






National Solid Waste Management Programme (NSWMP) Egypt

Main Report

December 22, 2011

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Acronyms

AMANA	General Secretariat for Localities, MoLD
CAOA	Central Agency for Organization and Management
CBO	Community Based Organisation
CCBA	Cairo Cleansing and Beautification Authority
CDM	Cleaner Development Mechanism
CEO	Chief Executive Officer
EC	European Commission
EEAA	Egyptian Environmental Affairs Agency
EIA	Environmental Impact Assessment
EMU	Environmental Management Unit
EPR	Extender Producer Responsibility
ESIA	Environmental and Social Impact Assessment
ESWA	Egyptian Executive Agency for Integrated Solid Waste Management
EU	European Union
FCA	Full Cost Accounting
FS	Feasibility Study
GCBA	Giza Cleansing and Beautification Authority
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIZ	Gesellschaft für Internationale Zusammenarbeit
GOE	Government of Egypt
IDA	Industrial Development Authority
IMC	Egyptian Inter Ministerial Committee for Solid Waste Management
KfW	Kreditanstalt für Wiederaufbau
LE	Egyptian Pounds
LGU	Local Government Units
MENA	Middle East and North Africa
MoLD	Ministry of State for Local Development
MSEA	Ministry of State for Environmental Affairs
MSWM	Municipal Solid Waste Management
MWRI	Ministry of Water and Irrigation
NAMA	Nationally Appropriate Mitigation Action
NGO	Non Governmental Organisation
NSWMP	National Solid Waste Management Programme
O&M	Operation & Maintenance
PM&E	Participatory Monitoring & Evaluation
PPP	Public Private Participation
PPP	Polluter Pays Principle
PSIA	Upstream Poverty and Social Impact Analysis
PSP	Private Sector Participation
QMS	Quality Management System
RBO	Regional Branch Office
R&D	Research & Development
SME	Small and Medium Sized Enterprise
SW	Solid Waste
SWM	Solid Waste Management
TA	Technical Assistance
UNDP	United National Development Programme
WB	The World Bank Group
WEEE	Waste Electrical and Electronic Equipment

1 Sector Framework

1.1 Introduction

With about 83 million citizens (April 2011), Egypt is the most populous country in the Middle East and the third-most populous on the African continent. Nearly 100% of Egyptian citizens live in three major regions of the country: Cairo and Alexandria and elsewhere along the banks of the Nile; throughout the Nile delta, which fans out north of Cairo; and along the Suez Canal. These regions are among the world's most densely populated, containing an average of over 1,540 persons per square kilometre (per km².), as compared to 73 persons per sq. km. for the country as a whole[1].

From the fertile and extremely land-constrained Delta Governorates in Lower Egypt, to the historical Governorates in Upper Egypt, and the numerous tourism areas, Egypt is a richly diverse country with very different environmental, economic and social conditions across its territory

Small communities spread throughout the desert regions of Egypt are clustered around oases and historic trade and transportation routes. Whilst policy has been to encourage migration to newly irrigated land reclaimed from the desert, the proportion of the population living in rural areas has continued to decrease as people move to the cities in search of employment and a higher standard of living.

The most recently available data (EEAA, 2007) indicates that an estimated 16 million tonnes of municipal solid waste was being generated in Egypt in 2006, growing at an estimated 3.4% per year[2]. Assuming this growth rate to be accurate, the quantity of municipal waste being generated in 2010 was over 18 million tonnes, and will soon cross 20 million tonnes.

As in all countries, a large diversity of waste-types are generated across Egypt. In addition to municipal solid waste (ie waste from households and similar type waste from other sources), other important waste streams include: agricultural waste, construction & demolition waste, industrial waste (non-hazardous and hazardous), health care waste, waste tyres, waste electrical and electronic equipment (WEEE) etc.

It is estimated that 40% of the total waste generated is left uncollected, and that only a fraction of this collected waste is treated and disposed in facilities with a generally acceptable level of environmental control. The remainder is dumped on open land and along water courses, roads, railways…etc. without any environmental controls.

Unplanned waste dumping contributes to the contamination of the surface and ground waters, to the spread of disease and to the degradation of the landscape. This situation is very harmful in a general way to the economic development of the country. A study by the World Bank[3] (June 2002) has assessed the costs of environmental degradation in Egypt due to improper management of municipal waste, and estimated such cost at 0.4-0.7% of GDP per annum.

1.2 Background to the NSWMP

The need for a National Solid Waste Management Programme (NSWMP) was first identified in 1999-2000 as a response to the severe air pollution episodes known as “black cloud” phenomenon. A NSWMP was prepared but was not adequately implemented, probably because of the lack of a sustainable institutional setup at the National level that could provide support, guidance and follow up on the implementation. In 2009, the need for a NSWMP has been revived given the growing solid waste management crisis being faced by the country. The policy intention

[1] Adapted from http://en.wikipedia.org/wiki/Demographics_of_Egypt
[2] Regional Solid Waste Management Project in Mashreq and Maghreb Countries. Country Report on Solid Waste Management. Prepared by GTZ/ERM/GKW, for the World Bank/METAP/EU. January 2004
[3] Report No. 25175 –Arab Republic of Egypt: Cost Assessment of Environmental Degradation, Sector Note. The World Bank. June 29, 2002

to address the situation was signalled by the establishment of an Inter-Ministerial Committee (IMC) by the Government of Egypt. The IMC comprises representatives from all key Ministries currently playing a role in the waste management sector, and was charged with tasks including preparing a proposal for the future institutional arrangements to govern the waste management sector across Egypt.

Since its establishment, the IMC's consultative process has been supported by the German Government (through KfW and GIZ) and the European Union (EU). In 2010 a study was launched to support the IMC by analysing the sector framework, identifying and evaluating institutional reform options, determining the preferred institutional arrangements, preparing the NSWMP and necessary documentation to establish an investment and technical assistance (TA) programme from the German Government and EU.

The main outcome of the IMC consultative process is a broad based agreement between stakeholders of the need to establish a national solid waste management (SWM) entity as a centre for excellence in policy, legislation, strategy, technology, contracting and financing of SWM; working to support decentralised implementation of improved waste management practices in governorates.

1.3 Policy framework

Waste management has historically received a lack of serious policy attention in Egypt. There is no published policy for the waste management sector to drive investment, performance and standards.

Egypt's waste management policy framework has lagged behind other countries in the MENA region, and investment into the sector is largely stagnant. The impact on the social, economic development of the country is evident, and lack of performance in the quality of this essential public service impacts on peoples' daily lives.

Solid waste management is a sector of the economy with a strong growth potential, and an industry which has the potential to employ hundreds of thousands of people, including skilled, semi-skilled and unskilled workers, including youth of working age and poor and disadvantaged people. Inadequate standards of solid waste management impact upon the health of citizens and the quality of the environment. It is the most visible of all public services, and an essential component of the sustainable development of Egypt's economy.

1.4 Institutional/organisational framework at the national level

Up to now, there has been no single Ministry charged with responsibility for solid waste management at the national level. In practice, responsibilities are divided between the

- Ministry of State for Environmental Affairs (MSEA)/Egyptian Environmental Affairs Agency (EEAA);
- Ministry of State for Local Development (MoLD);
- Ministry of Housing, Utilities and New Communities;
- Ministry of Water and Irrigation (MWRI);
- Industrial Development Authority (IDA);
- Ministry of Agriculture and Land Reclamation;
- Ministry of Health and Population;
- Ministry of Finance; and
- Ministry of Investment.

The current division of responsibilities between Ministries presents significant coordination problems. Institutional roles and responsibilities are unclear and there is a lack of technical, organizational and institutional capacity at the national level. The unclear division of

responsibilities has led to duplication of efforts, inefficient use of human resources, and lack of accountability.

EEAA is a coordinating agency with no executive powers to direct investments or plans neither at the national, regional nor the local level. The main responsibility of the EEAA is to ensure implementation of the provisions of environmental legislation, in particular Law No 4 of 1994 and its amendments Law No 9 of 2009 (The Environmental Law), and associated regulations and decrees. The EEAA formally interacts with local waste management planning through the Environmental Impact Assessment (EIA) process. Waste management facilities are granted licences to operate subsequent to the approval of the EIA. Moreover, EEAA is mandated with the inspection and enforcement of environmental regulations associated with waste management activities. Strengthening enforcement and enforcement structures, however, remains key (see section 3.4.2 – Measure A3.3).

Within EEAA, there is a Central Department of Waste and Material and Hazardous Substances. The Central Department was responsible for preparing the National Strategy for Integrated Solid Waste Management (the precursor to this NSWMP) in 2000, assists Governorates to identify sites for waste facilities, and is generally regarded as the technical solid waste management experts within national government, supporting many Governorates with aspects of waste management.

The AMANA is established under the Minister of Local Development. According to the Law of Local Administration 43/1979, AMANA's relevant roles and responsibilities could be summarized as follows:

- Provides advice and technical assistance to local administration;
- Harmonizes legal views addressing local administration matters amongst local administration units;
- Replicates successful experiences in Governorates;
- Manages training to local administration personnel;
- Acts as the technical secretariat for the Minister of Local Development in presenting issues to the Cabinet, as well as communicating the Cabinet's decisions to the local units;
- Propose legislations relevant to local administration systems;
- Investigate means of decentralizing central authority's functions to the local level;
- Supports local units preparing local budgets and participate in their discussions with central authorities; and
- Supervise grants and loans provided to Governorates and follow-up on the implementation of investment projects in the Governorates.

AMANA is also responsible for assisting the Governorates in developing SWM facilities, mainly composting plants of which there are 60 in the different Governorates. The evaluation of the performance of the composting plants showed that limited number of these plants is operating efficiently. The largest segment of these plants, under both governmental and private operators, is performing under medium or low level of efficiency. A number of these plants are out of service. The key problem is linked to the management of the plants and the limited profit from their operation. The reason is that this type of projects is regarded as service project with intense labour demand.

The composting plant operated in 15th-May-City is regarded as a successful model that should be replicated. The plan operates through contract with Cairo Cleansing and Beautification Authority (CCBA) with one of the national private companies sub-contracted. Service fees are applied for the treatment and safe disposal of waste.

AMANA is a technical secretariat of the Ministry of State for Local Government, and has extensive duties related to all issues at the Governorate level, and waste management is only a very small part of their role. As such, the sector does not receive the attention that it needs within the current institutional structures, and this lack of policy attention translates into staff numbers and levels of professional specialisation dedicated to the sector.

1.5 Institutional/organisational framework at the regional and local levels

In accordance with the principles of decentralisation, the national government policy is that Governorates are responsible for municipal solid waste management in their territories.

This means that whilst the Central Government set up policies, legislation and the framework for implementation of SWM infrastructure implementation mechanisms, Governorates are responsible for all SWM activities either directly or by contracting private sector companies. The responsibilities of Governorates are: setting regional strategies, regional planning, institutional and financial issues at the local level; site localization for SWM facilities; contracting, supervision and operation monitoring of private sector; enforcement of laws and regulations; training and public awareness. Municipalities are responsible for implementation of the system, monitoring and inspection and training.

Solid waste management has received low political priority, and one of the major reasons for poor quality of services is a severe lack of technical, organizational and institutional capacity through Governorates, Municipalities and New Cities.

There is a diversity of different institutional arrangements in place for solid waste management at the local level.

The vast majority of the Governorates do not include in their organizational structure a dedicated department for planning and management of waste services. The organizational set-up for waste management varies between the different Governorates. Departments such Housing and Utilities, Environmental Management or Planning and Follow up play some supervisory role in addition to their original responsibilities and supports the Governor and the Secretaries of the Governorates in planning and supervision of SWM services.

Given that these Departments are usually over occupied with their other responsibilities and are under resourced in terms of their human and physical resources, consequently, the SWM is practically left for the lower level of the local government (city and district level).

Governorates do not usually have an organizational structure specialized in SWM system with the exception of Cairo and Giza governorates. In the majority of Governorates, the Local Government Units (LGUs) are responsible for the public cleansing within the organizational structure of the city services. Therefore, the cleansing works intervene with other services regardless of the integration of the SWM phases, either on the city level or on the district level.

The organizational structure in Cairo and Giza Governorates includes two special agencies, named the Cleansing and Beautification Agency. Each agency is responsible for collection and transfer of wastes from the containers and the supervision of public disposal sites. The agencies are also responsible for operating composting plants either directly or through a private company. The Cleansing and Beautification agencies are the bodies responsible for concluding contracts related to SWM either with national or international companies.

A number of Governorates that have received donors' support in the field of SWM, have established organizational structures and systems for SWM, but were not all necessarily sustainable models.

The organizational structure in most of the Governorates does not include a separate body responsible for SWM planning, management and service monitoring of the SWM and public cleanliness operations. In Governorates like Cairo and Alexandria where the waste management service has been privatized, a separate Department for SWM Service Contract Monitoring has been established.

Environmental Management Units (EMUs) are located in the Governorates, and responsible for monitoring and enforcing the provisions of environmental legislation. Salaries and operating

expenses of the EMUs come from the Governorate budget, and technical advisory support from the Regional Branch Offices (RBO's) of EEAA. In some Governorates, EMUs play a role in SWM.

Moreover, other civil and informal actors play a role in SWM in some of the Egyptian Governorates. Numbers of NGOs provide MSW treatment, recycling, community development and public awareness related to SWM. Additionally, informal sector operators, namely Zabbaleen and Wahyas are actively operating in the provision of door-to-door household collection service, transport, sorting and recycling activities in Greater Cairo and Alexandria Governorate.

1.6 Financial framework

There is very limited information available on financial aspects of waste management services in Egypt. There is no single budget or cost accounting line for waste management within Governorates, except those (ie Cairo and Giza) that have established cost centres for these services (i.e. for CCBA and GCBA).

In Cairo, costs of waste management services are estimated at about LE 125/T[4] (14.40 Euro/T), not including the costs of resource recovery/recycling by the informal sector. Outside of Cairo, total waste management costs (from collection to disposal) are estimated to be in the range of 60 LE/T (6.90 Euro/T) to 110 LE/T (12.65 Euro/T).

Two parallel user-charging systems are functioning:

1. The first is the Cleansing Fee, a formal locally collected fee implemented through a variety of different charging mechanisms, most importantly the electricity bill;

2. The second is an informal cash payment at the door as a result of *ad hoc* arrangement with informal recyclers.

The Cleansing Fund is the most significant budgetary sources of finance for SWM. Originally, cleansing law number 38/1967, and its subsequent amendments in 1976 and 1982, stipulated the creation of the Cleansing Fund with a number of sources of revenues[5]. In 2005, the Egyptian People's Assembly issued Law 10/2005 amending Law 38/1967, and permitting solid waste management collection fees on the electricity bill. The fees are not tied to electricity consumption, but only utilize electricity bills as a vehicle for collection. Currently electricity bills are utilized as a fees collection mechanism in a number of governorate while other mechanisms like separate bills collected by Local Governorate Units (LGU) or Districts fees collectors are functioning in other governorates[6].

Revenues for the Cleansing Fund are mainly the monthly fees by residents in return for SWM services. In addition to this, other sources of revenues to the Cleansing Fund include fines and penalties for violations in accordance to law 38/1967.

Governorates use collected tariffs to either pay contract values to private companies and/or to finance their self-run SWM systems. Where charging via the electricity bill is in place, money is collected by the electricity company; the company hosts a special auditing unit which distributes the collected solid waste management fees to the different cities and cost centres.

Monthly payment thresholds per household stipulated in law 10/2005 are from 1-10 LE in cities and 1-4 LE in smaller towns. Shops and other commercial premises are charged from 10-30 LE/month.

[4] Source: Derived from Laila Iskander, Berti Shaker and Dr Rami El-Sherbiny. Economic Aspects of Informal Sector Activities in Solid Waste Management. Original data presented in US Dollars. Prepared for and Financed by The German Technical Cooperation Agency (GTZ) and The Collaborative Working Group on Solid Waste Management in Low and Middle Income Countries (CWG), October 31, 2006, Modified on August 2010.

[5] Review and Analysis of Existing SWM Laws and Regulations – Governorate of Alexandria, Abt Associates Inc.

6 Source: Amana, MoLD, Cleansing fees collection methods in various Governorates, 2007

The system of cash payments at the door has developed over generations, and still remains a key part of the informal financial system for SWM. Cash is paid to informal collectors/recyclers in return for their regular and reliable door-to-door collection services which they solely offer in the Governorates where they operate. The cash payments are an important source of revenue for the informal recyclers to sustain their businesses. In these Governorates, the duplication of fess is an issue of concern for the benefices who are paying for both the Cleansing Fund and the informal operators.

Fees collected by the informal sector represent a fraction of the total system costs (eg. primary collection, and primary recovery), and do not provide sufficient revenue for onward transport of non-recyclables to transfer, treatment and disposal facilities, and the operation and maintenance cost of these facilities.

Overall, it is estimated that there is typically a 35% funding gap in cost recovery for SWM operations[7]. Deficiencies are reported across all Governorates. This gap is partly covered by direct subsidies from the central government or from extra budgetary funds. Utilizing these funds is usually insufficient to cover financial needs for SWM and as a result in the majority of cases local governments suffer from deficits that are directly reflected in the low level of performance in SWM sectors.

The Ministry of Finance includes direct subsidies for CCBA and GCBA as the only legal entities entitled to directly receive allocations for SWM. Other governorates do not have specialized organizations responsible for SWM, however, they still receive direct SW related allocations from the Ministry of Finance in cases of contractual gaps in the cases when the governorates are contracting private operators. Other central sources of revenues used for bridging deficits come occasionally from MoLD or MSEA usually in the form of equipment.

Fiscal decentralisation remains an important issue in Egypt. Local governments are mainly dependant on central financial allocations and lack adequate autonomy to increase their local tax basis to cover service provision. Sovereign taxes in addition to a number of nontax revenues account for 17.5% of total local government revenues and the remaining 82.5% comes from transfers from central budget[8]. Improving locally collected revenue for solid waste management is an integral part of fiscal decentralisation.

1.7 Regulatory framework

There is no framework legal act which covers all waste streams (including municipal waste). Similarly, there are no subsidiary regulations (mirroring established EU practice) dealing with special waste streams such as waste electronic and electronic equipment, hazardous waste, waste tyres, packaging and packaging waste, end of life vehicles etc. There are no legally established technical norms.

Egypt doesn't have a SWM law. The laws governing solid waste collection, treatment and disposal are the Law 38/1967 on General Public Cleaning and Law 4/1994 for the Protection of the Environment and their amendments.

- Amendments were made to the Environmental Law 4/1994, adding certain clauses that increase the penalties on mishandling of solid waste, including open burning and dumping in undesignated sites.
- The People's Assembly issued Law 10/2005 for solid waste collection fee on the electricity bill, where citizens pay depending on their income level and area of residence.
- Law 9/2009 amended Law 4/1994 to include hazardous waste management collection, treatment, recycling and disposal.
- Presidential Decree 86/2010 regulated the closure of existing dumping sites and landfill at Greater Cairo, rehabilitation of their sites, and identifying the location of five new sites, for

[7] SWEEP Net. Country Report on SWM in Egypt 2010
[8] Khaled Z. Amin and Robert D. Ebel. Inter governmental relations and fiscal decentralization, 2010.

sorting, recycling and final disposal of municipal solid waste, outside the residential and commercial belt of Greater Cairo.

Law Number 4 of 1994 'The Environment Law' is the one of the key framework laws under which municipal solid waste management practices are regulated[9]. The Law states that it is prohibited to throw, treat or burn garbage and solid waste except in special sites designated for such purpose which are far from residential, industrial or agricultural areas as well as from water-ways.

Solid Waste collection and disposal are regulated by Law 38 of 1967 and the environmental Protection Law No. 4/1994 and its amendments 9/2009 which are both in effect. Law No. 38/1967 addresses waste management specifically and includes provision that: (a) the local administration agencies are responsible for waste collection and disposal, and provide licensing for waste collectors and contractors; (b) provision for occupants of buildings to set out waste for collection which was not enforced; and (c) a levy of 2% of the rental value. A penalty may be imposed for violation of the law; however, because of its insignificance, this penalty was rarely enforced.

The Executive Regulation of Law Number 4 of 1994 amplifies the siting criteria and requirement to allocate sites in agreement with EEAA, and also places a responsibility on waste collectors to maintain the cleanliness of garbage bins and vehicles, for garbage collection bins to be tightly covered, and to be collected when full. Environmental law is mainly concerned with disposal and not quality of service. Accordingly, enforcement is only focused on disposal and is not adequate. Only in the case of privatization, a contract monitoring until and enforcement is established but not by EEAA. EMUs might play a role in some Governorates.

The current legal/regulatory provisions for municipal solid waste management are weak. For example there are no provisions, e.g. specifying in detail roles and responsibilities of Governorates, Municipalities, service providers or waste generators; requiring local authorities to prepare and update waste management plans; regarding provision of a waste collection service; regarding provision of an integrated network of waste treatment and disposal facilities; requiring the clean up/remediation of old dump sites; requiring waste generators to pay service charges; requiring facilities to be designed and operated to certain minimum standards; setting targets (e.g. for collection service coverage, waste treatment, or recycling); or regarding management of many special waste streams[10]. In contrast, Law number 4 places significantly greater emphasis on control of pollution from hazardous waste.

1.8 Planning and service delivery framework

In 2001, a National Strategy for Integrated Municipal Solid Waste Management was published by the MSEA. The document provides a vision of a step by step improvement of practices, and integrated solutions to meeting the country's challenges in the waste management sector. The Strategy was partially implemented with limited success for, amongst other reasons, a lack of mandated institutional responsibility, low professional capacity, and failure to attract investment.

There is currently no requirement for preparation of regional/local waste management plans. In addition, apart from siting criteria, there are no national standards or guidance for landfills (except for Landfill Guidelines published by EEAA in 2002) or other treatment/processing technologies. The standards of individual facilities are determined via the EIA process, and executed and monitored mainly via the contracting process. In practice the engineering and operational standards of waste disposal vary widely.

Composting has a long history in Egypt. There are more than 60 composting plants located across Egypt, many of which do not operate effectively or at all. The approach to utilising/managing the facilities differs from case to case, as does the specific nature of wastes being sent to the facility.

[9] Law Number 4 of 1994 promulgating The Environment Law and its Executive Regulation, Egypt. Presidential Decree.
[10] eg. Packaging, tyres, batteries, waste electronics and electronic equipment, used oils etc.

