contract was awarded agreed that the wider institutional context of the Project should be studied as well as the accountancy and budgetary items.

During the Study activities the Aswan Governor stated his intention to form an Independent Water Company (IWC) for the Aswan Governorate similiar to those already formed elsewhere in Egypt. This decision makes the task of institutional development much easier because basic changes to administrative and budgetary practices at Edfu can only be made in the context of an IWC.

Preliminary proposals for O&M management improvement at Edfu assume that an IWC will be formed in the near future.

b./ Tasks to be Carried Out.

IWC Formation at Aswan.

Discussion with Aswan staff has shown that the IWC concept is well supported, but the implications in terms of work to be done in setting up the IWC is not clear. The experience of the three existing IWCs in Egypt is a valuable source of information which must be studied closely. The tasks at Aswan are:

- Feasibility of IWC at Aswan
- Basic research into existing IWCs in Egypt
- Discussion Workshops for Aswan Governorate and senior Water and Wastewater staff .
- Assistance to Aswan IWC in setting up the IWC systems
- Design Implementation Programme
- Coordinate with Edfu Project.

Cost Accountancy System for Edfu

- Review other relevent CAS in IWCs and elsewhere in Egypt.
- Agree form and scope of systems with Aswan and NOPWASD
- Design structure of accounts with utility staff
- Design Forms, schedules, procedures, books, Manuals
- Train Edfu staff in procedures
- Monitor staff effectiveness and correct if needed.

O&M Budgetary Framework

- Review existing O&M procedures at existing IWCs; the

- proposals from NOPWASD; the requirements at Edfu.
- Agree form and scope with Aswan Governorate staff
 - Design structure of the Framework and PPB process in relation to the needs of Aswan utilities.
 - Coordinate inputs with Edfu Project for stores inventories, asset inventories etc.
 - Design forms, procedures, Manuals
 - Confirm arrangements with Aswan , NOPWASD
 - Train staff on processes
 - Monitor staff and correct if needed.

c./ Resouces Needed

At this stage an accurate estimate of resources needed to set up the O&M management improvement activities cannot be made; the Aswan decision on forming an IWC will be a major item.

However considerable technical assistance will be needed by Edfu staff and this is outlined below:

With Aswan IWC

- Aswan IWC Feasibility Study and Assistance	3 months
- Cost Accountancy System	3 months
- O&M Budgetary Framework	4 months

total	10 months

Without IWC at Aswan

- Cost Accounting System	3 months
- O&M Budgetary Estimating Model	2 months

total	5 months

d./ Costs of Technical Assistance

With Aswan IWC :	Expatriate	10 mm *	
	Egyptian	10 mm *	
Without IWC :	Expatriate	5 mm *	
	Egyptian	5 mm *	

	total		=====

EDFU WATER SUPPLY : O&M MANAGEMENT CAPABILITY ASSESSMENT

1. PURPOSE

- to assess how current O&M practices affect the performance of the Edfu Water Supply utility.
- to assess how current weaknesses in O&M practices can be improved by feasible administrative changes at the District, Governorate and National levels.

2. APPROACH

There is a wealth of research evidence available in Egypt indicating that municipal water supply systems are operating at the limits of their capacity; that O&M is carried out on a crisis management basis; that staff are poorly paid and many lack appropriate or sufficient skills; that managers are unable to manage effectively because they do not have adequate responsibility; that the budgetary process, which separates revenues from expenditures, limits effective planning for O&M.

Remedies for these perceived weaknesses propose increased management and revenue raising autonomy for the utilities. This Study also reviewed the initiative of Daqahliya Governorate in establishing a Water & Wastewater Municipal Fund (W&WWMF), and the activities of several Governorates who have established Independent Water Companies (IWC).

It is clear, however, that the smaller provincial utilities will still require some form of support from central or regional government, and many utilities will need continued technical support.

The field study assessment on Edfu's O&M Management Capability was designed to test out the validity of the perceived weaknesses described above, and to compare them with the suggested institutional remedies. The assessment was made using 'semi-structured interview' techniques across a slice of Edfu's management and operations staff; from the observations of the Project field team; and from direct observation of the utility's institutional environment.

Questions were prepared for both general and detailed replies. This allowed Edfu staff to put their own position, and focussed on specific issues. The interviews assessed the respondents understanding of the wider regional planning and finance issues affecting the sector.

3. RESULTS OF ASSESSMENT

Results of the field survey work are presented in the Tables below.

