

**Working Group on Experiences of and Analytical Approaches to  
Institutional Capacity Development within the Field of Urban Environmental Management**

**Working Paper for Design and Appraisal of  
Capacity Development Activities  
in Urban Environmental Management**

2<sup>nd</sup> June 2004

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## 1. Introduction

Urban growth in developing countries has been very high over the past 3-4 decades and is characterized by both serious environmental and social problems as well as great opportunities for economic growth and development. The natural growth of the urban population, combined with a steady influx of people from rural areas seeking economic opportunities in smaller towns and larger cities, has in many cases created settlement patterns, particularly in the urban peripheries, which are largely uncontrolled. In this process, environmental issues have not often been a major concern and health hazards related to soil, water and air pollution characterize many urban environments. Also, the growing urban areas have an ecological footprint on surrounding rural areas, affecting the rural environment and natural resources.

Since the Earth Summit in Rio in 1992, the need for adequate urban environmental management (UEM) has been increasingly recognised in order to ensure sustainable development in society as a whole. Danida has, particularly in the context of the Environment, Peace and Stability Facility (in Danish MIFRESTA), prioritised UEM in Southeast Asian and Eastern and Southern African countries, which receive environment and development assistance.

In order to ensure the continued analysis, improvement and quality assurance of Danish environment and development assistance, Danida established a working group with the Danish resource base on experiences of and analytical approaches to institutional capacity development within the field of urban environmental management. The objectives of the group were, according to the terms of reference (see Annex 5), to:

- Create a more common understanding in the Danish resource base of the critical factors involved in designing capacity development interventions in UEM
- Develop a practical tool for design of capacity development activities in relation to local environmental administration – particularly UEM. The tool should be in the form of a checklist or guideline to the different analytical steps that need to be included in successful design of the interventions

As of April 2004, the group has held ten meetings and one seminar. Membership of the group is given in Annex 4. The discussions have focused on a number of key issues for urban environmental management and capacity building. These issues (see Chapter 2 for further details) include physical planning, rural-urban links, decentralisation and public sector reform, urban greening, functional analysis, human resource development and research. Some presentations and background documents relating to these themes are found in Annex 1.

Based on the discussions the group has developed a list of guiding questions central to the design of programmes and components aimed at capacity development for UEM. The checklist has been developed for the appraisal stage of programming, but can be adapted to other stages of the programme cycle. It is aimed at Danish representations, staff of the Technical Advisory Service – Development Assistance, consultants and other practitioners involved in programme and component development. It is suggested that the checklist be integrated in the new Danida Aid Management Guidelines after it has been pilot tested. The checklist is presented in chapter 3.

## 2. Key issues in capacity development for urban environmental management

The working group has during the discussions debated a number of issues, which are critical for successful capacity development in UEM. These discussions have guided the development of the tools presented in chapter 3. The issues discussed in the following have been divided into four sections: i) definitions of important concepts; ii) key issues in urban environmental management; iii) the importance of the local context; and iv) key issues for capacity building. The objective of this chapter is not to give a comprehensive and complete analysis of all these issues, but rather draw out key elements from group discussions and literature, which have informed the choices made in the tool in chapter 3.

### 2.1. Definition of concepts

The working paper and tool uses a wide range of concepts, some of which must be considered as being well known and therefore do not need specific definition in this context. However, the group finds it necessary to define a few key concepts:

- Environment, in the understanding of the group, refers both to the living and not living elements of the natural world. The environmental functions can be understood using the “source-sink” analysis, in which the source function refers to the ability of the environment to supply the goods and services needed for human activities, whereas the sink function refers to the capacity of the environment for “absorbing” the effects and impacts of human activities.
- It can be difficult to give a clear definition of the urban environment, and the perceptions of what the term comprises, vary substantially. In some places, urban environmental issues are perceived to relate to urban greening and beautification and are perhaps considered a “luxury problem” when urban poverty is a major issue. However, if there is a better understanding of their harmful effects on human health and well-being, then the attention to urban and industrial environmental issues may take a higher priority. The working group has not developed a new, comprehensive definition, but considered benefits and limitations of various approaches to defining urban environmental issues. The International Institute for Environment and Development (IIED) has in its publication “Urban Environmental Improvement and Poverty Reduction” (prepared for Danida) chosen to adopt the following as the basis for identifying urban environmental problems: “Urban environmental problems are threats to people’s present or future well-being, resulting from human-induced damage to the physical environment, originating in or borne into urban areas”. This will in most cases adequately cover poverty oriented environmental issues in urban areas, but may not cover more long-term effects on - environmental and natural resource systems such as forests, water-courses and agricultural land outside the urban area, which may be significant and important.
- The term “Programme” refers to environmental sector programmes or special environmental programmes, which represent the core of Danida development assistance in the field of environment and sustainable development. Within these programmes, capacity development for urban environmental management can be an important “Component”, “Project” or “Activity”.
- Capacity development: Capacity development (CD) is an officially declared key objective of international development assistance. As development assistance has moved from a project to a programmatic approach, the focus on capacity development support has moved from a focus on individuals or individual organisations to support to the development of institutional or organisational capacity at sector level, or at government level through support to various reform endeavours. The concept of capacity can be broadly defined as “*the ability to perform appropriate functions or tasks*”. Yardsticks for capacity would normally include efficiency (doing things right), and effectiveness (doing the right things). Donors will often see accountability functions

towards themselves and/ or towards national stakeholders as especially appropriate. Sustainability – the presence of a capacity for an extended period of time after CD efforts have ended – is also most often an explicit objective (Nils Boesen et al. Evaluation of Capacity Development in an SPS context, 2002)

- Capacity Development in Environment (CDE) concept: OECD defines CDE as “Capacity in environment represents the ability of individuals, groups, organisations and institutions in a given context to address environmental issues as part of a range of efforts to achieve sustainable development. CDE describes the process by which capacity in environment and appropriate institutional structures are enhanced. (Donor Assistance to CDE, OECD).

## **2.2. Key issues in urban environmental management**

In order to improve urban environmental management, a number of key conceptual and technical issues need to be considered. These include the importance of (but often inadequate consideration of) physical planning, the understanding of rural-urban linkages, the relationship between environment and health and the relationship between urban environmental management and reform processes, such as decentralisation and public sector reform.

### *2.2.1. Physical planning*

In most developing countries the lack of efficient urban planning and/or lack of implementation of plans are a major cause of many environmental problems and conflicts. Problems include location of polluting industries in relation to major residential areas, proliferation of unplanned settlements without basic services, urban sprawl into prime agricultural land, the absence of recreational areas, poor public transport etc.

In some cases ambitious Master Plans exist but are not implemented due to lack of funding, lack of enforcement of zoning etc. or simply because the master plans have been too static and have been overtaken by events. In other cases problems relate to the fact that rapid urban development often happens in the interface between the city and the surrounding rural areas, where planning requirements may not be in force or are managed by a neighbouring district due to jurisdictional problems.

A particular problem in relation to unplanned settlements (which can be very large having maybe 100,000 inhabitants or more) is the fact that they are regarded as illegal and therefore not considered as a legitimate part of the city with equal rights to service provision etc. In some cases municipal governments may even oppose and obstruct attempts to establish service provision via community based organisations.

A policy dialogue on the two issues above is therefore an important part of the preparation for support to urban environmental management. Possibilities of establishing mechanisms for planning and management in growth zones outside of the municipal borders should be explored where relevant, and needs for capacity development in neighbouring districts or at a provincial or regional level must then be considered. Likewise the options for developing alternative, simple planning systems, which may be applied to the hitherto unplanned settlements, should be carefully considered and political commitment for innovative approaches should be secured.

### *2.2.2. Rural urban linkages*

Development in rural and urban areas has traditionally been addressed separately in development, but rural-urban linkages will be an important area for greater focus in future development efforts, if continued development of cities and towns is to become more sustainable.

It is increasingly recognised that rural and urban livelihoods are closely interlinked and that development - particularly in peri-urban areas, which are some of the most important areas of growth - can not be addressed with a narrow rural or urban focus. Close links also exist between more distant rural areas and urban centres through remittances and seasonal migration, both of which serve as buffers rural and urban populations in times of crises (e.g. low agricultural prices may lead to urban migration whereas economic downturns in cities resulting in fewer jobs cause people to return to the rural areas). Rural-urban linkages are also important in terms of commodity chains and flows of matter, notably the function of cities as consumers of produce and nutrients from rural areas. Towns and cities have an ecological footprint on the surrounding areas. This can be manifested for example in over-extraction of groundwater in urban areas thus impacting negatively on agriculture, deforestation due to cutting trees for fuel wood and construction, abstraction of sand and gravel from rivers for building materials thus changing hydraulic properties and resulting in flash floods, etc.

The need to address and partly reverse some of these unilateral flows, e.g. by returning nutrients to agricultural areas will be an important area for development in the future if continued development of cities is to become more sustainable. The issue recycling of organic waste is discussed further in Annex A1.5.

### 2.2.3. *Links between environment and health*

Environment and health problems are in many cases closely linked, and health is a highly relevant concern in the rationale for addressing many urban and industrial environmental issues. This is particularly true and well documented for diseases linked to unsafe water and sanitation, indoor air pollution and injuries. WHO has estimated that 21% of the overall global burden of disease is closely linked to environmental factors, and estimates that as many as 30% of all health problems in Sub-Saharan Africa may be associated with environmental risk factors<sup>1 2</sup>. Environmental improvements are often more cost-effective as health measures than curative health services, and preventive measures obviously reduce human suffering and loss of economic opportunities, particularly for the poor. And for a number of environmental factors such curative approaches do not exist. Important environmental factors include water sanitation and household hygiene, air pollution, and injuries.

Urban areas concentrate not only people and enterprises, but also their wastes. As recognised by WHO, when infrastructure and services are lacking, urban areas are among the world's most life-threatening environments.

The implications of ill health on poverty are well reflected in the Millennium Development Goals and generally also in the Poverty Reduction Strategy Papers.

Despite the strong evidence of links between environment and health problems, the possible reduction of health problems through environmental improvements is often overlooked or only given limited attention in projects and programmes relating to the urban environment. A possible reason may be that health issues and environmental issues are usually handled by different sector ministries – with

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<sup>1</sup> DFID, DG Development EU, UNDP, & World Bank 2002: Linking Poverty Reduction and Environmental Management. Policy Challenges and Opportunities. The World Bank, Washington DC.

<sup>2</sup> Cairncross, Sandy et. al 2003: Health, Environment and the Burden of Disease. A Guidance Note. DFID, UK

Ministries of Health predominantly focusing on curative health, while environmental authorities have had a tendency of focusing more on conservation of natural resources and other “green” issues.

True cross-sectoral approaches will probably require substantial capacity development at the University level to ensure that sufficient high-level education and training can be provided for decision makers in the future. Annex A1.7 argues this case and provides a concrete suggestion for establishment of a regional training institution in Africa.

Health is of particular importance in urban environments, where risk factors encountered include both air pollution, chemical and microbiological water pollution, occupational exposures, traffic and waste management. Preparation of support programmes in urban environmental management should adequately address the issue of health and environment for at least four reasons:

- Health improvements through environmental activities are often more cost effective than curative health initiatives.
- Addressing the health related issues will have a very direct and concrete effect in relation to poverty reduction, as the urban poor are the most vulnerable to many environmental problems. Moreover, women and children may particularly benefit.
- Focus on environmental health will increase important cross-sectoral cooperation and understanding.
- Increasing understanding of the links between health and environment will increase the often limited political support and commitment to environmental management in general.

#### 2.2.4. *Urban Greening*

The importance of urban greening has received limited attention in many poor cities and towns as it is often perceived as being associated with beautification projects, which are considered a “luxury” benefiting only the wealthier part of the population. However, urban greening may have a number of environmental, economic and socio-cultural values, which will also benefit poorer segments of city populations.

Environmental values include:

- Reduction of air-pollution and protection of water resources.
- Reduction of harmful influence of sun, wind and temperature.
- Increase in biodiversity.

Economic values include:

- Production of valuable products such as food, fodder, timber and fuel wood.
- Setting for new development, new businesses and jobs.
- Pleasant working and living environment, which may positively affect production and livelihoods.

Socio-cultural values include:

- Improved health and possibilities for recreation.
- Pleasant living environments and stages for social activities.
- Keeping people in contact with nature, community building and empowerment.
- Education and training.

Even in poorer countries, planning for urban greening is a good investment, as these areas will be demanded when income levels increase. Once everything is allocated to other construction or infrastructure (legally or illegally) it may be very difficult to create new green areas unless these are planned for.

### **2.3. Importance of context**

Natural settings, socio-economic conditions, and political and institutional landscapes are all elements of local contexts, which are necessary to understand if programmes and programme components within urban environmental management are to be successful. Experience shows that urban environmental problems cannot be addressed in isolation and be solved in sustainable manner without attention to the broader setting and urban governance context.

#### *2.3.1. Natural setting*

Urban environmental problems are often partly a function of very diverse settings of cities and towns. Water related health problems (e.g. malaria, dengue, cholera) are most prevalent in cities located in lowlands or flood plains with permanent presence of water and high risk of flooding, whereas cities located in mountain valleys where conditions of inversed layers of air above the cities create respiratory health problems as air pollution remains in the lower layers. Other cities again are located in very dry areas where access to water resources is critical.

#### *2.3.2. Socio-economic context*

The social and economic context needs to be assessed as a prerequisite for understanding the development and current state of urban environmental management. A wide range of factors may be considered and in the following only few important issues are mentioned:

At the general level, the type of dominant economic system present (e.g. liberalised economy vs. plan economy) typically determines the level of government intervention in urban management, e.g. subsidies vs. free markets, state funded housing schemes vs. private housing, state-owned industrial enterprises vs. private sector enterprises, etc. The level and quality of growth, e.g. equity aspects such as the distribution of wealth between different population groups and regions needs to be understood in order to target the people and areas most in need. In this context, knowledge on the poverty situation is important as the problems associated with the presence of large poor segments in the urban population need to be addressed and guide the types of intervention – e.g. the sustainability of financing mechanisms for service provision largely depends on the ability of people to afford these.

Social and demographic parameters such as population densities in urban areas, the degree of literacy, indicators of health conditions, land tenure, local organisation, ethnicity, etc., may all have an impact on the success of interventions as will the presence and condition of existing infrastructure needed to support urban management.

Ownership of housing and status of land tenure are particularly important to understand in relation to upgrading of unplanned settlements. The approaches and challenges are quite different in areas where the inhabitants have legal or at least recognised ownership of their homes, compared to areas where the majority are tenants. This may differ from city to city and even from settlement to settlement.

#### *2.3.3. Political and institutional context*

Obvious as it may sound, a basic understanding of and possible adjustment to the political landscape and priorities is often overlooked in programme design. Even the most carefully thought-out

programme may run into serious problems and lack of progress if key political commitment is lacking. A political analysis is usually much more complex than the types of institutional analysis frequently carried out, but the latter may be pointless if the main opportunities and barriers within the political system have not been identified.

Government institutions and the officially elected politicians are of course essential in the political landscape, but in many cities and municipalities, other institutions and actors participate equally or more in urban environmental planning and implementation at different levels. It is vital to understand how these interact mutually and with government at different levels before engaging in capacity building, particularly in a situation where government departments do not have the resources and capacity to carry out long-term implementation of plans:

- Traditional authorities – may play a vital but diminishing role in land issues and development planning
- Residents associations – may be actively involved in service provision and maintaining the urban environment
- Private enterprises and NGOs – may step in to provide missing services

Greater co-operation is needed between these different actors to ensure improved management of the urban environment, though differing interests and power relations can result in this being a difficult task. A first step is however to spend sufficient time and effort to at least identify the key actors, which may be of importance to successful implementation of the programme, to acknowledge the possible importance of cyclical political events and to consider how political priorities may be influenced. This includes:

- The identification of agents of change within institutions and political systems as well as in civil society as NGOs involved in advocacy and private companies engaged in lobbying may be powerful actors at the local level. Agents, which are likely to become barriers and potential opposition to change, should also be identified.
- The timing of projects/programmes as political interest in activities may fluctuate with election dates.
- The need for political leaders to understand urban environmental problems and appreciate the importance of addressing serious problems.

