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*   Translation in French   ENDA/MATAM

1. INTRODUCTION

Based on the outcome of deliverable 4.1 regarding the recommendations for policy measures in the target countries, this report (deliverable 4.2) presents methods for the future implementation of policy strategies in ISWM. To this aim a guideline will be introduced that supports authorities in the inclusion of participatory approaches for future ISWM strategies. The guideline outlined in this report is structured by

- Principles to develop a roadmap for ISWM (chapter 2),

- Definition of goals, stopovers & deadlines for a roadmap (chapter 3),

- Definition of responsibilities for the development of a roadmap (chapter 4),

- Principles to enable effective participation of stakeholders in policy setting and implementation (chapter 5),

- Best practices to monitor the implementation of the roadmap (chapter 6) and

- Role of the stakeholders in the target countries (chapter 7).

The guideline has the goal to deliver a blueprint for roadmaps to implement policy strategies in ISWM to reduce the pressure on the environment and the health of the people in the target countries in West Africa and to enable effective participation, formation of partnerships and integration with other policies.

2. PRINCIPLES TO DEVELOP A ROADMAP FOR ISWM

2.1. Initial Remarks

The implementation of ISWM as a policy strategy needs to be based on the waste management hierarchy of, firstly, avoiding generation of waste, followed by reducing, reusing, recycling, recovering, treating and disposing whatever waste is produced. The waste management hierarchy needs to be emphasized in policies and summarized its observations on the current waste management situation in the targeted countries into requirements for improvement.

It will be necessary to initiate a process defining immediate, intermediate and ultimate outcomes within an aimed time frame. Strategic planning based on local needs and long-term goals should inform any policy addressing community involvement and public health issues. Thus, there is a need for action to effectively translate these approaches into a unified goal, incorporating local, regional and national priorities.

2.2. Principles for Developing a Roadmap

The idea(s) behind roadmaps can be described by the following statements:

"Roadmapping" has become a popular metaphor for planning technology or policy advancements usages (MacKenzie 2002, Machate 2006).

A "roadmap" is an extended look at the future of a chosen field of inquiry composed from the collective knowledge and imagination of the brightest drivers of change in that field (definition by Galvin 1998).

Roadmaps can comprise statements of theories and trends, the formulation of models, identification of linkages among and within sciences, identification of discontinuities and knowledge voids, and interpretation of investigations and experiments. Roadmaps can also include the identification of instruments needed to solve problems (Galvin 1998).

The optimal process for gathering and selecting the content of roadmaps is to include as many practicing professionals as possible in workshops periodically in order to allow all suggestions to be considered and to evaluate the consensuses that will more often than not emerge. Equal treatment should be given to minority views and individual advocacies. As mentioned above the conceptual

design of roadmaps in general needs clear targets for further orientation (Fleischer et al. 2005). There has to be established measures and milestones to demonstrate the development of the predefined process. Roadmaps communicate visions, attract resources from business and government, stimulate investigations, and monitor progress. They become the inventory of possibilities for a particular field, thus stimulating more targeted investigations at an early stage of process to establish ISWM.

With the help of the roadmap the following interrelations can be taken into account:

- The focus is on key elements (milestones, incidents, activities).
- The elements will be connected with a superior structure (legal framework, existing technologies, know-how).
- A long-term timetable will be added.

The following are essential elements of what is required at national level in the targeted countries to foster the process of implementing final solutions for ISWM:

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1. Political decision to develop and implement ISWM.

Clear political decisions are needed as a basis for all steps towards ISWM.

2. Formulating policies and strategies towards prioritizing public and workers health issues and to establish the waste management principles (avoiding, reuse, recycling, disposal).

Before ISWM policies and strategies are elaborated they need as a basis a principle political decision to implement an ISWM in the country.

3. Assessing the quantum of waste being generated and its impact on environment and health.

There is a need for databases as a basis for political decisions.

4. Transformation of political decisions into a legal, regulatory and organisational framework.

National legislation and rulemaking has to transpose the political decisions into clear provisions. This includes issues such as timeframes and milestones for the successive steps of the implementation process. Definition of roles, responsibilities and rights of the parties involved in this process (regulatory body, private sector) need to be also taken care of.

5. Assigning clear responsibility and accountability to various agencies involved in the process of integrated waste management.

There has to be considered different responsibilities based on different governmental levels (national, regional, municipal). These responsibilities have to be concretized clearly regarding the certain levels.

6. Enforcing compliance to rules regulating municipal solid waste.

Compliance and enforcement of existing rules are very important for a working ISWM, especially if there is a significant lack of good governance.

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7. Providing funding and capacities for the implementation of rules on waste management.

Concepts for funding and cost recovery mechanisms are needed. Different funding options are available for the governments.

8. Monitoring to check non-compliance.

This means on the other hand the check of non-compliance by strictly monitoring.

3. DEFINITION OF GOALS, STOPOVERS & DEADLINES FOR A ROADMAP

The main goal of a roadmap is the long-term outcome; change in the waste management sector; which should be defined early in the process. Specific, measurable goals and outputs, such as arranged activities and written documents are of less importance, and may change along the process as new opportunities and obstacles occur. The success of the roadmap is measured in relation to the long-term goal: the implementation of integrated solid waste management (ISWM).

The main goal of the roadmap should be based on what is considered as desired and necessary. This often means that a long-term perspective (10 years or more) is needed. The main goal should not be limited by what seems practically attainable in the short term.

After the main goal has been agreed upon, the roadmap development should focus on developing specific goals for the short term 1-2 years, mid term (2-5 years) and long term (5-15 years), and deciding on strategies and measures to be taken to achieve those goals.

4. ESTABLISH A ROADMAP AN DEFINE RESPONSIBILITIES FOR ITS DEVELOPMENT

4.1. Identify and define responsibilities

Integrated Solid Waste Management (ISWM) is a comprehensive waste prevention, recycling, composting, and disposal program. An effective ISWM system considers how to prevent, recycle, and manage solid waste in ways that most effectively protect human health and the environment.

In defining responsibilities for the development of roadmap for ISWM, data and information gathering has been recognized as one of the first steps in designing or improving a waste management system. Data collected should take into consideration institutional, social, financial, economic, technical, and environmental aspects (see Table # below). These factors vary from place to place.

Table 1 Important questions to consider in collecting data for the development of roadmap to ISWM

Aspects	Questions to consider	Steps to be taken
Institutions (Laws/regulations/policies processes)	- Are existing laws and policies adequate to allow the government to properly implement ISWM? - What shortcomings need to be addressed by new policy?	- Establish a national policy and pass laws on solid waste management standards and practices. - Identify the roles and responsibilities of each level of government. - Ensure that the local government has the authority and resources to implement an ISWM plan.
Social (local customs and religious practices, public education, etc)	- What types of waste does the community generate and how it is managed today? - What formal and informal actors are involved in waste management? - What barriers to ISWM are experienced by different actors?	- Encourage citizen participation in all phases of waste management planning to help gain community awareness, input, and acceptance. - Waste characterization and quantification with the involvement of local population and authorities
Financial (Funding)	- How is waste management funded today? - What financial mechanisms could be implemented to improve funding? - What mechanisms could be used to implement the polluter pays principle?	Identify the gap in terms of financing, and sources that can provide funding for solid waste management, including general revenues or user fees, recycling, the private sector, and government or international agency grants and loans.
Evaluation of current technologies	What is functioning and what is not functioning?	- Overview on the waste management technologies used in the country - Analysis of the obstacles and promotors for technologies in place.
Economic (costs and job creation)	- What will it cost to implement various waste management activities?	- Identification of cost-effective waste management technologies
Environment (natural resources and human health)	How does current management activities (e.g. land-filling, open dumping and burning) affect the environment?	- Carry out an environmental assessment in order to characterize the initial situation and define environmental criteria/indicators to be monitored - Establish procedures to verify the protection of groundwater and drinking water. -Monitor compliance with the national standards to ensure human health risks are minimized.