Enhancing private sector participation (PPP) in the delivery of waste management services has been a policy priority for several years. A range of different contracting models are in place from integrated street sweeping, collection, treatment and disposal contracts, to waste treatment and disposal "Build, Operate, Transfer" (BOT) contracts. Problems have arisen during the first wave of SWM privatisation, and it remains a controversial issue.

1.9 Environmental and social framework

Egypt's informal recycling sector is extremely active, with a relatively high degree of vertical (upstream/downstream) linkages when compared to many other countries. The 'Zabbaleen' have highly organised operations which have been in place for several generations. Zabbaleen are active in the field of door to door collection and waste recycling in Cairo, Giza and Alexandria. Historically, the Zabbaleen have been cooperating and working closely with important segment of the informal sector, namely Wahyas who are active in the same Governorates.

In addition to these traditional informal groups, other newly emerging groups of waste pickers are dominant in all the Egyptian Governorates. They handle waste and strip out a large proportion of the total quantity of certain materials such as plastics, metals, paper and cardboard from the waste stream, particularly from high density urban areas. This income generating recycling activity constitutes a core source of livelihoods for these people.

Controlled and advanced waste management in Egypt can make a significant contribution to the reduction of greenhouse gas (GHG) emissions, through avoiding the generation or emission of methane from anaerobic degradation of waste. According to the German experience putting in waste management measures can lead to significant reductions of the country's total GHG emissions. Model calculations for other countries including Mexico, Turkey and Tunisia show that by implementing SWM systems, 10-15% of the total national GHG emissions could be reduced[11].

1.10 Summary of key challenges

The current policy as well as the institutional and legal framework for the waste management sector is not effective. Institutional roles and responsibilities are unclear and capacity is weak, not only horizontally across Ministries, but also vertically through Governorates, Municipalities and New Communities. Responsibilities are divided between Ministries, and this has led to duplication of effort, inefficient use of human resources, lack of trained staff, and lack of accountability.

Whilst individual Ministries are working to address specific waste management issues within their various remits, the institutional fragmentation in the sector gives rise to an un-coordinated approach which tends to divert the available financial and professional resources from one crisis situation to another. As a result, the measures intended to tackle the various crises often tend to address the symptoms rather than the causes of the problem, and tend to not be fully implemented due to a lack of effective policy, legislation, strategy, institutional capacity, finance, and the regular emergence of new crises.

Despite economic, social and environmental importance of the sector, and the impact that poor quality waste management practices have on the daily lives of Egyptian citizens, the sector remains largely un-regulated. Services are provided by a diverse range of actors, and the boundary relations between the formally organised waste collection services and the informally organised recycling micro-enterprises are complex and contentious. Waste management has been a source and catalyst of inter-community conflict, and a vehicle through which community dissatisfaction is expressed and protest is manifested.

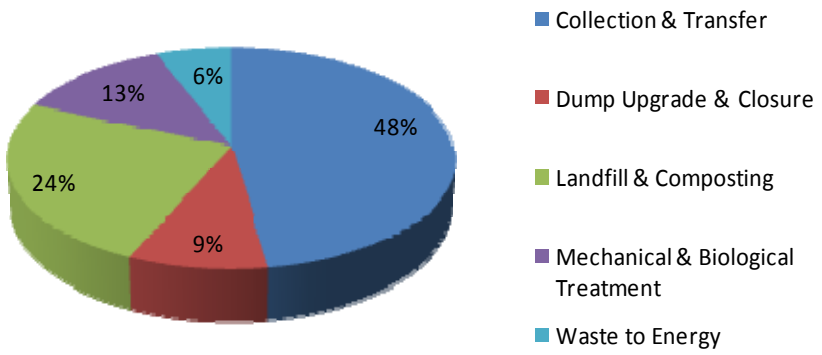
Main challenges presented by the current situation in Egypt are the operational and financial performance of Municipalities in waste management is poor, revenue generation is insufficient and services are often not provided in an efficient cost-effective way. Waste of the resources,

[11] G Dehoust G, Dr. D. Schüler, R. Vogt and J. Giegrich. Climate Protection Potential in the Waste Management Sector Examples: Municipal Waste and Waste Wood. Environmental Research of the Federal Ministry of Environment, Nature Conservation and Nuclear Safety. Umweltbundesamt, 2010.

physical losses and lack of financial rationale in operations and investments are evident. Financial performance is hindered by inadequate capacity in revenue administration, financial management and investment programming and budgeting.

The urgent need for reform is illustrated by the low level of investment which has been attracted into the sector. Initial estimates suggest that depending on the applied standards there may be between Euro 1.2 - 3 billion of capital investment demand for the municipal waste management sector over the next 10-years and Euro 3 billion including investments in the recycling industry chain and facilities for management of different wastes[12]. However, there are very few well designed 'bankable' projects available or in preparation, and without considerable action to address this situation a continuing deepening of the sectoral crisis seems inevitable.

Figure 1: Indicative structure of MSWM investment demand (by % of total investment)



There are complex social, economic and political relations within the status quo waste management system in Egypt. The energy and dynamism of the private (formal and organised informal) sector in Egypt provides strong potential for rapid improvement in waste management practices, and investment absorption. Initiatives like the NSWMP which seek to deliver change must be inclusive to all stakeholders and integrate robust environmental and social impact assessment procedures.

Underpinning all the issues above is behavioural change and communications. People generate waste, and people decide whether to manage it properly or not. Inspiring a step-change in environmental awareness and behaviour is therefore vital to success of the NSWMP.

The key challenges facing the SWM sector can be summarized as:

Lack of formal policies and strategic objectives and work plans that address the various phases of the integrated SWM process on the level of governmental and private sector.

Lack of institutional set-up and the sufficient capacity to plan, structure and operate integrated solid waste management system.

Lack of clear identification and division of roles and responsibilities among the various organizations in charge of SWM (including governmental organizations, civil society organizations, privates sector, community leaders….etc).

Limited availability of financial resources.

Weaknesses in the legislations and the organizations in charge of laws enforcement.

Shortfalls in the SWM equipment that lead to limited collection and transport coverage that does

[12] Lower band estimate derived from global sector investment analysis carried out by *Wasteaware* (www.wasteaware.org) for the United Nations CSD Inter-sessional Conference, Tokyo, 16-18 February 2011, http://www.uncrd.or.jp/env/spc/docs/ChairSummary.pdf. Upper band estimate derived from KfW project experiences.

not exceed 75% in large cities and is as low as 30% in some small cities while no service is provided to several slum areas and villages.

Lack of appropriate landfill sites that comply with the environmental standards.

Lack of efficient and compatible recycling facilities and equipment.

The low performance of the existing composting plants and the several operational and maintenance challenges they are facing.

Lack of capacities for management and operation and the limited wages that discourages human resources from working in the SWM field.

Lack of allocations for maintenance and deteriorated conditions of maintenance workshops.

Limited capacity and knowledge of the private companies in the issue of safe handling of hazardous waste which lead to mixing up between these hazardous wastes and domestic waste. No system for the construction & demolition, markets and slaughterhouse/abattoir wastes.

The absence of appropriate national database on the existing systems, practices and patterns of SWM is a key challenge that prevents the opportunity for efficient planning and monitoring.

Low level of public awareness with the issues of SWM which result in negative practices and weak public participation in SWM projects.

Contractual problems between the government and the private operators and lack of separation between the different phases of the system in the contracts (i.e. collection, transfer, disposal).

Lack of strong supervisory entity for SWM.

2 Setting the National Solid Waste Management Programme

2.1 Programme objectives

The objective of the NSWMP has been identified as:

> *Protection of public health, environment and quality of the living environment for Egyptian citizens through sustainable development of waste management practices.*

The purpose of the NSWMP is:

> *To support the establishment of new and effective policy, legislation and institutional arrangements for waste management at the National and Governorate level in Egypt, coupled with enhanced professional capacity, and an investment pipeline for implementation of sectoral projects at the regional and local level.*

2.2 Programme results

The expected results of the NSWMP are:

1. *An established waste management policy supported by framework legislation and implementing regulations for priority waste streams, and a developed institutional structure governing the waste management sector at the national and local level.*
2. *An established investment pipeline, with implementation of waste management concepts in 4 governorates designed and implemented with multi-stakeholder participation.*
3. *Enhanced professional capacity to direct, manage and implement policy, legislation, strategy, programs, projects and services.*
4. *Solid waste management plans at the national and local levels, with measures designed and implemented to increase service coverage and performance.*
5. *Broad involvement of civil society in the elaboration of policies and plans coupled with recognition of waste management & recycling as a profession.*

2.3 Positive impacts of the programme

The NSWMP is intended to catalyse development of the waste management sector across Egypt through developing the policy, legal and institutional framework, and making seed investments in infrastructure and services.

Implementation of an enhanced waste management system on national and in particular regional and local level will provide an opportunity to improve the living conditions of Egyptian citizens via the creation of employment as well as upgraded environmental conditions.

A growing waste management services sector will:

- Protect the health of Egyptian citizens;
- Accompany sustainable development of the Egyptian economy;
- Create a large number of skilled, semi-skilled and unskilled jobs;
- Improve the professional status and working conditions for informal recyclers;
- Reduce the emissions of greenhouse gases to the environment;
- Protect water resources and improve the quality of the soil;
- Make Egypt an even more attractive tourist destination.

2.4 Programme structure

The Programme is structured into 6 Components, and further divided into Workstreams and Measures. The 6 Components represent the building blocks of the NSWMP, and contain distinct Workstreams and Measures; however, they combine to form an integrated vision. Programme measures are described under Components A to E.

Only by focusing on all the Components will the objectives and results of the NSWMP be achieved. Component F presents an Implementation Plan for this work. This will require multi-stakeholder participation, and the combined effort of Government, industry & business, the waste management service sector (formal and organised informal) and civil society. The NSWMP provides a framework to catalyse and sustain this process.

Figure 2: NSWMP Components

3 Component A: Institutions, Policy and Legislation

3.1 Introduction

Developing the institutional, policy and legal arrangements for the waste management sector in Egypt has been a necessary reform for a long time. In order to address the current problems a need to establishment of a single national solid waste management entity to take charge of policy and oversee implementation in the sector has been identified and agreed through a process of inter-ministerial and stakeholder consultation.

A proposal has been endorsed by government for immediate establishment of an Egyptian Executive Agency for Integrated Solid Waste Management (ESWA) within the Ministry of Local Development. ESWA will take charge of developing the waste management sector, formulating policy, preparing legislation and regulative measures, and assisting the implementation of an integrated financial and technical support programme from the German Government and the European Union. Assistance from other international development partners in the waste management sector will be sought under the framework of this NSWMP.

The capacity of ESWA needs to be built-up over time. During this period an increasing budgetary and human resources allocation will be required as it takes on new staff, and the sector develops. In the process of developing to its target strength, ESWA needs to demonstrate performance and competence in its functions. Parliament will need to be assured that the funds invested are being well spent, and represent good value for money for the public budgetary allocation.

From the current baseline situation, it is clear that reaching the level of institutional capacity and resources needed for development of the solid waste management sector in Egypt will be a profound step-change, and a necessary pre-condition to effectively manage the growing SWM crisis in Egypt.

ESWA will take charge of waste management policy & strategy implementation (working in close collaboration with EEAA on environmental aspects), and will also lead investment programming and provide support Governorates, Municipalities and Holding Companies (if and when existing, since currently none exist). ESWA is expected to grow to a total staff number of around 150 over the coming years.

3.2 *Workstream A1: Institutional & organisational development*

Workstream A1 contains the following specific measures:

A1.1: Egyptian Executive Agency for Integrated Solid Waste Management (ESWA)
A1.2: Improving existing institutional structures
A1.3: Institutional/organisational structures at the regional and local level

3.2.1 Measure A1.1: Establishment of the Egyptian Solid Waste Management Authority

The Government of Egypt will establish ESWA to take charge of sector development. Establishing ESWA is a necessary precondition to manage the solid waste management sector in an effective, efficient and sustainable manner. This reform is essential to protecting public health, the quality of the environment, at the same time as developing a new sector of the economy and creating new jobs.

ESWA will take and progressively develop competence in each of the following functions.

1. **Policy**: Setting national waste management policy including objectives and targets.
2. **Strategy**: Development, implementation and updating of national waste management strategy and action plan.
3. **Legislation**: Drafting waste management legislation, and supporting the passage of legislation through parliament.
4. **Economic & financial instruments:** Research and establishment of appropriate economic and financial measures.

5. **Parliamentary briefings**: Support to the Minister in Parliamentary briefings and sub-committees.

6. **Stakeholder dialogue:** Coordination of inter-sectoral dialogue on SWM issues

7. **Investment planning/promotion:** Investment planning/pipelining, identification and promotion of investment opportunities in the waste management sector.

8. **Program management/coordination:** Management of programs financed by government and international development partners.

9. **Project identification and design:** Technical assistance to support Governorates and Municipalities in preparing waste management plans and integrated, bankable SWM concepts.

10. **Guidelines and standards:** Preparation and dissemination of best practices guidelines; development of technical and environmental standards.

11. **Information and data:** Collection and reporting of information and data (eg from Governorates and Municipalities).

12. **Knowledge management**: Collection and sharing of best practices amongst national and regional networks.

13. **National focal point:** Information and advisory service.

14. **Monitoring & evaluation:** Collection and publishing of key performance indicators and data

15. **Research & Development:** Management of R&D programs.

16. **Awareness raising:** Behaviour change, communications and environmental education.

17. **Tariff Policy**: Financial regulation, including establishing affordability benchmarks.

ESWA will have a Supervisory Board and an Executive Body. The Board will be chaired by the Minister of State for Local Development and contain Governmental representatives as well as nominated experts.

A Code of Governance will be drawn up to ensure the effective and transparent functioning of ESWA. In general, the role of the Board will be to review, amend and approve the working procedures, programme and budget of the ESWA Executive Body.

The ESWA Executive Body would be in charge of policy & legal development, national strategy implementation, investment promotion and coordination, and supporting the decentralised implementation of improved services in Governorates, Municipalities and New Housing Communities. It will be the national centre of authority and excellence in waste management policy, investment and practices.

ESWA will collaborate closely with EEAA on environmental aspects of waste management policy, strategy, legislation, R&D, codes and guidelines. Setting and enforcement of environmental regulation would continue to be the function of the EEAA, and this function will be strengthened in parallel to the establishment of ESWA.

Figure 3: Schematic of ESWA's Institutional Location

Establishment of ESWA represents major and much needed institutional reform for the waste management sector in Egypt. It will take time for ESWA to establish its full range of functions, and development of the professional competence will be supported by technical assistance from the German/EU programme.

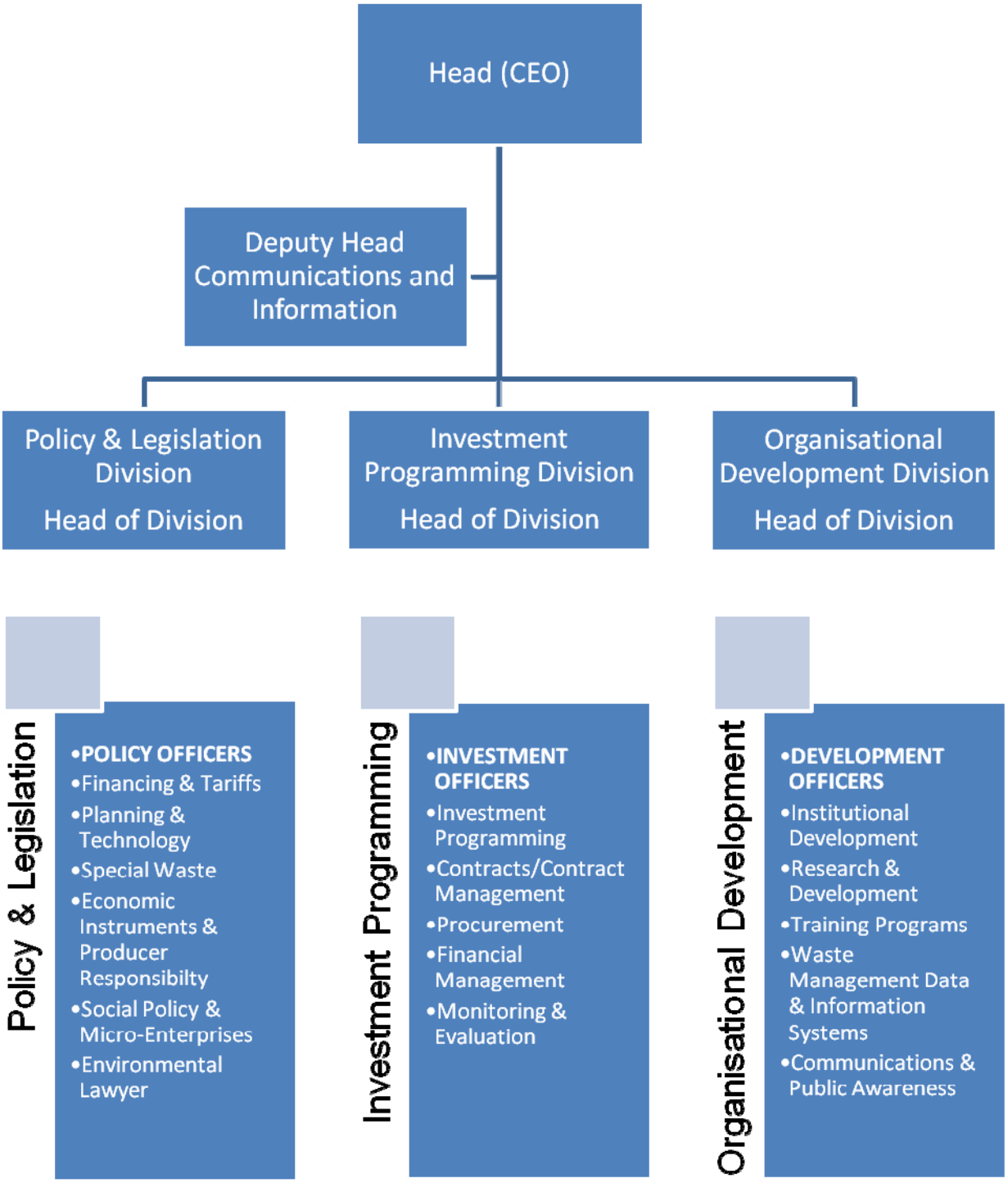
Establishing the Egyptian Solid Waste Management Authority (ESWA) will ensure:

1. A *coherent and integrated set of functions*, located in one institutional 'home' for the waste management sector;
2. A *supervisory, advisory and governance structure* for the waste management sector which involves a range of stakeholders inside and outside of Government;
3. A *policy consultation structure* for the sector which ensures strong cooperation between the Ministry of State for Environmental Affairs and the Ministry of State for Local Development;
4. A *distinction of policy from environmental regulatory functions* at the national level, representing an important reform step consistent with institutional practice for the waste management sector throughout the World.
5. That *investment is attracted* and channelled into sustainable local projects.

Establishment of ESWA and the necessary policies, law/regulations and sustainable financing instruments represents a signal to Egyptian companies and international partners to invest.

In the first phase, emphasis will be placed on staffing and operationalizing a functioning core unit, able to take charge of developing policy & legislation, programming & implementing investments and developing organizational structures and capacity. The organisational structure of ESWA for the initial development phase of 1-2 years is presented below. Qualified staff would be hired into ESWA from within and outside of Government.