The political will to recognize and deal with unplanned settlements is often a critical issue. It is extremely difficult to make progress if the politicians merely see the unplanned settlements as illegal areas, which should be removed or at the very best ignored.

This being said, it is also important to acknowledge that political powers may change rapidly and barriers created by one administration may be lifted by the next. Thus, certain important activities should not necessarily be ruled out simply because they do not have backing from the current political decision makers.

Other important aspects of the political and institutional context are decentralisation, public sector reform and governance. In many developing countries there has been a general disappointment with the performance of centralised government systems, where a traditional and hierarchical, administrative structure has not resulted in a satisfactory performance regarding service provision and allocation, and political legitimacy and public involvement in development at the local level have not been achieved.

The response has been Civil Service Reforms (CSR), which have been carried out all over the African continent leading to a major re-organisation of government institutions and democratic decentralisation, but not always leading to economic growth and development. The main arguments for CSR have been that:

- Decentralisation of government increases the quality and quantity of public services.
- Decentralisation activates non-utilised resources through the mobilisation of local citizens at all levels of society.
- Decentralisation means economising with public resources through improved adaptation to local needs. Decentralisation of public finances leads to increased welfare because of flexibility and demand driven service provision.
- Transparency and checks and balances between political and administrative leaders promote public sector performance. This is best achieved at the local level.
- Decentralisation and good governance creates incentives for private sector growth.
- Decentralisation benefits vulnerable and marginalised groups and integrates them in a system of democratic governance.

However, decentralisation does not necessarily lead to better service delivery nor is it a guarantee for good governance without other institutional reforms. Some of the problems experienced at local levels even after CSR can be:

- Lack of financial transfers: The bulk of public finances remain at the central government level despite the functional and administrative decentralisation.
- Inappropriate local revenue management systems: Poverty in the peri-urban and rural areas makes any local revenue generation difficult.
- Non-transparent staffing system: cases of direct ministerial intervention in staffing issues in local government.
- Recruitment problems: It is extremely difficult to attract the right calibre of staff in remote areas such as legal expertise, engineering etc.
- Highly centralised land legislation makes local physical planning very difficult if central government can abolish local environmental protection plans.

#### *2.3.4. Sustainable financing mechanisms*

It is of great importance for the sustainability of urban environmental improvements that sustainable financing mechanisms are in place. This may comprise revolving environmental funds, cost recovery schemes for environmental services, locally generated taxes and revenues, inter-governmental financial transfer mechanisms, etc.

Most developing countries agree to concept of the polluter pays principle, but it may be politically sensitive to introduce user fees for services that have traditionally been provided for free or at nominal charges. Similarly, politicians may be reluctant to charge polluting industries that create much needed employment.

Capacity development for political decision makers and civil servants in the field of sustainable finance is therefore important and should be combined with public information and awareness raising.

## **2.4. Key issues for capacity development**

When the key issues in urban environmental management have been defined and the local context established, efficient capacity development efforts must be developed through careful attention to a

number of elements. The relationships between different levels of government and institutions must be carefully considered, as must the state of local, regional and national planning exercises and planning tools. An informed choice of different approaches for achieving the goals of capacity development such as functional analysis, human resource development and research and knowledge management is also essential.

#### *2.4.1. Relationships between central, regional and local levels of government*

There is a tendency of programmes focusing either at the level of implementation of concrete projects or at a national strategic level, while the essential task of linking central, regional and local levels of government and developing sustainable relations and divisions of responsibilities may be left out. Often central level support focus on development of strategies and policies de-linked from local level realities, and a realistic assessment of implementation capacity at local level is often neglected. Similarly interventions at the local level often focus on rather concrete projects, while feedback loops to development and actual implementation of national policies and legislation by local administrations is often neglected. Unclear and overlapping mandates between local/central as well as between different ministries are a common problem.

In many countries the relations between central, regional and local governments are in rapid transition due to decentralisation reforms, which makes it even more important to carefully analyse and understand current and future mandates and functions of the different levels of government. One of the challenges is to help establish new relations, whereby experiences from the local level may feed into national policies and guidelines. In this relation it is important to be aware that urban environmental management may involve a number of different sector ministries, which at least need to be aware of and supportive of programme activities in order to avoid later conflicts during implementation.

Decentralisation policies may also create a vacuum in relation to solution of problems that cut across jurisdictional boundaries. This is often a case in urban areas, where a lot of the growth may take place outside the formal municipal boundary. The issue of jurisdictional boundaries can be quite important. In Tanzania, for example it is often seen that municipal boundaries are very wide, so that large rural areas are under urban municipal jurisdiction. And the urban administration may not be well equipped to handle rural issues. In Thailand, for example, the opposite is often seen. Here, municipal boundaries are often very narrow, and the bulk of urban growth and industrial development takes place along transport corridors outside the urban municipal jurisdiction in adjacent district authorities that are ill equipped to handle the resulting urban and industrial environmental issues.

Some key issues to consider are:

- How will local capacity development and demonstration project approaches feed back to national policies and guidelines in order to develop better and more coherent national systems?
- How are the lessons learned efficiently disseminated to other urban communities? This may be the role of central government, but research institutions and networks for knowledge dissemination could play an important role.
- How can national institutions be capacitated to move from “command and control” to facilitation of decentralised administration and development planning?
- How do the administrative boundaries correspond to the actual urbanisation pattern and which mechanisms may be used to resolve cross-boundary issues?

#### *2.4.2. Economic planning tools and processes, including integration of civil society*

Sustainable solutions to urban environmental problems need to be properly integrated into relevant policies and planning systems at the national level. Thus a proper analysis of mechanisms, procedures

and actual significance of different systems for policy formulation and economic planning must form part of the preparation of any support programme. Proper alignment and timing of programme activities with official planning cycles can be important to ensure maximum impact.

Relevant areas of analysis are:

- National strategies and policies, where Poverty Reduction Strategies and Sustainable Development Strategies as well as a number of different sector policies are important to consider.
- National Development Plans, which in some cases may be quite detailed in relation to prioritisation of public investments in the municipalities.
- Urban Development Plans and Annual Budget Cycles.

Involvement of the poor in participatory planning processes is usually an important feature of donor-funded activities. Ironically, this has unfortunately sometimes led to duplication of efforts and a proliferation of different types of participatory processes promoted by different donors. Care should be taken to ensure that existing systems for participatory planning are improved and utilised rather than development of additional and maybe slightly more “ideal” processes. Alignment with the general annual planning and budgeting consultations will often provide a good platform for public involvement and capacity development in participatory planning will in this case improve general planning approaches in the municipality.

#### *2.4.3. Capacity development requires clear understanding of different functions*

A number of existing support projects and programmes seem to lack a clear analysis and strategic approach to the different functions, which may be seen as falling under environmental management. Functional analysis is an important tool for successful capacity development and should form an integrated part of the planning of any programme dealing with urban environmental management. Functional analysis is relevant both at the horizontal level and vertically. At the horizontal level, e.g. in a municipality or part of an urban area, it is important to identify who the stakeholders are and what their respective roles and responsibilities are concerning the selected urban/industrial environmental issue, for example solid waste management. Having identified what the key urban/industrial environmental issues are, it then becomes important to undertake the functional analysis vertically for these particular issues. For example, if the key problem identified is hazardous waste management, then roles and responsibilities at national, provincial/regional and municipal level must be identified, e.g. with respect to legal and regulatory functions, opportunities for finding common solutions for several municipalities, financing, etc.

When looking at the activities of a municipal authority they can be categorized in the following overall types of functions relating to both inputs and outputs of the organisation:

- Strategic Planning, policy-making and legislation.
- Service delivery.
- Enforcement and supervision (incl. issuing local by-laws).
- Input/resource mobilisation.
- Handling of stakeholder relations.

The requirements in terms of capacity for these different generic functions are very different, and support in relation to a specified programme objective needs to take the different types of functions into account and be aware that some of the “specialized” skills needed are generally relevant to many types of activities within a municipality.

Specific environmental management likewise involves a number of different activities (physical planning, development of local by-laws, inspection of industries, which require different skills and activities will only rarely be limited to a well-defined environmental unit.

Support should thus be considered to build general skills across the organisation and not just in the directly targeted department(s). Furthermore it is increasingly to focus on development of capacity in civil society and the private sector to enable new approaches of outsourcing of certain functions or establishment of public-private partnerships.

#### *2.4.4. Human Resource Development*

Human resource development (HRD) is an essential element of capacity development and can be divided in three broad categories: i) Training (usually short term, such as in-service training); ii) education (usually pre-service, longer term, including Master's and PhD programmes); and iii) other types of HRD, e.g. mentoring programmes, peer to peer learning, networking, seminars, twinning arrangements, study tours, etc. Development of HRD strategies and sustainable HRD systems is important and of particular concern in short term training programmes, which should be linked to functions and /or positions rather than specific individuals. In-service training activities should not be developed in isolation from the context of the organisation addressed, but must be linked to the availability and attractiveness of career opportunities. This is particularly important in countries where public sector employment is characterised by high mobility, e.g. between ministries and between local authorities, but also between public and private sector. The loss of well-trained staff from the civil service to NGOs and private sector offering higher salaries is a problem in some countries. Moreover, it should be recognised that training and capacity development and appropriate information systems for local politicians are in many cases just as important as training of staff as qualified and informed decision-making is essential for sustainable development.

Universities can play a role not only in long-term pre-service education, but also in training and re-training. They are important partners in development to ensure knowledge development and a supply of qualified people for public as well as private sectors positions. Experiences with formal training at universities for mid-career professionals have been achieved in a number of programmes, e.g. ENRECA, DUCED SLUSE, DUCED I&UA, and Aarhus University collaboration on environment and health education.

Local consultancy firms may also be involved in the development of training programmes, particularly the shorter courses for in-service training, which can be offered after programme support has ended and without the use of international trainers.

#### *2.4.5. Research and knowledge management*

The linkages between research and development assistance has been increasingly debated in the recent past, and future programmes within urban environmental management should to a larger degree integrate research activities or components.

Several (overlapping) research approaches could be envisaged:

- Reviews of existing knowledge in the field of intervention and analysis of the broader application of programme and component activities, including dissemination of results from existing programmes.
- Applied research in direct support of programme or component activities, e.g. monitoring and evaluation of programme or component impact.

- Thematic research addressing key issues of concern in programmes and components, e.g. analysing the hypotheses and assumptions in a programme or component and the feasibility of proposed management activities.

In order to ensure that research activities also have a capacity development element, research should be designed and carried out by local research institutions. International researchers and institutions may be involved if the local capacity for carrying out quality research is inadequate.

Research funding should be made available in programmes and components and research communities should be actively approached to bid for these activities. Research funded from other sources should also be welcomed within programmes and components.

### **3. Checklist for appraisal of components or programmes for capacity development in urban environmental management**

The themes discussed above have led to the development of a tool, which includes general as well as more specific questions that may be addressed in connection with appraisal of programmes or components aimed at capacity development within urban environmental management. The list of questions below can be considered generic, but it has been developed specifically with the appraisal stage of the programme cycle in mind. It therefore needs to be versioned for other stages, e.g. identification, formulation, design, review, etc. Moreover, it should be mentioned that in line with many Danida supported UEM interventions, there is a particular focus at the local (typically municipal) level – however, it should be stressed that horizontal as well as vertical linkages between stakeholders and levels of governance are also considered important and therefore included in the checklist.

The questions have been organized according to a number of main principles, which in most cases must be addressed. However, not all questions may be relevant in each case – or it may not be realistic within given time and resource constraints to address them all. More specific issues will of course have to be considered for different types of interventions, but the aim with the present list is to keep it universally relevant. The main principles are crosscutting in terms of different levels of analysis (e.g. local vs. national level). It should be emphasised that the horizontal analysis of issues and institutions targeted at local level in many cases need to be complemented by vertical analysis to ensure compliance with provincial and national legislation and policies and to ensure that lessons of practical experience at local level can feed back to policy and strategy levels. Moreover, it is important to emphasise that all questions may not necessarily have been considered in detail in the design phase of a programme or component as they typically will be part of implementation; some may also not be relevant in all country contexts.

It is essential for the usefulness of the tool that the questions are not only answered by yes or no. In the appraisal situation a certain degree of explanation of findings and conclusions and recommendations for action will be needed, particularly in cases where the answer is no or where questions have not been adequately addressed during identification and design. Such findings, conclusions, and recommendations can then feed into the Appraisal Report and the subsequent modification of component descriptions and other requisite documentation. Reference to relevant parts of the Danida Aid Management Guidelines is also necessary, as a number of formal requirements need to be fulfilled in connection with appraisal.

The target user group of the list is primarily Danish representations in developing countries with projects or programmes within urban environmental management, staff of Danida's Technical Advisory Service – Development Assistance (TAS), consultants, and institutions receiving the support. The involvement of local counterparts and where relevant also other donors for refining and adapting the list is important in order to ensure that it is applicable in all contexts and does not contradict or duplicate existing tools.

An initial assumption for the list in the present form is that the development objective, the immediate objectives, and the outputs of the component or programme have been clearly defined following a logical framework analysis approach. It is realised that the list of issues to be addressed is long and that in many cases the types of analyses suggested may not have been carried out or only undertaken at a general level. Over time, as experience is gained from practical applications of this tool, it is intended that the checklist will be successively refined.

The guiding questions are listed in groups under headings of the main principles, as follows:

### 3.1. Be aware of the political context

No matter how well planned the technical aspects of a UEM support programme or component may seem to be, chances of successful implementation are limited if the broader political context at the appropriate levels has not been adequately analysed. It is critical to understand the political backing for the programme objectives compared to other politically prioritised issues, to know how informal power structures may affect ownership implementation and sustainability, how and when the political landscape may change etc. Thus while some of these issues may be difficult to assess and fully understand, “being politically smart” in the identification and design phase in terms of knowing and taking into account key political issues, forming “alliances” with key political actors, timing in relation to elections, etc., is crucial.

Relevant questions at the appraisal stage may include the following:

1. How has local regional and national political context and backing for programme and component objectives and outputs been assessed during identification and formulation?
  - How has the local political landscape of the municipality (or provincial or district administration, as the case may be) and its partners in development been analysed and how has this been used to optimise programme/component design?
  - Have local political leaders and key decision makers been adequately enabled to understand urban environmental problems and appreciate the need to address serious challenges and take sometimes unpopular decisions, for example in implementing the polluter pays principle?
  - Have key local political champions of programme/component objectives been effectively identified and adequately involved in programme identification and formulation activities?
  - Which options were considered and what was the political rationale for the chosen design option?
  - How effective is the political commitment of key stakeholders at the relevant local regional and national levels in the proposed UEM activities in the chosen option assessed to be?
  - How can “reality checks” in the appraisal situation best be made concerning this commitment, in terms of interviews with political decision makers, independent assessments by political analysts and senior observers, etc.?
  - Were relevant political decision makers at the different levels of governance identified and their interrelations in political decision-making effectively identified and factored in programme and component design?
  - How may planned elections or other anticipated political developments influence programme/component performance (relation to timetable, possible political change etc.) and how have any resulting risk factors been mitigated against in the design?
  - If significant change in political will is needed, have agents of change within institutions and political systems as well as main barriers and potential opposition been identified?

- Has the formal and informal roles of elected politicians vis-à-vis civil servants been clearly analysed and is the actual relationship adequately reflected in the programme/component design?
2. How were political voices in the private sector and civil society identified and heard, and were they effectively involved in UEM programme/component identification and formulation?
- Were key private sector actors on the local political scene (major industrial and commercial enterprises, leading entrepreneurs, chambers of commerce, industrial associations, etc.) effectively identified, and how were they consulted/involved in programme/component identification and formulation?
  - Were private sector funding sources for local development and their related political influence adequately considered?
  - Were key civil society political actors (including NGOs, CBOs, associations of urban poor, religious leaders, etc.) effectively identified and their political influence as lobbyists, advocates, etc. adequately considered?
3. Was the role of the media considered in the political context?