Based on answers obtained for the questions asked in table 1, data on institutional, technical, economic, social and environment aspects that need to be addressed in order to initiate a successful process towards ISWM have been identified and analyzed to establish a roadmap.

4.2. Establishing a roadmap for the development of ISWM

Establishing a roadmap consists of creating a program with **clear steps** based on the objectives and the expected results for each of the aspects identified in the table above.

In order to develop a roadmap for the development of an integrated solid waste management (ISWM) the following steps should be included:

1. The first step of the roadmap is an agreement of the vision for the future integrated waste management system. In order to cover ISWM, the vision should include
   - Waste collection – keeping the community clean.
   - Health protection – for both workers, the public and the environment, which requires safe treatment and disposal, especially of hazardous waste.
   - Resource recovery through recycling

2. The second step of the roadmap is an identification of the barriers that need to be overcome to realize that vision. The current waste management situation, including both formal and informal activities, is the starting point of the future integrated waste management system. It has to be described and assessed, and the key strengths and weaknesses of the current situations should be identified, as well as opportunities and threats for implementation of change towards integrated solid waste management. This requires an open evaluation of the current waste management situation involving all stakeholders. (This third step is described in Deliverable 3.4, Chapter 3.1 Situation analysis. Evaluation of the situation in the IWWA target countries has been performed in WP2 and WP 3.) The relevant stakeholders such as waste generators, service providers such as private sector and government must be identified. It is important to know the needs and interest of each of them and how their interest/needs can be integrated for an effective ISWM.

3. The fourth step of the roadmap is the development of relevant policies/laws/regulations governing the sector:
   At the national level, it is the responsibility of the Central Government to:
   - develop and implement policies/laws/regulations/laws/regulations that should govern ISWM;
   - define sector ministries or governmental agencies that should implement policies/laws/regulations governing solid waste management;
   - develop standard practices or quality guideline for effective ISWM;
   - define geo – administrative areas of the nation into municipal, metropolitan, perii-urban and rural committees, and
   - develop systems for enforcement of laws and regulations that should govern ISWM at the national level.
   - define regulations and methods for waste management planning at national and local level as well as monitoring and evaluation of plans.

4. The fifth step is the identification of institutions that will be charge with the responsibility of managing SWM at all levels (national/municipal/metropolitan/local/community). Also at these levels there are different actors who are involved in the collection and management of ISW. The primary agent whose responsibility is to ensure proper management of solid waste at the municipal/metropolitan/district level is the municipal/metropolitan/district waste management department. However, private sector should be invited to take part.

5. The sixth step is the identification and definition of financing mechanisms. It is the responsibility of the local government/municipal/metropolitan assemblies as well as the sector ministry in charge with waste management to fix fees/taxes/levies or provide subsidies to residents as well as provision of financial support to private sectors involved in ISWM.

6. The seventh step is to develop the first version of the Waste Management Plan. In order to move from the current situation to the envisioned situation, a number of actions have to be taken. In order to be successful, the planning should consider financial, legal, organizational and technical aspects of waste management as well as human resources management. All stakeholders should be involved in the planning process. The planning process should preferably result in a waste management plan at both local and national level (see D 3.3 for examples from other countries). The planning process should take into account the recommendations developed in IWWA D 3.3 and is further described in D 3.4. all activities and expected results (according to targets) with a clear definition of responsibilities and tasks are defined, according to a feasible schedule (short term, mid term and long term timeline). This plan indicates also the performance indicators for the implementation of the roadmap, and who is in charge of the monitoring activities.

7. The last step of the roadmap is to establish mechanisms for monitoring and evaluation. Data for monitoring of the waste management system should be collected continuously. After a few years, the fulfilment of the goals should be evaluated, and the vision, the plan and the implementation and monitoring procedures should be evaluated.

5. PRINCIPLES TO ENABLE EFFECTIVE PARTICIPATION OF STAKEHOLDERS IN POLICY SETTING AND IMPLEMENTATION

5.1. Public authorities: Setting up & implementation of a roadmap

5.1.1. Principles for public authorities to ensure effective participation

From the conclusions in Work package 2 and the recommendations of policy options elaborated in work package 3, the principles outlined below would ensure an effective setting up and implementation of a roadmap for effective public participation in ISWM policy:

- Commitment

In Ghana the policy of decentralization to the local assemblies, embodied in the relevant Acts of 1993 and 2003 shows commitments on the part of the government but has not been translated effectively into action. As such, there must be leadership and strong commitment to information, consultation and participation in policy-making amongst public authorities– from government, and stakeholders.

- Clarity

Objectives for, and limits to, information, consultation and active participation during policy-making in the target countries should be well defined from the outset. Clear definition and delineation of roles and responsibilities among the relevant stakeholders must be the goal of the roadmap.

- Time

Public consultation and active participation in the target countries should be undertaken within reasonable timeframe preferably as early as in the policy process as possible to allow a greater range of policy solutions to emerge and to raise the chances of successful implementation. Adequate time must also be made for consultation and participation to be effective. Information is needed at all stages of the policy cycle.

- Objectivity

Information provided by government during policy–making should be objective, complete and accessible. All stakeholders should have equal treatment when exercising their rights of access to information and participation in the target countries.

- Resources

There is reasonable amount of resources for ISWM in Nigeria and Ghana for instance but the government is yet to put them into good use. Thus, adequate financial, human and technical resources are needed if public information, consultation and active participation in policy-making in the target countries is to be effective. Government officials must have access to proper skills, guidance and training as well as an organisational culture that supports their efforts.

- Co-ordination

In Cote d'Ivoire, policy makers have evidently encouraged centralization of the SWM system and privatization is underway since 2007. However, initiatives to inform and request feedback from and or consult the public should be co-ordinated across various government units in other target countries to enhance knowledge management, policy coherence, avoid duplication of and reduce the risk of consultation fatigue among the public and civil society organisations. Co-ordination efforts however should not reduce the capacity of government units to ensure innovation and flexibility.

- Accountability

Governments in Ghana, Nigeria, Cote D'ivoire and Senegal have an obligation to account for the use they make of citizens' inputs received through feedback, public consultation and active

participation. Measures to ensure that the policy-making process is open, transparent and amenable to external scrutiny and review are crucial to increasing government accountability overall.

- Evaluation

Respective governments in the target regions must evaluate their performance in providing information, conducting consultation and engaging public, in order to adapt new requirements and changing conditions for policy-making.

5.1.2. Limits for their effective participation

There are limits to the extent of government's contribution for the effectiveness of ISWM in the target countries. For instance, in Nigeria, most waste management agencies lack adequate capacity and technology for effective public participation processes while Cote d'ivoire, Ghana and Senegal lack the requisite funding for consistency in public participation. There is need for a private-public partnership to assist in order to boost investment in waste management and to build capacity of relevant stakeholders.

5.1.3. Instruments to foster participation

It appears that the only legal instrument which provides for the requirement for public participation in decision making is Article 10 of the Rio Declaration on Environment and Development which states that

"environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy shall be provided".

Public participation in the policy making process is pivotal to the development and implementation of an effective waste management plan in the target countries. There is however, no instrument in any of the target countries indicating the requirement of public participation in the decision making processes.