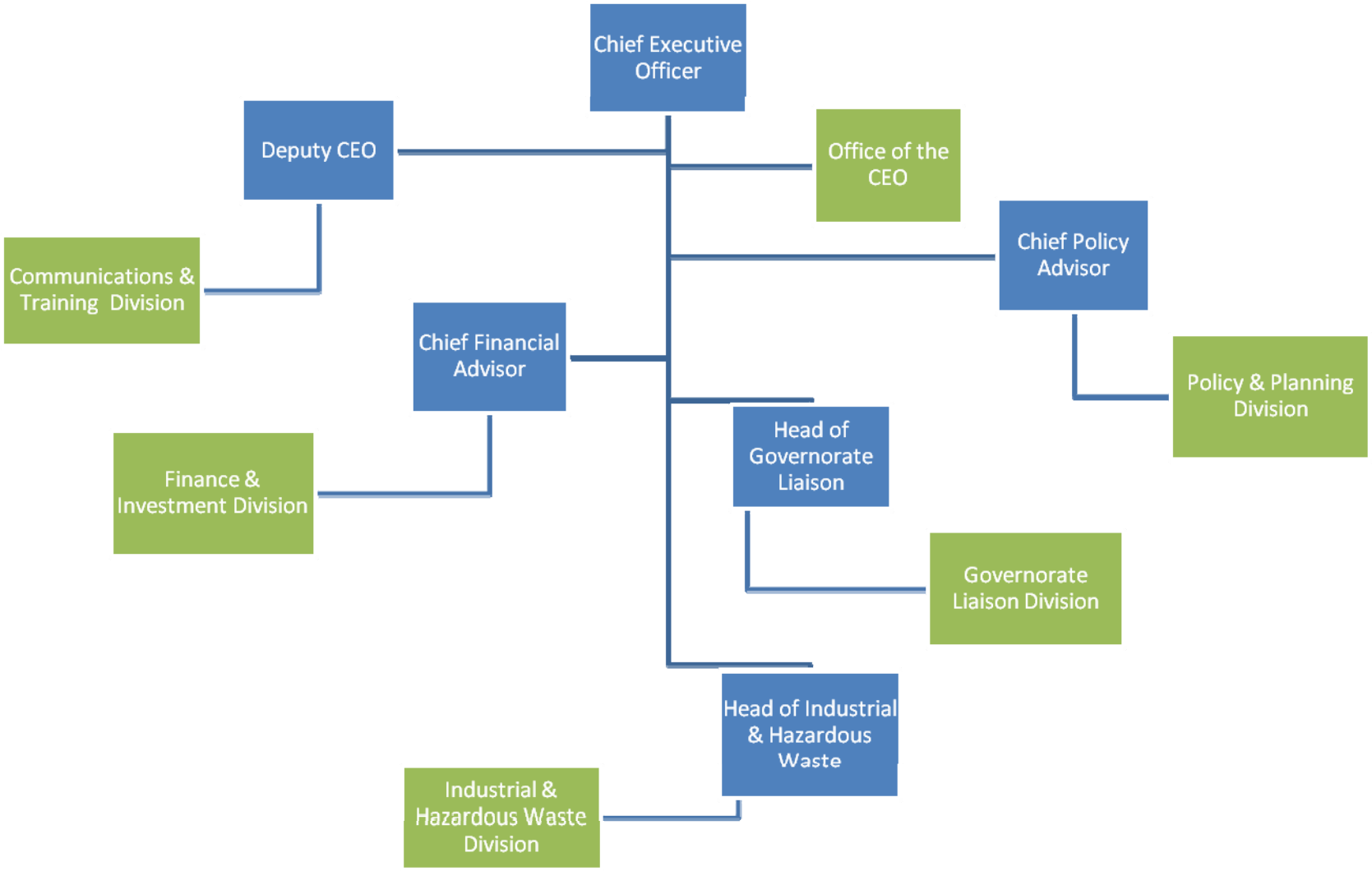
Figure 4: Initial ESWA Structure (Year 0-2)

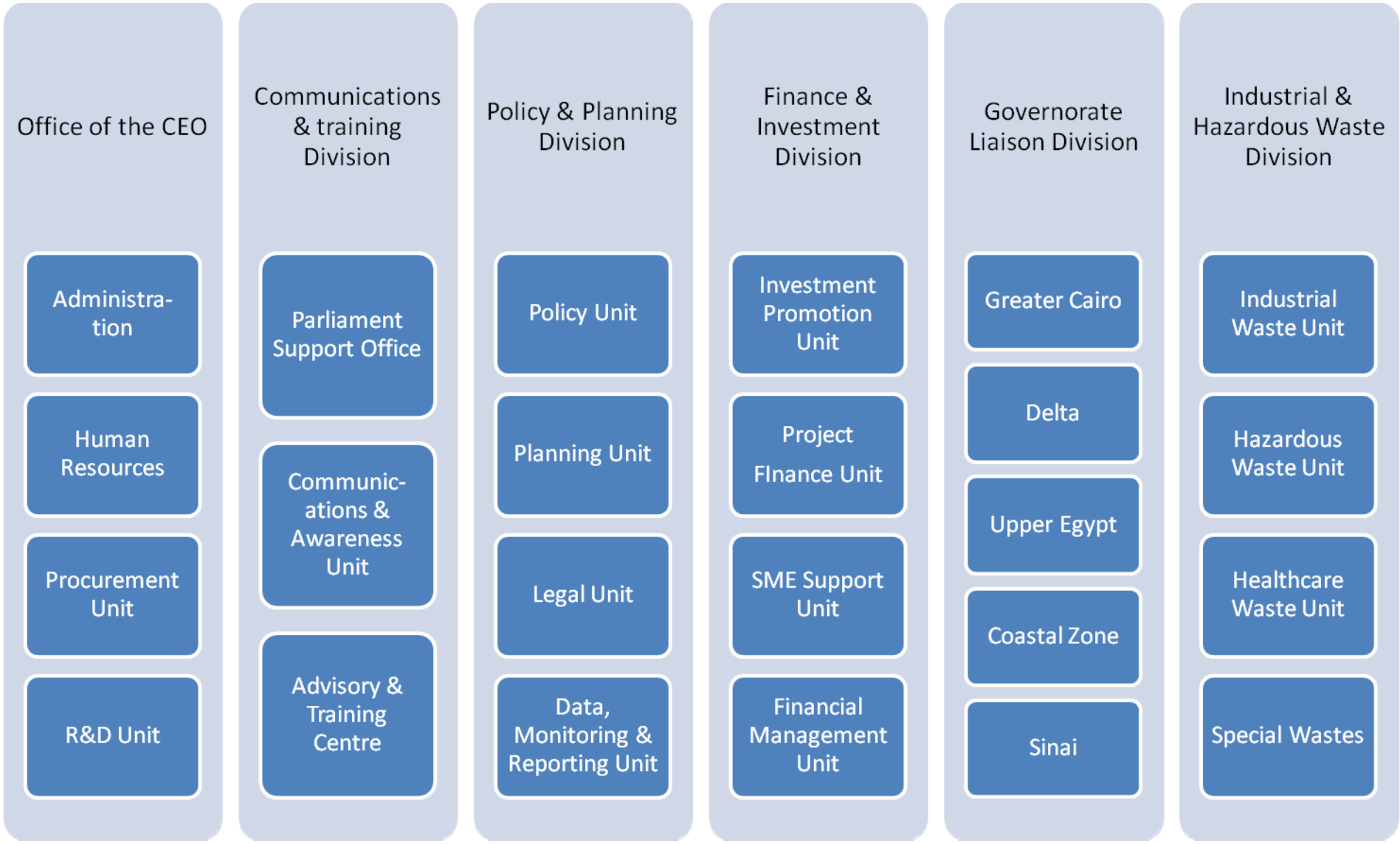


Over time, ESWA will develop its permanent and long term structures. The precise institutional structure will evolve organically, responding to needs of the sector as they emerge.

The figure below provides an indicative long term organisational structure for ESWA.

Figure 5: Indicative Organisational Chart: National SWM Entity (Year 2 onward)




Office of the CEO
Administra-tion
Human Resources
Procurement Unit
R&D Unit
Communications & training Division
Parliament Support Office
Communic-ations & Awareness Unit
Advisory & Training Centre
Policy & Planning Division
Policy Unit
Planning Unit
Legal Unit
Data, Monitoring & Reporting Unit
Finance & Investment Division
Investment Promotion Unit
Project FInance Unit
SME Support Unit
Financial Management Unit
Governorate Liaison Division
Greater Cairo
Delta
Upper Egypt
Coastal Zone
Sinai
Industrial & Hazardous Waste Division
Industrial Waste Unit
Hazardous Waste Unit
Healthcare Waste Unit
Special Wastes

3.2.2 Measure A1.2: Improving existing institutional structures

The NSWMP aims at strengthening of institutions and bodies involved in SWM and enhancing capacity of environmental authorities, particularly with respect to planning, permitting, inspecting, monitoring, enforcement, as well as project management. Government is committed to strengthening institutional structures and increasing professional staff levels. Technical Assistance will be sought from international development partners to assist this process.

Whilst the main focus will be to develop ESWA as the central hub of Egypt's waste management sector, other ministries and agencies which are involved in SWM (eg. the Ministry of Health for health-case waste, Ministry of Agriculture for agricultural waste) will require technical assistance to strengthen their functional roles in parallel to the establishment of ESWA.

Inter Ministerial coordination, and close consultation with stakeholders outside of government, is essential to efficiently channelling the energy of different organisations into achieving the objectives of the NSWMP

Strong emphasis will be given to the mechanisms and activities that will develop the inter-ministerial co-operation, e.g. on the development of necessary co-operation arrangements, establishment of permanent co-operation structures and development of instruments to increase necessary commitment and ownership.

Key staff from different Ministries will be recruited into ESWA Executive body, and the Supervisory Board will be constituted to channel the professional views of different experts into policy making.

3.2.3 Measure A1.3: Institutional development at the local level

It is essential to rationalise existing organisational structures at the local level, and develop specific institutional structures to support improved solid waste management services.

Up to now, the lack of a central SWM unit in the majority of local administrations has constrained effective planning, implementation and monitoring of waste management operations at the level of governorates, cities and villages in Egypt. Responsibilities have been scattered between several individuals and departments, creating delays the decision making process and institutional inefficiencies which have not helped effective service delivery. Current institutional arrangements at the local level often do not work to encourage professional development, limiting the ability of local administration to attract qualified staff to work in the waste management sector.

Therefore, SWM units at Governorate level needs to be established in order to rationalize resources, centralize capacities and enhance professionalization for creating an effective SWM system at the Governorate level.

Improved organisational structures will have a bearing on maximising fee collection for waste management services and improved cost recovery. The Law establishing the cleansing fund identifies a number of financial streams which are rarely utilised. In addition to tariffs collected from households, either directly or through the electricity bill, and fines, local administration units could also have special contracts with entities which are heavy generators of waste, such as factories and other commercial establishments in accordance with the polluter pays principle. However besides Cairo and Giza where the beautification authorities have an administrative capacity and exert a concerted effort to enter into such contracts, rarely have city administrations in Egypt collected these additional revenue streams.

This is primarily a symptom of weak organisational structures since there is no-one tasked with exploring new financial streams within the cleaning departments/units and where the objective is usually to minimise the number of contracts since there is limited capacity to administer numerous contracts.

Furthermore, institutional development at the local level is crucial for enhanced community participation and inducing the necessary behavioural change needed for establishing an effective

solid waste management system. Existing organisational structures at the level of local administration in Egypt does not allow for effective community participation in waste management services. Beyond receiving complaints from citizens there is no proactive engagement of citizens either in the design of waste management systems or in awareness raising and educational activities. While a number of local administration units in Egypt have contracted NGOs to collect and transport waste, the role of NGOs as community representatives and mobilisers have not been to a large extent utilised.

As a result, limited trust between local communities and local administration has been pervasive in Egypt which dilutes the whole system and is an obstacle in the face of any proposed improvements. Integration of a community relations unit within solid waste departments would be a significant step towards addressing this shortcoming.

Under the NSWMP implementation, those Governorates which demonstrate that they have (or are committed to putting in place) the institutional structures and levels of staffing required to improve waste management practices will be encouraged and supported. Investments will naturally flow to those reform-minded Governorates which demonstrate commitment and willingness to step up to the challenges being faced in the waste management sector.

Those Governorates which are selected to host investment project within the first phase of financing supported by German/EU financing will be required to establish dedicated SWM units to manage the investment projects. Commitment to sustaining the future professional administration and operating & maintenance costs of the facilities will be sought. The programme will also work with the MoLD to introduce such a change in the Governorates' organizational structures in consultation with the Central Agency for Organization and Management (CAOA).

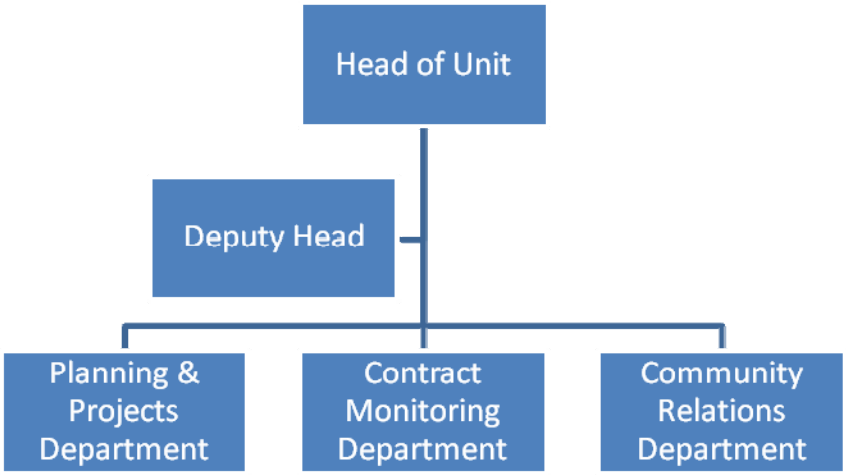
Within a SWM system, operational activities on the regional and local level include:

- Planning, concept development
- Collection, transfer, transport, treatment, disposal, recycling etc.
- Fee collection and financial management
- Procurement of equipment and services
- Maintenance and repair
- Community/public relations
- Personnel / staffing / HRD

The split of roles and competence between the Governorate and municipal levels has to be determined to reflect the specific regional/local needs; however, the Governorate shall assume the function of overall planning and concept development.

Given the diversity of our Governorates, there will be no single institutional solution. However, an indicative structure of a dedicated SWM unit at Governorate level is presented in the figure below.

Figure 6: Indicative structure of the dedicated SWM unit within Governorates



An important reform at the local level on which the NSWMP places focus is separation and strengthening of the functions of a) planning, management and service performance monitoring, and b) operation of waste management services and facilities. This functional separation is important regardless of whether the operation of waste management services and facilities is carried out by the public or private sector.

This separation of functions is important because it:

1. Introduces a performance specification providing a mechanism for monitoring the ***effectiveness*** of service provision.

2. Facilitates the identification of the costs of the operation of services providing management information to assess the ***efficiency*** of service performance.

Implementation arrangements and schedules for specific local institutional reforms will be developed and applied on a case-by-case basis. Necessary institutional reforms will be initiated in those Governorates benefiting from investments under the investment component of the NSWMP (see Component B). The aim is to build on the existing institutional structures at the local level, improving the functional performance and capacity of these institutions.

Where services are carried out by the private sector, a further potential reform at the local level is the separation of functions of financial control (ie. payment of service providers) from operational control (ie. day to day monitoring of service performance). This reform is necessary in some cases to improve the transparency and fairness of contractor monitoring and payment procedures.

One of the activities that should be strengthened on the Governorate level is data collection on SWM. Technical Assistance will include provision of expertise on basic principles and procedures of data information and collection at the regional level. The same situation concerns the law enforcement performed on the local level but coordinated on the central level.

Institutional set-up for the German/EU investment and technical assistance programme

The main counterparts at the local level for the German/EU investment and technical assistance programme will be Governorates. Governorates will be required to establish SWM Units. These Units will act as coordinator of all SWM activities, as facilitator and supporter of other actors in SWM.

General obligations of the SWM Units under the German/EU financed investment and technical assistance programme will include:

- To assume the role of project management unit (PMU) on behalf of the governorate.
- Establishment of the new solid waste management system and the implementation of infrastructure projects
- Tendering and contracting documents for works, supplies services financed in the framework of Financial Cooperation prior to their finalisation to ESWA for verification, in particular:
    - Copy of public announcement
    - Prequalification evaluation report and shortlist of pre-qualified candidates
    - Tender documents
    - Tender evaluation report
    - Contract to be awarded
    - Contract awarded
- To submit to ESWA for verification, the tender documents needed to fulfil the required standards. ESWA will forward the tender documents to KfW for no objection.
- To either hold or transfer to the cities and mother villages concerned the assets financed in the framework of financial cooperation.
- To ensure that at the end of the first implementation phase all operating costs for the new solid waste management system are covered through local revenues and the general budget of the Governorate.
- To submit a yearly financial forecast on operating costs of the cities and mother villages concerned. This forecast shall include the costs caused by the project and the expected sources and amounts for financing.

Governorates will decide on how to implement waste management services with support from ESWA and technical assistance where possible, either establishing municipal companies or private (formal or organised informal) contractors to deliver the day-to-day waste management services.

Governorates will be responsible for the following functions through established structures:

- Ensuring that waste is recovered or disposed of without endangering human health and without using processes or methods which could harm the environment;
- Ensuring recovery of waste by means of recycling, re-use or reclamation or any other process with a view to extracting secondary raw materials, or the use of waste as a source of energy at affordable cost;
- Ensuring that any holder of waste has it handled by a private or public waste collector;
- Ensuring that in accordance with the "polluter pays" principle, the cost of managing waste is borne by the holder of waste or the previous holders.

3.3 Workstream A2: Policy development

Waste management is a specialised area of policy, with strong political, social, economic, environmental and health, climate and international dimensions.

The various dimensions of waste management policy include:

- *Political dimension:* Waste management is one of the most visible of all public services. Cleanliness of public areas is an indicator of urban governance performance. The planning process for waste management facilities is intensely challenging.
- *Social dimension:* Waste collection services interact with people on a daily basis and deficiencies in service provision can lead to community tensions and conflicts. Street cleaning, waste management and recycling provide livelihoods.
- *Economic dimension:* Allocating budget and collecting taxes/charges to financially sustain the service is a core issue. Street cleaning, waste management and recycling is a sector of the economy with strong growth potential which can create jobs for a huge number of skilled, semi-skilled and unskilled workers.
- *Environmental and health dimension*: Inadequate waste management leads to pollution of the air, water and soil. Health and safety issues are commonplace in waste management, and in extreme cases poor standards can cause disease outbreaks.
- *Climate change dimension*: Waste management has strong climate change relevance, and sectoral measures can contribute significantly to the reduction of greenhouse gas emissions.
- *International dimension*: Trans-boundary movements of waste and secondary raw materials are an international concern. Waste management it is one of the few sectors whose development is relevant to all the Millennium Development Goals (MDGs).

Workstream A2 contains the following specific measures:

A2.1: Establishing policy
A2.2: Strategy finalization through stakeholder consultations

3.3.1 Measure A2.1: Establishing policy

National waste management policy will be developed through the NSWMP.

Policy will be based around the following principles:

- *Self-sufficiency*: A network of services and facilities is required to ensure that all wastes generated are properly managed.
- *Waste management hierarchy*: Certain waste management practices are more desirable than others.
- *Proximity principle*: Waste should be managed as close as possible to the source of its generation.
- *Principle of recognition*: Waste management and recycling is an important professional sector, and major future employer of skilled, semi-skilled and unskilled workers.
- *Polluter pays principle*: Those who manufacture products which lead to waste, and those who generate waste should be responsible for paying the costs for its appropriate management.

Municipal waste, industrial & hazardous waste, healthcare waste, agricultural waste, waste electronics and electronic equipment, tyres etc, require different policy approaches. During the first two years of the NSWMP, ESWA will undertake a review of which waste streams should be addressed as a priority, and establish waste-specific policies accordingly.
Judgements about the most appropriate response to a particular issue or concern are better when they are founded on careful study of options, and formulation of solutions with maximum net benefit to society.

ESWA will track international developments in climate mitigation policy, and instruments, and determine the extent of alignment of policy priorities within the waste management sector with these opportunities.

Policy documents will be drafted by the Executive Body in collaboration with EEAA on environmental aspects, and submitted to the Supervisory Board for review. The Minister (Chair of the Supervisory Board) will submit the final draft policies to Cabinet/Parliament for consideration and adoption.

3.3.2 Measure A2.2: Strategy finalisation through stakeholder consultations

The NSWMP is intended to catalyse multi-sectoral participation in solid waste management. Stakeholder participation in the formulation of policy and strategy, preparation of legislation, and the planning and implementation of services and facilities is therefore vital.

Multi-stakeholder consultations will be carried out on this NSWMP document including participation of Governorates, waste management industry, research institutions, community representatives and others. The process of consultation will be led by ESWA, supported by independent experts and facilitators.

The outcome will be an updated Egyptian Waste Management Strategy, which is intended to be published at the end of 2012.

3.4 Workstream A3: Legislation and regulations

Workstream A3 contains the following specific measures:

A3.1: Waste Framework Law
A3.2: Subsidiary regulations/decrees
A3.3: Enforcement

It is essential that the waste produced in Egypt has as little impact as possible on the local environment and so the purpose of developing legislation is to ensure that waste is managed in a controlled manner and to encourage good practice in the use of resources.

A Waste Framework law will be prepared to establish a legislative framework for the handling of waste across Egypt, promoting reuse, recycling, and recovery within a waste management hierarchy. It will provide a framework for the waste management sector aimed at the whole waste cycle from generation to disposal.

This framework will create the basis under which all Governorates and municipalities will prepare waste management plans to implement waste management policies and harmonise waste management practices.

The legal framework regulating MSWM in Egypt is multisided and falls under the jurisdiction of a number of different ministries. There is currently no framework legislation solely dedicated to SWM and therefore instead, legislation is in the form of provisions within other laws. The most significant are Law 38 of 1967 and its subsequent amendments in Law 10 of 2005, and Law 4 of 1994 and its amendments in Law 9/2009 and its Executive Regulations.

Based on the legal gap analysis of current national SWM laws and recent studies on the legal system for SWM and the proposed drafts of the SWM law, ESWA will conduct the work to consolidate and prepare a waste framework law in the framework of public and stakeholders consultations. The final draft of the law will be used to establish a basis for identifying SWM secondary legislation and decrees.

A participatory approach will be adopted during the process of preparing the waste law. The development will be a fully transparent process; citizens and stakeholders will be involved and consulted with throughout the process of developing the waste legislation. The stakeholders meetings and information activities will be organised to ensure a fully participatory approach for agreement on the final draft of the SWM law. The Working Group for finalizing draft SWM law will be established to ensure representation of relevant sectors (health, agriculture, industry etc.)

The new draft law will aim to regulate all waste streams and will take into account the general environmental protection principles of precaution and sustainability, technical feasibility and economic viability, protection of resources as well as the overall environmental, human health, economic and social impacts. It will also reflect internationally recognised principles governing SWM such as:

- The Waste Management Hierarchy
- The Use of Appropriate Technologies
- The Proximity Principle
- The Precautionary Principle
- Producer Responsibility and
- The Polluter Pays Principle.

Waste sector legislation has important links with legislation in other sectors. The industrial pollution control sector, water sector (discharge of dangerous substances) and the 'horizontal' sector (Environmental Impact Assessment and Strategic Environmental Assessment) are most relevant, because they all impact on waste management processes and facilities such as landfills and incinerators. The NSWM Entity and Working Group will consider these in developing the framework legislation on SWM.

In summary the framework will define key concepts and will put in place the requirements for the management of waste, including an obligation for waste management plans. This legislation will also establish the principles of handling waste in a way that does not have a negative impact on the environment or human health and an encouragement to apply the waste hierarchy and the polluter-pays principle.

- **Scope and Definitions:** Developing common terminology and a definition of waste are critical to improving the efficiency of waste management across the municipalities and Governorates of Egypt. The framework will start be defining key concepts such as waste, recovery and disposal and will clarify the distinction between waste and non-waste, including a section detailing the categorisation of waste.
- **Waste hierarchy:** A waste hierarchy will be established which lays down an order of preference for best overall environmental options in waste policy and waste operations: prevention, re-use, recycling, other recovery operations, and safe and environmentally sound disposal. In order to better protect the environment, the Governorates will be required to take measures for the management of their waste in line with this hierarchy.
- **Protection of human health and the environment:** An important objective of this legislation will be to ensure the management of waste without endangering human health and without using processes or methods which could harm the environment. Governorates will also need to take the necessary measures to prohibit the abandonment, dumping or uncontrolled disposal of waste. Great emphasis will be placed on the prevention, reduction, re-use and recycling of waste, as well as expanding collection services to all.
- **Responsibility for waste management:** Administrative responsibilities will be divided effectively between different levels of Government. Waste generators will take the necessary measures to ensure that their waste is managed properly.