### 3.2. Understand and work with existing structures institutions and processes

It is a general principle of Danida development cooperation that existing national structures and mechanisms, institutions, and procedures should be preferred - provided they give adequate transparency and accountability - and that separate parallel structures for Danida programme implementation should be avoided as far as possible... In this respect it is extremely important to know and understand the roles and responsibilities vested within each partner institution though the support may not necessarily cover all types of functions. Municipal authorities will typically have a range of responsibilities in quite different areas, which require quite different skills and capacity, such as:

- Strategic planning, policy making.
- Regulation and enforcement, monitoring and supervision
- Service delivery, whether undertaken by direct labour or through different forms of outsourcing.
- Resource mobilisation (both in terms of capital and recurrent budgets derived from taxes, intergovernmental financial transfers, user charges, licenses, etc. and in terms of manpower).
- Handling of stakeholder relations.

The following questions are aimed at ensuring that adequate analyses have been or will be carried out:

1. Have all the key authorities with mandates related to UEM (however UEM is defined or understood in the local context and as relevant in the Danida context) been identified?
- Have all UEM-relevant stakeholders in the public sector been identified?
  - Have vertical institutional links between e.g. district, municipal, provincial and national levels been clarified, e.g. with respect to regulatory functions, financial flows, progress reporting and the location of specific expertise on UEM?

- Are the activities proposed clearly defined in relationship to the mandates of the institutions targeted for capacity development?
  - Are these mandates clearly defined in legislation and are adequate regulation and enforcement measures in place?
  - Are the institutions with the mandates also executing the associated tasks and activities in practice? To what extent is outsourcing practiced or considered as a realistic future option? Have core business functions been identified prioritised and assessed during formulation?
2. Are proposed activities well anchored and integrated into existing institutions, nationally and locally, rather than in new parallel structures?
- And if not, what assessments were made of the transparency, accountability, effectiveness and efficiency of national structures and procedures, and based on what rationale was it decided not to use them?
  - What plans have been made, if any, for a gradual process aimed at fuller integration with national structures and procedures?
  - Have the actual and potential UEM roles of other institutions, e.g. poor local groups and their federations, community organisations, NGOs, traditional structures, professional organisations, associations of local authorities, etc. been adequately assessed?
3. Summarising the foregoing points, can it be concluded that an adequate functional analysis - or similar type of analysis (specify) - of the stakeholders to be capacitated has been carried out during formulation? Has an initial analysis of functions considered the following four basic steps (the last two steps may not have been addressed in detail as these may be part of programme implementation)?
- Status assessment, including a list of functions for each department and organisational unit, a review of the role and mandate of the institution, an overview of departmental resources (manpower and financial, including external funding sources) and coordination between departments.
  - Overview of functions, including a technical phase defining the outputs of each function and a financial phase involving the establishment of resource requirements (human and financial) for each output.
  - Definition of resource gaps and prioritisation of functions, including a comparison of available human and financial resources, as established during the status assessment, with requirements defined during the function analysis in order to define resource gaps.
  - Plans for improved organisational performance, including proposals for improving the organisational performance of the institution.
4. Based on the functional analysis undertaken (at whatever level it can be said to have been carried out before appraisal), has an explicit and systematic strategy for the proposed capacity development activities been developed, in terms of whom to capacitate and how?
- To what extent has the development of such a strategy been deferred to implementation, and is this appropriate?

- Have clear and explicit capacity development targets been set?
  - Are the proposed monitoring systems appropriate?
5. Has the importance of achieving sustainable financing mechanisms been adequately considered? This is a fundamental issue to be addressed. As part of the programme or component development, feasibility studies may have been undertaken for the selected areas of intervention, and the finance issue will therefore have been addressed. In any event, the following questions may be relevant:
- Which financing mechanisms are relevant for the urban environmental improvements to be made? Have all the relevant mechanisms been identified and analysed? To which extent do these presently cover the funding required? Are these mechanisms time-bound, or can they provide long-term financial sustainability?
  - What is the political will to enforce the polluter pays principle?
  - What is the political will to charge user fees for environmental services?
  - What is the affordability and willingness to pay of the urban poor and what is the scope for targeted subsidies to make environmental services affordable to them?
  - What is the collection efficiency for user fees and charges, and what scope is there for improvement?
  - Are tariff increases required, and if so provide details, also on political will to enforce them?
  - What are the key bottlenecks and the key incentives to stakeholders to improve financing to make it more sustainable?

### 3.3. Links to existing development planning processes

A key to sustainability of any donor supported programme is that activities and budgets become an integrated part of the statutory/legally required general planning and budgeting procedures applied by the municipality, district, province, etc.. It is of crucial importance to align the timing of activities adequately to the general planning cycle and to use existing systems as far as possible. This relates to both to national strategies, the general planning system as well as to the application of participatory approaches.

#### *General policies strategies and plans*

1. Have all relevant existing policies, strategies and plans pertinent to urban environmental planning and management been identified at local, regional and national levels and appropriately assessed in the context of prioritisation and targeting of Danida UEM support?
2. Are UEM-relevant general policies strategies and plans well integrated with other aspects of socio-economic development planning and investment planning and budgeting, e.g. 5-year plans and Poverty Reduction Strategies (PRSPs)?

3. How specifically do UEM-relevant policies strategies and plans comply with requirements in National Sustainable Development Strategies (NSDSs) Agenda 21 plans, and other environmental strategies and plans?
4. Specifically in which ways does the proposed UEM project, component or programme contribute to the fulfilment of the Millennium Development Goals (MDGs)?
5. How do the proposed UEM targets, indicators and monitoring systems relate to national targets, indicators and monitoring systems of Poverty Reduction Strategy Papers (PRSPs) and MDGs?

*Integration with local planning systems*

6. How have proposed programme/component implementation plans and the outlines activities been aligned with the national, regional and/or municipal planning and budgeting cycles?
7. Which steps have been taken to incorporate (now or at a later stage) the programme/component budget directly into the municipal planning and budgeting system?

*Participatory UEM planning approaches*

8. Have existing mechanisms and results from participatory approaches used under other relevant programmes been identified and analysed?
9. Will the proposed programme/component use existing systems and guidelines for participatory planning – if not why?
  - Is there a risk of re-inventing participatory approaches supported by other donors?
  - Is there a risk of fragmentation due to promotion of several different participatory approaches?
  - Is there a risk that participatory approaches may create parallel structures with local communities and NGOs that undermine statutory mandates of local authorities?
  - If so have these risk factors been appropriately and adequately mitigated against in programme/component design?

### 3.4. Address relevant issues for urban environmental management

UEM support may cover a number of the following issues, but not necessarily all of them. The following should therefore not be seen as “musts” but more as a supplementary list of relevant questions within selected focus areas that may or may not apply under the specific circumstances.

#### *Physical planning*

While a lot of support may be relevant and highly needed to upgrade existing slum-areas and provide land and basic services to the urban poor it is equally or even more important to try to avoid that similar problems arise in the future. An important instrument for this – particularly in fast-growing peri-urban areas - is introduction of appropriate physical planning at a realistic and affordable level. This may include significant changes of approach from traditional master plans designed in the capital to more flexible timely and participatory approaches to physical planning.

#### *Service provision*

A UEM support programme/component will usually aim at providing improved services in one or more areas (this could include land allocation and provision of title deeds, waste management, water supply and sanitation, drainage and other environmental infrastructure and services etc.). Mandates, existing structures, modality of provision (public/private), financing mechanisms etc. may vary greatly in each field.

#### *Monitoring, inspection and enforcement*

Municipal authorities will often play an important role in developing and enforcing local environmental regulations such as by-laws, licenses and permits for various activities etc. This may be an area of support for capacity development.

#### *Environment and health*

Recent experience shows that environmental risk factors account for over 20% of the burden of disease worldwide, and more in developing countries. Environmental improvements are often more cost-effective as health measures than curative health services, and preventive measures obviously reduce human suffering and loss of economic opportunities, particularly for the poor. Important factors include water sanitation and household hygiene, air pollution, and injuries.

#### *Human resource development*

If the objective of the component or programme is capacity development for urban environmental management, then HRD will undoubtedly be important, but it must be seen in the broader context of institutional development, management and information procedures and systems development, etc.

#### *Research and knowledge management*

Research and other forms of knowledge development and management is now increasingly meant to be a part of Danida programmes and not something funded separately (as was formerly the case, e.g. through ENRECA). Also, this increased focus on knowledge development in operational projects and programmes should provide opportunities for drawing on lessons of operational experience into curriculum development to a much stronger degree than before.

Relevant questions under each of the above sub-headings may include the following:

1. Physical planning:

- How have existing physical plans been identified and considered in the proposed project component or programme?
- Are existing physical plans including zoning plans and local development plans operational, responsive to current and expected spatial development trends and dynamics and reflected in municipal work plans and investment budgets? Are the hot spots of urban and industrial growth adequately identified and addressed in physical planning?
- Have initiatives to address the issue of unplanned settlements been taken, including resolution of tenure issues and the legal status of settlers?
- Have adequate and effective mechanisms been put in place to enforce physical plans when available? What were the key constraints and opportunities to effective enforcement?
- Have additional needs for physical planning been identified? E.g. where does the growth take place, and are new special measures required there? Is urban sprawl and industrial development a constraint for the costs of urban infrastructure, traffic problems and service provision or an opportunity for growth, which also benefits the poor? What are the effects on land prices?
- Have options for cooperation with authorities outside the municipal boundary been analysed to cater for effective planning and regulation of possible urban growth and industrial development in adjacent areas as well as for handling of urban-rural linkages?
- Have rural-urban linkages been adequately identified and taken into consideration in planning?

2. Service provision:

For each service provision considered under the programme the appraisal should ensure that at least the following issues have been adequately analysed:

- What is the precise mandate of different local and national stakeholders in the field and how have relevant stakeholders been effectively involved in the programme/component development?
- Is the service pro-poor?
- Has a benchmark analysis or similar analysis of the level of service been made and an adequate baseline for activities in the selected area been defined?
- Has existing statistical information on the particular service been collected and analysed? Has the reliability and accuracy of official statistics been critically assessed? Has the possibility of using data from/surveys involving the urban poor and their associations been considered to verify/supplement official statistics?
- Have (or will) the most important needs in terms of the service provision been identified through an adequate process of consultation? Particular attention should be given to ensure involvement of the views of the poor and other potentially vulnerable groups.

- Have different stakeholders involved in service provision been consulted and their capacities and comparative advantages been adequately assessed?
- Has the national legislation been adequately analysed to ensure that activities comply with national standards and links to national systems if they exist?
- Have adequate linkages been established to national authorities, research and educational institutions and professional associations in the particular field to ensure use of already existing knowledge as well as feedback of lessons of experience from any new pilot activities?
- Have adequate strategies for service delivery been developed and relevant options analysed, e.g. public versus various forms of partnership with private operators?
- Are adequate and sustainable financing systems for both investment costs and recurrent costs related to service provision in place?

### 3. Monitoring, inspection and enforcement:

The following questions may be relevant for the selected geographical area, service sector, or environmental issue selected for improvement:

- Who has the responsibility for regulation, enforcement and monitoring of compliance with regulations?
- Are by-laws and other regulations appropriate?
- Are there appropriate incentives for compliance?
- Characterise the transparency and accountability in the enforcement and monitoring systems.
- Are there appropriate sanctions for non-compliance, and are these sanctions enforceable and relevant to current price levels and affordability of violators? Characterise statistics on the effectiveness of enforcement and impact of sanctions.
- What are the key opportunities and the key constraints to sustainably improving the enforcement of environmental regulations?
- If higher levels of government are involved as regulator or enforcer (e.g. vs. larger industries), are the regulations appropriate and enforceable, and are there effective central-local relations that enable effective local environmental improvements?

### 4. Environment and health:

Relevant questions on environment and health linkages may include the following:

- Have the causal links between exposure to living and working environment risk factors and health been adequately addressed in the proposed component or programme focus and activities, e.g. water pollution/poor hygiene and gastro-intestinal diseases; stagnant water and malaria and dengue fever; indoor and outdoor air pollution and respiratory diseases; exposure to working environment hazards and accident/health statistics, etc.?
- Are adequate data/statistics on environment-related diseases available?

- Has the use of environmental health statistics been considered as a way to monitor outcome and impact of UEM interventions?
- Have the responsibilities on environmental health in the public health sector, city administration, and in the industrial sector been assessed?
- Have the health authorities been involved in the identification and formulation of the component or programme and have their relations with other stakeholders, particularly the implementing agencies/departments been assessed?
- Have the impacts of industrial pollution on human health and well being been adequately considered?
- Have implications of the programme or component activities for occupational health and safety been adequately considered? Have working environment concerns been adequately prioritised and integrated into the proposed interventions?
- Are environmental impact assessment and health impact assessment procedures required?

#### 5. Human resource development:

Relevant questions may include the following:

- Has a systematic assessment of present and future needs for human resources been carried out (provide details concerning assessment of staffing levels and required competences vs. the functions required to be performed by the organisational units concerned)?
- Have specific targets for HRD been set, and have appropriate indicators and means of verification been identified?
- Are proposed training and educational activities relevant for the UEM activities proposed?
- Have generic training systems based on job descriptions for specific positions (rather than individuals) been developed?
- Has systematic training needs assessment been carried out for the incumbents?
- Has the sustainability of the training and education activities been considered by
  - Developing long-term training and education programmes integrated into or commissioned from existing local institutions, e.g. universities or private consultancy firms?
  - Ensuring the relevance and systems for regular updating of training packages?
  - Focusing on training of trainers rather than only continue to rely on international trainers?
- Do the training and education activities sufficiently take into account whether there is considerable staff-turnover or systematic staff rotation?
- Do the training and education activities take into account available resources in the institutions targeted for capacity development, both in terms of training budgets and manpower?
- Have alternative HRD strategies been explored, e.g. mentoring programs, twinning arrangements, networking, policy seminars, peer-to-peer learning, etc.?

- Have the right beneficiaries of training and education been identified (e.g. politicians may need training to be able to make appropriate decisions)?
- Has general awareness-raising as well as targeted campaigns to change specific behaviour been planned?

## 6. Research and knowledge management:

Relevant questions may include the following:

- Have previous operational experiences with similar activities within this field been identified and used in programme or component design?
- Has research in this field been used in component or programme design?
- Has the experience of existing local and international research institutions and documented national and international best practices been considered when designing the component or programme?
- Have milestones and indicators to measure the progress and success of the capacity development activity been identified? Have monitoring plans been made, and have these been linked to relevant institutions involved in knowledge management?
- Have plans been made to ensure that local component or programme results are fed back to national policies strategies and guidelines?
- How can lessons learned documented and good or best practices be efficiently disseminated to/exchanged with other urban components or programmes, nationally and internationally?
- Has research collaboration with local and/or international research institutions to address any of the above questions been integrated as a sub-component?

### 3.5. Ensure adequate mechanisms for flexibility and adjustment of activities during implementation

The Danida Aid Management Guidelines define certain minimum requirements concerning the level of detail required in component and programme documentation that will need to be satisfied in order to conduct an appraisal.

However, with increasing emphasis on programmatic approaches and local ownership it is increasingly difficult (and counterproductive) to design activities in great detail based on the traditional LFA-approach. Typically there will be a strong wish for concrete activities to be identified as part of a participatory process and in some cases one may deliberately design for a demand-driven approach, where different local communities or even different districts or municipalities compete for resources based on local commitment and development of plans or project proposals. This may ultimately lead to a situation, where capacity needs cannot be identified up front, but should be an on-going exercise as the programme progresses.

1. Which steps have been taken to make programme activities demand-driven?
2. Which steps have been taken to enable a dynamic development of the programme, including possibilities of taking other stakeholders on board as roles, responsibilities and opportunities are identified?
3. Are budget lines for capacity development sufficiently flexible to allow for adjustment during inception and subsequent implementation?
4. Have management structures and mandates been designed to handle a dynamic development of activities?