In the absence of effective local legislation for public participation therefore, it would be difficult to obtain feedbacks and implement environmental policies even with adequate formidable programmes and policies in place. The result will be massive proliferation of laws and policies with lesser implementation results and conflict of roles between existing waste management authorities. Clearly, public participation is an imperative that will contribute to the success of waste management system in the target countries. It is expedient that the target countries enact participation instruments to build a good legislative framework for the effective incorporation of an Integrated Solid Waste Management system.

5.2. Formal waste management sector: Development & implementation of a roadmap

The main objective of the formal waste management sector is to assist society by providing waste management solutions efficiently while making profit. The formal waste management sector could be public or private oriented providing services in the metropolitans, municipalities and local government areas. In the public sector the waste management departments, the municipal authorities, the local government administration or the District Assemblies are responsible for waste management. However, the emergence of public-private partnership had proved that the private sector in this waste management is more proactive. It is believed by experts that the public sector should be allowed to concentrate on the monitoring aspect. Thus, the formal waste sector will be faced with minimizing costs within a planned strategy to improve on service delivery including

efficiency in order to win more contracts. Thus in the waste management industry the private sector is often seen to be more efficient, effective, and innovative; to have the requisite expertise, technology, equipment to deliver; and the financial capacity to expand. It is recommended that the private sector participation in waste management should be more responsive to a particular waste challenge, more efficient, more economical, more equitable (enabling the formation of certain niche markets for SME's), as well as in some cases (e.g. e-waste management) more environmentally responsible. They can improve a country's waste management system through increased overall efficiency and enhanced performance, with better management and accountability, faster response and (in the case of countries run by non-democratic type of governments) higher service ethics. The realization of these depends not only on the private sector actors, but on the degree of professional oversight and engaged control retained by the municipal or regional government responsible for their jurisdiction.

5.2.1. Reasons for the formal (private) sector Involvement

The need for the private sector investment and service provision emerged because in the past the public sector was seen to have failed in carrying out this mandate due to: inefficiency, poor pricing, overstaffing, lack of expertise, mismanagement, unaccountability, political hi-jacking, non-transparant management and operational structures, and stagnation among others. From practical experiences of waste collection in Ghana it is recommended that close to one hundred percent of the total service delivery in terms of collection should be handed over to the private sector whilst the government and its representative bodies should focus on the awarding of contracts and subsequent and consequent monitoring of the performance of the private waste industry sector.

5.2.2. Barriers for the formal (private) sector to participate in the development of a roadmap

Since the formal waste management sector typically comprises predominately of locally based private SME type businesses (next to larger international corporations) it is vital that the participation in the development of a country's or region's roadmap translates into tangible financial (or at least social) benefits for each private sector party involved.

Hence in order for the formal sector to get motivated to actively participate in the development of a roadmap the following conditions need to be taken into account:

- Governments operating under or expressing any form of a dictatorial, cronystic or nepotistic management style are not likely to attract free market based and hence unbiased private sector interest for partnerships

- Governments that do not show strong enough political will to take IWM planning seriously and provide budgets and structures accordingly (to develop required expertise and infrastructure and continuously improve upon the latter) are unlikely to receive any noticable buy-in from the formal private sector to partner towards finding effective and economic feasible IWM solutions.

- Formal private waste management sector stakeholders such as SMEs and individual entrepreneurs typically lack funds, skills, human resources and facilities/infrastructure to get involved meaningfully unless government provides direct financial and/or structural support for new start up operations of PPPs.

- The joint development of an integrated waste management roadmap between the government, the formal private sector, the public at large as well as the informal sector must ensure that there are clear incentives for each participant to make input in the strategy development. To avoid future conflict the roadmap has to spell out clearly and assign the relevant roles and responsibilities expected by each party.

5.2.3. Role of the formal waste Sector

In reference, Ghana's waste management practice is guided by the Environmental Sanitation Policy of 1999 (revised in 2010). It outlines the roles of the private sector waste operators and describes the character and preferred organizational and financial structure in public-private partnership in solid waste management. The policy supports building partnership both at international and local levels and with the private sector within an expanded network of actors through effective public sector facilitation and coordination. The Ministry of Local Government and Rural Development is responsible for waste management while the District Assemblies are responsible for waste management services at the local and community levels. Thus the private sector is engaged by these governmental representatives for services in collection, transportation and disposal. It is however essential that the private sector focuses on an integrated waste management system, making the best in the value chain with a focus on true waste reduction at source of both waste volumes and waste toxicity while the public sector provides the required environment for performance.

The formal waste management company is recommended to play a leading role in: Waste reduction at source, separation, collection, safe temporary storage, transport, material recovery, recycling, treatment and safe landfill management. Through triple bottom-line designed "waste beneficiation programmes" innovative ways have to be increasingly found by the private waste management sector to bring in value to waste projects by creating opportunities for employment and social upliftment while ensuring environmental integrity. In a more productive venture, some waste management companies provide additional or supplementary service embraced in the integrated waste management which includes landscaping, special waste management services such as composting and household hazardous waste management services, fabrication and hiring of waste management equipment, public education and the operation of waste management institutions.

The formal private sector should lead in the integration of the informal private sector in some aspects of its operations; for instance introducing typical informal type of "low technology – high labour intensive work approaches to waste separation and collection of waste from inaccessible routes or low density populated or rural areas. This is discussed in the next section.

Public private partnership is a highly recommended approach which must be encouraged and good examples from developed or other successful countries should be a learning example to adopt. A private company could start or initiate a project and later be supported by the government unless start-up grants and funds (e.g. towards the provision of required capital investment funds are offered) .The government can also employ the services of the private companies to manage a programme or project in waste management to bring to bear efficiency in managing as ascribe to the private firms.

There is the need for private companies to collaborate and undertake joint ventures in areas where each might have deficiency in terms of expertise, equipment, technology and others. There is the need for private companies in most nations but in particular in developing countries to have a common front to address any worrying development that might affect their efficacy. Joint ventures or other forms of strategic partnerships have been identified as ideal to overcome some of these challenges; especially, when the private sector has been handed over the majority of the execution of waste management services.

5.2.4. Participation Instruments for the formal waste sector

Public private partnerships constitute a recommended participation instrument to implement integrated SWM. Public–private partnership (PPP) describes a government service or private business venture which is funded and operated through a partnership of government and one or more private sector companies. These schemes are sometimes referred to as PPP, or P3.The Table below describes some key strategies (based on matching governmental policies) that should form the base of any PPP

Table 2 Best-Practice Review for successful PPP Structures and Strategies

Regulatory and Co-regulatory Policy Instruments	Economic Instruments & Socio-Economic /Environmental Incentives	Information, Awareness Raising and Education	Infrastructure Provision	Co-operation and Partnership Initiatives
Setting achievable targets: - waste reduction - recycling (goal-oriented or mandatory).	**Pay-as-you-throw household charges:** - pay per unit of waste disposed[1] - not a fixed fee	**Waste Information System:** - local and provincial level, - data necessary to inform waste minimisation and recycling policies and opportunities.	**Promote more waste segregation and recycling activities** -accessible clean waste recovery, sorting & treatment facilities[2]	**Poverty alleviation community projects:** - innovative initiatives[3]
Zero Waste Policy: -commitment to generate no waste[4]	**Landfill tax:** - a charge is levied for waste to be disposed to landfill - acting as an incentive for large waste generators to reduce waste.	**Awareness-raising campaigns:** -for households, consumers, retailers and producers on waste minimisation and recycling. -educational activities in both the formal & informal sector	**Provide separate waste collection facilities:** -increase household based or street or district wide collection facilities and schemes for recyclables and organics	**Business partnerships:** -potential for stimulating greater engagement of private sector in waste minimisation and resource efficiency programmes **Sponsorship partnerships:** - finance waste minimisation programmes linked to certain product/producer groups