- **Prevention of waste:** Legislation will aspire to encourage the prevention or reduction of waste production by the development of clean technologies that are sparing in their use of natural resources, technical development and marketing of less polluting products and development of appropriate techniques for the final disposal of dangerous substances.
- **Network of treatment and disposal facilities:** Governorates will be required to take appropriate measures to establish an integrated and adequate network of treatment and disposal facilities, taking account of the best available technology not involving excessive costs.
- **Re-use and recycling:** This framework law will ensure that waste generators will take measures to promote the re-use and recycling of products and will encourage the establishment and support of re-use and recycling networks. Use of economic instruments, procurement criteria or quantitative objectives will be enabled. Promotion of high quality recycling including establishment of separate collections of 'recyclable' and biodegradable' waste fractions will be sought in order to improve the revenue from recycling, as well as improve the working conditions of professional recyclers. Quantitative targets will be considered.
- **Costs:** Implementing the "polluter pays" principle, the cost of disposing of waste will be borne by the original waste producer or by the current or previous waste holders. As far as practicable, costs will be allocated in such a way as to reflect the real costs to the environment of the generation and management of waste.
- **Waste Management Plans:** To deliver the above objectives the Governorates will be required to develop regional waste management plans to cover the whole country. These plans will provide an analysis of the current waste management situation as well as the measures to be taken to improve environmentally sound collection, transfer, re-use, recycling and disposal of waste.

  Waste management plans will contain information on the type, quantity and source of waste to be recovered or disposed of, existing and future collection systems, site location criteria, transfer, treatment and disposal sites and supporting waste management measures. Plans will also take into account the environmental impacts of the generation and management of waste. Plans will also need to demonstrate how the costs of the preferred systems will be covered, and include institutional and human resource development plans.
- **Environmental Permits and Registrations:** Law 4/1994 and its amendments cover permitting requirements for all kinds of hazardous wastes. The permitting system will be reviewed, and options to extend it to other waste streams investigated.
- **Inspections and records:** All waste management facilities which carry out waste treatment and disposal operations or collect and transport waste (including brokers and dealers) may be subject to appropriate periodic inspections by authorities. Inspections will cover the origin, nature, quantity and destination of the collected and transported waste. Records of the quantity and type of waste and the destination and frequency of collection, mode of transport and treatment method shall be kept and made available for inspection.
- **Reporting and Reviewing:** Each Governorate will be required to submit an annual sectoral report to ESWA detailing measures taken to implement the Waste Framework Law, and progress achieved in the implementation.

3.4.1 Measure A3.2: Subsidiary regulations/decrees

A number of subsidiary regulations relating to the management, transport, treatment and disposal of waste will be developed to implement and regulate Egypt's National Waste Framework following the preparation and adoption of the final draft of the Waste Framework Law.

The proposal for adopting secondary laws will be prepared by ESWA in close consultation with EEAA and presented to relevant Ministers for approval. The Working Group established for finalizing the draft of the framework law will carry out the consultation of secondary regulations and decrees.

Technical and environmental standards will be brought in either by way of regulation, code or guideline, or a combination of the three.

Subsidiary regulations to be considered will include the following:

Duty of Care regulations: Regulations may be put forward to ensure that anyone who produces, imports, carries, treats or disposes of controlled waste or acts as a waste broker has a duty to ensure that any waste produced is handled safely and in accordance with the Framework law. These obligations could include ensuring that the waste is transported to a proper site.

Waste Management Licensing Regulations: Waste Management Licensing regulations will be considered in order to establish a permitting regime for waste facilities. Activities which are excluded from requiring a permit or that are exempt from permitting would be identified.

List of Wastes Regulations: This regulation will provide a waste catalogue, including list of codes used to classify and report on wastes.

Packaging Regulations: Packaging regulations would set out essential requirements for packaging which apply to packaging importers, producers, sellers and distributors, and include enforcement, offences and penalties. The full range of extended producer responsibility models will be evaluated for their appropriateness in Egypt. Such schemes would aim to ensure that the packaging industry is responsible for ensuring the establishment and financing of collection and recovery systems. Aim would be to guarantee achievement of the recycling targets defined in the national framework law, and provide additional financial stream for local recycling companies and informal sector associations/cooperatives.

Waste Electrical and Electronic Equipment Regulations: Under these regulations, producers of electrical and electronic equipment would be required to cover the costs of collecting, treating, recovering and disposing of equipment when it reaches the end of its life. The objective of this is to reduce the amount of WEEE sent to landfill, and to generate employment opportunities.

Other Extended Producer Responsibility regulations: Other producer responsibility schemes will be considered as a major implementation tool for the improvement of waste collection and recycling systems for specific waste streams as appropriate.

Hazardous Waste Regulations: Hazardous Waste regulations will detail the requirements for controlling and tracking the movement of hazardous waste and provide additional regulation by banning the mixing of different types of hazardous waste.

3.4.2 Measure A3.3: Enforcement & enforcement structures

The National Strategy for Integrated Municipal Solid Waste Management adopts the following initiatives: set up general policies, guidelines, performance benchmarks and indicators and bases for contracting and licensing/permitting, best practices and periodic review of these to amend and enact legislation and provide for its enforcement.

The process for enforcing SWM legislation will consist of two main categories:

Environmental Inspection and Enforcement:

This will address and cover all environment related aspects of SWM activities and facilities. The focus will be to ensure compliance with the environmental requirements associated with management of all waste categories as reflected by the environmental legislation as well as with any environment related articles of the New SWM legislation. Actions to monitor, achieve compliance and to impose consequences for violating SWM related environmental legislations or posing a threat to public health or environmental quality may be undertaken.

The lead in this case will be for the EEAA relevant central departments, the Regional Branch Offices (RBOs) of EEAA and the Environmental Management Units (EMUs) of the Governorates.

Although there exists some degree of capacity for environmental inspection and enforcement within EEAA, RBOs and EMUs, yet there is much room for improvement, especially when it comes to environment related aspects of SWM.

The relation between the RBO and the EMU is based on collaboration and coordination in the areas of data exchange and organisation of on-site visits. The difference in staff expertise between both could be debated due to the geographic variations and extended amount of variables. A typical scenario of cooperation between the two entities would be as follows: one of the head of EEAA SWM departments would contact the head of the EMU informing him that EEAA representatives would be visiting a certain site to investigate a complaint. The EMU gets the needed authorisation from the governor and prepare whatever could be needed for the visit – including available data. EEAA staff, RBO staff, EMU staff would move together to the site to do the needed inspection.

It would be fair to say that cooperation between these entities could be much stronger but the following solutions need to be addressed first:

- Adequate staffing and Extensive capacity building and training to both the RBO's and EMU's
- The development of detailed mechanisms of cooperation and providing hands-on training on these mechanisms

SWM Service Inspection and Enforcement:

SWM service inspection and enforcement will in turn comprise two tiers:

The Process of Inspection and Enforcement of SWM Legislations: The process of enforcing SWM legislations, in particular the new law, will consist of monitoring and inspection of SWM practices, operations, and facilities to determine the compliance status and to detect violations. This will apply to generators, whether individuals or establishments, as well as to SWM service providers and operators. In situations where standards have not been achieved or regulations have been violated, negotiations with individuals or facility managers who have not been compliant may take place to develop mutually agreeable schedules and approaches for achieving compliance.

In specific situations, legal actions to enforce compliance and to impose some consequence for violating the SWM law may be undertaken. Enforcement may also include compliance promotion (e.g., educational programs, technical assistance, subsidies) to encourage voluntary compliance.

The Process of Monitoring and Enforcing SWM Contracts: This will apply to Governorates and municipalities where the SWM services have been contracted out. The focus here will be to ensure compliance of the SWM service provider with the stipulations and requirements of the contractual agreement.

While there has been some institutional capacities built for "monitoring and enforcement" related to SWM activities and facilities, yet these were limited to Governorates where privatization has taken place. These capacities exist only within "Contract Monitoring Units" that have been established within these Governorates and are merely focused on contracts' monitoring and enforcement, with still much room for improvement.

The national SWM entity will develop an Action Plan for Capacity Development of enforcement structures related to SWM. This will include the relevant departments within the entity itself as well as the proposed SWM Departments at the Governorate level. Capacity building will address, but will not be limited to:

- Efficient organizational structures and staffing needed for effective inspection, monitoring and enforcement.
- Inspection planning and sound enforcement procedures.
- Training programmes for relevant staff at the central and Governorate levels.
- Checklists, manuals and kits addressing the professional aspects of inspection, monitoring and enforcement.

3.5 Workstream A4: Economic & financial instruments

3.5.1 Measure A4.1: Business & financial instruments

Economic instruments generally refer to policies or tools that can be used to influence people's behaviour through financial incentives or disincentives to control pollution and improve cost effectiveness of environmental protection.

Economic instruments are usually used in SWM to: reduce the amount of waste generated, reduce the proportion of hazardous waste in the waste generated, segregate hazardous waste for special handling and disposal, encourage recovery, reuse and recycling of wastes, support cost-effective solid waste collection, transport, treatment and disposal systems, and minimize adverse environmental impacts related to solid waste collection, transport, treatment and disposal systems[13].

The use of different economic instruments can prove effective in achieving some of these objectives with regards to SWM in Egypt as follows:

1- Undertake a comprehensive review of the tariff structure to obtain better cost recovery for SWM in Egypt.

Tariffs or user charges are a type of "*revenue raising"* economic instruments. They are used by Governments to raise revenue to achieve cost recovery for different solid waste management activities. However, type of tariffs vary and can be utilized also to achieve other goals such as waste minimization.

In Egypt the current tariff structure is regulated by Law 10/2005, which permits solid waste management collection fees on the electricity bill. Law 10/2005 stipulates:

- Residential apartments in the capital city of each governorate to pay a monthly fee ranging between 1 LE and 10 LE (0.12 Euro to 1.20 Euro).
- Residential apartments in non- capital cities to pay a monthly fee ranging between 1 LE and 4 LE (0.12 Euro to 0.46 Euro).
- Each governorate sets a range of fees largely in accordance to the income level of the residential area.
- Commercial and industrial establishments to pay a monthly fee ranging between 10LE and 30 LE (1.15 Euro to 3.45 Euro). Note here that some special entities, such as hospitals, pay much more to handle their special wastes and are not regulated in this law.

ESWA will liaise with relevant ministries and institutions to review the current tariff structure in Egypt and explore other possible scenarios that could achieve more efficient SWM system along with raising revenues; this may include but will not be limited to:

- Revisiting the current tariff level and retesting the affordability levels and the willingness to pay a higher tariff for the service.
- Exploring a separate tariff structure for commercial and industrial establishments based on quantity of waste produced (incentive for waste minimization), e.g. applying a 'per ton' or 'per volume unit' ratio basis.
- Introduction of a new SW or municipal tax to be collected by local governments, to increase their ability to finance SWM needs.
- Introducing Extended Producer Responsibility systems.

[13] *Economic Instruments for the Solid Waste Sector,* Inter-American Development Bank Regional Policy Dialogue Washington, DC, USA, February 2003

2- Using economic instrument to provide support to the Informal Sector to enhance waste recovery and recycling

Economic instruments can be used to encourage waste recovery and recycling in Egypt. Egypt hosts a significant and diverse informal sector working in waste recovery and recycling across all Governorates. The informal sector has been facing problems with the introduction of the international private sector companies in Egypt- especially the traditional groups of the sector "Zabbaleen" working in Cairo and Giza. Recently the GOE is exploring a number of actions to organize and coordinate the work of the Zabbaleen along with the private companies.

It is important to build-up the recycling sector. ESWA will consult with stakeholders to define policies which will help gradually formalize the sector and assist in the growth of the Egyptian recycling businesses; this may include but will not be limited to:

- Extended Producer Responsibility schemes which work alongside micro-enterprises.
- Reviewing tariffs that are directly related to disposal of SWM and exploring the possibility of levying new tariffs in this respect to favour one option over the other (e.g. levying higher landfill disposal tariff in order to fiscally encourage recycling);
- Providing subsidies, grants and/or micro-finance for the establishment of micro enterprises to recover material from waste;
- Providing subsidies, grants or micro/meso-finance to establish small and medium recycling industries;
- Tax incentives for waste recycling industries;
- Custom exemptions for recycling machinery;
- Levying Taxes on the use of virgin material;
- Use of deposit funds. Deposit funds schemes are used in Egypt in limited programs such as certain beverage bottles and Liquefied Petroleum Gas (LPG).[14]

3- Fee collection efficiency and enforcement of payment

MSWM fees are collected on the electricity bill by virtue of law 10/2005. Fees are not tied to electricity consumption, but only utilize electricity bills as a vehicle for collection. Tariffs are collected by the electricity company; the company hosts a special auditing unit which distributes the collected solid waste management fees to the different cities and centres. The collected fees are distributed according to the proportions of the received fees.

Collection of fees on the electricity bill ensures a high level of fee collection efficiency which reaches over 90% in some Governorates.[15] However, there is no penalty imposed in case of refusal to pay the monthly SWM, a situation which arises in some areas, especially low income ones which are generally suffering from low level of service provision.

There is hence a need to put in place a mechanism which legally enforces the payment of MSWM and penalizes households which fail to pay. However, such measure should come hand in hand with a satisfactory level of service provision to residents.

3.5.2 Measure A4.2: Carbon financing

Carbon trade may become a reasonable source of funding for selected measures in SWM. It is expected that the "classic" clean development mechanism (CDM) will be suspended after 2012, thus under this program new CDM projects are unlikely to be developed.

However, other mechanisms and carbon markets will be still available. Sources are expected from:

[14] USAID. Program Support Unit, Egyptian Environmental Policy Program: Six Economic Instruments in Current Use in Egypt, October 2000

[5] Poverty and Social Impact Analysis (PSIA) for SWM Reform Policy, 2010.

- Registered CDM projects such as co incineration in cement plants.
- Registered programme of Activities (PoAs) (eg. taxi scrapping project, decentralized composting) which are registered in advance to be later joined by projects.
- Voluntary carbon market, which shows in a questionnaire a strong acceptance for emission reductions generated in Egypt. Projects must include energy production (eg. digesters, landfill gas).
- Nationally Appropriate Mitigation Action, which are expected to be either partly bankable or linked to financial funds.

3.5.3 Measure A4.3: Producer responsibility

According to the principle of "extended producer responsibility" (EPR), producers are not only responsible for selling their products into the market, but also for ensuring the responsible management such product and materials following their useful life (ie. when they become waste).

It has become established international practice for producers of goods to contribute with financial and organisational support to the establishment and operation of recycling, recovery and management systems for specific waste types, including but not limited to:

- Packaging and packaging waste;
- Waste electronics and electronic equipment;
- Waste batteries and accumulators.

EPR complements the "polluter pays" principle, as additional costs required for recovery and recycling are included in prices of new products. Therefore, a customer buying new product is paying in advance for its recovery or recycling when the product will become waste. The term "producer" comprises not only producers as such but also importers, i.e. producer are any person who places product for the first time on the national market.

Currently the principle of extended producer responsibility is not applied in Egypt. Tunisia for example covers 80% of the running cost of central facilities by applying EPR.

Internationally, a wide range of systems have been developed and implemented. Generically, however, producers can fulfil their obligations in two different ways:

- Separately or by establishing their own organisations, or
- By joining producer responsibility organisation responsible for financially and where necessary logistically supporting the collection and management of certain type of waste.

The advantage of the first option is that competition between a number of companies and organisations should force producers to reduce prices and increase efficiency of recovery and recycling. On the other hand, establishment and control of the system with large number of independent participants are very complicated and it may take long time until the system becomes operational and effective.

The advantage of the second option is that it is potentially more readily implementable and provides a fewer number of organisations to regulate. Separate producer organisations may be established to deal with each type of waste (e.g. packaging waste, WEEE, batteries and accumulators, etc.). The applicability, range of models, and basic principles of establishment, structure and operation of EPR systems for different waste streams will be studied by ESWA, and selected schemes brought forward for implementation.

4 Component B: Investment Programming & Implementation

4.1 Investment Strategy

All elements of the waste management systems in Egypt show significant gaps and require large investments. A recently conducted survey of Governorates determined that the systems in place for waste collection, treatment and disposal are far from the goals as stated in the National Strategy for Integrated Municipal Solid Waste Management (2000).

The main reasons for the shortcoming are either lack of operation and maintenance of existing systems, or planned investments never materializing at all. The technical problems being faced as well as their environmental impact vary mainly with regard to the region and the kind of settlement (urban/rural). The NSWMP seeks to address the major needs in an integrated approach while focusing on the main tasks described below

- Collection
  Nationwide the collection systems show more or less severe limitations in service coverage, which ranges in most Governorates between 50 and 70% (related to total waste generation).

  A significant part of the population does not receive waste collection services at all. In most areas between 70 and 90 % of the population is connected to waste collection systems, however some governorates report lower numbers. The reported shortfalls indicate endemic capacity problems which are mostly due to a lack of equipment, poor condition of vehicles and facilities and low efficiency (for instance: collected amount of waste per worker ratio).

  In contrast the generation of municipal solid waste in Egypt has increased by 37% from 40,000 tons per day (2001) to 54,800 tons per day (state of the environment report, 2010) while only little progress was achieved with establishing the needed waste collection systems.

- Waste treatment
  Two major types of waste processing are in place, composting and recycling. 60 combined recycling and composting facilities with an overall capacity of 9,600 tons per day have been installed. At present, 14 facilities are not functioning, while the other 46 plants work on an average capacity level of 63% adding up to a total active capacity of 4,664 tons per day, equal to less than 10% of the amount of waste generated.

  Data shows that short term (100 facilities) and long-term targets (50% treatment capacity) were not achieved. Moreover, the current situation has deteriorated since 2000, with the number of operating facilities down by 10. Problems mainly arise from a structural lack of resources for treatment and disposal, owing to the reality of available funds being channelled to the more “visible” collection services.

  Without adequate support the facilities are suffering from a lack of personal and investments (replacements). Moreover, private sector participation did by far not meet the expected level.

- Waste recycling
  The organisational structure, technical means and professional capability of the material recycling sector have not changed significantly in the last 10 years. Most recycling activities are being still carried out by the informal private sector, which plays a dominant role in Greater Cairo and to less extent in other governorates. The activities are corresponding to market situation of recyclables, which showed both boom times (2005-2007) and downturn (2008/09).

  There is no structural mechanism in place to leverage investment into the recycling, reprocessing and recycled product manufacturing sector. A tremendous opportunity exists to build on the strengths of Egypt’s home grown recycling businesses, improving productivity and sustaining existing livelihoods and creating new jobs.

- Disposal

  The current disposal situation is marked by dumpsites and accumulations with significant negative impact on the environment through gaseous, liquid and solid emissions. During the past 10 years little progress has been made concerning the waste disposal all over Egypt. The number of sanitary landfills increased from 0 to 8, while the disposal predominantly still happens at dumpsites. 6 out of the 8 sanitary landfills are located in urban areas (Cairo 2, Alexandria 2, Suez and Port Said), leaving the rural areas even in vulnerable regions (Delta) without state-of-the-art disposal facilities.

  In terms of disposal, the 2000 strategy, which set targets of 90% waste disposal to sanitary landfills, clearly failed. As with the treatment the disposal suffers from a lack of financial means for operation and investments.

  Similarly, funds are not routinely reserved for the closure and aftercare of dumpsites or landfills. Closure, remediation, restoration and aftercare of landfills is a major investment item which needs to be guaranteed in the future.

In summary it can be concluded that the targets set in the 2000 Strategy have not been achieved. Specifically:

Collection:	little progress, targets not achieved
Treatment:	declining performance
Recycling:	stable, targets partially achieved
Disposal:	little progress, targets not achieved

Investment Demand

One of the most evident reasons for the failure to improve the waste management sector over the last 10 years is that there has been an endemic lack of investment in the necessary infrastructure and services, and insufficient funds to cover operation & maintenance costs.

The urgent need for reform is illustrated by the low level of investment which has been attracted into the sector. Very few well designed ‘bankable’ projects available or in preparation, and without considerable action to address this situation a continuing deepening of the sectoral crisis seems inevitable.

Investment Objectives

Investment is required be used to tackle acute negative impact on health and environment. The investment strategy considers the experiences from the previous SWM strategy period, which failed to reach any of the envisaged targets. In terms of investment, a key lesson learnt was that on a short to medium term the available financial means from the public, private and international sources have not matched the financing demand. Moreover, full cost coverage of the waste management systems by residents and other users is difficult to achieve overnight.

With financial and technical assistance from the German Government and the European Union, new investments in the waste management sector will be implemented. The major objective of the first phase of investments under this NSWMP will be to achieve a demonstration effect which may act as a “blueprint” or “seed” for future waste management projects.

Even with these important seed funds, a very large quantity of investment finance will be needed for Egypt to approach the demand for the municipal waste management sector. Support of other development partners will be helpful in meeting some of this residual demand; however, it is clear that given the scale of the needs, a large amount of investment will be need from state budget and from the private sector.

The anticipated future investment strategy will aim to reflect this overall frame through strict prioritization of investments according to the level of needs, the environmental impact of existing problems (vulnerability), the multiplier effect, and the sustainability.

The investment strategy is flexible considering regional characteristics and the level of development; in particular the large differences between rural and urban areas as well as between more and less densely settled rural regions. Additionally, the reasonability of the investment compared to the available funds will need to be carefully regarded.

Close attention will be paid to sustainability aspects in order to avoid that facilities are not only established, but also can be operated and maintained effectively. This issue applies to all aspects of integrated waste management systems. Investments in this field will support waste management concepts which will deliver significant improvements to the integrated waste management system within a Governorate.