## 4. List of Annexes

- Annex 1 Cases and issues in urban environmental management provided by working group members
  - A1.1 Sustainable Cities/UN-Habitat Approach in Tanzania
  - A1.2 Decentralisation and Service Delivery. Conditions for Local Government Environmental Management
  - A1.3 Rural Towns Development in Bangladesh
  - A1.4 Complexities of Urban Environmental Management
  - A1.5 Urban Ecology, Metabolism and Health – Urban Waste and Agriculture: Problem or Resource?
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- Annex 2 List of Abbreviations
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## **Annex 1**

### **Cases and Issues in Urban Environmental Management provided by Working Group Members**

#### **A1.1 Sustainable Cities/UN-Habitat Approach in Tanzania**

*By Jan Riemer*

Danida has supported urban environmental management in Tanzania with approximately DKK 115 million from 1999 to 2004. The programme has assisted six cities and the intention has been to ensure a long-term approach to the role of local and central authorities in environmental planning and management.

The background of the Danida involvement was a request from the Tanzanian authorities of support to an already existing national programme based on a UN Habitat concept called Sustainable Cities Programme (SCP), which was initially developed via UN-Habitat support to urban environmental management in Dar es Salaam. Danida supported projects were designed for Mwanza, Arusha, Iringa, Moshi, Morogoro and Tanga and were phased in gradually over a number of years. Activities in Mwanza were terminated in 2002 due to severe management problems.

#### **Main characteristics and experiences of the Danida supported activities**

While some changes in design were introduced over time the basic set-up in the on-going 5 projects has been more or less the same and follows the Sustainable Cities Concept:

- Local project manager supported by a Danida adviser
- Identification of activities via municipal consultations in the form of a participatory workshop and establishment of working groups with representatives from key stakeholders
- Substantial budget for hiring local and international consultants
- Local fund for investment in small-scale projects
- Overall responsibility of implementation vested in a special Project Steering Committee

The intended logic of activities has also been more or less identical in the 5 cities:

- Development of environmental profiles to identify main issues
- Development of Action Plans by Working groups
- Implementation of action plans via concrete investment projects

An important assumption in the design of all projects was that national coordination and technical support would be provided by a special secretariat called Urban Authorities Support Unit (UASU) with funding from UNDP.

The experiences from the different cities have been quite varied, but seen from an overall point of view the overall success of the programme has been more limited than expected. This paper does not intend to give a full analysis of the various problems and obstacles encountered in the different cities, but attempts to extract a few issues, which may provide important lessons for future interventions.

#### **Lack of national policy, legislation and well-defined mandates**

Urban development and urban environmental management has traditionally not been high on the political agenda in Tanzania and consequently both the policy and legal framework is rather

fragmented. Most of the relevant acts have not been systematically revised to match the decentralisation of power to municipalities, which means the mandate of the municipal government is often unclear.

The SCP approach takes a very holistic approach to environmental planning and is based on a local, participatory identification of key issues to be addressed. This means that a very broad range of problems may be identified to be addressed by action plans, but not all identified issues are necessarily under the formal mandate of the municipality.

As an example all the SCP projects are designed to include some activities on introduction of cleaner technology in local industries, but the mandate to inspect and licence industrial activities is still vested with the NEMC.

### **Lack of national coordination and linkages to relevant line ministries**

The national coordination and technical support through UASU has been less than assumed. UASU did play an active role in the initial city wide consultations, but has proven less efficient in providing ongoing coordination, technical support and training and exchange of lessons learned. Most of the support from UASU has been provided as participation in workshops, while only limited effort has been put into developing and adapting the SCP concept to the Tanzanian setting – and only very general material is available in Kiswahili.

It is difficult to point to a single reason for the relatively limited success of UASU, but a contributing factor may be that UASU was established as a separate project implementation unit linked to PORALG, but outside the existing structures and without clear and formalised linkages to the different line-ministries with mandates in the different technical fields. Furthermore the UASU was never given sufficient man-power resources to cover the ambitious replication of the Dar es Salaam experience in all municipalities. UNDP decided to stop supporting UASU by the end of 2002 and since then the level of activity has been very limited.

The present absence of national coordination is a serious problem for the Danida supported programmes and means that the impact on the general policy development is very limited. It also means that exchange of experiences between cities is much more difficult.

All Danida advisers have been hired under the assumption that they would have access to national support as well as support in identifying good local and international consultants. The advisers and the local project managers have had limited overview of the Tanzanian resource base and have unfortunately hired less competent local consultants in several cases. The budget for international advisers has only been used to a very limited extent, probably because the task of identifying and recruiting international consultants for rather small contracts has been seen as rather cumbersome and complicated.

In the absence of national coordination Danida has contracted the local branch of COWI-consult to provide general technical support and quality assurance. Furthermore a system of regular meetings between the management teams of the different cities has been established. This is however not an ideal situation and the intention is to provide a more sustainable support at the national level as part of a new urban environment programme to be launched in 2007.

### **Establishment of semi-parallel structures**

In all cities a separate SCP-unit has been established with a locally appointed programme manager supported by a Danish employed adviser as well as support staff (administrator, accountant, secretary and driver). In most cases the co-ordinator has been recruited from the physical planning department of the municipality, but the more precise role of the secretariat in relation to the municipal administration has not been very clear. As an example there has not been a uniform approach to how the programme manager relates to the municipal management team.

The approach to establishment of working groups has not been uniform and in most cases the mandate of the working-groups has remained unclear. In some cities the municipal staff as well as councillors have been heavily involved in the working groups, while other cities have established groups dominated by NGO's and civil society. Irrespective of the approach it has been a recurrent problem that the status of the working groups has remained unclear and in some cases the municipal staff has seen the working groups as parallel structures.

The existence of a separate Project Steering Committee responsible of approval of action plans as well as projects for funding under the local Environmental Development Fund has also in some cases created conflict in relation to the elected Municipal Council. Although the establishment of the PSC has provided a forum for involvement of NGO's and civil society it has been problematic that relations to the council have not been more clearly defined. In some cases project proposals have been approved by the council and subsequently rejected by the PSC or the Royal Danish Embassy – in the latter case either due to poor quality of proposals or proposals outside the scope of the project documents.

### **Unclear focus of capacity building of the municipal administration**

The history of the projects as a replication of the SCP concept from Dar es Salaam has resulted in a strong focus on the process itself and municipal staff has mainly been trained in relation to managing the process of consultations, establishment of working groups and development of action plans. The overall structure, mandate and capacity of the municipality has only been analysed to a limited extent and thus a more long-term strategy for capacity building to fulfil identified functions has not really been developed.

Training in specific issues has been provided as these issues have been prioritised by the working groups, but not based on a more thorough functional analysis of the future role and responsibilities of the municipality. This also means that structural problems of unclear division of responsibilities between for example the environmental health officers and the engineers have remained unresolved.

Important discussions of how services should be provided in the future (directly by the municipality, via CBO/NGO structures or outsourcing to private companies) have only been taken to a limited extent despite the fact that the different models will require quite different skills from the municipal staff (i.e. specific technical skills; skills in community organisation or skills in describing and tendering services).

Another critical issue is the strong focus on development and implementation of specific micro-projects, while issues like mechanisms development of realistic physical plans with adequate mechanisms for implementation as well as enforcement has been given less attention. Thus there is a risk that good intentions in locally developed plans may soon be lost due to a lack of enforcement and regulation to support them.

### **Approach to action plans and their relation to municipal planning in general**

The SCP approach has been applied in a rather generic way and it seems that the role of working groups and local consultations is somewhat de-linked from the general planning process and budgets of the municipalities. This means that proposed activities may be identified and implemented independently of the general planning cycle, where ideally the working group process should work as a supplement to the general planning procedures.

The participatory approaches of city-wide consultations and establishment of working groups have often been planned without proper recognition of already existing consultative mechanisms. In some cities reviews have found that up to 7 different donor-funded activities have applied their own approach to consultation resulting in an overwhelming amount of time spent on workshops etc. Future interventions should build on a careful analysis of all ready planned general planning consultations and try to link closely to these. Despite variations among cities it has also been a general problem that working groups have been established without a clear link to already existing committees.

These problems have been identified by several reviews and steps have been taken lately to improve this linkage.

### **Funding for micro-projects derailing the process**

Substantial funds have been available for small scale projects in all cities and in all cases the idea has been to use some funding for fast-track demonstration projects to help mobilise support for the planning exercises. The availability of funding has in some cases lead to a “gold-rush” resulting in not very well designed projects which have eventually been blocked by the embassy.

Most of the funding was however intended to finance projects based on a more comprehensive planning and development of action plans. On the other hand the time and capacity building needed for development of proper action plans has been underestimated, which means that overall spending on properly designed projects has been far less than expected. This has been unfortunate since disbursement is also used as a quick measure of progress by the embassy, which in turn has put pressure on the process to develop more projects.

When assessing the present experience it seems that the funding for small-scale projects in general has been too large – and one may even argue that it has been disproportionate compared to the overall investment budget available to the municipalities. There is a risk that development of small scale projects – while welcomed by the lucky recipients- fail to develop any sustainable impact on the livelihood of the people and the urban environment in general.

An important lesson is that more time and energy should be put into developing proper action plans and subsequent projects and that direct funding (or facilitation of funding from other sources) for large scale investments in environmental infrastructure and services at the municipal level should also be made available.

### **Linkages to Local Government Reform Support Programme**

All the programmes were designed with an assumption that a number of more general activities in relation to introduction of decentralised accounting systems, general planning and management in the municipalities etc. would be provided via the Local Government Support Programme, but details of the programme were not known at the time of design. A number of the expected activities under LGRSP have been seriously delayed, which has caused some problems, particularly in relation to financial management capacity. As the LGRSP has evolved there has also been a realisation that more activities

may duplicate what is planned under the Danida support (an example being LGRSP support for training of NGO's and CBOs). Another problem has been that the Local Government reform process has required substantial resources from the municipalities thus leaving fewer resources for implementation of the urban environmental programme.

### **Linkages to national level structures**

Linkages to central government were originally planned to be secured via the UASU unit, but this never really functioned since UASU (maybe due to the organisational location) was not very efficient in its coordination and there also for some time at least was some competition between UASU and Ministry of Lands and Human Settlements. In the later stages with the reduced financial resources at UASU this linkage to the central level became even weaker. This has meant that the actual feed-back of experiences from the cities to national level development of guidelines and policies has been quite limited.

## **A1.2 Decentralisation and Service Delivery. Conditions for Local Government Environmental Management**

*By Soren Villadsen*

### **1. Introduction**

This paper is about development of decentralised service management and in particular the conditions for management of local environmental issues. The geographical focus of the discussion is East Africa and in particular Tanzania (with some comparisons to other African states), and there is no intention of generalising the discussion to cover all nations and regions of the World. However, decentralisation of environmental management and public service provision is a strong feature in a number of reforming political systems.<sup>3</sup>

The following three questions represent the problems to be discussed in the following pages:

- *How does the decentralisation reform contribute to an improved system of public service delivery?*
- *How are the capacity development programmes adapted to the new system of governance? What roles do civil service reforms (CSR) and decentralisation reforms play in this context?*
- *Where are the bottlenecks in environmental management for sustainable and manageable solutions based on local level government and administration responsibilities?*

### **2. Decentralisation reforms in Africa**

The failure of centralised governance systems in Africa has been recognised for more than a decade<sup>4</sup>. Whereas a lot of attention has been focused on participation, human rights protection, elections and other so-called input functions of the political system the aim here is the output functions of the political and administrative systems in the form of service delivery capacity and in particular environmental management services.

In recent years focus has shifted away from a hierarchical, political regulation of the external, economic factors and to marketisation of the economy and to reform strategies dealing with the internal political and institutional problems in the political-administrative system. Structural Adjustment Reforms, privatisation and Civil Service Reforms (CSR) have been carried out all over the African continent leading to a major re-organisation of government institutions, but not always leading to any major economic growth and a sustainable development.

Despite its qualitative objectives critics have maintained that the CSR has generally been too occupied with quantitative interventions such as downsizing of staff and administrative bodies and quantitative success indicators, less with the qualitative aspects of government reforms.<sup>5</sup> There may be some truth in this, but it is probably also true that, increasingly, more qualitative measures have been introduced in the CSR-strategies, and a transformation of the entire public sector first and foremost involving a process of democratic decentralisation has become an ingredient of the CSR reforms - or vice versa.

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<sup>3</sup> In Africa countries like Bénin, Ghana, Mozambique, Namibia, Niger, South Africa, Tanzania and Uganda are all at different stages in decentralisation reforms.

<sup>4</sup> Wunsch & Oluwu, eds., *The Failure of the Centralised State. Institutions and Self-Governance in Africa*. Boulder: Westview Press, 1990.

Governance is defined as the existing system of formal and informal government in any given national or sub-national context.

<sup>5</sup> C. Wescott, *Civil Service Reform: Lessons from Africa*, in *Poverty and Development*, 12, *Civil Service Reform in Sub-Saharan Africa*, The Hague, 1996

### 3. Basic concepts of decentralisation

There have been several attempts of defining and understanding decentralisation, and it is not the purpose of this paper to contribute much to the conceptual aspects of this discussion. Seen from the policy angle two main distinctions may be of interest, a holistic versus a sector based approach. In countries like Tanzania and Uganda the holistic approach to decentralisation has been chosen combining processes of political, administrative and financial decentralisation. In other countries a political decentralisation may not be combined with financial decentralisation and transfer of administrative functions.

Many different concepts and definitions have been introduced in the growing literature on decentralisation. Decentralisation has in various studies generally been associated with different concepts including:

- *Devolution*, i.e. a real transfer of political power from higher to lower political/administrative levels,
- *Public participation* institutionalised in local management of service provision,
- *Self-government and subsidiarity*, which is to let control and implementation be as close as possible to the final consumer,
- *Functional decentralisation in the form of local government service production*, letting low levels of government produce and distribute all services for citizens,
- *Delegation*, which is a transfer of administrative responsibilities to lower levels, but not the political responsibility,
- *Deconcentration*, which is a geographical dispersion of state agencies and public administrative tasks, but keeping the hierarchical administrative and financial control,
- *Privatisation*, i.e. "rolling back" the state and introducing market institutions in service delivery.

The ideal for decentralisation of government in Tanzania, inspired from the Ugandan experience, is devolution of political powers, subsidiarity in the location of public service functions, non-subordination of local government administrations and transfer of block grants from central to local government. Decentralisation in Tanzania has a strong, constitutional foundation and a solid support from the dominant, political party. The Tanzanian government and Parliament has adopted a visionary Policy Paper on the Local Government Reform (1998), which has guided the later reform activities.

### 4. Public sector reforms and service delivery

Public sector reforms in Africa, when first developed, aimed at a comprehensive re-shuffling of the administrative systems, usually in the form of down-sizing (eventually right-sizing) the ministries, re-shuffle and combine these, privatise a number of public facilities and state-owned factories, create extra-ministerial agencies and introduce systematic capacity development of public sector personnel.

In Africa and elsewhere, there has been a general disappointment with the performance of centralised government systems. The combination of "soft states" and a traditional and hierarchical, administrative structure has not resulted in a satisfactory performance regarding service production and allocation, and political legitimacy and public involvement in development at the local level has not been achieved. A number of studies have confirmed this tendency and shall not be repeated here.<sup>6</sup> Some of the political

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<sup>6</sup>See in particular, Wunsch & Oluwu, eds., *The Failure of the Centralised State. Institutions and Self-Governance in Africa*. Boulder: Westview Press, 1990. It should also be mentioned that some economists in recent years have argued

ideas, which have formed the background for proposals on how to improve on the public sector performance, and which are based on decentralisation and good governance, shall be mentioned briefly.<sup>7</sup> It has thus been maintained that:

- Decentralisation of government increases the quality and quantity of public services.
- Decentralisation activates non-utilised resources through the mobilisation of local citizens at all levels of society.
- Decentralisation means economising with public resources through improved adaptation to local needs. Decentralisation of public finances lead to increased welfare because of flexibility and demand driven service provision.<sup>8</sup>
- Transparency and checks and balances between political and administrative leaders promotes public sector performance. This is best achieved at the local level.
- Decentralisation and good governance creates incentives for private sector growth.
- Decentralisation benefits vulnerable and marginalised groups and integrates them in a system of democratic governance.<sup>9</sup>

The governance reforms in Tanzania are dealing with almost all sectors of society and with all levels of government as well as with the relations between the levels of government. The comprehensiveness of the reforms would in itself be a challenge for any society, and to accomplish the intended results requires support and determination from all parties concerned and from all levels of society. The various reforms can be summarised into the following main categories:

- Devolution of powers, finances and a decentralisation of local authority personnel from central ministries to local councils (urban and district) through a local government reform
- Streamlining ministries and other government agencies making them cost effective and improving the management of government through a Civil Service Reform (CSR)
- The shifting management responsibilities and production functions from the state sector to the private sector and a general marketisation of economic processes in the society
- Attacking financial malpractice in the public sector such as corruption and bribery through a targeted approach towards a global strengthening of accountability and transparency
- Sector ministry reorganisation and reform programmes aiming at increased effectiveness and efficiency in service delivery
- Strengthening public participation and political accountability also at the lower levels of government

However, since decentralisation by definition is crosscutting the problem with the harmonisation of vertical sector ministries and of a fragmented area like environmental management has been and still is serious.