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[1] e.g for prescribed disposal bags, or disposal bins

[2] e.g. transfer stations, material recovery facilities (MRFs), composting sites, drop off sites, buy-back centres and industrial recycling facilities

[3] e.g. waste for food or transport exchange programmes

[4] i.e. material that cannot be used either as biological or an industrial "nutrient"

Mandatory waste separation:	Product tax:	Public reporting from local authority:	Collection and composting schemes for biodegradable wastes:	Volunteer initiatives and development of volunteer database:
-households and/or businesses	-charge is levied on products causing problem waste -consider increased charges for waste materials that have a high volume to weight ratio in a landfill site.	-on performance progress against stated waste management targets[5]	-improving facilities[6].	-green individuals, schools and community groups in relevant waste programmes.
Extended producer responsibility: - waste collection (take-back) and treatment duty is placed on and financed by manufacturers. - provides stimulus for product / packaging redesign.	Waste min / recycling fund: - revenue raised via an IWM project[7]	Demonstration projects: -information, technical assistance and/or incentives provided to develop pilot demonstration projects	Waste exchange: - establish forum (e.g. through Internet) to facilitate the exchange of "waste" to those that can use this waste as a raw material input. - link up of waste exchange with local industrial and business hubs	Learnerships and Internships: - identification of Solid Waste related learnerships, academic internships and partnerships
Environmental Procurement: - using the power of large consumers (incl. government) to stimulate market demand e.g. for recycled products.	Financial incentives: - various options exist for providing financial incentives to reward those who adopt waste min / recycling practices[8] (	Product eco-labels and waste fact sheets: -inform consumer choice on environmental impact (and potential for post consumer recycling) of products / packaging	Retail outlet for recycled materials: - provide public facility where second- hand goods are repaired as required and sold-on to the public.	Public Private Partnerships: - aimed at job creation and outsourcing of service delivery functions to community members and/or private industry

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[5] e.g. through regular "State of Waste" report
[6] e.g.for garden and kitchen waste to reduce landfill space needs
[7] e.g. from waste disposal levies and/or supplied from central fiscus), dedicated to waste min/recycling initiatives, such as infrastructure, research, awareness raising, capacity building, and/or awards
[8] e.g. direct cash incentive or tax rebate for increased household recycling activities, airspace credits etc

Mandatory waste minaudits: - requiring waste minimisation audits / reviews e.g. as part of existing operational permits for industry and commerce.	**Social/Environmental incentives:** - options include composting donations to schools and communities, "food for waste" programs, provision of more/ better services etc. free electricity cards	**Public participation processes** - soliciting public feedback on performance, and receiving input into policy development	**Co-finance and/or subsidization of:** - selective CP technology and recycling technology by government authorities in order to boost WM and recycling activities.	
Voluntary industry agreements: - may include industry commitments for waste minimisation - phasing out of certain toxins	**Airspace Credits:** - claimable by whoever reduces amount of waste generated and disposed of - preserve future landfill airspace -financially rewarded by Government	**Sharing of:** - information and waste databases amongst Government Authorities and with the Public	**Co-finance of required special infrastructure for:** - recycling of certain materials by industry[9]	
Integration: - of By-Laws extending to Provincial and National areas	**Penalties and other Disincentives:** - control/fight bad attitude of individuals towards waste management issues e.g. such as littering, dumping etc			

In conclusion a successful roadmap is hinged on multi-stakeholder input while incorporating as many key elements as possible linked to

- the development of regulatory and co-regulatory policy instruments,

- the establishment of triple bottom-line (hence sustainability based) economic instruments & socio-economic as well as environmental incentives,

- a growing information, awareness raising and education platform (crosscutting between all spheres of government, the public at large as well as both formal and informal private waste management sector stakeholders,

- the provision of all necessary, sufficient and viable SWM infrastructure and

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[9] e.g. a local washplant for Plastic Recycling Industry

- the harnessing of co-operation opportunities (such as a PPP) through various partnership initiatives.

5.3. Informal waste management sector: Development & Implementation of a roadmap

Depending on the context, the performance of the informal sector in terms of collection, waste beneficiation and value adding[10] as well as recycling efficiency can be much higher than the performance of the formal sector. Rural or sparsely populated areas as well as informal dwellings might be much better served with waste collection by an informal entrepreneur with an ox-cart than any motorized vehicle with high maintenance cost, requiring specialist knowledge in handling and operation. The inherited often traditional know-how and efficient performance must be recognized and further supported, and consulted. By "formalizing" informal collectors participating households could rest assured that individuals were useful in supporting their activities and posed no threat to their personal safety hence increasing the credibility of such individuals and the resulting self-esteem tremendously.

5.3.1. The limits to the effective participation of the informal sector

The limits to the effective participation of the informal sector are:

- Absence of formal representation:

  The organic structure of much of the informal sector often forms without professionally planned representation of the community if any, such as associations for collectors, recyclers, traders, etc. This limits the ability of effective participation as stakeholders in the planning and implementation process with fair representation, and weakens their position when communicating or negotiating with the government and the private sectors.

- Exclusion by the government:

  Weakness in the participatory planning approach from the side of the government when upgrading the system or when drafting contracts for private sector participation.

- Lack of information:

  There is often a lack of information on the informal sector, the people involved, and baseline surveys to assist in planning for their effective participation.

- Limited awareness about potential support:

  Lack of awareness about or access to financial services, technical assistance, and means to formalize and professionalize activities.

- Lack of education:

  Difficulty in articulating needs, evaluating suggestions, and proposing sustainable solutions.

- Health issues and addictions:

  Often members of the informal sector, crippled by poverty, resort to drugs and excessive drinking hence making this sector unreliable to perform regularly the required tasks.

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[10] This "value adding" step can be for example done by enabling the informal sector to apply selective treatment prior to conventional recycling procersses such as the granulation of plastic or baling of recycling materials. It can also be in the form of "eco-industrial" activities where waste materials get converted into entirely new products in a low technological and high labour intensive setup. Waste to Art manufacturing is such an example where waste paper converted to paper-mache can e.g. provide a valuable ingredient to make bowls, vases and other art pieces that can be moulded inexpensive but to great visual effect with high sales potential.

- Distraction and competition from new actors:

  Rising unemployment in certain areas lead to more waste collectors participating in the system with no orientation.

- Legislative barriers:

  There is often a lack of legislations to govern the integration of informal activities in the formal sector or a lack of monitoring and enforcement.

- Institutional barriers:

  There is often a lack of administrative expertise to monitor the integrated management system and to coordinate between actors for effective participation in policy formulation.

5.3.2. Principles and Participation Instruments for the informal waste sector

Against this background (given in chapter 5.3.1) the following principles should be followed to foster a participation of the informal sector:

- Cooperating with the formal sector:

  Incorporation of the activities of the informal sector in any formal sector planning will create a symbiotic relationship rather than an unhealthy competitive relation. This can be done through contractual obligations of the private companies to involve the informal sector in a formal contractual manner.

- Formally providing services:

  Capacity building to encourage professionalizing and formalizing the informal sector into SMEs or NGOs will build on the inherited know-how and the sense of ownership of the sector, while at the same time improving the health and safety of the workers and professionalize their activities.