Investment Climate

The investment environment in SWM sector in Egypt shows strengths and weaknesses, which both should be carefully considered when designing waste management concepts. The range of investors and investment sources includes:

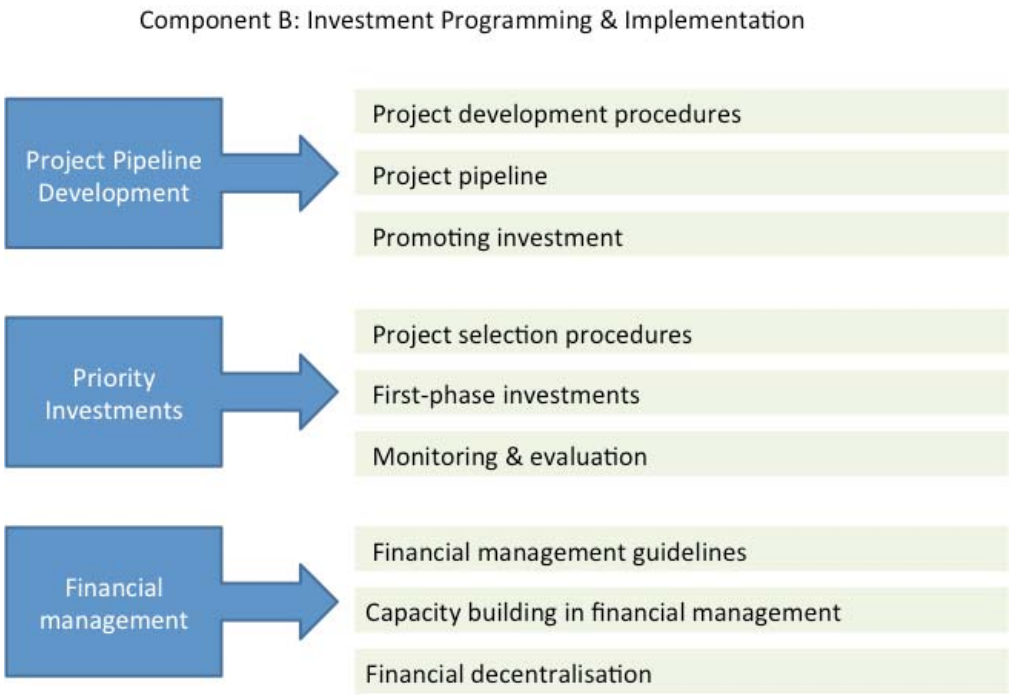
- The national private sector in SWM is well established and provides a base for growth. The industry structure consists of some leading companies which are able to compete internationally, combined with many more locally active SMEs which need to develop their capacity to manage larger facilities and systems. In this regard the sector needs some policy/regulatory support, better coordination, reduced '*red tape*' and increased access to financing.

- The international private sector has been involved in Egypt's waste management services sector, with mixed success, for over 10 years. Companies have brought new approaches and management methods, and driven a professionalization of the sector in some important aspects. Whilst involvement of international contractors remains important, it is clear that expansion of services to other, less affluent or densely populated areas of the country depends on a thriving home grown waste management services industry, which are able to implement service models which are more adapted to Egyptian realities.

- Some of the more economically developed parts of Egypt offer the opportunity to set up projects on a more advanced technical level due to slightly higher living standards in those regions, better visibility and an extended potential for cooperation with international companies and institutions. In particular the revenue situation from the voluntary carbon market, which regularly depends on carbon investors' attitudes, is expected to be favourable. Thus, projects in tourist areas will be required to include components having an impact on climate mitigation in order to make them attractive in this respect. On a longer term view Egypt's solid waste sector is a prime candidate for a so called NAMA (Nationally Appropriate Mitigation Action), which is expected to be either partly bankable or linked to financial funds.

Whilst Egypt's waste management system offers a diversity of financing opportunities for different investors and types of schemes, it is clear that the main burden of investment will fall upon a combination of locally collected fees and charges (direct revenue) and the state budget (indirect revenue). New financial and economic instruments (such as EPR) need to be identified and brought forward in order to help fill financing gaps for recycling and recovery. The waste management sector will develop naturally as political, social and economic reforms take effect. Financial decentralisation and improvement of fee collection and financial management systems is an integral part of financial sustainability, and thus is a cornerstone of this NSWMP.

The administrative structure of the investment component of the NSWMP is outlined in the following sections. The figure below provides an overview.



4.2 *Workstream B1: Project Pipeline Development*

Workstream B1 contains the following specific measures:

B1.1: Project development procedures
B1.2: Project pipeline
B1.3: Promoting investment

4.2.1 Measure B1.1: Project development procedures

The investment programming & implementation component of the NSWMP will be facilitated by the Egyptian Executive Agency for Integrated Solid Waste Management (ESWA), located under the Ministry of State for Local Development.

Investments will be implemented at the regional and local level, under the leadership of Governorates. The role of ESWA will be to coordinate, guide and assist the process of decentralised implementation of improved infrastructure and services. In selected Governorates, a concept study will be conducted to elaborate an integrated SWM concept. On this basis, concrete investment projects will be implemented utilising support from the German/EU programme.

A detailed assessment of the needs and a pre-assessment of the implementation framework were carried out during the elaboration of the NSWMP.

For the first 4 waste management concepts to be financed appropriate locations in different governorates have already been shortlisted (see Workstream B2). Future projects will be brought forward by the governorates, and evaluated by ESWA.

In the framework of the German/EU investment and technical assistance programme, the following works, supplies and services can be financed:

1. Construction or extension of municipal waste landfills at suitable sites including the related mobile and immobile operation equipment

2. Construction or extension of transfer stations at suitable sites including the related mobile and immobile operation equipment
3. Supply of mobile equipment for primary and secondary waste collection and transportation as well as related maintenance facilities in the framework of an investment projects including waste treatment or disposal facilities
4. Closure and rehabilitation of existing landfills or dump sites in the framework of an investment projects including waste treatment or disposal facilities
5. Construction or extension of waste treatment, recycling or composting facilities at suitable sites including the related mobile and immobile operation equipment
6. Required equipment and materials for project implementation such as vehicles, IT equipment at national level (ESWA) and governorate level (SWM units)
7. Consulting services related to the preparation and implementation of the programme (i.e. preparation of waste management concepts, design and tender documents, construction supervision, commissioning, training measures, auditing.

A pre-condition to become eligible for the financial support from the NSWMP investment program is that Governorates have:

1. Clear will to develop SWM
2. Political commitment – in particular related to building up required human resources and organisational set-up
3. Readiness to install and staff a SWM Unit which will also act as PIU
4. Maturity of preparation of planned projects
5. Availability of suitable sites
6. Willingness to improve cost recovery (i.e. tariffs)

In case ESWA accepts an application the investment project will be developed using technical assistance from various available sources (including state government and donor financing programmes), and proposed to the relevant financing institution.

The first step of a project development consists of a conceptual study with:

1. Project outline (need for the project, integration into existing systems, expected impact)
2. Financial assessment (financing, coverage of O & M-costs, PSP aspects)
3. ESIA
4. Proof of readiness

The project outline for investment projects should specifically prove that the anticipated project harmonizes with the existing SWM systems and clearly assess which impact is expected from and to other system components.

A financial assessment should be provided which focuses on the present situation regarding billing and collection of waste fees, the framework for possible increase of fees, other sources of revenue (recycling etc.) and potential partners for PPP.

ESWA will provide assistance for the local governments to overcome expertise constraints and to lower capacity burdens for a successful application, in particular for less developed governorates with high needs. A conceptual environmental and social impact assessment (ESIA) should outline the environmental impact (pollution, hazards, hygiene, accumulations, dumpsite situation etc.) to allow the program office a competitive evaluation with other proposals. The social aspects should focus on the informal sector (waste pickers, SME recyclers) to give proof that their situation, needs and potential for inclusion were understood and considered.

The project outline will be reviewed by ESWA and recommendations will be forwarded to the relevant financing institution. For a successful proposal it is essential that the governorates understand the ideas and match the goals of the government and the donors regarding the future development of the SWM systems in Egypt, which are outlined below:

- Investments in waste management infrastructure and services must be planned and designed within the context of an integrated system. Investment projects should demonstrate a holistic

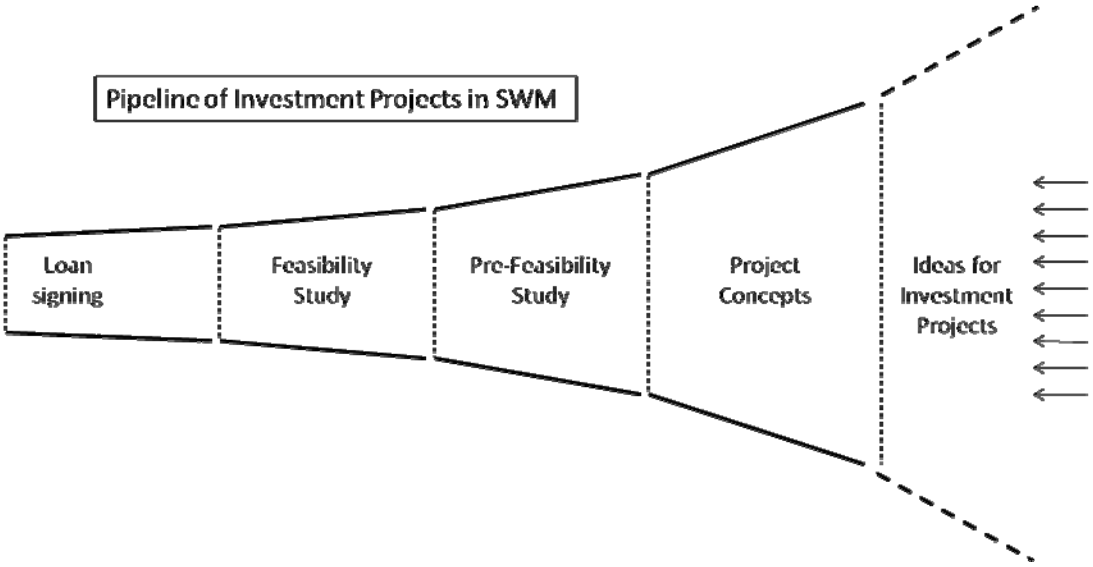
approach addressing all technical components of the system (collection, transfer, recycling, treatment, and disposal), be based on a thorough and critical analysis of the existing needs, and fully consider the social, economic, environmental and political dimensions of the proposed change.

- Investment proposals must be supported by thorough technical and economic analysis of options. Options analysis should be both qualitative and quantitative, using cost benefit analysis, and presenting a transparent justification of the proposed investment measures;
- In case that "stand alone" solutions are proposed (ie. a particular facility in a particular location), the investment proposal needs to prove that the associated system components are sufficiently robust, and have sufficient available capacity (and condition) for the facility to operate successfully. For example, if a governorate proposes the establishment of a materials recovery (recycling) facility, the compatibility with the existing informal or formal recycling system, the installed collection capacity and the final disposal arrangements for non-recyclable materials (rejects) are in place;
- The proposed technical solutions should be effective, cost efficient, affordable, reliable and manageable with the governorate's personnel. Hence, sophisticated, expensive solutions beyond the material, professional and financial capacity of the implementing agents, will not be supported;
- Waste management concepts which are financed during the starting phase of the NSWMP investment program are expected to unfold a "blueprint" character in order to be replicable in other governorates and regions. Hence, those projects should be integrated in nature and address the specific weaknesses and gaps in the local SWM systems.
- The budget of the investment program is limited and currently not sufficient to solve the endemic SWM problems in their entirety. Applicants will be requested to adjust proposals to the available means. It may be recommended to start with projects in sub regions of the governorates rather than tackling the entire problems simultaneously with inadequate means.
- Institutional reforms need to be implemented in parallel to the investment projects. These will include establishment of SWM units in Governorates, and reforms in other local administrations. Private sector participation is welcomed, however, regardless of whether the private sector (formal or organised informal) or public sector operate services, a service performance specification must be put in place to ensure transparency in the monitoring of service performance.

4.2.2 Measure B1.2: Project pipeline

The figure below illustrates a generalised pipeline process for a potential investment project. Ideas for investment projects are scoped into project concepts. Once accepted, the project concepts are followed by pre-feasibility study (where necessary), and then a feasibility study. The feasibility study is accompanied by supporting documents as necessary to render the project bankable.

Figure 7: Generic project maturation process[16]



Pre-feasibility studies are initial technical and economic screening of proposed investment projects. The scope of the level of the pre-feasibility study is flexible according to the financial means of local administrations to finance such studies. Guidelines and templates on pre-feasibility study will be issued by ESWA.

In the concept study the technical, institutional and financial feasibility is assessed in detail. Where available finances allow, feasibility studies will be conducted with technical assistance from government and/or donor finance. Otherwise they need to be financed from local sources.

In the initial phase of the NSWMP, some technical assistance will be made available for project pipeline development via the German/EU investment and technical assistance programme.

To develop waste management concepts, the following tasks will require close cooperation between local stakeholders and experts:

- Collection of basic data: demographics, waste generation, waste composition, amounts for disposal;
- Assessment of project relevant information: institutional set-up/responsibilities, financial capability of the local government, billing, collection and affordability of user fees, marketing of recyclables, active private sector etc;
- Identification of needs, environmental impact, previous policies/strategies etc;
- Assessment of technical options, and decision making on selected options;
- Determining solutions to overcoming political, institutional, social and economic constraints.

4.2.3 Measure B1.3: Promoting investment

Available financial means are currently insufficient to meet the investment demand. Therefore third party funding of investments from private and international sources is required and anticipated. To achieve this, third party investors will need to demonstrate their financial feasibility. Efficient operations with reasonable O&M costs as well as an optimal exploitation of revenues are the keystones in this context. Potential PSP include local SMEs as well as experienced national and international companies.

[16] Note that for the EU/German programme, the approach is different to that in this generic chart. The programming approach to be used places the loan signing at an earlier stage in project development process.

Optimizing revenues is a key factor for a successful investment program, and good governance in collecting adequate waste fees is essential. However, additional economic instruments which can supplement local financial sources, such as extended producer responsibility and carbon financing, are highly likely to be required and will be carefully studied.

4.3 Workstream B2: Priority Investments

Workstream B2 contains the following specific measures:

B2.1: Project selection
B2.2: First-wave investments
B2.3: Monitoring & evaluation

4.3.1 Measure B2.1: Project selection procedures

Showcase projects will be implemented within the first-wave of investments supported by EU-KfW financing. Projects, selected for piloting will demonstrate an integrated, holistic approach addressing the whole SWM chain from collection to disposal. They will convey how to establish an appropriate, environmentally sound, and financially sustainable solid waste management system.

On the basis of a Governorate survey conducted during the preparation of the NSWMP, a pre selection of potential project locations has been carried out. The pre selection considered specific requirements of the donors' funding goals whilst taking the following parameters into account:

- Appropriateness of funding by means of balancing the available financial means towards both the identified needs and the amount of required investments of the governorates
- Representative distribution of anticipated showcase locations over the country reflecting regional specifics, population distribution etc.
- Avoidance of overlapping funding in SWM sector
- Sufficient availability of evaluation data (from studies or governorate survey)

In a negative screening applying the parameters above, suitable locations were compiled to create a long list of candidate sites. The following Governorates were excluded with the justification given below.

Type of area	excluded candidate locations	justification
Metropolitan areas	Cairo, Giza, Qalyoba, Alexandria	Exceeds available funding
Delta	-	
Upper Egypt	Wadi Gedid Beni Seuif, Aswan	Population less than 1 million (not representative) Lack of data
Tourist areas	South Sinai (Sharm el Sheik)	Other funding (EU)
Costal and other	Matrouh, Port Said, Suez, Ismailia, North Sinai	Population less than 1 million (not representative)

After the first pre selection the following Governorates were considered as potential sites and clustered into three pools:

Pool 1: Delta: Sharkeya, Gharbeya, Dakhleya, Monofeya, Kafr El Sheikh, Damietta Behyra;
Pool 2: Upper Egypt: Assuit, Sohag, Menya, Fayoum, Qena;
Pool 3: Tourist areas: Luxor, Red Sea (Hurghada).

The number of investment projects to be financed under the open program has not yet been finalized. Therefore, the potential candidate Governorates were ranked to identify five preferred locations, with one site per pool plus one reserve site for the large pools 1 and 2, which together represent the living conditions of 2/3 of the Egyptian population.

The ranking has been conducted using a matrix with general criteria and weighted parameters under each criteria. Input data were mainly taken from the Governorate survey. For each parameter the highest data acted as a benchmark. Major scoring refers to the needs of the Governorates (60), minor scoring to readiness aspects (10) and appropriateness of available financial means for the required investments (15). All pools were evaluated together, and ranked along the pooling. The following criteria were used:

Needs of the governorates			
Criteria	**Meaning**	**Max score**	**Benchmark**
Required investment	Total needs	4	Dakahilya
Investment per capita	Residents' needs	6	Red Sea
Amount of waste collected	Condition of collection	10	Quena
Portion of damaged composting facilities	Indicator for condition of equipment and facilities	12	Several
Originally installed composting facilities related to number of residents	Indicator for previous investments	9	Sohag
Required landfill investments per capita	Indicator for environmental impact	10	Red Sea
Missing staff training measures	Indicator for capacity building	9	Several
	total scoring - needs	60	
Appropriateness of means			
Criteria	**Meaning**	**Max score**	**Benchmark**
Proportion required investment vs. available means	Sufficiency	9	Quena
Population	Indicator for required means	6	Sharkia
	total scoring - appropriateness	15	
Readiness			
Criteria	**Meaning**	**Max score**	**Benchmark**
Feasibility study elaborated	Measures identified	2.5	Several
SWM strategy adopted	Concept ready	2.5	Several
Support by national government Support by donors	Streamlining	4 1	Several
	Total scoring - readiness	10	
	Maximum score	85	

The main indicators for the needs of a Governorate are:

- The amount of collected waste. A low number (benchmark Qena: 0,08 kg/capita and day) indicates a poor service coverage since the rural Governorates have similar waste generation (max score: 10)
- The portion of damaged composting facilities. This parameter refers to the overall condition and framework of the SWM system including lack of funding, poor capacity, low attention by stakeholders, marketing problems for end products etc. A maximum score of 12 is matched by Assuit, Sohag and Fayoum with total destruction of facilities.
- Required landfill investments, which relates to the needs of the most neglected component of the SWM systems. The data originates from Governorates' reports but needs to be verified, since the per capita investment demand appears rather small with numbers ranging from 5-11 LE/capita.

The parameter describing the appropriateness of means refers to local statistics (investment demand) and national demographic data. The investments required for a 10 year period as compiled by the Governorates, ranges from 135 million LE (benchmark Qena) to 862,5 million LE (Dakhleya). This data needs verification and therefore the population number has been added as

a simple criterion, assuming that a large population generally requires larger funding. The benchmark is Sharkeya as the biggest task (population: 5,47 million) whilst the tourist destinations are the easier areas (Red Sea: 293.000).

The readiness factors take into account finalized preparation in terms of Feasibility studies (Qena, Kafr El Sheikh) and adopted SWM strategies (8 out of 14 Governorates) as well as support by donors (1 point) and national government (4 points).

The table below presents the scoring of the Governorates.

Governorate	needs	appropriateness	readiness	total
Pool 1: Upper Egypt				
Qena	31.7	11.7	6.0	49.4
Assiut	37.8	5.0	6.5	49.3
Sohag	40.7	4.8	0.0	45.5
Fayoum	29.1	7.1	2.5	38.7
Menia	23.1	4.7	2.5	30.3
Pool 2: Delta				
Kafr El Sheikh	23.6	6.0	7.5	37.1
Gharbeya	28.6	3.3	4.0	35.9
Sharkeya,	27.3	2.2	4.0	33.5
Behyra	28.4	2.7	0.0	31.1
Dakhleya	22.4	1.8	6.5	30.7
Damietta	17.1	8.6	2.5	28.2
Monofeya	16.6	5.1	2.5	24.2
Pool 3: Tourist areas				
Red Sea	24.5	10.5	4.0	39.0
Luxor	25.4	10.7	2.5	38.6
max	60	15	10	85

In pool 1 (Upper Egypt) Sohag, Assiut and Qena show the highest needs, while Qena and Assiut rank first when all criteria are taken into consideration. In pool 2 (Delta) most Governorates (beside Damietta and Monofeya) have similar needs (ranging from 22,4-28,6), and in the total ranking Kafr El Sheik and Gharbeya are the two highest ranked projects. In pool 3, Red Sea and Luxor have similar ranking with the Red Sea having a slight advantage.

4.3.2 Measure B2.2: First-phase investments

The number of waste management concepts which will be financed in the first phase of investment projects under the NSWMP will depend on the financing needs of the selected projects and the availability of funds. The first wave investments will be implemented with technical assistance (TA) from the government and donors. TA projects mainly address issues which are considered to be crucial for a future projects success, such as institutional set-up, awareness and education as well as measures ensuring the anticipated multiplying effects (visibility, publication, promotion).

According to the priority-ranking matrix, investments in the following Governorates are shortlisted:

Delta: Kafr El Sheikh, Gharbeya
Upper Egypt: Qena, Assiut
Tourist areas: Red Sea

In addition, the following represents a reserve list of priority Governorates Project, from whom proposals may be sought:

Delta:	Sharkeya, Behrya
Upper Egypt:	Sohag, Fayoum
Tourist areas:	Luxor

Governorates that receive financing from the EU/German financing programme will be supported, both by ESWA and consultants hired to assist the implementation process of the infrastructure. This will include review of waste management concepts, design documents, tender documents, tender evaluation reports as well as the financial monitoring of the investment programme. Technical assistance is further described within Component C.

The basic procedures and obligations on those Governorates receiving financing through the EU/German programme will be established, and relevant commitments secured prior to finalisation of the selection process. ESWA will play a leading role in communicating the procedural and compliance requirements of the EU/German programme.

4.3.3 Measure B2.3: Monitoring & evaluation

The first wave investment projects will be used to deliver a template. Therefore it is important to prove whether these projects have achieved their goals and identify potential constraints and required revisions. The project monitoring consists of several components at different time stages as listed below.

Task	Monitoring measure	Schedule	Frequency
Cost control	Post investment economic analysis	After project execution	Single
Technical functionality	Quality management System (QMS)	6-12 months after start of operation	Permanent
Operation costs	Financial balance	After 1st year	Annual
Impact	ROM mission (results assessment)	After 3 years, after 7 years	Single

4.4 *Workstream B3: Financial management*

Financial Management is a process concerned generally with the planning, monitoring, and controlling of financial resources to implement any program or project. Similarly, financial management in SWM is concerned with how to raise and utilize financial resources in a planned and organized manner in order to attain an adequate and efficient service to the public. Financial management covers both the short term and long term in order to properly plan and forecast capital and operational needs in the future, in order to match plans with available funds. Effective financial management is essential whether local governments undertake SWM on their own or in the case of contracting the private sector to implement the service.

Attempts to undertake sound financial management for SWM were undertaken in some Egyptian Governorates which adopted privatization-as part of their tender document requirements, such as Alexandria, Cairo and Giza. In spite of that, even these Governorates encountered a number of problems with their contractual agreements with the private sector, which were partially attributed to lack of proper financial planning and forecasting of costs. Currently, across most Governorates, especially at markaz and village levels, budgets for SWM are usually prepared on an *ad hoc* basis and often are not related to the sector needs. Long term financial planning and forecasting is generally lacking in this sector.