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that a decentralised system of service allocation is less cost-effective than a centralised service allocation system in arguments based on economic modelling. In East Africa (Uganda and Tanzania) evidence seem not to support this idea.<sup>7</sup> One interesting example is from Tanzania where surveys of social service provision in the first batch of districts in the process of decentralisation have been executed.

<sup>8</sup> This is the classic argument of welfare economics introduced by C. Tiebout in, A Pure Theory on Public Expenditure, first published in *The Journal of Political Economy*, vol. LXIV, 1956.

<sup>9</sup> A comprehensive argument is presented in, *Decentralisation in Uganda: The Policy and its Implications*. Decentralisation Secretariat, MOLG, Kampala 1994.

## **5. Donor programmes in support of decentralised public service**

In recent years most donors have focused on sector wide programmes and on poverty alleviation. It would be an exaggeration to maintain that these programmes have been true success stories. Lack of sustainability and lack of local ownership and local management capacity combined with the well-known financial difficulties are frequent characteristics of these efforts.

Whereas donors typically and with justification are criticised for an incoherent and at times competitive approach to development aid, the situation in Tanzania is an example of a coordinated and coherent approach to decentralisation support. Donors have established a basket fund in support of an Action Plan and Budget (rolling), which is supported by a Local Government Reform Secretariat referring to what used to be a ministry for local government, but which is now President's Office: Regional Administration and Local Government.

However, there are other programmes related to sector ministries, and these may not necessarily reflect the policies of the decentralisation reform. A particular problem in this respect is the lack of coherence in the various legal instruments. The reform includes efforts to harmonise the legislation, which has proven to be a difficult process. Some of the sector programmes have not internalised the ideas of the governance reforms, and some confusion is created because of would-be politicians among the donor agencies.

A recent review in Uganda has pointed to the failures of capacity development programmes, the lack of coordination and coherence with the national policies and actual needs. More specifically the problems identified include:

- Lack of relevance of training programmes;
- Lack of targeting and focus;
- Lack of institutional anchorage;
- Lack of sustainability;
- Lack of coordination with educational institutions.

## **6. Why is it so difficult to develop functioning service delivery systems in sub-Saharan Africa?**

One criticism raised against donor-supported service delivery systems, be they decentralised or centralised, is the lack of internalisation of traditions and culture and thus on the one hand not utilising existing structures and on the other hand introducing alien systems, which have no durability.

It is not easy for any country to cope with so many reforms at the same time. In Uganda, in the comprehensive Report of the Public Sector Review and Reorganisation Commission of 1989-90<sup>10</sup> the following major defaults regarding good governance were pointed out:

- poor corporate organisation and bad division of labour
- low productivity and inefficiency
- extreme laxity and indiscipline
- bureaucratic red-tapism

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<sup>10</sup>Public Service Review and Review and Reorganisation Commission 1989-1990. Main Report.

- inappropriate financial regulations
- lack of clearly defined lines of authority
- bad attitudes, nepotism, tribalism etc.
- corruption

This strong criticism was substantiated over more than 350 pages in this major contribution to strategies in preparation of the introduction of good governance, but the situation described in the report seems not to be a unique feature for Uganda. The features characterise a “soft state” and are not productive for decentralisation and good governance.

One remedy has been the introduction of decentralised management systems. The perspectives for management capacity in decentralised governance systems were seen as better than those under centralised conditions for the reasons given above. However, decentralisation does not necessarily lead to good governance without other institutional reforms.

## **7. Good governance and the policy process**

### 7.1 The “rational” policy process

The policy process embraces all phases of any political decision making process from the very early formulation of a policy to its possible implementation and feedback into the political process. A policy process will eventually lead to a distribution of resources or any other values or to a “non-decision” meaning that the policy process is effectively stopped by some of the actors in the process. A policy process may also lead to a distortion of the formal decision’s intention, a delay of the implementation, a financial malpractice or any other unintended consequence of the political decisions made. Policy processes take place at all levels of society, from the national to the regional and to the local level.

*The issue at stake is in other words whether the policy process is characterised by good governance, or whether one or several steps in the policy process display difficulties in this respect?(See the list below.)*

The nature of the policy processes will characterise the type of governance system existing in a society and will in a systematic way describe the current status concerning good governance. The policy process approach can thus be seen both as a holistic perspective on the problems related to good governance and as a means to identify specific strengths, weaknesses or bottlenecks in the political process of a society.

The policy process approach to good governance underscores both the input and the output of a political process, which implies that both the participatory stages, the formal decision making stage and the implementation process are seen as similarly important aspects of governance. In some of the works on good governance the output aspect is underestimated or taken for granted. It seems to be assumed that with a sharp focus on input and an improvement of the democratic process one could assume that the output in the form of public services provided to the population shall be equally improved. Such an automatic relation should not be accepted without reservations.

In Tanzania one traditional problem has been the implementation stage. Implementation practice has generally been leading to a low service output seen in relation to the input of financial and human resources because of severe problems with financial management and a poor service management record. The focus of the CSR and the Local Government Reforms are for this reason targeted at the same main objective: To improve quality and quantity of the public service provision.

To describe the policy process the various steps in the process must be identified. The model presented here describes an ideal and rational situation, which may not have its exact parallel in a particular policy making process, but a policy making process characterised by good governance should at least be close to the following ten step model. In this paper the ten steps model shall serve as a checklist in relation to the identification of both general and particular governance problems at the particular level of government in question and shall assist in the formulation of targeted Good Governance programmes.<sup>11</sup>

The ten steps include:

1. Identification of problems and policy articulation
2. Policy deliberation & negotiation
3. Policy alternatives and choices
4. Decision in representative body
5. Promulgation of policy
6. Implementation
7. Control
8. Policy evaluation
9. Impact assessment
10. Feed back

## 7.2 “Real life” policy processes

Each of these steps in the policy process is characterised by certain features reflecting more or less good governance practice and institutions. In actual fact, most policy processes are some distance away from an ideal situation, where a direct relation can be established between the will of the people, the decision of an elected council or a parliament and the loyal and precise implementation of the decision by the administration. The implementation is then controlled concerning its legal and human rights implications. Generally it could be said that the further apart from the ideal process the real processes are, the further is the distance to a political situation characterised by good governance.

In order to explain this distance from the ideal situation it should be recognised that a number of barriers and constraints are at stake in the policy processes as they take place in reality. This is where the good governance programmes are at stake. In the list below (table 1) these constraints or barriers are described in order to indicate why a policy process, which may be based on democracy and a reflection of the popular will may at any stage be derailed or changed into something different from what was intended:

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<sup>11</sup> The model has been used as a framework for an understanding of ideal conditions for the policy process at national and local levels in various guidelines on good governance developed by NCG for the Local Government Reform Team, PO-RALG, Tanzania. Emphasis has been on the typical constraints.

Table 1.

Constraints for a policy process characterised by good governance. A theoretical model

Stages in the policy process	Barriers and constraints
1. Problem identification and policy articulation-	Lack of information, misinformation, obstruction of public participation
2. Policy deliberation & negotiation decision-making,	Traditional power structure, non-transparency in monopoly of information
3. Policy alternatives and choices lack of access to leader-	Traditional values, manipulation of interest groups, ship
4. Decision making phase	Manipulation and suppression of political representatives
5. Promulgation	Delays, capacity constraints and irregular bureaucratic intervention
6. Implementation	Misuse, wastage and mismanagement
7. Control mechanisms or checks and audit in place	Corruption and distortion, no independent control balances in place. No traditional audit or performance
8. Policy evaluation councils not in a position practice	Lack of competence, biased observation and reporting, to assess policies. No work plans etc., poor budgeting
9. Impact assessment beautification of results	Distortion of records because of malpractice;
10. Feed back	Misinformation, non-participation

Governance programmes should approach any of the above problems, but within the framework of a holistic perspective. The policy process is a chain, and a break of any of the links in this chain may lead to a disruption of the entire policy process. Central government interventions of an ad-hoc basis may create the same problem. In relation to the different levels of government, which exist in the Tanzanian context, the national, the district/municipal and the local levels, weaknesses are particularly experienced in relation to implementation and control. The approach taken in the above model is holistic in its description of all stages of the policy making process, but at the same time it makes it possible to identify specific governance problem making it possible to create a prioritised selection of key problems of particular importance for a particular step in the policy process.

The main question to be raised is as follows: where are bottlenecks and constraints in particular hampering the democratic and accountable policy making process? To identify these problems it is

useful first to look at the implications of good governance for the policy making process. Good governance implies that relatively few of the obstructions and constraints listed above play any major role. If at any stage in the process obstruction or constraints result in a derailing of the policy process the good governance objective is forfeited in this particular circumstance.

### 7.3 Current approaches to governance reforms

Government has now introduced a new dimension of its governance related programmes, which is the Local Government Reform.<sup>12</sup> The reform has been prepared over several years and some influence from other countries equally eager to promote people's participation in government should be recognised.<sup>13</sup> For Tanzania two different approaches have been supported:

- I. The Agency - Board model
- II. The holistic governance model

*The Agency - Board approach* has been introduced in various sector ministry reforms in many countries' development programmes. The model is based on a management principle that de-links a certain service area in organisational terms from the hierarchical subordination of a line ministry and into a special body, which is endowed with a semi-autonomous status. The Agency will deal with low level consumer boards in a direct and often hierarchical way providing all technical backstopping and financial support. The local boards will at most refer indirectly to local councils, but may typically deal with a regional branch of the national agency.

Whereas the Agency-Board model may have specific advantages seen from a purely management perspective and in particular regarding financial control, it is not in harmony with the holistic local governance principles. Donors have promoted this model in several sectors and African countries, but are currently increasingly focused at strengthening the normal, governmental procedures and entering into basket fund arrangements, which offer general support to various ministries. The governance problem is that the management system of an Agency-Board model bypasses local councils and may be in direct conflict with the local government principles, as these are elaborated in the local government reform policy.

*The holistic governance model* is in contrast based on devolution of powers and a comprehensive decentralisation of functions and financial resources to democratically elected councils at various levels. The on-going local government reform is based on the holistic principle devolving powers to local councils with their own administrations and financial resources. This model is called holistic because it is based on the following main features:

- Council as the highest level of political authority within its jurisdiction
- Administrative non-subordination of local governments vis-à-vis central government
- A local (democratically elected) council, which all other local government bodies refer to
- A legal status of the local council (body corporate)

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<sup>12</sup> The Local Government Laws (Miscellaneous Amendments) Act, 1999, 5<sup>th</sup> February 1999, and the Policy Paper on Local Government Reform, Dar es Salaam, October 1998.

<sup>13</sup> See for example the key note address by H.E. Y. K. Museveni at the Regional Conference on Local Self Governance, People's Participation and Development: Preconditions for Peace and Stability, August 1993, published in Decentralisation in Uganda, vol. 3, Decentralisation Secretariat. Kampala, 1993 and the Constitution (1995) and Local Governments Act (1997) of Uganda.

- A multi-sector local government management system
- Locally passed budgets and plans
- Resources to be spent according to local, democratically selected priorities

Currently, the local government reform is introducing the holistic governance principle.<sup>14</sup> This will have several consequences for most of the sector reform programmes, some of which will need a thorough revision of design in order to accommodate to the local government principles. The holistic principle is generally supporting good governance principles and accountability institutions. However, many donors have favoured the Agency-Board model, which also fits the interests of the stronger line ministries.

## **8. Practical problems concerning local environmental management**

All evidence points to the fact that centralised governmental institutions find it difficult or impossible to deliver services. When it comes to environmental services the problems include lack of ownership at the various levels and for many, valid reasons environmental protection may be difficult to fit into the “high politics” at national and local levels.

In Tanzania attention has been directed towards the following service sectors by means of a decentralisation of staff and to some extent finances:

1. Primary and secondary health care;
2. Primary and to some extent secondary education;
3. Agricultural extension;
4. District feeder roads;
5. Water and sanitation;
6. Development planning and urban planning;
7. Some aspects of land management;
8. Some aspects of environmental regulation and management;

The five first-mentioned of these sectors play important roles in the poverty reduction strategies heavily supported by the donor community. Urban and district council staff are now answerable to the respective councils and are (in principle) de-linked from their parent ministries.

All these steps are bold and productive steps to improve local governance. However, also at the decentralised level there are practical management problems. These problems include:

**Lack of financial transfers:** The bulk of public finances remain at the central government level despite the functional and administrative decentralisation.

**Inappropriate local revenue management systems:** Poverty in the peri-urban and rural areas makes any local revenue generation difficult. The existing system is highly inappropriate.

**Non-transparent staffing system:** There are still cases of direct ministerial intervention in staffing issues in local government, transfers of staff and difficulties in achieving local accountability.

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<sup>14</sup> This approach is taken in The Local Government (Miscellaneous Amendments) Act, Tanzania, February 1999.

Recruitment problems: It is extremely difficult to attract the right calibre of staff, particularly in the remote areas such as legal expertise, engineers etc. Employment on contract basis is gradually being accepted as a solution to this problem.

The highly centralised land legislation makes a robust, local physical planning very difficult since state commissioners can abolish local environmental protection plans and make discretionary decisions.

There is no ministry directly responsible for environmental protection. The responsibility relies with the Vice President's Office.

The legal framework is in need of internal and external harmonisation with other, relevant pieces of legislation

## **9. Capacity problems for local environmental management**

Capacity building of local government personnel and of the political leadership in Tanzania leaves a lot to be desired. Key problems include:

- The over-all responsibility for capacity development in local governments remain with the ministry responsible for local government, currently President's Office, Regional Administration and Local Government;
- Line ministry failure to provide programmes and resources;
- Requirements of elected leaders not met;
- Still lack of donor co-ordination of capacity development programmes;
- Lack of coherent training materials (not always in harmony with the new policy context);
- Lack of management capacity (very few persons in PO-RALG) to exploit existing training materials appropriately.

For environmental management the major obstacles cannot only be resolved by means of capacity building. The incoherent legal and institutional framework constitutes a serious obstacle to local, environmental management. The land legislation in Tanzania constitutes such a constraint, and a major improvement of management requires a combination of measures including policy and legal reforms plus institutional improvement and capacity building.

## **10. Conclusion**

Three questions were raised in the beginning of this paper. They can now tentatively be answered:

*How does the decentralisation reform contribute to an improved system of public service delivery?*

Experience is mixed for the reasons given in this paper. In Uganda there is some experience with financial decentralisation, whereas financial decentralisation is lagging behind combined with the fact that local revenue generation is very weak. The reform is not coherent, financial and human resources are scarce and sector ministries are difficult to reform. The legal and institutional framework is complex with crosscutting lines of accountability. However, there are also encouraging examples, where management has improved and new systems of accountability have developed. A major improvement seems to depend a lot on the quality of the administrative leaders involved.

*How are the capacity development programmes adapted to the new system of governance? What roles do civil service reforms (CSR) and decentralisation reforms play in this context?*

In Tanzania the conflict between the CSR and the decentralisation policy has caused serious problems for implementation of the new system of decentralised personnel management. Capacity development at the local government level is the over-all responsibility of PO-RALG, but the capacity at that level with an extremely limited number of professional staff and few operational funds has made this difficult. Line ministries are supposed to make great contributions to capacity development within their respective sectors in coordination with PO-RALG, but the actual contributions seem to be limited. For local environmental management the situation is even worse because of the complexity of the institutional arrangement of this policy area. Initiatives need to be taken at the local government level (district levels) possibly supported by the local government association.