- Providing Consultation:

  Consultation with the informal sector will assist in planning locally-tailored solutions, whether regarding collection, dealing with waste producers, standardization of recycling practices, marketing recyclables, etc.

Participation instruments to accommodate the informal sector should include the establishment of an association for collectors, recyclers, and traders to participate in regular workshops/discussions on the planning, implementation and review of the selected integrated ISWM system. This will ensure fair representation, open communication channels and negotiation opportunities.

Mechanisms for incorporating informal sector into tenders can be legislated or applied as tender conditions for public private partnerships, according to what is most suited to a particular country. Capacity development of all role players is essential and must include formalizing the informal sector into SMEs, providing workshops or training on how to tender, waste technologies, business management, and health and safety of workers. The public sector must also be equipped to manage contracts and to ensure that they fulfill their side of the partnership.

5.4. Participation of the Waste Producers: Development & implementation of a roadmap (Citizens, Industry, etc.)

Many civil society networks involved in ISWM in African countries such as the Habitat and Environment network, a member of Habitat International Coalition, consider that ISWM policies are still :

- "managed in an excessively centralized way, which leaves little room for local initiatives,

- a unisectoral approach which scatters responsibilities,

- managed by administrations often seen as too technocratic and bureaucratic, and that keep citizens and municipalities away from decision making" (Gaye, 2001).

In addition, communication between public authorities and citizens on the issue of ISWM is most often top-down, authoritarian and centred on hygiene issues.

The participation of Citizens to develop a ISWM policy is important because:

- At the situation assessment stage, it helps identifying local problems and specific issues that could otherwise remain ignored. For instance, it helps identifying groups that could be negatively affected by a public policy, which can lead to reconsidering this policy, which will save a lot a tensions and conflicts.

- When choosing collection and treatment technologies, it helps getting a better knowledge of "popular ecology" (Enda, 1990) and its low-cost innovations in terms of re-use and recycling practices. Le Jallé (2004) notes that "the "thinkers" of sanitation – practionners as well as researchers – tend to focus on "fashionable" issues rather than observing real problems on the field and rather than trying to find pragmatic solutions". When it comes to ISWM, fashionable solutions can be costly and un-adapted to local contexts, for instance dry toilets are not convenient for ablutions in Muslim countries. It is more cost- and time efficient to build on existing local initiatives based on local resources, rather than importing technologies.

- When the ISWM service is set in place, citizen participation facilitates behavioural changes and improves "willingness to pay". If citizens are informed, if their ideas, opinions and concerns are taken into account in decisions that affect them, and if they see the results of new policies, they will be more willing to adopt new habits and pay a little bit more for the service.

- On a long term basis, in a sustainability perspective, it helps creating ownership of SWM and foster solidarity around something that is not always seen as a "common good" in Western Africa: The environment. But solidarity cannot be decided solely in a top-down approach, it should be created, or revived in a bottom-up approach, at the neighbourhood level.

5.4.1. The limits to the effective participation of citizens

The main constraints that have to be taken into account when working with citizens to the definition and implementation of a ISWM roadmap are:

- The level of education and knowledge on ISWM. There is a gap between municipal technicians or specialized companies and simple citizens. It is of utmost importance to bridge this gap and empower citizens, for instance by organising questions & answers sessions (with debates) with decision makers or technicians, guided tours in waste treatment centres, etc. This means investing time and resources.

- The gender issue. Women and girls are the most concerned by SWM in the household. They should have access to information and be sensitized / trained on waste separation at the source as a priority group. But their level of education is in general lower than men's and they have much less time to attend meetings or field visits because of family constraints or involvement into income-generating activities. Meeting hours and places with citizens should therefore be adapted.

5.4.2. Participation Instruments for Citizens

The main tools that can be used to foster citizens participation to the development and implementation of a roadmap are:

- to characterize waste: public meetings, focus groups and interviews,

- to define pre-collection or collection roads: social cartography workshops with groups composed of pre-collection or collection companies and citizens,

- to manage sub-contracting by the municipality to private companies: experiences of "micro-privatisation" or "community partnered procurement" have been documented in Asia and East Africa (Cotton, 1998). It is especially appropriate for public procurement under 10 000 US$ and for a period less than one year in popular neighbourhoods. A group of citizens can choose companies or community-based organisations to render the SWM service, they can monitor the way that the service is delivered and report conflicts and observations to the municipality. The budget can be managed directly by the inhabitants (payment upon delivered service), originate from the municipality (like the participatory budget in Porto Allegre) or from both,

- to decide upon the financing schemes, public meetings should be organized to inform citizens precisely on the costs of the SWM service and on who pays for it (tax on SWM integrated to the water bill, or payment upon delivered service). It is important to have in mind that inhabitants of rich or central neighbourhoods generally benefit from a real public service (for instance in Dakar where waste in the central neighbourhood Le Plateau is collected by the multinational company Veolia paid on the municipal budget), whereas inhabitants of poorer neighbourhoods rightly consider that they are not treated fairly because they pay the taxes but the public service does not reach their neighbourhood so they have to pay for a private service (most often community-based) which means that in the end, they have to pay twice,

- at any time, citizens should know who they can complain to or get information from, which implies identifying an interlocutor dedicated to this dialogue with citizens in the municipality for instance, with appropriate communication patterns such as a meeting room open to the public, a phone number, etc.

6. **BEST PRACTICES TO MONITOR THE IMPLEMENTATION OF A ROADMAP**

Based on the defined goals, stopovers and deadlines of a roadmap for the development of ISWM a comprehensive monitoring system to control the success and failures within the process schedule is necessary. Therefore the setting of a sophisticated and realistic schedule (see chapter 3) is important at an early stage of the implementation process towards ISWM. Clear deadlines on the short term, mid term and long term regarding the timeline are essential as well as previous defined criterion to measure the progress. For the single targets and deadlines a monitoring regarding the level of compliance (e.g. percentage of the achieved new legislation on ISWM defined in the goals of the roadmap; percentage of recycled fractions from e.g. municipal waste compared to the target etc.) is essential. On the other hand side a monitoring system has to be efficient and fast to deliver the important information right in time as a basis to align the goals and deadlines if necessary (e.g. in the case of a serious delay concerning the intermediate targets or complete false developments (e.g. no progress concerning recycling). Therefore the development of a smart and efficient set of criteria is relevant which have to be oriented against the detailed goals within the roadmap.

An essential pre-condition for a successful and constructive monitoring is the performance of the monitoring by an independent and well-qualified group of persons which has the appropriate experience and reputation for the important job and the competence to give clear recommendations to the responsible stakeholders (government etc.) The results of the monitoring have to be used to set new goals to update the waste management plan from time to time. In general, monitoring activities should be carried out for each individual waste management project performed, as well as after the end of the short term period (about 2 years after beginning of the implementation process towards ISWM) and the end of the mid term period (after about 5 years from the start). After 5 years the waste management plan, as well as the roadmap has to be up-dated at the latest to react on new developments and information gathered by the monitoring process.

7. ROLE OF THE STAKEHOLDERS TO BE INVOLVED IN THE TARGET COUNTRIES

The sphere of influence of each stakeholder has been presented in Deliverable 1 of this project. It is however important to differentiate the current and effective sphere of influence of each stakeholder, and the ideal role it should play in an ISWM system. To do so, stakeholders that are in a position to bring changes should be empowered: these stakeholders are waste producers (households, institutions, small merchants, industry, etc), and popular economy actors involved in pre-collection, re-use and recycling.

In addition, the objective of any development action in particular in "least developed countries" of Western Africa should be not to create losers from any kind of situations. The constant priority of any public policy should be to fight poverty here and now, bearing in mind that "growth [of GDP per capita] will not eradicate poverty fast enough" (Engelhard, 1998) considering the pace of demographic growth.