Table 1: Basic Data on Edfu Water Utility Performance

Performance Measure for Utility	Value
1./ Level of Operations	
- water production per day (cum)	- 5500
- number of house connections	- 8200
- number of commercial connections	- N/A
2./ Efficiency and Effectiveness	
- use of installed production capacity (%)	- 100%
- use of installed distribution capacity (%)	- 100%
- average water consumption/ domestic user (lpcd)	- 80 lpcd
- water meters working (%)	- 66%
- unaccounted for water (%)	- 40%
3./ Financial (annual data)	
- average revenue /cum sold (EL/cum)	- 7.5 Pt/cum (ng 30cum/m)
- total receivables from water sales (EL)	- 80,000 EL (1989/90)
- total Bab2 revenue (last financial year- EL)	- N/A
- total Bab2 expenditures (.. .. -EL)	- 255,000 EL (1989/90)
4./ Staffing.	
- total staff	- 87
- staff /1000 consumers	- 760

Table 2: Managers Evaluation of Edfu's O&M

Question	Response	Institutional Improvement
1./ What are the most serious deficiencies in current O&M practice?	<ul style="list-style-type: none"> * lack of O&M budget to pay for chemicals, small parts, etc * long delays (up to 5 months) in receiving requested parts after order has been made to Aswan or Cairo. * poor inventory in Edfu of spares, equipment, tools,etc. 	<ul style="list-style-type: none"> - develop local sources of revenue within the control of Edfu management. - set up local stores and local ordering system - set up local stores and workshops with adequate stocks
2./ How well does the system perform and how is this monitored?	* no way to compare or monitor system as records are not kept; system operates on a crisis basis for maintenance.	- set up O&M monitoring system for Project; this will make annual for O&M management.
3./ How do staff perform in O&M management?	* system shares common problems of overmanning; few staff incentives; ineffective staff placement; BUT staff perform well in operations.	- government decisions on staffing levels can be influenced only in an IWC.
4./ How to improve the performance of the utility?	* set up an Independent Water Company to: give more local control over planning and funds; increase staff salaries and incentives; select staff.	- <u>IWC can only be set up at Governorate level, using existing administrative procedures within Ministry guidelines.</u>

Table 3: O&M Planning, Programming, and Budgeting (PPB).

Observations on Current O&M Practice	Approach to Improvement
<p>1./ Records for monitoring the system are not kept for repairs carried out, spares used, asset inventories etc</p> <p>2./ Maintenance strategy uses 'crisis management' approach; there is no policy of preventative maintenance for each component of the system</p> <p>3./ No forward programming of O&M work: . no assessment of O&M needs . no programme of work orders for maintenance</p> <p>4./ O&M budgeting based on monies promised from MoF–Manshur for coming year; no budgetary planning possible with small sums made available</p> <p>5./ Edfu O&M activities works with monies available to provide a basic service.</p>	<p>– set up a basic data base for the new system for planning maintenance.</p> <p>– set up preventative maintenance system using data generated from Project</p> <p>– set up programming system in Project</p> <p>– set up a locally controlled O&M fund at least to increase O&M resources</p> <p>– improve local autonomy to improve managers' effectiveness in decision making; W&WW Management Fund and IWC approaches necessary.</p>

Table 4: Cost Recovery Procedures

Cost Recovery Practice	Approach to Improvement
<p>1./ Tariffs set by National Decree at a low level that requires national subsidies to keep the system working at a basic service standard; no local opportunity to increase water rates</p> <p>2./ Revenue collections and water use records kept for system; collectibles not excessive many meters not working – bills estimated</p> <p>3./ No relationship between expenditures and revenues generated by the system; manager of utility has responsibility for technical O&M activities only</p>	<p>– set up additional revenue funding from W&WW MF or similar to provide supplementary funds for maintenance contingencies</p> <p>– improve public awareness of need for better O&M of system and need for surcharges (ie, W&WW MF)</p> <p>– improve management decision making through improved PPB systems; this may require the creation of an IWC</p>

Table 5: Procurement of O&M Materials.

Observations on Procurement Practice	Approach to Improvement
1./ Records of materials, chemicals, spares kept and used are not kept up-to-date	- set up a basic stock inventory for the new system for maintenance planning
2./ No planning of procurement for year ahead because of budget constraints	- set up PPB system for O&M
3./ Procurement of items more than 100EL made by tender; this is reported to take up to 5 months	- ammend ceiling for tender decision; use resources from W&WW MF or similiar

Table 6: Accounting System for Water Service

Observations on Accounting Practice	Approach to Improvement
1./ No enterprise accounting system being used at Edfu other than Local Administration procedures for recording revenues and expenditures.	- enterprise accounting system possible only with increased management autonomy where the accounting system is part of the financial management tools.
2./ Cost data for Edfu water service consolidated into Edfu Municipality annual accounts; cost accounting system for water supply components and cost centres not used.	- set up cost accounting system for Project; but this may only be used in an IWC.
3./ Major purpose of existing accounting procedures is to record data on water fees collected and reach revenue targets set by MoF; expenditure accounts are used to control expenditures within allocated budget set by Mof Manshur.	- set up enterprise management accounting system to manage financial performance at utility level; this will only be used in an IWC