*Where are the bottlenecks in environmental management for sustainable and manageable solutions based on local level government and administration responsibilities?*

The bottlenecks have been identified in this paper, and on the basis of these constraints activities can be proposed to ameliorate the situation. A possible new programme in support of local government environmental management needs to be closely coordinated with the decentralisation reform and preferably managed within the local government reform structures.

## **A1.3 Rural Towns Development in Bangladesh**

*By Paul van der Kam*

### **1. Introduction**

Bangladesh is experiencing rapid growth of urban population as the rural areas of the country are no longer able to support the growing rural population. Unemployment, lack of educational and health facilities and municipal services, and the desire for an urban life style are main causes of migration from urban to rural areas. This growth of urban population is heavily concentrated in Dhaka and the major secondary towns with a population of over one million.

The thrust of the Rural Towns Development Study (RTDS) is therefore to investigate the scope for developing the rural towns with a population of up to 50.000 in such a way that the “push” factors encouraging migration to larger towns in Bangladesh are reduced. The aspiration is that rural towns, if developed appropriately, may be able to retain a greater proportion of their own population growth and may provide an alternative destination for possible migrants from their own towns and hinterlands.

### **2. Pilot Investment Programme**

The issues taken into account by the study team in preparing a Pilot Investment Programme (PIP) for the rural towns were the following:

- Rapid growth of urban population;
- Rural towns and their hinterlands;
- *Urban-rural linkages;*
- Relationships between central, regional and local levels of government;
- Capacity building and institutional development;
- Infrastructure development;
- *Employment and income generation;*
- Business opportunities;
- Entrepreneurial skills;
- Producers associations;
- Labour skills;
- Financial services;
- Local governance;
- Revenue collection;
- Service delivery;
- Municipal management and administration;
- Gender issues; and
- Environmental issues.

### **3. General Approach**

By means of an objective process twelve towns were selected, two in each of the six Divisions of Bangladesh. The principal output of the RTDS-team is a proposed PIP for these 12 selected rural towns. Successful investment in rural towns and their hinterlands is expected to bring benefits to the inhabitants of the rural towns involved in the programme. These benefits could principally be in terms of:

- Increased economic activity;
- Increased wealth/decreased poverty; and
- Improved urban services.

The above benefits will reduce the “push” factors that encourage the migration to larger urban centres, particularly Dhaka, and will contribute to realisation of appropriate spatial, economic and demographic balance in the urbanisation process in Bangladesh.

#### 4. Interventions

The proposed PIP consists of three interventions, which together are geared towards developing the participating rural towns as attractive environments for human activity and particularly economic activity:

- *Business Development Centres (BDC)*: the principal objective of the BDC-intervention is to increase economic activity and generate employment and income in the participating rural towns and hinterlands. A subsidiary objective is to improve the roles for women and disadvantaged groups in the economic activities. The intervention is intended as a private sector activity in support of private sector development. The vision for the future would be one with more small-scale enterprises operating in a wider range of economic activities and involving a broader cross-section of the society than at present.
- *Pourashava Capacity Enhancement (PCE)*: the principal objective of the PCE-intervention is to strengthen the ability of the participating pourashavas (municipalities) to meet their statutory obligations as set out in the Pourashava Ordinance 1997, which outlines standards for managing and developing municipal services. A subsidiary objective is to encourage the pourashavas to be more transparent and accountable in meeting these obligations. The intervention therefore addresses the higher-level goal of good governance. The PCE-intervention aims to enhance the capacity of the participating pourashavas in respect of: (i) local revenue collection; (ii) service delivery; and (iii) management and administration.
- *Regional Planning and Coordination (RPC)*: the objective of the RPC-intervention is to introduce effective regional planning and coordination into the District administrations. The premise is that effective coordination of policies and programmes at district level will enhance the social and economic development prospects of the affected rural towns. These enhanced prospects will thus both support the investments under the BDC and PCE interventions and assist their sustainability. The benefits for the rural towns may include:
  - More effective use of investments in the Districts – both public and private – that would benefit all communities within the Districts;
  - Greater opportunity for investment specifically geared to the needs and aspirations of the rural towns – and more directly related to their development objectives;
  - Better understanding of developing activity in the District and of the benefit that this can bring for the rural towns;
  - Easier identification of the rural towns’ share of the Annual Development Programme “cake” and other investments being made in the District; and

- Easier submission to Central Government for the inclusion in the Annual Development Programme and the National Five-Year Plan.

In the context of Urban Management in general and Urban Environmental Management in particular, two specific issues within those covered by the Pilot Investment Programme are highlighted below.

## **5. Urban-Rural Linkages**

The European Commission and most other international donors have recognised that poverty is both an urban and rural phenomenon. It may be worthwhile mentioning that it took Danida quite some time to support urban poverty. While the recent Danish support is primarily focused on the development in the peri-urban areas around the larger cities, EC's support in Bangladesh is more focused on development of smaller urban centres – rural towns and secondary towns – in order to decrease migration from rural areas to larger towns and cities.

By the developing the socio-economic infrastructure of rural towns and their hinterlands migration to larger urban centres will not only decrease, but also those who moved to these urban centres will return to the rural areas. Consequently both rural and urban poverty are affected in a positive manner. Development of the socio-economic infrastructure in rural areas can be achieved by:

- Improving the economic, social and demographic balance in the urbanisation process and thus increasing the living environment in both urban and rural areas;
- Improving and strengthening management capability in rural towns in general and in particular improving municipal finance capacity through the review of inter-governmental relations and existing mechanisms for tax collection;
- Strengthening good governance and transparency in general and through decentralisation improve local governance in particular, in order to achieve local revenue enhancement, improved service delivery, and participatory management;
- Identifying training needs for improved urban management and administration;
- Providing adequate infrastructure for safe drinking water, proper sanitation and drainage, health care, education, affordable housing and efficient public transport;
- Generating employment and thus increasing income and investment in the private sector.

## **6. Employment and Income Generation**

People living in smaller towns and rural areas rightly perceive that larger urban centres and cities offer a wide range of job opportunities and a wider range of other opportunities important to the enjoyment of life. When, at the same time the traditional sources of employment in rural areas – primarily agriculture and agriculture related activities – are increasingly incapable of supporting the growing rural population, migration towards urban centres is set into motion. One of the objectives of the proposed pilot investment programme is to broaden the range of income generating activities in the rural towns and their hinterlands in order to reduce the pressure for migration.

Potential entrepreneurs and their would be employees need to have access to business development services that can provide encouragement, coaching and training. The aspiration would be that the rural towns are developed into economic growth centres of their own. Identifying business opportunities and assisting potential entrepreneurs in passing through the “infant” stages of enterprise development

normally achieve the initiation of income generating activities. Where the assistance provided is successful, employment creation and income generation are the results.

Potential business activities identified include:

- Traditional low “value added” agriculture: diversification from mono-culture rice growing to other varieties of rice and other staple crops e.g. bananas, sunflowers and mangoes;
- Traditional higher “value added” agriculture: vegetables and husbandry such as poultry, cattle and fish;
- Non-traditional agriculture/enterprise high “value added” activities involving more complex technologies e.g. processing and packaging, or higher environmental risks e.g. aquaculture. Such businesses may involve crop production, processing of fruits and vegetables, rice and flour milling, fertiliser production, bio-gas production, leather production, and processing of coffee, tobacco, tea and sugar;
- Support industries such as fishing nets, cold storage, ice-making plants, agriculture tools and equipment;
- Other industries e.g. furniture, handicrafts, garments and cement;
- Service industries e.g. trading, marketing and transportation.

The establishment of business development centres is proposed as one of the interventions to realise the potential that exists for development of the economy of the rural towns. These centres could provide access to new information and new technologies; vocational, business and management skills; and financial resources.

## **7. Conclusion**

Successful investment in rural towns, along the lines set out above, would bring benefits to inhabitants of rural areas. These benefits could principally be expected in terms of increased economic activity, increased wealth/decreased poverty, and improved services. Such benefits would also reduce the “push factors” that encourage migration of people from rural to urban areas. As such they would contribute to realisation of achieving “appropriate spatial, economic and demographic balance in the urbanisation process”, which is the primary goal of Rural Towns Development in Bangladesh.

## **A1.4 Complexities of urban environmental management; the case of Accra, Ghana**

*By Katherine Gough*

### *Introduction*

With the failure of many governments to provide adequate services for their urban populations, a wide range of actors are often involved in the urban environmental management of developing country cities and towns. The activities of these actors varyingly complement or contradict each other in complex ways. Here, the case of Accra, Ghana will be presented to illustrate these complexities by highlighting the role of local government, customary authorities, NGOs and CBOs in urban environmental management.

### *Local government*

As in many developing countries, the responsibility for urban environmental management in Ghana has been devolved to local government. Since 1988, district assemblies have become the basic administrative, political and planning units incorporating typical local government functions and powers, including revenue raising. The district assemblies are responsible for the overall development of the district, including the formulation of a development plan and budget, and many of their functions are related to the provision of services at the local level. Two-thirds of assembly members are elected by their constituencies on a non-partisan basis and the other third is appointed by the central government, as is the District Chief Executive who heads the assembly. Below the assemblies are three further tiers with no independent financing or functions of their own. These are the sub-metropolitan area, the town or area councils and the grass root unit committees.

Despite the high ideals of decentralisation, the co-ordination of planning and enforcement of development control have not become more effective in the urban areas of Ghana. The planning aspect of the decentralisation programme is very weak and the programme for administrative decentralisation has not been fully implemented; the sub-metropolitan structures, as well as the town councils and unit committee system have not yet been fully established. The poor performance of the district assemblies has become a source of deep frustration for many Ghanaians, as the high expectations that were aroused have not been fulfilled. The district assemblies have ended up in a vicious circle in which they are unable to carry out development projects because they have little revenue, resulting in the local population losing interest and refusing to pay their local taxes. The central government has not provided the district assemblies with sufficient funding partly due to pressure from the World Bank, through the Ministry of Finance, to keep down government expenditure as part of the structural adjustment programmes. Some district assemblies have been able to make some improvements in their areas, particularly in the education and health sectors, but they have rarely had the resources to improve infrastructure and services. As the level of services has declined, elements of civil society have become increasingly involved in urban management.

### *Customary authorities*

Prior to colonial rule, traditional rulers, usually chiefs, exercised great powers within their jurisdictional areas. The functions of the chiefs were religious, administrative, judicial, legislative, military, trusteeship and cultural. The chiefs were assisted by elders who were appointed on the basis of lineage or personal achievements. One of their main roles was the maintenance of peaceful relations within the community and its defence from external attack. During the period of colonial rule, the British colonial government involved the native political and social institutions in the administration of the country. Eminent chiefs were recruited and assigned responsibility for maintaining law and order, collecting taxes, settling disputes and managing essential socio-economic services. Today, the political authority of chiefs is

almost entirely confined to traditional matters such as arbitration in local disputes. The chieftaincy system is very closely linked, though, with the family system and ownership of land. Prior to colonial rule and government intervention in the administration of land, all land was customarily controlled; ownership was corporate and vested in the stool or skin represented by the chiefs or in a family. British colonial land policies resulted in a complex tenurial system shaped by both customary land laws and the British conveyancing system. Control over land is still one of the most important roles of the chiefs today and has gained increasing significance as land has increased in value. The chiefs remain important agents in the development of their areas, as they are the foci for the mobilisation of their people for community action.

In many places, the chief and elders are directly involved in urban management and have become the main actors in improving the level of services, especially in peri-urban areas. Here, the chief and elders often control a considerable area of land, which is gradually being sold to individuals for building purposes. As the planning authorities have not yet drawn up a development plan for these areas, the chief and elders employ surveyors themselves to plan the plot layout. This can lead to problems as the surveyors used are not always very accurate, leading to disputes between new land acquirers, and the space allocated to communal activities is often inadequate if existing at all. As the demand for land has increased, the money raised from the sale of the leaseholds is not an inconsiderable amount. The chief and elders use some of the proceeds for infrastructural development including extending electricity to the villages, providing public toilets and baths, bringing in piped water, and improving access roads. Ironically, considerable sums of money are also spent on court cases to settle land disputes with neighbouring chiefs.

Not all the chiefs and elders are equally successful in their urban management practices. There are many instances of the money raised from land transactions being misused, and if the chief or land-owning family is resident outside of an indigenous village, the money is rarely invested there. In many indigenous villages, the inhabitants are thus increasingly looking towards their assembly member to solve their practical problems. Assembly members, however, cannot hold a meeting in a settlement without first contacting the chief who may also be highly influential in their election. Hence, the nature of the relationship between the chief and the assembly member can be of crucial importance to the urban management of an area.

#### *NGOs*

A more recent element of civil society is NGOs, which are often viewed as being the primary agents of civil society today. In many developing countries, NGOs have been instrumental in improving the access of urban communities, particularly the urban poor, to essential environmental resources and services such as water, sanitation and drainage. In the late 1970s, a few NGOs were established in Accra, but many more have emerged in recent years. The NGOs have varied orientations but are mostly externally funded. Most of the NGOs operate nationally, usually working either in rural areas or in inner-city areas.

One such organisation is the Ayawaso Committee for a Clean Environment (ACCEN), which was established in the low-income area of Nima in 1997. ACCEN aims to assist the community in mobilising human and material resources to confront the problem of poor environmental sanitation. It organises communal labour to desilt gutters and carry out clean-up campaigns. In the short time since its establishment, ACCEN has made an important impact on the sanitation of the area. Thus ACCEN is providing real support to Accra Metropolitan Authority (AMA) and the sub-metropolitan area office in discharging their sanitation and waste management functions. ACCEN's success so far in this respect has been due to a range of factors, including the dedicated leadership provided by its current executive,

especially its chairman who is also a chief; the involvement of tribal chiefs and opinion leaders who are highly respected in the community; and the relative homogeneity of the community in terms of their migrant status as well as the dominance of Muslims in the area for whom their religion acts as a rallying point for community action. The traditional as well as the religious leaders and the mosques are used as points of contact and a media for disseminating information about the activities of ACCEN. They are also used for settling disputes among its members.

ACCEN is registered with AMA and the Ayawaso sub-metropolitan area office in Nima. AMA has provided ACCEN with some tools for its work and has promised cash and other logistical help in the future. ACCEN has established a fairly strong working relationship with some government departments and agencies but claimed that this relationship is not entirely unproblematic since it is sometimes seen as a competitor rather than a partner to the government in its development efforts. Although ACCEN has forged some links with other CBOs and NGOs it is difficult for them to coordinate their activities. The traditional respect accorded the chiefs, however, has without doubt been a major factor in the mobilisation of the people and their enthusiastic response to the clean-up campaigns and hence the level of success of ACCEN's activities.

### *CBOs*

The CBOs operating in Accra focus mainly on environmental and waste management issues and on the provision of basic services. They have emerged not only in low-income areas but also in high-income areas where the inhabitants are conscious of their investments and wish to protect them by ensuring that the area does not deteriorate into a slum. They often form their own action groups, called residents' associations, as they believe they can better solve their common problems through collective effort. The associations have executive committees that meet regularly and propose actions that are ratified at their collective meetings. Subcommittees are sometimes formed for specific projects for which members may be levied in order to generate funds for specific projects. The new associations have adopted a town-planning role to ensure that both the owners of the land and the land acquirers obey zoning regulations; they attempt to ensure that no-one builds in spaces earmarked for roads or communal areas and that the chiefs do not sell plots designated for these uses. The associations also police their areas to improve security and reduce theft, act collectively when trying to obtain documents, and arrange social functions.

All of the associations play an important role in lobbying for, and in being both financially and manually active in service provision such as improving access roads, providing an electricity supply, and installing water pipes. The associations try with varying degrees of success to liaise with the appropriate agencies and institutions. Liaising with government officials is far from unproblematic, though, and the associations complain that whenever they try to meet relevant officials, they are never available and it is impossible to discover their plans. Many of the associations expressed their frustration that the government has not sufficiently come to their aid. The residents' associations also stress how contacts are often an extremely influential factor in gaining access to services.