However, stakeholders in solid waste management differ in each city or region, so they need to be identified in the local context. Stakeholders may vary in the intensity or breadth of their roles and interests in relation to solid waste management, but they can co-operate for a common interest. In addition, the stakeholders in a particular city or region share a common social and geographic context, and may be bound together by other systems in addition to solid waste.

The key stakeholders and their roles in a sustainable solid waste management are summarised in **Fehler! Verweisquelle konnte nicht gefunden werden.**.

Table 3 Key actors and their roles in a solid waste management system

STAKEHOLDERS	ROLE/CONCERN
Primary	
Citizens	- Payment by collection for waste pickers working in primary waste schemes - Interest / Rely on a functioning SWM
Secondary	
Politicians/authorities	- Enforce ISWM by-laws - Policy guidance with long term view in allocating resources - Lead the Solid Waste Management campaigns - Pressurize the government cooperation to make the Waste Management issue a priority - Improve road networks for easy waste collection and disposal
Environmental Agencies	- Setting environmental regulations and standards, monitoring and enforcement
Sector Agencies	- Cross-sectoral coordination and incorporation of environmental considerations in projects
Planning Agencies	- Integration of environment in developmental planning
Informal Sector/Waste pickers	- Participation in decision-making, implementation and monitoring - Practice source reduction and source segregation. - Cooperate with civic bodies in identification of sites for waste

	management facilities and their operation
Private Sector	- Searching and implementing appropiate actions
NGOs	- Mobilizing community participation, voicing local concern - Take lead in forming ward committees and comunity participation
Scientific Community	Focus on needs of vulnerable population and communication to wider audience including policy makers, planners and managers
Financial Institutions	- Supporting environmentally sound developments
Media	- Environmental awareness, focus on real local priorities rather than sensationalisation
Recycling industries	- Offer the capacity to cover the treatment of all the types of solid wastes - Training of youths on recycling technologies
Private Waste Management companies	- Redesigning of the waste collection sites - Establish more and well planned transfer stations - A weekly schedule for collection of wastes from the skips

Stakeholder participation

The authorities are generally aware of the health risks and environmental problems caused by inadequate solid waste management. At the same time they also look for new ways to share their traditional responsibilities in these areas with neighbourhood communities, micro- and small enterprises (MSEs) and large private entrepreneurs and industries and other stakeholders. Increasingly, the authorities may seek to mobilise the human and financial resources of these actors in order to develop an adequate system of solid waste services.

The whole set of activities related to generation, source reduction, storage, handling, collection, treatment and disposal of solid wastes is termed the waste management system. The technical, environmental, financial, legal and social aspects of these elements need to be balanced to attain sustainable waste management. The public or informal sector plays an important role in sustainable ISWM for which awareness on waste reduction, segregation and recycling needs to be enhanced. Waste collection, the next element of waste management is labour intensive and is consuming almost the full budget of solid waste management in target Western African Countries. As the solid waste is thrown on to the streets each day in most of the target countries, street sweeping is the commonest method of primary collection of all types of municipal waste. Most of the streets are only unpaved or semi-paved resulting in a lot of street dust and drain silt getting collected during street sweeping making the inert content of wastes really high. This can be substantially reduced by public participation in source segregation and door-to-door collection. It will require that the waste generators stop littering the streets to reduce the need for street sweeping. In addition, the drain silt and inert collected during the street sweeping needs to be segregated and disposed without mixing with other wastes. Mode of collecting the waste has a great impact on further processing and disposal. If one fraction of the waste stream could be best managed in the city's outskirts, such as

organic content destined for composting, then it makes very little sense to lump it in with wastes that would require substantial labour to process, such as recyclable, non-degradable, materials.

In rural areas, community management is increasingly common but in urban settings formal relationships with communities are rare and such initiatives are lacking. Effective social intermediation, including awareness raising, user group and NGO formation, micro-financial services, health education, hygiene promotion and consumer education is required for an effective service delivery and is essential for community management. Social intermediation can be provided by community-based organisation (CBOs), NGOs, small-scale private providers or by local government.

7.1.1. Côte d'Ivoire

In Côte d'Ivoire, waste management involves several actors can be divided into four categories:

- Waste generators (households, industries and hospitals),
- Private operators of informal and formal waste stream (pre-collectors, collectors and transport, recovery),
- Local authorities (District and City Councils),
- Ministries and implementing agencies-State (ANASUR, ANDE).

These actors interact and share their individual and / or collective influence in one way or another with the waste industry. It is important to keep in mind that any change proposed or made from a group of actors will certainly have an impact on the functioning of solid waste management. The actors who could be most affected by possible changes are:

7.1.1.1. Waste producer

Households

With nearly 16% of waste recycling, the proposed changes through the introduction of a source separation could reduce poverty by creating jobs of waste recycling and transformation at the level of waste producers such as households. This system of source separation is already practiced by most pre-collectors of the District of Abidjan which have in their cart bags for waste plastics, scrap metals and paper and paperboard. The proposed changes are also involved improving the health of populations through the promotion of environmental education (hygiene promotion) and eco-health.

Industries

In Côte d'Ivoire, most of these industries about 70 to 80% are located in the District of Abidjan. Thus, the city of Abidjan is facing the problem of industrial waste management given the nature and danger of daily production. Each company produces a specific amount of its own waste by type of articles and characteristics of the chemical products used. With the implementation of "polluter pays pays"-principle industry should contribute to the costs of collection, transportation, treatment or disposal of industrial waste. However, in a non peaceful socio-economic situation in a country (part of a country), the changes may face enormous difficulties in their implementation especially in financial level, without effective awareness campaign for the involvement of industry. While ensuring the well-being and protection of their environment, the proposed changes must not undermine the economic vitality of industries.

7.1.1.2. Informal and formal private operators of waste management

Informal pre-collector

In the District of Abidjan, 48% of households subscribed to a pre-collection service and this service mobilizes more than 60% of household waste. Changes such as the professionalization of the

activity of collecting primary or pre-collection through the establishment of Small and Medium Enterprises (PME in French) will help to improve the collection of household waste, to clean up isolated areas, create permanent jobs. This has been proven through the Urbis project (Development Innovations Group) carried out in the District of Abidjan. The professionalization of activities FEPSUCI (Federation of Pre- Collection of Solid Waste) allowed to apply for multiple contracts. In January 2011, the FEPSUCI signed three contracts for household waste collection, cleaning roads and drains with the respective municipalities Marcory, Bingerville Plateau and the District of Abidjan. These contracts had create stable employment for 332 pre-collectors with revenues which increased by 150%. The professionalization of FEPSUCI enhanced the quality of service pre-collection, increased income and stable jobs.

The proposed changes could therefore help all pre-collectors of Côte d'Ivoire to have legal status, access to public market with standard contracts on the basis of specifications standards. For these changes to be sustainable, the authorities must accompany all pre-collectors of informal status to formal status through financial assistance or tax exemptions, capacity building of pre-collectors and public contracts.

Private companies for collecting and transporting

With the opening of the formal market to pre-collection professionals, private companies could lose important collection markets especially since many roads are almost impracticable in the District of Abidjan.

Informal recyclers of discharge of Akouédo

The Ivorian government has decided to close the Akouédo landfill uncontrolled operating since 1965 in December 2012. This decision, although beneficial in terms of environmental will affect all industry actors such as upgrading collectors, scrubbers, intermediate wholesalers, wholesalers, mills, industrial intermediates. Given the benefits of this sector in terms of environmental, economic and social (300 actors standing on the site and as many temporary actors), the authorities should put them in the future technical centres or sorting of the District of Abidjan to upgrade and sustain their business.