Reasons for inefficient financial management at the Governorates level are largely attributed to a number of problems:

- Lack of financial resources available for SWM and low levels of cost recovery, which makes financial planning a very difficult task;

- Inaccurate and insufficient data collection, which is the most essential input for successful financial planning;
- Lack of technical and managerial capacity at the local level to undertake financial management related tasks, especially in the absence of a specialized entity responsible for SWM planning

Lack of Financial Resources

Only 16-17% of national recurrent resources are provided to the local government in Egypt for the provision of public local service, which is low even in comparison to other developing countries. In addition to this, there is limited autonomy in terms of levying service charges and or taxes at the local level.

The lack of a national institutional body for solid waste management at the Governorate's level (except for Cairo and Giza), and the subsequent lack of institutional representation at the local level, adds another problem for SWM compared to other public services. This lack of a national entity means that no central allocations for solid waste management are earmarked at the local level. Only some budgetary lines related to SWM in local governments are covered indirectly through the national budget, for example wages of local government employees, consumables or if SWM is in priority – capital investments (e.g. equipment). The financial requirement for this sector hence competes against other needs of the Governorates, and hence the final allocations are influenced by each Governorate priority. Local government in many instances assign a low priority to SWM.

Apart from central allocations for SWM, local governments use revenues from a cleansing fund – mainly the monthly fees paid on the electricity bill by residents in return for SWM services (makes up 95% of the funds revenue in addition to revenue from violations and penalties), to finance their SWM operations. Revenues of the cleansing fund are used to partly pay the contractual value of the operating private sector companies in Governorates who have private sector operators. In Governorates who undertake SWM by their own staff, the cleansing fund is used to self-finance SWM in their respective Governorates. A big share of this expenditure is incurred on temporary salaries and on simple collection equipment and a very limited amount is spent on any operation & maintenance (O&M) renovation and or replacement of equipment.

New capital investments (e.g. tractor and trailers systems) are occasionally paid for from a "local development fund", which is financed by donations and other sources. Larger capital investments, such as composting plants, come directly from national budgets. In general, financial management for the operations of these investments are seldom undertaken. Revenues fall short from covering the financial needs for an adequate and efficient SWM system.

Inaccurate / Insufficient Data Collection

Accurate operational data is fundamental to financial planning to enable efficient calculations of SWM forecasting.

Low Technical Capacity to Undertake Financial Management

Another important factor leading to inefficient financial management is the low technical capacity of the staff to undertake financial planning, controlling and analysis at the local level. This is especially true at the markaz and villages level, where only simple income statements displaying costs and revenues are often prepared for SWM activities at the local level. Long term planning for SWM is lacking.

Workstream B3 contains the following measures:

B3.1: Financial management guidelines
B3.2: Capacity building on financial management
B3.3: Financial decentralisation

4.4.1 Measure B3.1: Financial management guidelines

ESWA will provide Guidelines for sound financial management practices for SWM at the local level. This will include the developments of templates and models – covering all data input needs to assist local governments to undertake proper financial planning. Evidence of financial sustainability will be an important pre-requisite to benefit from the funds provided for investments under the EU/German programme. At least coverage of the running cost must be secured during the first years.

4.4.2 Measure B3.2: Capacity Building on financial management

Capacity Building on financial management will be provided at the national and local levels, to enhance the ability of local governments. To ensure effectiveness of the training, an important prerequisite, is the existence of an institutional framework responsible for SWM at the local level. SWM units will therefore be established and include among its staff, human resources with adequate qualifications to receive this training.

Budgeting and cost accounting mechanism
It is important to provide training on robust systems of budgeting and cost accounting for SWM, which would help integrate the real costs in waste management.

A best practice in the solid waste management field that is currently being used is Full Cost Accounting (FCA). FCA is defined as a systematic approach for identifying, summing, and reporting the actual costs of solid waste management. It takes into account past and future outlays, overhead (oversight and support service) costs, and operating costs. [17] The use of FCA recognizes many costs that are not recognized under the traditional cash flow accounting system, e.g. public awareness and outreach programs, Land acquisition, Costs of permits, Building construction.

The FCA approach focuses on:

- Efficient data collection.
- Sound budgets (short and long term capital and operational budgeting)
- Pinpointed inefficiencies or other problems
- Using financial analysis as a tool to improve efficiencies, eliminate waste, improve service to citizens, and lower costs

Affordability Analysis and Willingness to Pay
Tools will be designed to assess affordability and willingness to pay of the community for the SW service (e.g. household surveys). This answers an important question about the type of service the community/commercial and industrial establishment is willing to pay for and the amount they are willing to pay.

Tariff structures and Cost Recovery Analysis
Tools will be developed to assist in determining the type of tariff structure appropriate to achieve cost recovery.

Financial Assessment of Investment projects/technology options
This is essential to enable local governments to develop investment projects and or make decisions regarding their financial viability.

4.4.3 Measure B3.3: Financial decentralisation

The Ministry of Local Development (MoLD) is finalizing the new Local Administration Law. The new law should provide for more fiscal decentralization at the local level. In accordance to this law, in 2010, the Ministry of Finance set up a permanent intergovernmental fiscal committee to coordinate between all line ministries in preparation for providing the local government with a bigger share of public resources partly to provide public services. The financial role of the proposed central SWM departments will be identified in view of the new fiscal decentralization

[17] USAID, SWM privatization procedure manual, solid waste financial management, 2001.

provisions of the law. The new law will also influence the ability of the local governments to accept grants/ loans, issue new surcharges or tariffs.

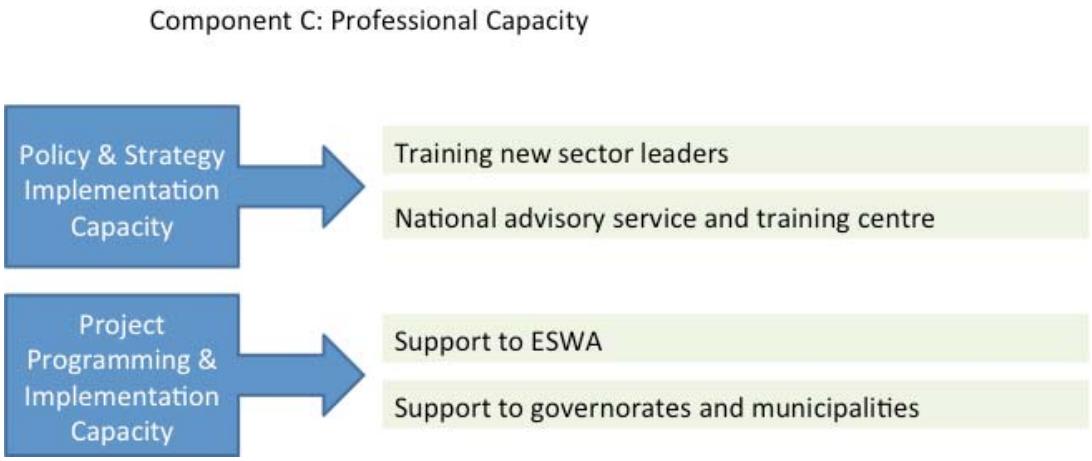
5 Component C: Professional Capacity

5.1 Introduction

Behind every developing waste management system is a well-qualified workforce of policy makers, regulators, planners, entrepreneurs, engineers, lawyers, supervisors, and operators of all different facilities and services. Central to the ambition of this NSWMP is to create a new cadre of waste management professionals who have the mandate and abilities to make a step change happen in practice.

Waste management is a professional sector, which relies like all other sectors on the constant influx of young people into the industry. Realising the ambitions of the NSWMP relies on a sustained commitment to training people to become the next generation of waste managers, policy makers, operators and leaders.

Waste management requires professionals with knowledge in different fields, such as engineering, technology, natural sciences, economics, finances, law, management, public relations, social marketing and even psychology and sociology. Most importantly though, the sector has a great demand for disciplined and hard working people, who are willing to work in difficult conditions for the good of society and the environment and who have to be paid accordingly.



5.2 Workstream C1: Policy & Strategy Implementation Capacity

Workstream C1 contains the following modules:

C1.1: Training new sector leaders
C1.2: National advisory service and training centre

5.2.1 Measure C1.1: Training new sector leaders

A combination of skills is important for establishing policy, designing legislation identifying & implementing projects, and attracting finance.

A key task is to develop leadership skills. Communication, team building, goal setting, delegation, and mentoring are core competencies that must be addressed. In addition, knowledge of the project management cycle and a comprehensive understanding of the waste management sectoral issues are an important capacity building focus.

A prime area of focus for technical assistance at the national level includes the adaption of framework conditions to regulate, to enforce, to plan, to set strategy and to elaborate business and financial instruments as well as legal conditions and instruments for public participation. The

training programmes that will be developed will need to include people from both the national and local level.

The establishment of ESWA will be supported by the German/EU investment and technical assistance programme. The central aim of the programme is to help ESWA establish itself as the centre of expertise for Egypt's waste management sector. The assistance that will be provided will be multi-faceted, and dynamic. It will cover support for all aspects, including establishing policy and legislation, programming, design and implementation of investment projects, and work to develop organisational and professional competence.

ESWA will develop its expertise in the following areas:

- Policy analysis and development;
- Management systems;
- Preparation of legislation, regulations, codes, standards and guidelines;
- Establishment of financial mechanisms and producer responsibility schemes;
- Preparation of regional waste management plans through stakeholder participation;
- Guidance on operator and contracting models;
- Investment promotion, coordination and decentralised implementation in governorates;
- Monitoring and reporting;
- Extended producer responsibility;
- Support to development of national waste management industry, focusing on SME development;
- Tariffs and cost recovery;
- Civil society participation.

ESWA staff will be trained to a high level of waste management policy competence. Training will focus on international policy practices in the SWM field, specific knowledge relevant to the specialist areas of focus for ESWA, as well as institutional management and public administration.

Induction and further training courses will be developed for ESWA employees and key staff within governorates participating in the first phase of investments. New ESWA employees will receive induction training to provide them with an initial overview of SWM policy and strategy implementation issues and the role of the national and local SWM institutions. In-service training will be provided during the course of employment.

5.2.2 Measure C1.2: National advisory service and training centre

ESWA will develop as the central hub of competence in the waste management sector in Egypt.

Given the long years of policy neglect that the waste management sector has suffered from, developing professional capacity to drive forward a step-change of development in the sector is a huge challenge that must be faced.

Developing the professional capacity of the industry will be greatly helped by developing a national advisory service and training service. Partnerships with existing training centres , universities and international development partners will be sought.

Key will be for the advisory service and training centre to support the decentralised implementation of facilities and services in governorates.

The following range of assistance is envisaged to be provided for ESWA under the German/EU programme[18]:

Policy Setting / Policy document
National SWM Strategy

- National SWM Infrastructure Development Programme
- Implementation Plan nationwide
- Cost estimation, investment pipeline nationwide
- Financing needs, Monitoring and periodic up-date

Development of cost recovery schemes and new financial/economic instruments
Special Plans (in cooperation with other ministries):

- Agricultural waste
- Industrial waste / special and hazardous waste
- Medical waste
- Construction and demolition waste
- E-waste

Education, training, research and development strategy
Participation strategy: economy, informal sector, public
Behavioural change and communications strategy
Development of guidelines, codes and technical standards:

- Strategic MSWM planning
- Landfill design and implementation
- Upgrading and operation of composting plants
- ESIA
- Organisational development
- Community participation and public awareness
- Contract and operation of services and facilities
- Cost calculation and cost recovery
- Local statues and by-laws

5.3 *Workstream C2: Project Programming & Implementation Capacity*

Workstream C2 contains the following modules:

C2.1: Support to ESWA
C2.2: Support to governorates and municipalities

5.3.1 Measure C2.1: Support to ESWA

ESWA will become the centre of excellence in project programming and implementation in the waste management sector. In order to establish its competence, a significant investment in professional capacity development is required from government, including increased staffing levels, and sufficient budgetary allocation.

Technical assistance support will be requested from international development partners to help to reach this goal. In the initial instance, the EU/German programme will provide much needed technical assistance to take the first steps. This includes supporting the design and implementation of priority projects as well as developing a project pipeline.

Whereas the procedures vary between different financing agencies, the principles of project programing and implementation are basically common. These are that projects need to be supported by political will, dedicated institutional structures, be well planned and designed

[18] Technical assistance packages will be developed according to needs. This list is indicative only.

including stakeholder consultation, and be allocated sufficient committed sources of budget/revenue and professional capacity to run effectively.

The leadership and professional capacity of ESWA in project programming and implementation will be vital in securing these outcomes.

5.3.2 Measure C2.2: Support to governorates and municipalities

Egyptian citizens have expressed their demand for good governance. One of the most important parts of this is developing appropriate services and infrastructure. To begin to meet these expectations there needs to be a major drive to design and implement many more investment projects.

Investment is needed across the whole spectrum of the waste management sector.

- Waste collection and transport will be the main area of investment demand.
- Recycling enterprises need to grow;
- Sanitary landfills need to be developed;
- Dumpsites need to be closed and remediated;
- Composting plants need to become more productive;
- Other new technologies need to be applied.

As for all other aspects of the NSWMP, this relies on a cadre of experienced professionals to drive forward this change. The vision of ESWA is to develop as the national centre of expertise in investment programming and implementation. Investments will, however, be implemented in a decentralised way and therefore supporting governorates to define and implement projects is key.

The following range of assistance is envisaged to be provided for governorates under the EU/German programme[19]:

Project preparation and implementation
Development of regional SWM plans
Feasibility Studies, site selection, ESIA
Detailed design
Tender documents construction, supply
Tender evaluation
Contract management
Contract monitoring
Construction supervision
Provisional and final acceptance
Operation manuals
Operation of central facilities
Tender documents service contracts
Tender evaluation
Contract management
Institutional development and capacity building
Organisational development plan
Human resources development plan
Finance management
Financial planning and monitoring
Accounting system
Contract monitoring
Planning, monitoring and Reporting

[19] Technical assistance packages will be developed according to needs. This list is indicative only.

The following range of assistance is envisaged to be provided for municipalities under the German/EU programme[20]:

Planning
Development of SWM Master Plan on local level
Waste collection plans

Service provision
Organisation of waste collection and street sweeping services
Transport to next central facility
Contract management service providers
contract management / supervision of services

Financial management
Fee collection
Remuneration of service providers

[20] Technical assistance packages will be developed according to needs. This list is indicative only.

6 Component D: Improved Services & Facilities

6.1 Introduction

The main goal and basic intention of the NSWMP is to catalyse progress in implementing new and improved waste management services and facilities to serve the Egyptian people. To facilitate this, the NSWMP has identified a range of measures which need to be taken to develop the 'framework' conditions for the waste management sector to thrive.

The challenges on the ground remain practical and solvable. Whilst waste management services are quite complex, improving systemic performance of day-to-day services relies on the people involved in supervising, planning and operating the services.

This Component looks to support the implementation of improved services and facilities through a combination of three Workstreams.

6.2 Workstream D1: Guidelines, Codes and Technical Standards

Guidelines, codes and technical standards will be developed in order to support the practical application of the Waste Framework Law and subsidiary regulations.

These will provide a detailed framework for waste management sector to operate. Guidance documents covering the implementation of waste management legislation will be prepared for governorates and municipalities on areas of critical importance to the future sustainability of waste management services. Examples include standards for landfill sites, planning procedures, technical and financial planning, litter prevention and the cleanliness of public land and best practice options for collection, treatment and disposal of solid wastes.

Over time new higher standards will be required as and when additional options for managing waste become affordable and are thus sustainable (eg, recycling initiatives, enhanced landfill standards, composting, treatment of waste, co-incineration e.g. in cement kilns, monitoring requirements). The guidance and standards set out in the following sections will address many of the critically important issues in providing good practices for the management of waste.

Workstream D1 contains the following measures:

D1.1: Codes and technical standards
D1.2: Guidelines

6.2.1 Measure D1.1: Codes and technical standards

Codes and technical standards represent specific technical or other requirements which are placed on regulators, planners and operators of waste management services. They act to provide information on the minimum expected standards which are required in order to claim the provision of a satisfactory waste management facility or service.

They may be adapted to a specific local situation, and are thus not legally binding in the same sense as a legal or regulatory clause; however the codes and technical standards illustrate the expectations required for planning, licensing and permitting of facilities and services.

A range of codes and technical standards will be developed to support implementation of improved services and facilities. These are expected to include:

Waste collection services
Codes and technical standards will be developed to establish minimum basic standards for waste collection services. This will include developing service quality standards, including frequency of collection for different types of residential area and for different materials. The codes will look to establish requirements for separate collection of `dry' and `wet' waste fractions.

Landfill design and management
Technical guidance will be developed to help governorates and municipalities to understand the standards that the national government will require in order to achieve subsidiary regulations when designing and managing landfill sites. Guidance and standards in this area will ensure consistent high standards of landfill design, construction, operation and aftercare are achieved. The landfill code will cover:

- Landfill engineering
- Waste acceptance
- Landfill operation
- Monitoring of landfill leachate, groundwater and surface water
- Landfill gas management
- Closure and aftercare

Upgrading of composting plants
To address the issues of low performance in composting plants across Egypt, technical standards will be produced regarding the operation and maintenance of composting plants.

The code will establish requirements on facility owners to assure satisfactory operation and maintenance of facilities. The code will provide information on how composting plant operations should be monitored. Industry standards regarding the minimum compost standards for different applications will be developed.

Financial management and cost recovery
Financial management codes to governorates and municipalities will be issued to strengthen the authorities' cost recovery policies, and financial management and control procedures. The code will inform authorities of the range of cost recovery mechanisms available and provide instruction on the following topics:

- Improving revenue collection systems;
- Strengthening accounting an financial reporting systems;
- Improving accountability and budgetary systems.

6.2.2 Measure D1.2: Guidelines

Guidelines are sources of information and tools which can be used to improve waste management regulation, planning and operation. They are not legally binding, rather, they are intended as useful sourcebooks containing best practice examples for improving waste management.

A range of guidelines will be developed to support implementation of improved services and facilities. These are expected to include:

Strategic planning

Good practice guidance on strategic planning will be developed to support governorates and municipalities. The guidance will provide information and tools for assessing existing waste management systems, identifying options, and deciding on what to implement. The guidance will take into account environmental, socio-economic and implementation issues when managing waste. Further information on this is provided within Workstream D2.

Environmental Social Impact Assessment (ESIA)

Guidelines will be developed to outline ESIA procedures and ensure that environmental and social impacts are fully considered when deciding whether to proceed with a waste management project.

These guidelines will provide reference material on how to adequately consider cross cutting themes while assessing the environmental and social impacts of a project. The ESIA guidelines will also assist in waste management project designs, as many potential adverse impacts can be avoided or mitigated by modifying or adding certain project components to the initial design. Improvements in the project design can enhance several beneficial impacts at a minimal cost.

Organisational development

When planning waste management improvements, attention needs to be placed on ensuring that institutional responsibilities are clearly defined and that institutions are both sufficiently resourced and accountable for their performance. Governorates and municipalities will therefore be supported via the development of good practice guides on organisational change, human resources and conducting training and education courses.

Community participation and public awareness

Community participation acts as a major driving force of change and adopting this approach will enable Egypt's strategic MSWM plans to be more effective and more sustainable. The success of Egypt's national and regional planning initiatives will depend heavily on the ability of the Governorates and municipalities to secure the support and contributions of the public.

Best practice guidance on raising public awareness and education programmes and achieving community participation for SWM will be developed to aid governorates to:

- Inform the public of new waste management methods and requirements;
- Gain public support for SWM initiatives;
- Improve the profile of SWM.

The guidance will cover issues surrounding coordination, costs, who to address, timings, planning, responsibility of developing awareness campaigns.

Local statues and by-laws

Governorates and municipalities may adopt local regulations or by-laws to implement specific initiatives. These could include anti-litter and unauthorised waste disposal by-laws, arrangements for payment of waste collection fees, or requirements for to be presented for collection in a specific manner. By-laws will specify the penalty levels as required to avoid, for example, littering or illegal dumping.

6.3 Workstream D2: Regional waste management planning

Workstream D2 contains the following measures:

D2.1: Preparation of regional plans
D2.2: Planning targets

6.3.1 Measure D2.1: Preparation of regional plans

Regional planning is necessary to ensure that MSWM services keep pace with demand, are appropriate to needs, and are cost-effective. A plan provides a degree of certainty that specific service models and facilities have been thought through carefully prior to making decision and investments. A strategic plan is therefore a document which looks to the future, and establishes clear objectives, intentions and timelines for improving services and facilities.

Planning is however not just preparation of a document, rather it is a *continuous process* in which practical performance in meeting objectives is evaluated, and information on this taken forward into further planning cycles. When used effectively, planning is a tool to leverage sustainable improvements to service coverage and standards. It also provides an essential basis for financing projects.