The success of the various residents' associations varies widely with some groups reporting having difficulties motivating residents to be active. This is particularly a problem when land acquirers have not yet moved into their houses. The most successful groups seemed to be those where the members are more highly educated and have influential contacts. A problem common to all of the residents' associations is how to ensure that the costs of service installation are spread evenly amongst the residents since they build at different rates and move into the settlements at different times. There are also problems of a technical nature, since the solutions adopted by the associations are often sufficient to provide for their immediate needs, but may not be adequate in the future when the residential

density of the areas increases. Despite these difficulties, the residents' associations are a new force whose strengths and possibilities need to be recognised in urban management.

### *Conclusions*

The system of urban management in Accra has become complex with the roles of the traditional actors (chiefs) changing and new actors (assembly members, NGOs and residents' associations) emerging. Sometimes the roles of these actors are intertwined, but at other times there is a real problem of lack of communication between the different groups. As it appears that they will all continue to play important roles in the future, there is a need for improved communication between the chiefs, assembly members, NGOs and residents' associations, if there is to be any hope of achieving co-ordinated development. The differing groups, however, inevitably act in the interests of their own members hence it cannot be assumed that the relationships between them will always be harmonious. It is important not to romanticise the potential of civil society, as not only may various groups have different interests but also differing degrees of access to power to influence development decisions in their favour.

While it is acknowledged that urban environmental management is inevitably being shaped in different ways and is going in different directions in different countries, some of the findings from this study of Accra are more widely applicable. Many governments in Africa have reached the point where they are no longer able to solve urban issues independently and attempts to introduce decentralisation as the panacea have failed. Civil society has been demonstrated to have an impressive degree of resilience and capacity to flourish in the resultant crisis situations. However, it is important that governments do not dissolve responsibility for service provision and overburden the new associations. The existing links between the various actors in urban governance need to be understood and new partnerships created in any attempts to improve the management of the urban environment.

## **A1.5 Urban Ecology, Metabolism and Health – Recycling and agriculture: waste or resource?** By Jakob Magid

### **1. Summary**

The point of departure for this contribution is based on the observation that while the IIED paper on ‘Urban Environmental Improvement and Poverty Reduction’ identifies waste management and urban/peri-urban agriculture as important topics, there are some potentially critical inter-linkages that do not come across clearly in the analysis.

Given a judicious and robust approach there is a potential to recycle organic waste (including latrine) through the terrestrial ecosystem rather than disposing of it via the aquatic ecosystem, that inevitably will cause unacceptable environmental and health damage, unless a (prohibitively) costly sewage treatment strategy is implemented. On the other hand, while urban and peri-urban food production represents a much needed possibility for attaining multiple development goals (food provision security, job creation, poverty reduction, women support and potential open spaces for future urban development) there is also a real risk associated with disease transfer from animals to humans if such activities are not considered in environmental and health management programs.

We have seen an increased interest in recycling organic waste and latrine from urban to rural areas. There is a need to develop appropriate recycling solutions and build on successes in future urban capacity building. Such solutions should include peri-urban farmers as key stakeholders, and ensure that contemporary thinking in urban planning and management must be expanded to include understanding and responsibility for the urban metabolism.

### **2. Introduction**

‘Getting rid of the shit’ is what matters to most people – and they are even willing to pay for it, or given a certain level of community cohesion, spend some of their own time on waste management. A few people take pride in composting organic waste to use it in their home gardening, but this practice normally requires a considerable effort to work as a feasible community solution in ever changing urban settlements. In many urban environments informal recycling is organized by scavengers who corner a market by picking through the dumping grounds, and some places this is a basis for a substantial economy. To the extent that such solutions can be practiced or developed avoiding communication of disease vectors they should be seen as beneficial to environmental management. However in most rapidly developing urban environments (even in China and Vietnam these days) human and animal excreta often pose insurmountable challenges in terms of management. In so far as the economics of society allow it, sewage systems are promoted that collect rainwater, grey-water (kitchen, washroom and bathroom water) *and* black-water (latrine), ensuring that all urban water is mixed and thus all contaminated with high loadings of nutrients, organic matter and disease vectors. By removing the wastewater through pipes or open channels this management form solves the problems locally but generally relays them downstream. Even in areas where the economy allows a state of the art centralized sewage treatment and disposal scheme, this only represents a partial solution (see below). Already in the early 19<sup>th</sup> century when urbanization was taking off across the European continent there was an intense debate on how proper urban waste management should be addressed.

### 3. Resources

In a letter to Sir Robert Peel, Prime Minister of the UK in 1840, Justus von Liebig wrote: *“The cause of the exhaustion of the soil is sought in the customs and habits of the towns people, i.e., in the construction of water closets, which do not admit of a collection and preservation of the liquid and solid excrement. They do not return in Britain to the fields, but are carried by the rivers into the sea. The equilibrium in the fertility of the soil is destroyed by this incessant removal of phosphates and can only be restored by an equivalent supply. ...If it was possible to bring back to the fields of Scotland and England all those phosphates which have been carried to the sea in the last 50 years, the crops would increase to double the quantity of former years”*. When London's authorities decided to construct a sewage disposal rather than a recycling system, von Liebig decided that it was necessary to find ways to replace the fertility removed by cities from farmland by artificial means. He set about developing artificial fertilizers to keep the land feeding cities productive. Today, the use of artificial fertilizers is the norm all over the world.

While the development of artificial fertilizers have fixed a recycling deficit and furthermore increased global agricultural productivity far over and above its original potential, nutrient deficiency still remains a key agricultural productivity problem in developing countries. Thus from a resource point of view it is a major problem that increasing proportions of humanity live in urban settlements (50% of global population as of 2004, expected to increase to 2/3 by 2030) as long as such settlements remain unable to recycle their intake of food, water and other resources.

Abundance of clean water will increasingly become a limiting factor in many growing cities. Clearly many other factors than natural abundance may be critical in limiting adequate delivery of potable water to urban residents, but even if these are overcome it may prove critical in the longer term if such cities have become locked into a hugely expensive infrastructure that promotes the use of water as a means to transport latrine, animal excreta and industrial waste away from the urban area. One topical illustration of this problem is the case of Singapore. Although situated in a tropical humid environment, with overabundance of water in the nearby environments they have no control of the resource since the surrounding rural land belongs to Malaysia. They have faced the political threat of exorbitant water prices from the Malaysian government by installing an expensive sewage treatment system that allows the production of NEWater<sup>15</sup>, which is used for industrial purposes and added to drinking water reservoirs. On the inauguration of this scheme – the prime minister made a point of drinking this product to convey its qualities to local residents, who now drink it on a day to day basis.

A number of alternative low tech options exist for local treatment and recycling of rainwater, kitchen water and bathing water, which can substantially decrease urban intake of water from rural sources. This however, necessitates that latrine and animal excreta are kept separate from the main urban water stream.

### 4. Health

The recent SARS and bird influenza epidemics are dramatic example of a zoonotic (transferred from animals to humans and back) disease that may arise from highly intensive animal husbandry in the urban areas of the developing world. Another disease (Neurocysticercosis) that is less dramatic but never the less causing substantial human and animal health impact is at the moment spreading inexorably across the African continent, due to increasing production of pigs in urban areas. Cholera,

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<sup>15</sup> See for example:

[http://www.ecologyasia.com/NewsArchives/feb2003/straittimes\\_030222\\_3.htm](http://www.ecologyasia.com/NewsArchives/feb2003/straittimes_030222_3.htm) : New water is reborn, The Strait Times, Feb 22, 03  
<http://www.suaramalaysia.com/archives/001270.html> : Come see our shit!, SuaraMalaysia, Dec 8, 2003

diarrhoea and other fecal-oral diseases are closely related to poor sanitation apart from poor body hygiene among local poor. I have frequently observed diversion of wastewater from open sewers for use on leafy vegetables and other crops in urban agriculture. Scavenging poultry and other small domestic animals that are allowed to roam outside and subsequently enter the living quarters may transfer parasites as well. Thus inadequate management of waste and mismanaged urban agriculture will tend to recycle disease vectors.

Antibiotics, other medicinal residues and hormones (especially from industrialized animal production) entering the water bodies through sewage will modify the characteristics of both aquatic microorganisms, flora and fauna. Little is actually known about these changes. In the industrialized world we are increasingly facing ubiquitous multi-resistant *E. coli* as well as other bacteria previously susceptible to antibiotics. Fish and other seafood organisms will take up both resistant organisms, hormones and toxic substances and relay them back into the human food chain. Resistant bacteria and parasites pose an increasing challenge to the industrialized world both in human and animal health. Some medical doctors believe that human and animal natural immunization may be able to provide a solution, but if this is not the case most of these problems are unlikely to be solved unless appropriate solutions for recycling human and animal excreta to peri-urban agriculture are developed.

## **5. Economics**

Costs of managing waste and waste water should be balanced against the costs of mismanaging, in terms of the longer term impacts on human health and the total environment. Many interesting cases can be found where community organizations or private enterprises play a crucial role in local waste management, financed by local dwellers. However, even in the best cases I know of in developing countries the local management schemes cannot carry more than the costs of transporting the waste outside the local area. Paying for further treatment and the additional costs that would be involved recycling is not seen as an immediate necessity, and therefore not given priority. How this should be financed is a most critical question if sustainable urban waste management is to be achieved. In the case give below, this may become apparent in the nearer future.

## **6. The Kuching case: combined Conventional and Ecological sanitation**

The city of Kuching, capital of the state of Sarawak, Malaysian Borneo, has prepared the strategy for the future sewage management of the city. A solution for the sewage is urgent. Currently the black water (toilets) is discharged to the storm water drains through septic tanks, that are emptied maximum every 4 years, and the grey water (Kitchen and bathroom), is discharged directly to the storm water drains. The result is a very high level of bacteria in drains and river tributaries (> 16.000 counts/ml) and high organic and nutrient load and a critical oxygen deficit, and recurring outbreaks of cholera are reported every year.

A proposal for a centralized sewage treatment system has been prepared. However due to high costs and local physical conditions centralized sewage will only be suitable for the central business area of the town. The town is generally flat, low-lying areas, with only small possibilities for gravity piping. In addition large part of the area is deep peat, which may decompose due to the draining effect of the sewers and thus lead to breaking sewers and rising mains due to subsidence.

The city has therefore decided to prepare a framework plan for integrated sewage management, implementing *ecological* sanitation for large parts of the city. The ecological sanitation will be based on local treatment of grey water and collection of the black water for centralized biogas and fertilizer production. Grey water pilot facilities have been established in late 2003. The design of the biogas plant has commenced. Collection of black water will be commenced for selected housing areas and

institutions (pilot project) when septic tanks will be cut off from the storm drains and emptied on a regular basis. After hygienic treatment in the centralized biogas facility, the black water will be used as fertilizer in peri-urban agriculture. A number of problems will have to be solved along the way, including mechanisms for cost recovery, traceability of waste products and a number of technical and biological problems that may arise when implementing this type of approach in a tropical environment.

According to the government plan, a successful implementation of the pilot project will lead to a implementation of the ecological sanitation scheme for 250.000 households.

## **7. Research and development needs**

Much of the R&D needed to achieve sustainable urban waste and wastewater management is hardly rocket science. Adaptation and improvement of known technologies in new management systems coupled with collaborative schemes between stakeholders: CBOs, SMEs, municipalities and peri-urban farmers can be done as in the Kuching case by thinking big but starting small. Research on this is warranted for documenting, monitoring and improving the systems development and their environmental and health impacts (adverse as well as beneficial).

A more fundamental research need is to address the question of risk management. Whether we choose to dispose of our waste (or resource) in the aquatic system (as we do for the time being in the industrialized world) or through the terrestrial system there are risks involved. We are currently not able to foresee the consequences of these in the longer term. There is much evidence that disposal through the terrestrial production systems can make these risks more manageable, and in some places involve lower costs than full blown centralized sewage treatment.

## **A1.6 Urban Greening as a Vehicle for Healthy and Sustainable Development**

*By Kjell Nilsson*

### **1. Introduction**

Managing urban population change will be one of the most important challenges during the next decades. In developed countries, the urban future will involve dealing with complex changes in the composition of urban populations while also containing urban sprawl beyond suburbs into what remains of the countryside. In developing countries, where 80% of the world's population resides, central issues will be how to cope with an unprecedented increase in the number of people living in urban areas and with the growing concentration of these urbanites in large cities with millions of residents. In developing countries, urban forests and other green areas can provide an important supplement of food, fodder and wood to urban dwellers. The functions of green areas in and near cities in moderating harsh urban climates, preventing desertification, and in wastewater treatment have been under investigation. As more knowledge on these aspects is required, urban forestry research has to be further extended both in the developed and in the developing world.

### **2. Increased international policy attention**

While the 20<sup>th</sup> century can be characterised as the century of urbanisation for Europe and North America, the 21<sup>st</sup> century is the century of urbanisation in Asia and Africa. This stresses the need for developing liveable cities. During recent years, an increased international policy attention for the urban environment can be noted, for example through the Habitat-conferences, Agenda 21, the United Nations Conference on Environment and Development and the World Summit on Sustainable Development in Johannesburg 2002.

The quality of the urban environment, including green areas, is becoming increasingly recognised as a key to the ecological, economic and social reconstruction and development of European cities.

### **3. The benefits of urban greening**

The green infrastructure of cities provides urban society with an essential range of goods and services, representing the three dimensions of sustainable development: Environmental, economical and social sustainability.

#### **3a Environmental and ecological functions**

##### ***Reduce air-pollution***

Trees intercept particulate matter and absorb such as gaseous pollutants as ozone, sulphur dioxide and nitrogen dioxide, thus removing them from the atmosphere. Trees also emit various volatile organic compounds, such as isoprene and monoterpenes that can contribute to ozone formation in cities. Protective plantations along heavily trafficked roads and around industrial areas are, therefore, an effective means of reducing air pollution. But this should obviously not be taken as an excuse for neglecting to combat pollution at its source.

### ***Protect water resources & reduce storm water runoff***

Before modern urban areas made their appearance, rainwater was handled locally. It ran in stone fascines in the ground or out onto fields and pastures. The towns also had streams and damp areas that functioned as recipients. The great change came after the Second World War, when serious attempts were made to drain the water away from residential areas, streets and squares in underground sewer pipes. Thus, the traditional water cycle of the towns lost its main source. Instead, costly drinking water is now used for watering greens and plantations.

When it falls on roofs and paved areas, rain has become an environmental problem, instead of being a resource that appeals to our senses and benefits plants and animals. Run-off from roads, streets, parking areas and even some roofs is polluted. Thus, draining rainwater into sewers means that these pollutants end in watercourses, lakes and the sea. On the other hand, rainwater that has filtered through the soil is considerably cleaner than the water from purification plants.

### ***Reduce waste disposal problem***

In developing countries, recycling of waste from urban trees reduces waste disposal and secures new raw materials. In poor cities most "waste" may be used as fuel-wood, while in wealthier cities raw material such as mulch might be produced. Unused and degraded land and terminated landfill sites are increasingly being reclaimed through afforestation and converted to parks. Where land is contaminated, particularly with heavy metals, some trees are capable of absorbing the pollutants. Through repeated felling and removal of the timber, the level of contamination can gradually be reduced.

### ***Reduce harmful influence of sun, wind and temperature***

By transpiring water and shading surfaces, trees lower local air temperatures. Because trees lower air temperatures, shade buildings in the summer, and block winter winds, they can reduce the consumption of building energy and consequently reduce the emission of pollutants from power-generating facilities.

### ***Biodiversity***

At the U.N. Conference on the Environment and Development in Rio de Janeiro, 1992, all participating countries adopted Agenda 21, an action plan for how the world can work towards sustainable development. It also obliges them to work towards sustainable development - an obligation that, in turn, devolves on the administrators of urban green areas.

Older gardens and parks often contain noticeably rich biodiversity. These are the main habitats of urban plants and animals. Older, well-established plantations attract, for instance, birds and mammals, the natural habitat of which is the forest. Since an increasing part of the population lives in urban areas and receives its daily perception of nature therein, nature in urban areas is important to environmental awareness and an understanding of nature.