7.1.2. Senegal

In the following a brief first analysis is given of how changes might affect stakeholders in Senegal.

7.1.2.1. Changes in solid waste treatment modes

Everywhere in the world, when open air dumpsites are closed to build a new sanitary landfill (not open for to the public) waste pickers are taken out of what was previously their workplace and sometimes their home. They are too rarely properly accompanied towards their sustainable reconversion, beyond financial compensations that can be granted in the short term. For example rhe public project to close Mbeubeuss dumpsite in Dakar, Sénégal, has planned to reconvert 400 waste pickers (out of the 3000 persons living on the dumpsite) into permanent staff of a waste separation plant and to pay financial compensations to the others.

The sustainability of the waste separation plant is still very uncertain, especially with regards to the quality of recyclable materials delivered to the plant and the profitability of the sale of these materials to cover the recurrent costs of the plant.

In the case of a "classical" reform of ISWM policy (mechanization and privatization), it is therefore very likely that waste pickers will vigorously oppose to these changes as they are very marginalized populations and this is their last income generating activity.

As a result, in order not to worsen poverty, popular waste pickers and recyclers should be taken into account as central stakeholders in any ISWM policy. They should be supported by the municipality to get access to land and buildings to store their recyclable materials, be trained on safe recycling practices and last but not least they should be supported to improve their capacities so that in the medium term, they can be part of the competitors in the formal ISWM economy.

7.1.2.2. Changes in pre-collection and collection schemes

Privatization policies of pre-collection and collection services have to take into account the existing economic actors in the area. Imposing a unique sub-contractor or several hegemonic sub-contractors instead of the many existing small companies would immediately create opposition on behalf of the small companies but also on behalf of inhabitants that trust these small companies and that pay them directly upon delivered service.

7.1.2.3. Changes in SWM financing schemes

Financing schemes should be changed only where important investments are necessary, for instance to cover the costs of hazardous waste treatment in safe conditions. In this case, the industries that put hazardous waste-generating products on the market should contribute to the costs (polluter-payer principle). This could of course be initially rejected by these industries as it requires a financial effort from them, but public authorities can negotiate with them the access to a quality hazardous waste collection service, land or infrastructure for the treatment plants, etc.

Concerning pre-collection or re-use, compost and recycling circuits, it might be advisable to let the private collectors continue to get paid directly by the inhabitants where the service works, and to let recyclable materials pickers, repairers, aluminium smelters, etc continue to operate as "independent workers".

If these informal workers were to be forced to go into the formal system i.e. to pay taxes and/or contribute to the national social security fund, public funding should be available to accompany this transition from the informal system to the formal system so as not to jeopardize the precarious economical balance of the informal recycling circuits that are very vulnerable to price variations.

7.1.3. Ghana

In setting up an ISWM policy in Ghana the following stakeholders have been identified;

- Governmental bodies including ministries, agencies, municipal and metropolitan assemblies, law enforcement organisations such as the police and the judiciary,

- Civil organisations such as NGOs and CBOs,

- Research bodies comprising tertiary educational institutions, national and private research institutes and think tanks.

- Traditional authorities under the leadership of paramount chiefs, chiefs and family heads,

- Waste producer – households, industrial waste generators (comprising of both private and public entities), and

- Waste management firms – waste collectors (formal and informal), waste recycling organisations, landfill (dumpsite) managing bodies.

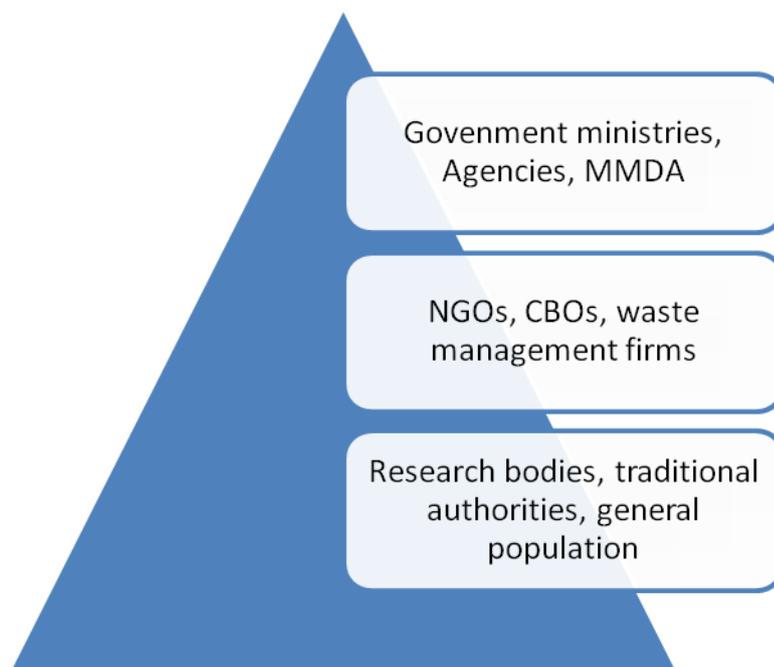The order of influence of the identified stakeholders is shown in Figure 1.

Figure 1: Hierarchy of Influence of Stakeholders with the most influential at the top.

7.1.3.1. Governmental bodies

In Ghana, the Ministries of Local Government and Rural Development and Environment, Science and Technology are government institutions responsible for formulating policies related to waste. All Municipal, Metropolitan and District Assemblies (MMDAs) fall under the Ministry of Local Government and Rural Development. The Environmental Protection Agency which formulates policies to protect the environment also falls under the Ministry of Environment Science and Technology. The Ministry of Forestry and that of Mines and Energy are likewise responsible for policies related to the extractive industry and oil and gas respectively. These ministries wield the most power of influence; in that any government policy must emanate from one of these ministries and for it to work it must have the support of all the other affected ministries.

The MMDA's formulate policies and by-laws at the Municipal, Metropolitan and district levels to control waste generation, collection and disposal. These by-laws stem directly from national policies and laws formulated by the Ministries.

7.1.3.2.   Civil organisations such as NGOs and CBOs

Civil societies like NGOs and CBOs usually play the role of pressure groups or in some cases supplement government effort in the form of education and policy formulation, and in some cases waste collection, recycling and proper disposal. In terms of influence, they can only put pressure on government or lobby government agencies to tow a particular line of interest when adequately informed and resourced. They cannot promulgate a law or policy by themselves. In spite of these, their influence on the local people is usually great. Locals see them to be more credible than political appointees. This unique advantage can be tapped in area of educating the masses on the benefits of ISWM in any road map.

7.1.3.3.   Waste producer

In effect waste producers comprise of everyone since one way or the other everyone generates waste of some sort, be it household, industrial or hazardous waste. Waste producers are at the centre of any integrated waste management policy. General acceptance of a policy is a very critical ingredient for successful implementation of an IWSM. Policy dissemination is very important. The educational background of the waste generators should be taken into consideration in the design and content of educational materials. For instance dissemination of ISWM policy through drama will be more effective in rural areas than leaflets and formal workshops and presentations. In more educated neighbourhoods, leaflets, seminars and workshops can be a very effective way of reaching waste generators.