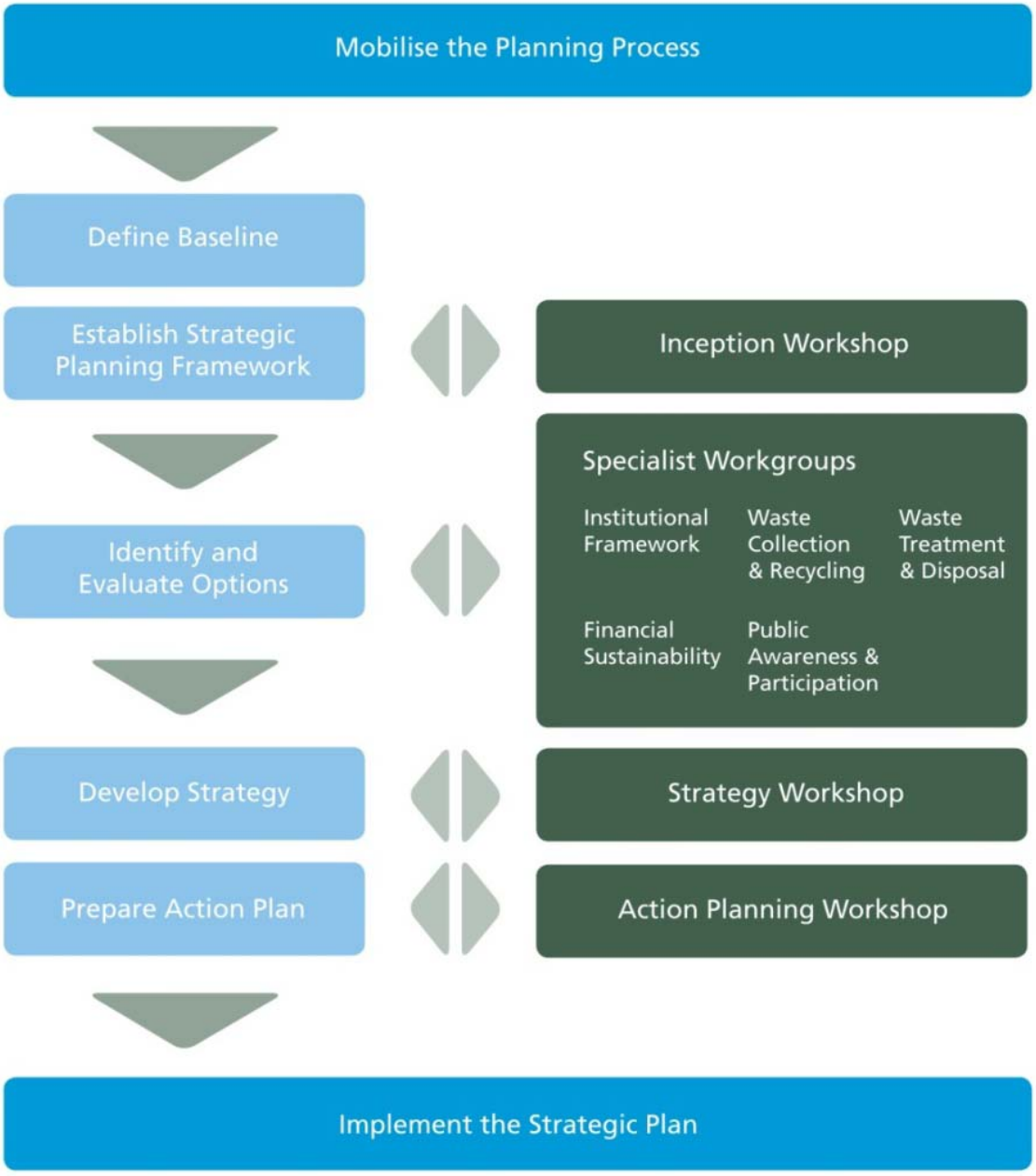
Inclusivity is a key factor of success. Key stakeholders (i.e. governorates, municipalities, local political leaders, department officials, specialists, NGOs, community based organisations (CBOs), and the private sector) need to be involved in the planning process.

Under the NSWMP, ESWA will prepare guidelines and models for preparation of regional waste management plans. International guidelines will be used as the basis, in particular The World Bank's strategic planning guide to municipal solid waste management will be utilised and applied[21].

The guide is based on a step-wise planning process, where stakeholder working groups are tasked to research options and propose specific aspects of the system. It emphasises the need for *facilitators* to manage a complex process of discussion and debate between stakeholders.

[21] Wilson DC, Whiteman A, Tormin A. ERM. Strategic Planning Guide for Municipal Solid Waste Management. The World Bank, 2001 (published on interactive-CD), available through http://wasteaware.org/publications

Figure 8: Strategic planning methodology



The outputs from the process are a *'strategy'* and *'action plan'*, with the strategy focusing on those issues which stakeholders agree on, and the action plan dealing with the measures required to implement the strategy such as specific technologies and sites for waste infrastructure.

Figure 9: The waste management planning hierarchy

6.3.2 Measure D2.2: Planning targets

The objective of regional plans is to put in place significantly improved waste management facilities and services. Targets for these improvements will be set on a case-by-case basis.

The following key indicators are expected to be included in regional waste management plans:

1. Coverage of waste collection services, ie. the % of the total population provided with a basic minimum standard of collection service;
2. Recycling and recovery performance, ie. the % of the total municipal and other waste streams which are to be diverted from landfill;
3. Sanitary landfill coverage, ie. the % of the total waste stream treated in facilities which meet minimum standards of environmental and operational standards;
4. Financial sustainability, ie the % of total O&M costs recovered from waste generators through locally collected revenue.

It will take significant time and resources to develop regional waste management plans to cover the whole of Egypt.

The legal requirement for preparation of waste management plans, which is expected to be introduced in the Waste framework Law, will contain planning targets. Development partners will be invited to support governorates in the process of preparing their regional plans, until such a time as the governorates have the necessary budgetary resources allocated to cover the planning and project development costs.

With the assistance of the German/EU investment and technical assistance programme, support will be provided for the preparation of the first 4 regional waste management plans, which will serve as models. These plans will be developed with broad stakeholder participation, and are expected to generate to a number of investment project opportunities.

6.4 Workstream D3: Private sector participation

The national private sector in SWM is well established and provides a base for growth. The industry structure consists of some leading companies which are able to compete internationally as well as nationally, combined with many more locally active SMEs which need to develop their capacity to manage larger facilities and systems. In this regard the sector needs some policy/regulatory support, better coordination, reduced *red tape* and increased access to financing.

The international private sector has been involved in Egypt's waste management services sector, with mixed success, for over 10 years. Companies have brought new approaches and management methods, and driven a professionalization of the sector in some important aspects. Whilst involvement of international contractors remains important, it is clear that expansion of services to other, less affluent or densely populated areas of the country depends on a thriving home grown waste management services industry, which are able to implement service models which are more adapted to Egyptian realities.

Workstream D3 contains the following measures.

D3.1: Operator and contracting models
D3.2: Developing the national waste management industry

6.4.1 Measure D3.1: Operator and contracting models

There are no standard operator models that can be seen as appropriate for the very diverse contexts in which solid waste management has to be provided across Egypt. Rather, a range of different models will be appropriate for different local situations. These include:

- Public/municipal operators;
- Inter-municipal structures;
- Integrated contracts with private operators;
- Service-specific contracts (eg. separate contracts for different parts of the waste management chain);
- Micro-licensing and franchise contracts; and
- A combination of the above

Deciding on which of the available operator models are to be implemented is crucial for the implementation of successful SWM systems. These choices essentially define the contracting strategy which will be adopted for waste management services, and therefore represents one of the core strategic decisions which need to be made in improving services and facilities

Similarly for infrastructure development, a range of different contracting models are available, including design build (DB), design build operate (DBO), build operate transfer (BOT), design build finance operate (DBFO), and build own operate transfer (BOOT) contract models. Each model has specific advantages and disadvantages, and decision-making needs to consider the balancing and allocation of risks between the employer (or client) and contractor.

Model contract documents for different services are available from international development partners and regional networks such as *sweepnet*. However, any of these models needs to be professionally and carefully applied into a particular local context.

ESWA will develop a central point of expertise, information and advice on waste management infrastructure development, operations and contracting, and will be assisted in development of this function by the German/EU investment and technical assistance programme.

6.4.2 Measure D3.2: Developing the national waste management industry

In order to advance the standards of services and facilities, the Egyptian waste management services sector needs to be nurtured and supported. The sector has tremendous potential. Growth will create thousands of new job opportunities for people of all different levels of education and skills.

With well-targeted policy and financial support, existing SMEs and young entrepreneurs can be encouraged to start new business, grow and innovate. ESWA will assess in detail, and consult with development and commercial banks to establish seed financing to put in place an SWM SME fund. Procedures for accessing credit and grant support from this fund will be designed to enable access from new entrant entrepreneurs, recycling associations, and SMEs.

ESWA will assess and put in place other mechanisms for stimulating development of the national waste management industry, eg. operator models which favour participation of smaller companies, pro-SME contract clauses, tax relief for start-up enterprises, recycling parks, and other support measures. These proposals will be fully consulted internally within ESWA's governance structures, and externally within and outside of Government.

7 Component E: Civil Society Participation

7.1 Introduction

Solid waste management has strong association to the social aspects and the local communities. SWM is one of the important and basic services that is not only linked to clean environment but also to enhancing the sense of well being and the quality of life of local residents.

Local communities are the primary affected groups from the negative impacts associated with the deficiencies in SWM systems. This is especially true in relation to threat to general public health and the environment. In the meantime, the economic burden associated with occasional lack of affordability for waste management systems and/or the mismatch between tariffs paid and level of service provided are also important considerations for the local community groups particularly the poor segment.

Certain community groups have strong association to waste handling which constitutes an exhaustive source of income for them. These groups are usually among the poor and most vulnerable. Efforts to improve SWM systems, unless carefully drawn within a socially-sensitive framework, could hit these groups in their livelihoods and these impacts could be destructive to these families due to the limited alternatives and choices they have. In the meantime, the success of any SWM system is strongly reliant on people's will to maintain the service. Communities' will stimulates positive behaviour and commitment to the system and to the required service fees.

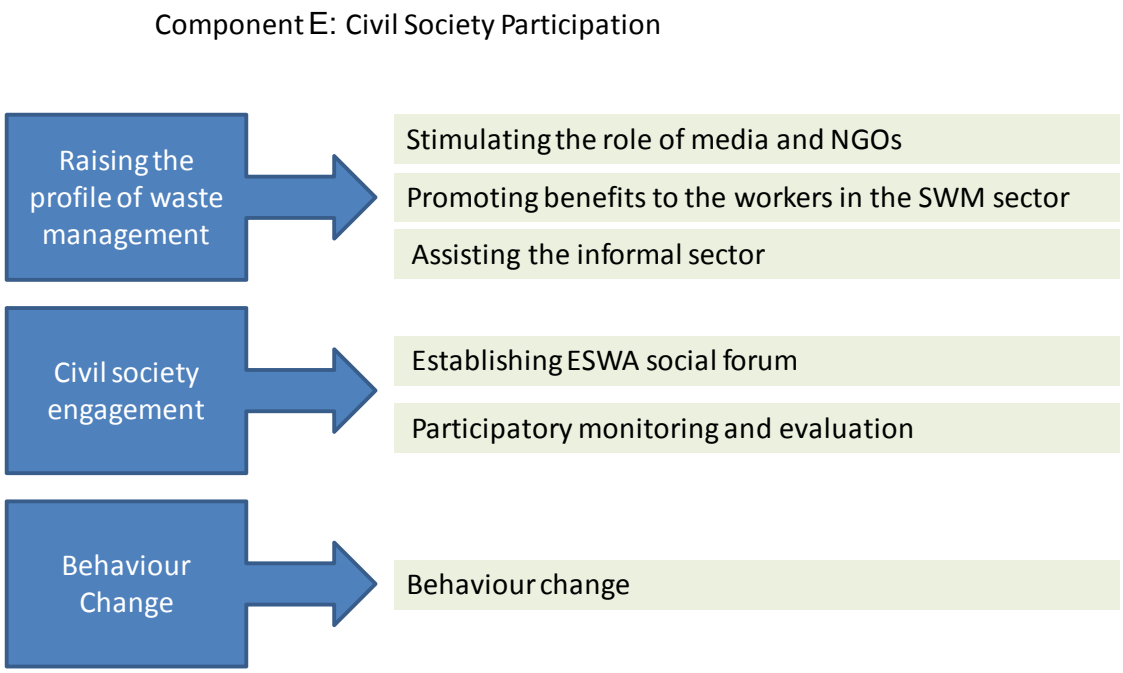
Despite the fact that local communities are the primary partners for, beneficiaries of and affected groups by SWM systems, there is no mechanism in place to mobilize local communities, consult and integrate them in the SWM process or raise their awareness with SWM aspects.

In the past, the introduction of new systems or new operators has rarely involved sharing information with people or raising their awareness with the new system. The only exception for this is the cases where the new systems are introduced through donors' funds or through the involvement of NGOs.

Although waste management is one of the key environmental priorities for local communities across the Governorates and despite the fact that the performance of Governors and municipalities is basically judged by the level of cleanness of streets[22], the system in the majority of the cases is dominated by the top down approach and local authorities rarely exert effort to engage communities in the system.

Generally, the level of awareness of the social aspects related to SWM is still limited among various stakeholders particularly the responsible government officials. This stresses a need for raising the level of awareness of those key actors about the complexity of the social issues related to SWM.

[22] Results of the Governorates Environmental Action Plan prepared during 2002- 2005



7.2 *Workstream E1: Raising the profile of waste management*

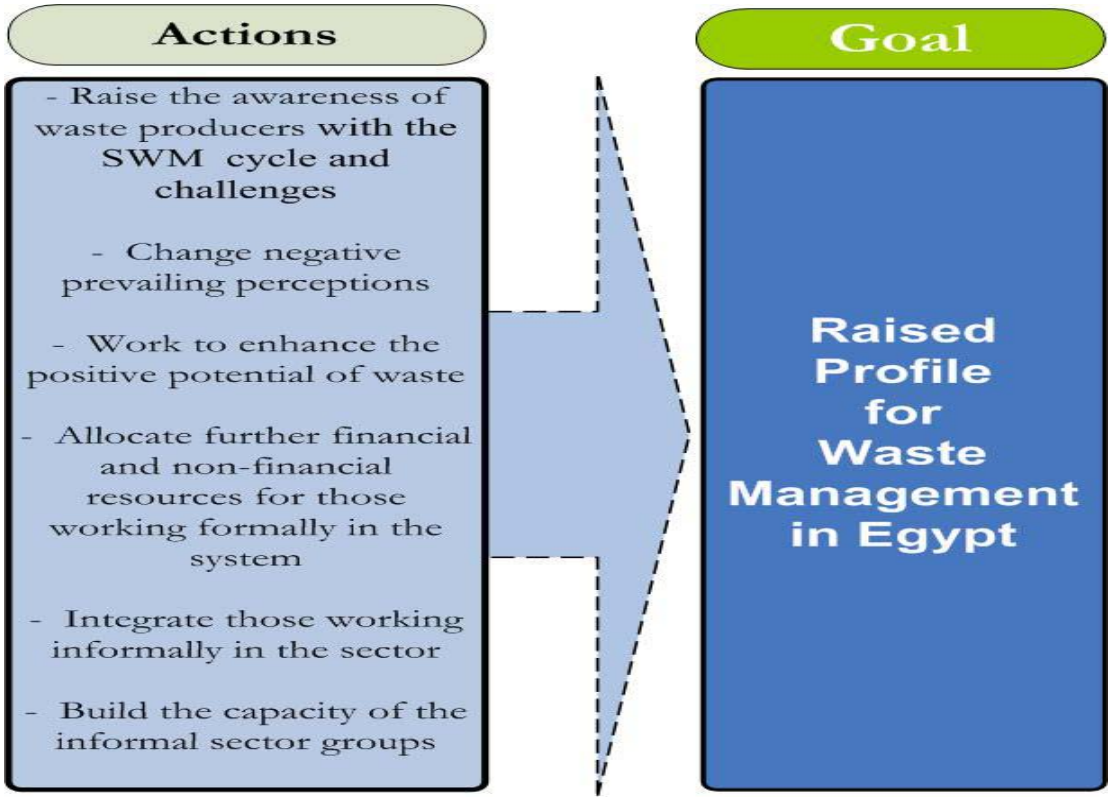
The waste management sector is positioned within a low profile in Egypt for several reasons:

1. Waste is not recognized as a precious asset except by those who are working closely and making a livelihood out of handling recyclables. Although the recycling business is a growing market in Egypt, the level of awareness with the value and potential of a rationalized waste management system is still very limited.
2. The initiatives that encourage reducing, reusing and recycling waste have been very limited in Egypt and rarely reach a wide range of target. Few initiatives for "at-source-segregation" were implemented within limited scale in Cairo and Giza Governorates but these initiatives have not been sustainable. The majority of residents perceived these initiatives as unsuitable to the community culture and the style of apartments which are dominant style of housing in urban areas. However, SWM practitioners returned the lack of sustainability of these initiatives to the poor level of awareness and lack of commitment from the communities' sides and the absence of clear convincing incentive for local people to sustain these initiatives.
3. Although the sector is employing thousands of the poor and is creating a source of living to a large number of low-income people and their families, working in this sector has historically been classified as "indecent and stigmatized job" that only poor people can accept. Workers in waste usually belong to a segment of those who are getting limited level of education, living in poor areas or slums and their houses are getting very limited services in most of the cases. They are low-paid and are receiving a minimum level of health security and safety considerations during their work. Service operators, including municipalities and private companies rarely consider the safety, heath and well being of their worker in the waste sector. Workers continue to work under frustrating working and wages conditions. These conditions push them to adopt various survival strategies like begging or scavenging for recyclables. This reinforces the social stigma associated to them and the sector.
4. Generally, local communities have long perceived waste collection as an easy service that should be provided by the Government. In most of the cases, ordinary residents of cities and villages are not aware of what comes next after the collection of their waste from their doors or street corners. They are not aware of the challenges, potentials and actors of the SWM in Egypt. The task of waste collection is over simplified in many cases and the technical complications of the process are underestimated.
5. Although environmental aspects are increasingly integrated within the school curriculums in different stages, these aspects are usually dealt with from a global prospective. Local

environmental priorities like SWM are not carefully examined and studied at schools. Accordingly, the new generation still has the limited vision of SWM as street sweeping and cleanness service without having deeper understanding for the sector.

The NSWMP and establishment of ESWA aims to be an important turning point for raising the profile of SWM in Egypt. A comprehensive programme will to be designed and adopted by the various relevant divisions within ESWA with the main objective of enhancing the SWM profile in Egypt. In coordinating the different actions, the Communications Division within ESWA will play a leading role to mobilize different actors. Actions needed should target local communities and the formal and informal workers in the sector.

Figure 10: Key actions to raise the profile of SWM in Egypt



Workstream E1 contains the following measures:

E1.1: Stimulating the role of media and NGOs
E1.2: Promoting benefits to the workers in the SWM sector
E1.3: Assisting the informal sector

7.2.1 Measure E1.1 Stimulating the role of media and NGOs

In order to achieve higher recognition for SWM, not merely as an important service but also for its big economic potential for the country, should play an active role in enhancing the profile of SWM in Egypt and the profile of those working in this sector. The sector needs to be more appreciated by various stakeholders and this would not be possible without better understanding and awareness.

The Communications Division of ESWA will play a major role in raising the profile of waste management and in mobilizing the various promotion tools including media and NGOs. Popular TV and Radio programmes with wide audience as well as active NGOs in the field of SWM and community mobilization will be utilized in promoting awareness with several topics, including but not limited to:

- SWM cycle, performance in Egypt and the main reasons for the defects in certain phases;
- The value of recyclables and the potential of the recycling sector in Egypt;
- The role of the workers in SWM, their work dynamics and what could be done to facilitate their jobs;
- Role of the community in an improved SWM including the possibility of at source segregation which might be regarded as an important option in the future;
- Informal recycling business and the role it plays in elevating poverty in Egypt.

7.2.2 Measure E1.2: Promoting benefits to the workers in the SWM sector

The official operators of SWM, namely the Government and the private sector companies need to pay more attention to the working conditions, wages and health aspects of both the temporary and permanent workers in the sector. Raising the profile of SWM in Egypt could be achieved by raising the profile of those working in this sector. Efforts should be made to create more attractive packages for the existing workers and those who will be joining the sector in the future. Advantages that could be promoted include but are not limited to:

1. Legally recognise waste management & recycling (formal and informal) as a sector of employment;
2. Work to secure additional financial allocation for the salaries and incentives of the temporary and permanent workers;
3. Pay the due attention to the safety consideration of the workers by providing the needed protective equipment, training and orientation;
4. Mobilize various civil society organizations to assist in the provision of non-financial benefits including capacity building programmes, improving the living conditions of the workers and implementing supportive interventions for the families of the workers;
5. Raising community awareness to change the negative attitude towards the workers in this sector.

7.2.3 Measure E1.3: Assisting the informal sector

The informal sector groups are an integral part of the waste sector in Egypt. To enhance the SWM profile, there is a need to improve the living and working conditions of the informal sector group and to maximize their contribution to developing the sector.

Integrating the informal sector groups is an action with double benefits. From a social prospective, unless efforts are made to integrate these groups, they will remain disadvantaged and left behind as a result of improvements for the system. In the meantime, and from business prospective, the informal sector have been efficiently operating for generations. They have the know-how of the sector and incorporating them into new systems will be an added value to these systems.

The Ministry of Local Development has recently cooperated with the United Nations Development Programme (UNDP) to develop the Upstream Poverty and Social Impact Analysis (PSIA) for the SWM Reform in Egypt. The PSIA provides a road map for the integration of the informal sector groups of SWM, particularly the traditional groups of Zabbaleen and wahyas. The PSIA emphasized the need for placing the various informal sector groups within the broader, holistic and multidimensional poverty context of the country in order to make an efficient integration process and to address their problem from a developmental perspective rather than by penalizing them. The integration process requires securing a number of perquisites, including:

1. The crucial need for having a recycling system and waste minimization at source as one of the main pillars in waste management to visualize an active role of the traditional informal sector in waste management;
2. Political will is crucial for the success of any integration initiative;
3. An institutional house to adopt and coordinate any integration scenario, given the current fragmentation in roles and responsibilities with regards to waste management;
4. The ability of the sector to organize itself internally.

Assisting the informal sector requires immediate actions and longer term actions as follows:

Immediate actions

- Addressing the basic needs of the informal sector groups including improving access to infrastructural services, education and health facilities;
- Improving working conditions through mobilizing resources to address poor working conditions and improve the households conditions, improve access to electricity supply needed for basic processing and mobilize resources, plan and implant awareness programs on health hazards related to handling waste and the protective measures;
- Organizing the sector internally by benefiting from the experience of successful NGOs that managed to network and empower groups of Zabbaleen;
- Legal recognition for the informal sector groups by revising laws and regulations related to solid waste management.

Longer terms actions

- Economic & social empowerment including arranging experience and business exchange programs between Zabbaleen groups to benefit from the successful business models, facilitating access to micro-finance;
- Capacity building for the informal sector groups including designing and implementing skills development programs on entrepreneurship and designing skills program in recyclable processing including low cost waste technologies. Other issues like advocacy, networking and team playing are important issues for more efficient operation for these groups.

7.3 Workstream E2: Civil society engagement

There is currently no official and institutionalized mechanism for engaging the civil society in the process of planning, implementing and monitoring SWM systems. The social aspects related to SWM need to be mainstreamed within the planning process for SWM projects in order to ensure that the projects are designed and implemented within a sustainable framework. There is a need to engage the various groups of civil society groups in the process.

Workstream E2 contains the following measures:

E2.1: Establishing ESWA social forum
E2.2: Participatory monitoring & evaluation

7.3.1 Measure E2.1: Establishing ESWA social forum

The Communications Division of ESWA will assume roles and responsibilities to ensure the inclusion of social aspects in the SWM sector. It will play the role of coordinator, stimulator and facilitator of implementing various socially oriented activities.