7.1.3.4.   Waste management firms

Waste management firms, in this case collectors, recycling organisations and landfill operators will most likely be the beneficiaries or the most affected entities in any integrated waste management programme. Policies and programmes rolled out will affect the way they operate and might demand a lot from them in terms of performance or output. The landfill operator might experience reduction in revenue as a result of reduction in waste brought for dumping. In the same way, collectors might also experience reduction of waste collected when IWSM becomes a policy and operational. In spite of these threats, waste management firms are not likely to hinder the introduction of IWSM in Ghana.

7.1.3.5.   Research bodies

As stakeholders, research bodies will conduct in-depth research and analysis of issues pertaining to ISWM, drawing useful conclusions that can form the basis of policy change or inform policy initiators about the success or otherwise of a programme. Monitoring and evaluation programmes can be easily and competently handled by research organisation comprising of institutions of higher learning, national and private think tanks and to some extents some NGOs and CBOS.

7.1.3.6.   The role of traditional authorities

Traditional authorities may not be so important especially in the urban communities in Ghana except some few places like Kumasi where the "Asantehene" (King of Ashanti) is highly regarded.

Non-the-less traditional authorities are very important stakeholders in rural areas because:

- Traditional authorities are the custodian of lands in Ghana. Government does not own any land in Ghana. Government can only acquire a piece of land for projects only after compensation has been paid. Since land is a very important commodity in an ISWM programme, chiefs become very powerful in that regard.

- The traditional court of adjudication is recognised by the constitution of Ghana. In rural Ghana where there are no formal courts, "chiefs" can be made to play that role easily.
- In all of rural Ghana, "chiefs" are highly regarded. They are the embodiment of the culture and traditions of the people and as such revered. Their words are often sacred and most people tend to obey their "chiefs" more than government officials as they are traditional rulers. They are the custodians and the embodiment of the culture of a particular ethnic or tribal group. They usually have sub chiefs and elders who are assigned various roles and functions in their courts. Some of the chiefs have sub chiefs in charge of the environment while others have turned themselves into environmental campaigners. Their unique role as custodian of the culture of the people puts them in a very important position because most often, especially in rural areas, their directives are adhered to strictly by their subjects. Also, because the constitution recognizes their courts, they have their own traditional means of punishing and enforcing laws passed in their jurisdiction so long as it does not contradict the constitution of Ghana. When chiefs are adequately briefed or educated about the benefits of ISWM practices, they can be the agents of change in their localities and to some extent may even enact laws to prohibit certain aspects of waste handling solid waste such as open dumping, and mingled waste collection.

7.1.4. Nigeria

The successful implementation of ISWM involves directly or indirectly all stakeholders in SWM. Implementation of the ISWM policy will require identification all relevant stakeholders, active involvement, education and communication with the stakeholders through a comprehensive, consultative and participatory approach. The involvement of all the relevant stakeholders will lead to more responsible behaviour, increased environmental awareness and a higher willingness to pay among users of a waste management system as well as empowerment of groups of stakeholders that have had limited access to decision-making.

The role of the relevant stakeholders regarding the setting up and implementation of a roadmap to establishing ISWM in Nigeria as identified in Task 2.3 are as follow:

7.1.4.1. Waste producers

This group of stakeholders plays a very significant role; they are the waste generators and service recipients. The main waste generators in Nigeria are households, industrial, academic institutions, small shops, hotels, offices, markets, laboratories and healthcare facilities, financial institutions, government institutions etc. They will be expected to pay for management of their waste, sort their waste at source, take them to designated collection points etc. Compliance can only be achieved by the carrot and stick approach. They are likely to resist change which they perceive will cost them more to adhere / adapt to. This group will benefit from the long term effect of ISWM also some benefits can come from take-back schemes.

7.1.4.2. Waste managers

This group collects waste and is made up of mostly private and informal sector. In Nigeria, they include cart pushers, waste pickers, door to door community based waste collectors/processors and private refuse companies, itinerant waste buyers, resource Merchants, recyclers and state agencies. Waste managers can participate in the design of waste services, recruitment of workers, setting rates for user charges. This group will only voluntarily support ISWM if it will be financially rewarding for them. However depending on governments restructuring of the sector, some in the informal sector may be at the losing end by losing the source of their livelihood if central government brings a waste management policy that make their activities illegal. The private sector on the other hand will benefit from increased patronage of their services from waste generators.

7.1.4.3. Government and policy makers

Policy makers act at different levels of government in Nigeria, including Federal and state agencies, ministries, authorities, local governments and law enforcement agents. They are a deciding factor to the extent of the implementation and success of ISWM. At a particular point in time, they are involved in the development of the National Policy Strategy and Action Plans, allocation of funds for Solid Waste Management through the National Budget, providing technical expertise on Solid Waste Management to Local Authorities, coordinating with donors and national and international experts on Solid Waste Management. They provide formal and informal sectors (small scale and unregistered group) with training, support with research, technical or financial assistance and give them recognition in the business of SWM. They are to promote waste minimization, maximize Resource/Recovery through source segregation, home and centralized composting and strengthening capacity of the society and Setting up Sanitary Landfills. They are to organize participatory multi-stakeholder seminars to develop an ISWM system and capacity-building meetings for all the stakeholders and create awareness campaign for waste separation at source, purchase and use of storage containers among the residents in the community.

In the short term, policy malers may appear to be losers, because the initial set up cost of ISWM may be higher than their usual budget for ISWM. Also in some areas they would need to subsidise the waste management service. However in the long term it will be of benefit in terms of reduced

health bills, positive impact on the environment and the economic benefits of job creation, tourism and perception in the eyes of the populace and foreign countries.

7.1.4.4. Industrial establishments

This group is defined as producers of waste collection and processing facilities. Implementation of ISWM will be an additional cost to this group in terms of setting up and running these facilities. The extended producer responsibility principle and polluter pays approach come into play making producers responsible for their products along the product life cycle. This group has to be compelled by law and economic incentives to be responsible for their waste from cradle to grave otherwise they can mar the success of implementing ISWM.

7.1.4.5. Waste dealers

Waste dealer sell and buy waste material. They are likely to strongly support the introduction of ISWM as this tends to increase employment generation and patronage for their business from readily available waste materials and increased local and sometimes international demand by waste processors and manufacturers.

7.1.4.6. Donors (national & international)

This group is very important to implementation of ISWM and will strongly support its implementation. They provide financial support that may be needed for initiating the implementation. They also provide the much needed technical assistance/support that is crucial to the success of ISWM.

7.1.4.7. Universities/ Research institutions

Universities/ Research institutions are crucial to the continued success of ISWM because of the changing nature of waste constituents. They are also able to assess the current waste management service, in terms of effectiveness, socio-economic and environmental impacts. They also identify gaps and provide solutions. This group will strongly support implementation of ISWM, because it will be an avenue for implementing their research findings and also solicit a demand for their services by the manufacturing sector.

7.1.4.8. NGO's

NGOs provide awareness campaigns and training to concerned stakeholders and are an important link for public participation in ISWM. They will also strongly support implementation of ISWM, because of its beneficial effect to human health and the environment. This is in line with their being strong advocates of protection of the human health and the environment.

8. SUMMARY

The guideline for roadmaps to implement policy strategies in ISWM which was outlined in this report should give a basis for the elaboration of policy briefs for the development of National and Regional Action Plans in the target countries Nigeria, Senegal, Ghana and Côte d'Ivoire (presented in deliverable 4.3 of this project). To this aim this guideline could be regarded as a kind of a blueprint. Without any doubt the defined roadmaps for the four target countries will differ in detail (different stakeholder constellations, partly different waste patterns, differences in the legal systems etc.). But the principles and the core elements of the roadmaps are universal at least for developing countries and emerging economies in West Africa as well as in other parts of the world.

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