In particular, their role will include the co-ordination and integration of projects and initiatives related to the informal sector and other social aspects so that these activities are working towards consistent strategic objectives and so that lessons and good practices are shared. In addition, the Communications Division will work on mobilizing resources needed and coordinating efforts

with governmental and civil entities to ensure the engagement of the various stakeholders including the local communities.

The Communications Division would be a longer-term objective, and might start as a function that is carried out by one or two officers in the ESWA, but which grows over time into a larger department with many activities. It will have the following key responsibilities:

- Participatory monitoring and evaluation
- Social Assessment
- Awareness raising and behaviour change
- Social integration and informal sector empowerment

The overall objective is to institutionalize the process of community participation and civil society engagement through setting structured strategies and mechanisms that allow for regular dialogues, feedbacks and ensure that the concerns of the civil society organizations and local communities are considered during the various phases of the SWM projects.

Mandates/Main Responsibilities for the ESWA Communications Division

- Develop policy and strategy related to social aspects in consultation with relevant stakeholders and in line with overall national strategies in SWM.
- Strengthen the dialogue and communication among various actors related to the SWM, including the governmental sectors, NGOs, private sector, donor agencies, concerned line ministries and the informal sector.
- Safeguard the interests of the marginalized groups who have a direct stake in the process, particularly the informal sector group through designing and implementing programs that aim for their empowerment.
- Facilitate the design and implementation of awareness raising campaigns and encourage different relevant parties to participate (e.g. media).
- Design and carry out community related activities (e.g. social surveys) prior to the implementation of various SWM interventions. This might include seeking consultancy services to carry out the tasks.
- Assist the various informal sector groups in legalizing their situations and empowering them socially and economically.
- Build the capacities of relevant stakeholders either directly or through seeking consultancy services.
- Encourage the implementation of participatory monitoring and evaluation (PM&E) techniques that engage local communities in developing monitoring indicators and assess the systems and suggest areas for improvements

7.3.2 Measure E2.2: Participatory Monitoring and Evaluation

Throughout the various steps of SWM project, a more participatory approach that aims to engage the civil society groups should be adopted. It is essential to move away from the conventional technical model of service monitoring and evaluation which only cares about the inspection of the technical work to a more participatory monitoring and evaluation (PM&E) that encourages local communities to give feedback on the system operation from their own perspective. Mechanisms to ensure this include:

- Carry out consultation activities including social surveys during the phases of detailed design of various systems in different governorates.
- Precede any SWM interventions with detailed Environmental and Social Impact Assessment (ESIA) and ensure the allocation of sufficient funds for this purpose. ESIA should involved conducting tailored surveys to assess the potential impacts of the designed planned interventions on the local communities and propose mitigation measures to eliminate any potential negative impact.
- Carry out awareness raising campaigns in different areas and develop the campaigns to fit with the contextual specificities of the targeted areas.

As mentioned above, the Communication Division under the ESWA will help in institutionalizing the PM&E process and give it an official form.

7.4 Workstream E3: Behaviour change

Workstream E3 contains the following measure:

E3.1: Behaviour change

7.4.1 Measure E3.1: Behaviour Change

People (the population) and waste are connected by definition. It is people that produce waste, fund the management of waste and are the principal beneficiaries of good waste management through improved sanitation, public health and an enhanced civic landscape. Citizens also have the greatest influence on the success (or otherwise) of waste strategies and investment in infrastructure, as the most fundamental aspect of any waste service is waste generation and its preparation for collection.

Any improvement to waste management services, strategies and infrastructure development done in isolation of the recognition of this will never attain the level of success that would otherwise be achieved. For this reason, Behavioural Change and Communications is of central importance in waste management strategies and services development.

Development of a coherent approach to Behavioural Change will begin by establishing the hierarchy of responsibility within ESWA and other organisations. The action of behavioural change takes place at a local level but ESWA will be a force to drive forward this change. A National Strategic Behavioural Change Hierarchy (NSBCH) will be established under the NSWMP, controlled and delivered at local level but retaining a national cohesion that will build greater impact across the country.

The creation of the NSBCH will concentrate on establishing departmental responsibilities to for behaviour change from planning to delivery:

Central governance: Development and delivery of national behavioural change strategy and the monitoring of its impact.

Regional governance: Delegated responsibility for regional deployment and management of behavioural change initiatives.

Local delivery: Responsible for the delivery of behavioural change campaigns at a local level.

To begin the process of establishing the NSBCH, core competencies will be developed through professional training of key staff within ESWA. This will also enable the development of institutional acceptance of Behavioural Change at the highest level, essential for effective decisions to be taken and implemented.

As part of this process, a framework of behavioural change assessment will be developed that will enable infrastructure and waste management strategy decisions to be considered in the context of the public's propensity to accept any change to systems and thus, identify areas for refinement as well as the early identification of the communications and budget needed to inform and encourage participation at the point of delivery.

'Communications' in this context can be defined as the tools with which the Behavioural Change strategy will be conveyed to the public. Competencies in this area will be developed through professional training of key staff.

In addition, a detailed tool kit of communication resources will be created for use nationally and locally. This will include a range of resources including (but not limited to):

- National waste brand iconography
- Publications
- Advertisement templates
- Photo library
- Literature templates
- Website templates
- Communication planning tools

8 Component F: Implementation and monitoring

8.1 Introduction

In order to ensure operability of the National Solid Waste Management (NSWMP) the implementation plans are proposed in this chapter. The implementation plans are prepared for all components of the NSWMP and are based on identified workstreams and measures, and form the basis of the Programme. The Implementation Plan is divided into a short-term plan for 1 to 2 years and medium-term plan spanning 3 to 5 years.

The implementation plan is structured in tables containing the following main data: workstreams, measures and activities. The justification for them and their main scope were described in the former chapters of this report.

The prerequisite for implementation of the plan is the establishment of the Egyptian Solid Waste Management Authority (ESWA) within the Ministry of State for Local Development (MoLD), its support to other departments within this ministry and other ministries, and the coordination with Governorates.

8.2 Short-term implementation (years 1-2)

Component	A - Institutions, Policy and Legislation
Workstream	A1: Institutional & organisational development
Measure	A1.1: Establishment of the Egyptian Solid Waste Management Authority (ESWA)
Activities	- Adoption of decree (legal decision) - Development of Operational Manuals - Adoption of organizational structure - Adoption of recruitment plan - Hiring staff and appointing responsible persons and coordinating project implementation - Arranging office facilities
Results	- ESWA formally established and operational - Office established and reporting lines agreed
Measure	A1.2: Improving existing institutional structures
Activities	- Establishing coordination mechanisms - Preparing guidelines on inter-ministerial committees - Advisory services mobilized and delivered on organizational development and project management
Results	- Inter-ministerial coordination in place and significantly improved
Measure	A1.3: Institutional development at the local level
Activities	- Establishment of SWM Units in Governorates - Preparation of the model institutional arrangements for service contract - Adopting necessary local regulations - Promotion and preparation of regional SWM plans - Preparing guidelines and instructions for tendering and supervision over construction of regional facilities; - Elaboration of PR activities related to SWM activities
Results	- SWM Units established - Local and regional ownership of SWM strengthened ; - Regional approach for WM services promoted and applied; - SWM Units prepared for contracting out of operations; - Monitoring system of the performance of service providers significantly improved
Workstream	A2: Policy development
Measure	A2.2: Strategy finalisation/stakeholder consultations
Activities	- Stakeholder consultations on NSWMP - Introduction of the efficient system of collecting and integrating comments from all stakeholders invited for finalising NSWMP - PR activities related to finishing NSWMP designed and performed
Results	- NSWMP finalized, consulted and adopted - Information on NSWMP prepared and disseminated
Workstream	A3: Legislation and regulations
Measure	A3.1 Waste Framework Law
Activities	- Preparation of draft framework law for SWM - Establishing participatory system for consultations

Component	A - Institutions, Policy and Legislation
	- Information activities (production of materials on new law) - Public awareness events on new draft law - Amendments of the Law on Environment
Results	- Draft law on SWM prepared, consulted and agreed - Draft law on SWM submitted to Parliament
Workstream	A4: Economic & financial instruments
Measure	A4.1: Business & financial instruments
Activities	- Review of tariff setting policy in SWM and development of proposals for changes. - Implementing full cost accounting for SWM in selected Governorates
Results	- Proposals for changes in SWM tariff system prepared and submitted for approval - Better information on waste management costs available
Measure	A4.3: Producer responsibility
Activities	- Development of proposals for new financial/economic instruments, including Extended Producer Responsibility for packaging and packaging waste, batteries and WEEE - Preparation of institutional concept and proposal for application of producer responsibility in SWM
Results	- The concept of producer responsibility promoted and understood - Proposals, including draft regulations/decrees, submitted

Component	B: Investment Programming & Implementation
Workstream	B1: Project Pipeline Development
Measure	B1.1: Project development procedures
Activities	- Preparation of Operational Manual on SWM project development - Manual for management of funds and co-financing criteria and conditions
Results	- Procedural manuals prepared and adopted - The stakeholders aware of procedural framework for SWM project development
Measure	B1.2: Project pipeline
Activities	- Preparation of the system for registering the project concepts - Mobilisation of TA for project preparation - Training on project development and management of project pipeline - Preparing project concepts, pre-feasibility and feasibility studies
Results	- Required IT system for developing and managing project pipeline in place - Required staff for managing project pipeline trained - Waste management concepts prepared and submitted for financing decisions

Workstream	B2: Priority Investments
Measure	B2.1: Project selection procedures
Activities	- Selection of projects for financing under the first-phase of investments - Preparing waste management concepts
Results	- Decisions made on waste management concepts to be implemented - Waste management concepts' project documentation prepared
Measure	B2.2: First-phase investments
Activities	- Preparation and implementation of the first-phase projects
Results	- Implementation of first phase waste management projects commenced
Workstream	B3: Financial management
Measure	B3.1 Guidelines for financial management of SWM at the local level
Activities	- Preparing methodological guidelines including templates and models for financial management practices at the local level
Results	- Guidelines prepared and adopted
Measure	B3.2 Capacity building of NSWM entity on Financial Management
Activities	- Training staff on budgeting and cost accounting mechanisms - Training staff on affordability analysis and willingness to pay - Training staff on tariff structures and cost benefit analysis - Training staff on financial assessment of investment projects / technology options - Preparing training reports to review training progress
Results	- Improved knowledge and skills on Financial Management

Component	C: Professional Capacity
Workstream	C1: Policy & Strategy Implementation Capacity
Measure	C1.1: Training new sector leaders
Activities	- Recruit ESWA core staff - Develop the required competencies - Develop and deliver training programme ESWA management - Conduct specific training programme for ESWA staff

	- Deliver induction and training courses for ESWA employees and key staff
Results	- Training programme delivered for ESWA management and staff
Workstream	C2: Project Programming & Implementation Capacity
Measure	C2.1: Support to ESWA C2.2: Support to governorates and municipalities
Activities	- Develop capacity to define and implement investment projects - Identifying and training professionals to support the investment process
Results	- Enhanced competence in waste management planning, and investment programming and implementation

Component	D: Improved Services and Facilities
Workstream	D1: Guidelines, Codes and Technical Standards
Measure	D1.1 Codes and Technical Standards
Activities	- Preparation of action plan for development of codes and technical standards - Drafting codes and technical standards - Preparation of publications and Information activities (production of guidance materials on codes and standards)
Results	- Codes and technical standards prepared and disseminated
Measure	D1.2 Guidelines
Activities	- Preparation of action plan for development of guidance material - Drafting guideline documents - Preparation of supporting documentation
Results	- Guidelines standards prepared and disseminated
Workstream	D2: Regional Waste Management Planning
Measure	D2.1 Preparation of Regional Plans
Activities	- Development of guidelines and models for preparation of regional waste management plans - Collaboration and consultation with key stakeholders in planning process - Preparation of model regional SWM plans
Results	- Model regional SWM plans
Measure	D2.2 Planning Targets
Activities	- Collaboration with key stakeholders during planning process - Development Partners supporting governorates in process of preparing regional plans - Development of key indicators for inclusion in regional waste management plans and Waste Framework Law - Prepared Regional Waste Management Plan
Results	- Defined set of targets for regional plans

Component	E: Civil Society Participation
Workstream	E1: Raising the profile of waste management
Measure	E1.3: Integrating the informal sector
Activities	- Communication of the role and importance of the informal sector in the waste management industry to the public - Revision of laws and regulations to legally recognise waste management and recycling industry, including informal sector workers
Results	- Integration of informal sector programme defined and adopted - Role of informal sector in waste management industry communicated to internal staff and the public
Workstream	E2: Civil Society Engagement
Measure	E2.1: Inclusion of a social unit/forum within ESWA
Activities	- Establish a Communication Division within ESWA - Training of staff on communication skills and objectives of the Division - Development of "tool kit" of communication resources
Results	- Communication Division established and operational

8.3 Medium-term implementation (years 3-5)

Component	A - Institutions, Policy and Legislation
Workstream	A2: Policy development
Measure	A2.1: Establishing policy
Activities	- Undertake a review on prioritizing waste streams - Study on options for management of most sensitive SWM issues - Review of policy documents on SWM - Developing climate mitigation policy
Results	- The SWM policy documents prepared and operational - Review of policy documents established and tested

Measure	A3.2: Subsidiary regulations/decrees
Activities	- Preparation of action plan for development of subsidiary regulations and secondary laws - Drafting subsidiary regulations/decrees - Preparation of publications Establishing participatory system for consultations - Information activities (production of materials on new law) - Public awareness events on new draft law - Secondary legislation on record keeping, reporting and data transfer prepared - Preparing a guidebook for (necessary) amendments in local SWM regulations - Minimum standards for closure of incompliant landfills; and for sanitary landfilling; - Financing and permitting of operations;
Results	- Subsidiary regulations/decrees on SWM prepared, consulted and agreed - Subsidiary regulations/decrees submitted for approval by relevant authorities
Measure	A 3.3 Enforcement & enforcement structures
Activities	- Functional review of monitoring and inspection in SWM - Developing and Action Plan for Capacity Building for inspection in SWM - Designing the Technical Assistance Package for monitoring and inspection in SWM - Programme of strengthening of local environmental inspections; and coordination with the EEAA/ Environmental inspectorate - Preparing needs assessment study for monitoring, inspection and enforcement study - Identification of types of violations not being penalized consistently; assessment of penalty levels against real costs of the environmental damages caused; - Review adequacy of resources and procedures
Results	- Higher level of compliance with SWM standards and legislation - Increased capacities of inspection services in SWM - Systems and procedures for inspection and enforcement priorities prepared; - Interface between the national and local level inspection improved
Measure	A4.2: Carbon financing
Activities	- Integration of current CDM system with the SWM project pipeline within NSWMP - Developing of information data exchange between CDM office and ESWA
Results	- The integrated system for CDM with SWM projects established and functional - The information activities on CDM in SWM designed and organized
Measure	A4.3: Producer responsibility
Activities	- Elaboration of draft legislation on SWM - Organization of information and awareness events on the concept of producer responsibility - Preparation of strategy and Action Plan for introduction of producer responsibility principle in Egypt - Pilot activities on “producer’s responsibility” (e.g. WEEE, tyres etc.)
Results	- Producer related legislation prepared, consulted and adopted - Information activities on producer responsibility prepared and distributed

Component	B: Investment Programming & Implementation
Workstream	B1: Project Pipeline Development
Measure	B1.3: Promoting investment
Activities	- Promotion of SWM investment among SME - Promotion of SWM investment opportunities as PSP - Promotion of SWM within PPP mechanism
Results	- The investment in SWM promoted through awareness activities and workshops

Workstream	B2: Priority Investments
Measure	B2.3: Monitoring & evaluation
Activities	- Establishing monitoring system for first-wave projects - Training staff on monitoring and evaluation of SWM projects - Preparing reports on review of progress - Co-ordination of monitoring - Establishing planning and reporting requirements - Defining inspection programmes - Preparing methodological guidance for reporting to all SWM actors
Results	- Monitoring system for first – wave projects prepared - Adjustment of the monitoring system after implementation of first wave project - Reporting mechanisms and procedures - Obligations for self-monitoring and reporting by waste generators & holders and operators of WM facilities
Workstream	B3: Financial management
Measure	B3.3 NSWM entity to explore financial role of local governments in alliance with new decentralization law

Activities	- MOLD to finalise new Local Administration Law - Identifying and consulting to establish financial role of the proposed central SWM departments
Results	- Role of central SWM departments in alliance with new decentralization law finalised

Component	C: Professional Capacity
Workstream	C1: Policy & Strategy Implementation Capacity
Measure	C1.2: National advisory service and training centre
Activities	- Define needs and requirements of a national training centre and advisory centre - Develop ESWA's expertise to position it as the national waste advisory service - Develop structured programme of training - Collaborative working with national universities and development partners to establish national training centre - ESWA advisory services mobilised and operational
Results	- Establish ESWA as a national training centre and advisory service responsible for developing the capacity of the industry. - ESWA has recognised status as the central hub of competence in the waste management sector in Egypt
Workstream	C2: Project Programming & Implementation Capacity
Measure	C2.1: Support to governorates and municipalities
Activities	- Working in collaboration with extended number of governorates to define and implement investment projects - Identifying and training experienced professionals on investment issues that can drive the investment process
Results	- Continued expansion of local waste management competence in waste management planning, and investment programming and implementation

Component	D: Improved Services and Facilities
Workstream	D3: Private Sector Participation
Measure	D3.1 Operator and Contracting Models
Activities	- Analysis of different operator models and defined "contracting strategy" to be adopted - Assessment of different contracting models - Develop model contract documents appropriate to local needs
Results	- Defined and documented operator model for waste management services - Defined and documented contracting model for waste management services
Measure	D3.2 Developing the National Waste Management Industry
Activities	- Support for SMEs and entrepreneurs to start new business ventures and stimulate innovation in sector - ESWA to liaise with development and commercial banks to establish seed financing and creating of an SWM SME fund. - Establish procedures for accessing credit and grant support from SWM SME fund by new entrants - ESWA to propose other mechanisms for stimulating development of industry - ESWA to consult with key stakeholders on proposals and prepare a document summarising outcomes
Results	- Sector growth and increase in employment opportunities in waste management industry
Component	E: Civil Society Participation
Workstream	E1: Raising the profile of waste management
Measure	E1.1: Stimulating the role of media and NGOs
Activities	- ESWA to develop communications strategy to raise stakeholder awareness of profile of SWM in Egypt - Mobilization of promotion tools to support awareness campaign - Prepare and document report outlining relevant communications strategy - Develop media action plan - Communicate media action plan to governorates
Results	- Increased stakeholder awareness of profile of SWM industry in Egypt. - Media communications action plan defined and adopted
Measure	E1.2: Promoting advantages to the workers in the SWM sector
Activities	- Establish a strategy to raise the profile of sector workers - Develop Human Resources strategy to improve working conditions and packages for current and future employees in sector - Communication of improved human resources packages to appropriate employees - Communication of importance of role of WM workers and the industry as a whole to the public
Results	- Increased public awareness of the role of workers in SWM industry - Increase in staff retention across SWM industry over time
Workstream	E2: Civil Society Engagement
Measure	E2.2: Participatory Monitoring and Evaluation
Activities	- Establish participatory monitoring and evaluation programme involving local communities giving

	feedback on services - Develop communications to local communities on participatory strategy - Conduct consultation activities and social surveys in different governorates - Conduct Social Impact Assessments and ensure allocation of funds for the task - Develop awareness raising campaigns specific to each area.
Results	- Set up and establish the participatory monitoring and evaluation process - Staff trained on participatory monitoring and evaluation process
Workstream	E3: Behaviour Change
Measure	E3: Behaviour Change
Activities	- Establish a National Strategic Behavioural Change Hierarchy (NSBCH) - Train staff on core competencies - Development of a framework of behavioural change assessment - Development of "tool kit" of communication resources
Results	- Behavioural change programme defined and adopted - Framework of behavioural change assessment prepared and adopted - Staff trained on behavioural change and communication of behavioural change

8.4 Monitoring, Review & update

The NSWMP represents the initial stage in what is ultimately a long-term process. The needs and circumstances in Egypt related to waste management issues will change. It is therefore vital that the NSWMP is continually monitored and regularly reviewed to ensure that the measures identified under each component are still valid and appropriate, and that the time scales for targets are implemented.

The NSWMP implementation period, will be monitored and reviewed in four ways:

1. *Policy implementation* – the extent to which the measures and policies set out in the plan are implemented in practice.
2. *Improved services and facilities* – the extent to which the capacity of infrastructure and systems for the physical handling of waste have been developed,
3. *Financial sustainability* - the extent to which the costs of services and facilities are being covered by locally collected revenue.
4. *Civil society engagement* – the extent and diversity of stakeholders which have been involved in the process of policy making, planning and implementation of improved services and facilities.

In parallel, attention will be placed on ensuring that the development of ESWA runs in parallel with a continued strengthening of the environmental regulatory functions of EEAA.

Programme milestones

The following key milestones are envisaged:

- **First quarter 2012**: Launch of a technical assistance (TA) project financed by the German Government (through GIZ) to support the establishment of ESWA, to continue development of policy, strategy & legislation, and to strengthen the professional competence of staff related to their specific roles.
- **Second-Third quarter 2012**: Establishment of an Egyptian Solid Waste Management Authority (ESWA) within the Ministry of State for Local Development (MoLD). This authority would be the national centre of excellence in waste management policy, legislation, strategy, technology, contracting and financing; working to support decentralised implementation of improved waste management practices in governorates and new housing communities.
- **Fourth quarter 2012**: Launch of the investment and accompanying measures/TA component of the NSWMP, co-financed by the GoE, the German Government (through KfW) and the European Union. The investment component will finance waste management concepts at the governorate level, and provide accompanying measures support for project-related studies, institutional capacity development, and assistance in developing a project pipeline.
- **Second quarter 2013**: Enactment of waste management policy and framework legislation. This focus will be on identifying and addressing priorities, through appropriate and achievable targets, instruments, measures and financing for the sustainable development of the waste management sector.

- **Fourth quarter 2013**: Enactment of regulations/decrees for specific priority waste streams. The focus for this quarter will be on municipal waste and other identified priority waste streams. Adapting EU regulatory practices (including producer responsibility for specific waste streams) into the Egyptian regulatory framework will be explored.
- **Fourth quarter 2017**: The German/EU financing programme ends leaving a framework in place for sustainable development of the waste management sector. Projects are implemented exhausting the first phase of NSWMP financing, and a project pipeline is in place attracting finance from a range of sources.