### **3b Economic functions**

Food from trees in private agroforestry gardens or allocated plots in public gardens can contribute significantly to food security in developing countries. Low-care wild edible plants are often excellent candidates for multipurpose use as ornamental roadside plantings.

Wood fuel provides between 25 and 90 percent of urban household energy supplies; it is particularly important as a source of energy in smaller urban centres in developing countries, especially in dry zones. Poor urban households spend a significant proportion of their cash income in obtaining wood energy. If the urban poor population continues to grow, an increase in the consumption of traded

wood fuel is likely to be a consequence. Under favourable circumstances, fuel-wood from non-rural forests and agroforestry systems can contribute significantly to fuel-wood supply.

There is and must be a clear distinction between Urban and Peri-urban Forestry in developed and developing countries. The basic need for food, drinking water, fuel-wood and construction material is straining the scarce resources available in and around most cities in developing countries. In richer countries, urban green spaces can contribute to the local *economy*, by enhancing real estate prices and by attracting economic activity and taxpayers.

### **3c Social functions**

#### ***Health aspects***

City life is stressful, but research shows that urban green areas have a beneficial influence on the health and well-being of the urban population. Studies conducted in Sweden and the USA indicate that visits to green areas can counteract stress, renew vital energy and speed healing processes.

Rachel and Stephen Kaplan (*The Experience of Nature*, 1989) have formulated a theory on the interaction between man's attention and his surroundings. This means that urban living, with fast vehicles, flashing neon signs and strong colours, causes constant stress. The research indicates that vegetation and nature reinforce our spontaneous attention, allow our sensory apparatus to relax and infuse us with fresh energy. Visits to green areas bring relaxation and sharpen our concentration, since we only need to use our spontaneous attention. At the same time, we get fresh air and sunlight, which have significance for our diurnal and annual rhythms.

#### ***Educational functions***

Closely related with the ecological and social values of urban green spaces is their educational function. Since a rapidly increasing part of the world's population lives in urban areas and receives its daily perception of nature therein, nature in urban areas is important to increase environmental awareness and an understanding of nature.

### **4. Research and development**

Urban green structures rather than individual green elements have become in focus. To an increasing extent, politicians, researchers and politicians deal with the contributions of the entire urban green structure to the quality of urban life and environment. Moreover, they have started to realise that more integrated green area planning and management are required to meet current societal demands when operating in high-pressure environments. This had led to the emergence of new concepts and approaches of a more integrative kind. Urban greening, for example, has developed as the planning and management of all urban vegetation to create or add values to the local community in an urban area. Urban agriculture is another example, defined as located within (intra-urban) or on the urban fringe (peri-urban) of a town, city or a metropolis, and growing or raising, processing and distributing a diversity of food and non-food products, (re-)using largely human and material resources, products and services found in and around that urban area, and in turn supplying human and material resources, products and services largely to that urban area. A third concept that resulted from the above-mentioned developments was that of urban forestry.

In its broadest sense, urban forestry embraces a multi-managerial system that includes municipal watersheds, wildlife habitats, outdoor recreation opportunities, landscape design, recycling of municipal wastes, tree care in general and the production of wood fibre as a raw material. Urban forestry includes

activities carried out in the city centre, suburban areas and the ‘urban fringe’ or interface area with rural lands.

The Danish Forest and Landscape Research Institute was asked by FAO to develop a framework for future FAO activities within UPF.

For the Biennially UPF Programme (2002-2003), FAO is suggested to focus on the following issues:

- Organisational strengthening: strengthen awareness of urban aspects within FAO and FAO forestry in particular, and establish a full-time UPF-coordinator position within FOR.
- State of art description: provide an overview of past and present activities within FAO of relevance to UPF, as well as an overview of good practice in UPF across the world.
- New knowledge generation: develop a strong FAO UPF Programme aimed at the development of new knowledge within UPF, with emphasis on the needs of the developing countries.
- Dissemination: establish North-South and South-South networks of experts and stakeholders within UPF and prepare an UPF information dissemination policy for FAO.

## **5. Different cities – different problems**

The Danish Forest and Landscape Research Institute has during the last five years tried to develop Urban Greening as a concept for the sustainable development of large cities in Eastern Europe and developing countries. The projects are financed by Danish Co-operation for Environment in Eastern Europe (DANCEE) and the Danish International Development Assistance (DANIDA).

### **5a St Petersburg**

With its 5 million inhabitants, St Petersburg is the second largest city of the Russian Federation, and the largest city in the Baltic Sea region. St Petersburg was established under Tsar Peter the Great in 1703 with the objective of becoming his Window on Europe. Peter wanted a green, prestigious capital - and boulevards, canals, palaces and gardens became important elements of the new town.

The city has benefited from this green heritage and is still a green city today. Apart from the parks, gardens and boulevards of the Tsar era (many of which have become recognised as an UNESCO World Heritage site), the current city green structure includes a large amount of areas established under Soviet rule.

During recent years, the pressure on St Petersburg’s urban green structure has intensified. Societal changes have led to a very different social, economic and political climate. Economic changes have brought major funding problems for the public sector. Consequently, green area planning and management is no longer a priority. Budgets for green area management as well as for the establishment of new areas have decreased dramatically, sometimes at levels that cover only 10 % of the needs. Green space is under pressure from for example urbanisation and infrastructure development, increased pollution with growing car traffic and an old-fashioned industry. Residents have become more mobile and outspoken in their demands for green area functions.

### ***Urban greening as a strategic instrument***

The development objective of the first Russian-Danish urban greening project was to conserve and develop the cultural-historical, social and ecological values of St. Petersburg's green areas by elaborating a structured, well-informed planning and management approach. This approach had to be participatory, in order to create a higher environmental awareness and responsibility towards conservation and development of green areas, as well as enhance collaboration between main stakeholders.

An electronic database of public green areas was developed, with more than 100 data entry categories for each park. These data entry categories were chosen in such a way that they could later be used to develop informative indicators for green area planning and management.

The aid project developed the initial database and some first indicators. A workshop with central green managers as well as representatives of the district and individual park administrations was held. Local green area planners and managers were encouraged to develop the system further together with local scientists and to use it in day-to-day management as well as more strategic management planning. The green area administration has committed to this by setting aside a separate budget for this purpose. This was important, as the new system needed to become accepted and used by green managers at different hierarchical levels. Although the system was translated into Russian, the lack of IT-skills of most of the green area managers still requires a considerable training effort.

### ***Restoration and public participation***

Restoration and implementation activities were important in making the project visible and in providing direct support to the physical improvement of some of the most popular green areas.

The largest implementation activity within the project was the restoration of part of the run-down drainage system of Tauride (Tavrishesky) Garden, a historical garden from the 18<sup>th</sup> century. This garden is located in the very centre of the city and extremely popular with local residents. By restoring part of the drainage effort and subsequent landscaping and tree planting, the situation of the park was improved.

Activities to enhance public awareness and involvement in green area issues were carried out. Three focus groups were set up for the 'case study' green areas. Especially the groups in Park Sosnovka and Moskowsky Park Pobedy, with members of local NGOs represented, were very active in assisting with planning public awareness and implementation activities. Getting the groups established was an important step, as no strong tradition with public participation has existed in St Petersburg. Actual public involvement was still lower than perhaps hoped at project outset, but the first steps towards developing this further were taken.

Public (and political) awareness activities also included organising events such as Park Days to present project activities as well as green area issues in general and press conferences. Moreover, playgrounds with a 'nature theme' were established in Moskowsky Park Pobedy and Park Sosnovka. In Moskowsky, a classroom for environmental education was also constructed and equipped with the assistance of a local children's education group.

### ***The St Petersburg forest greenbelt***

Sustainability in project co-operation is very important for achieving a longer-term impact. It was therefore very important that the Russian-Danish partnership could be continued through a new environmental aid project focusing on St Petersburg's green areas. In the case of the new DANCEE-

funded project, however, focus is on developing a planning and management system for the 142,000 ha forest greenbelt around the city.

### **5b Johannesburg**

South African cities are undergoing rapid urbanisation. Urbanisation brings with it many problems such as huge demands on land, water, housing and unemployment. The urbanisation challenges facing South Africa are more complex compared to other developing countries because of the problems inherited from its apartheid history. The apartheid system promoted deep division in the geography of cities through population control and forced removal and dual standards for everything. As an example, most green areas are mostly to be found in the former white municipalities.

A major challenge of urban planning is therefore to accommodate for urban greening as a sustainable community development that alleviates poverty, unemployment and housing shortage. As a result of all these challenges urban greening is still in its infancy and could be considered as a luxury.

Urban greening is not only about trees, it also covers sanitation, garbage removal, better drainage etc. Urban greening can thus be seen as vehicle for an overall upgrading of a township. Only when it is obvious that urban greening can be a vehicle to community development, only then it can become a priority issue of politicians and urban planners.

#### ***Johannesburg – urban greening as integrated part of town planning***

The Danish Forest and Landscape Research Institute has, in close cooperation with Food and Trees for Africa (FTA), provided input on how to integrate the many activities FTA has in the overall urban planning. Integrating 'hands on' urban greening activities into urban planning means that also housing and poverty problems along with technical challenges of, e.g. waste water management and sewage systems, can be targeted.

FTA is one of the key urban greening NGOs in South Africa that has played a prominent role in the greening movement in South Africa. They have many activities, e.g. Trees for Homes, permaculture and park makeovers.

The Danish Forest and Landscape Research Institute is providing input and collecting experiences on how urban greening can be integrated in overall urban planning, how participatory capacity development and on how to create local ownership to urban greening through participation by the residents in the area.

### **5c Kuala Lumpur**

The Malaysian capital of Kuala Lumpur can be characterised as a rather green city, with e.g. a number of larger parks and forest reserves located within the city limits. A large part of the green areas date back to colonial times, but some large areas have also been established more recently. Major tree planting efforts have been undertaken e.g. for the 'Visit Malaysia Year' in 1990. The potential of the green structure is, however, not fully realised because of the lack of green corridors or greenways to connect the various areas, and to make safe, non-motorised traffic to the areas possible. The ongoing economic growth in the city means that urban development is in full swing, and there is a clear need to carefully plan for maintaining and improving the city's green structure as a basic urban utility.

Another important issue is the integration of urban greening in all relevant aspects of city planning and policies and the development of more management-oriented skills at the City Hall's Landscape and Urban Cleansing Department. For the time being the department's profile is very project-oriented

towards construction of new parks. It also has a very ambitious tree planting program (50 000 trees per year over a ten-year period). This needs to be supplemented by developing a strategy for and knowledge in urban forest and tree management. In urban areas the aspect of safety is also crucial. The monitoring of urban trees should therefore include an assessment of potential safety hazards.

### ***Kuala Lumpur – twinning programme***

The overall objective for this so-called twinning programme financed by Danida and started in 2003 is: *Sustainable forest management achieved by improving the linkages between education, research and development and policy and practice.*

Three areas of co-operation have been identified:

- Nature interpretation & communication
- Urban forestry & urban greening
- Scientific decision support for policy making

Within each of these areas, the partners have identified specific subjects where both the Malaysian and the Danish participants will be able to improve their knowledge and services by close co-operation with one or more institutions in the other country.

The objective for each of the three areas is respectively:

#### *Nature interpretation and communication*

- Improved communication between forest staff and the general public in order to increase public awareness and interest in nature and environment

#### *Urban forestry and urban greening*

- The research and educational capacity as a sound basis for decision-making in the field of urban forestry improved for the involved partners

#### *Scientific decision support for policy making*

- Increased ability and capacity of forestry research to aid policy processes and provide decision support for policy makers

## **6. Conclusions**

The increased interest in urban environmental problems will probably mean a considerable increase in parks and green areas over the coming decades. Most of these will be laid out in the larger cities of Asia, Africa and Latin America. Obviously, we are all looking forward to this. Similar expansion of the green infrastructure was carried out in North America and Europe during the years after the Second World War and up to the 1970s. It was done with a strong belief in high technology, heavy machines and the liberal application of chemical aids.

Today, we can see the detrimental consequences of this in the form of a heavily loaded environment and the social and biological impoverishment of life in many of the green areas that were established during that period. These areas are sometimes referred to as "green deserts". One of the results is that we have learned the necessity of cooperating with nature, instead of combating it. This is the area in which research and development is now concentrating its efforts concerning technical aspects of the installation and operation of green areas.

Over the coming years, the main challenge will be to ensure that the expansion of green infrastructure in the world's urban areas is implemented within the framework of sustainable development, without the use of technology inimical to man and nature and with as few chemical aids as possible. Man is a vital resource

in this context, not only because manual work is an alternative to many of the methods that are harmful to the environment, but also because knowledge can in many instances replace the use of artificial methods.

It is therefore crucial to start extensive training of the work force that will build the new parks and green areas of the 21st Century.

Initiatives are needed in five areas:

- overall planning strategy for preservation and development of the urban green infrastructure is needed,
- urban greening initiatives should be integrated as part of an overall upgrading of townships,
- planning of new installations must be based on the condition that it will be possible to care for them in a sustainable manner,
- selection of plant material that is adapted to urban growing conditions, pest-resistant and genetically diverse,
- training of the work force, environmentally-oriented methods demand greater knowledge of ecological and social relationships.

## **A1.7 Capacity Development for Environment and Health**

*By Herman Autrup*

Environment and health are closely linked and it is estimated that as many as 30% of all health problems in developing countries are environmentally determined. Health is of particular importance in urban environments, where risk factors encountered include both indoor and outdoor air pollution, chemical and microbiological contamination of food and water, occupational exposures, and waste management. The health effects linked to environmental exposures include acute as well as chronic effects and range from infectious diseases to cancer. The complexity of risk factors and the management of risk necessitate cross-disciplinary training.

### **1. Training needs**

People with experience in environment and health are required at local, regional and national level in order to implement programmes with the focus on improving the quality of life of the people and the development of a healthy environment. This would include experience in risk assessment and risk management, including monitoring. Thus it is important for human resource development and capacity building to implement a sustainable training programme in disciplines relevant for a better and healthier environment. The program should integrate health sciences, biotechnology and environmental engineering and should train human resources capable of undertaking control and management of health hazards associated with urbanisation. The main focus should be on human health but the effect on the general environment should also be considered as it indirectly may influence the well-being of man. The focus should be on prevention of disease and not the infrastructure of the health system.

### **2. Centres of training**

This training could take place at either the national or the regional levels, but it is important that it is embedded in an existing educational institution, e.g. a university. Core training centres could be established in both East and West Africa to serve the needs of the countries on Danida priority list.

Facilities of internet based learning in environmental health and risk assessment should be established in connection with these core training centres, i.e. in collaboration with Danish or other European educational institutions.

A scientific cooperation programme between Danish educational and research institutions and the core centres should be established in order to train educators and environmental scientists.

### **3. Training courses**

Training in environmental health sciences and management should be conducted at different levels depending on the need of expertise and the educational background of the candidate.

#### ***Short term training***

The training could be based upon relevant core courses and elective courses. A series of elective courses covering the various aspects of the area environment and health should be developed, and could be electives for students involved in environment and health problems, engineering, medicine, occupational hygiene, economy and management, biology, environmental chemistry and environmental sciences.

### ***Diploma course***

A regional course for people already working in the field could be established as a diploma course. The course could be based upon tri-annual courses (each 1 week) covering relevant aspect from the elective courses

### ***University degree courses***

Integration of the core courses and the elective courses could form the basis of a B.Sc. or M.Sc.–degree in environmental health sciences (using a modified version of the AU joint project with Can Tho University, Vietnam with more emphasis on human health and engineering).

## **4. Post-Graduate Education – South-east Asia**

A joint degree programme in “ Environmental Toxicology, Technology and Management” has been established between Mahidol University, Chulabhorn Research Institute and Asian Institute of Technology in Bangkok, Thailand. This course is open for graduate students from the region, and consists of a combination of obligatory and elective courses. The core consists of courses in basic toxicology, environmental management, and waste technology, and the curriculum is designed to support both MSc and PhD degree programmes. The curriculum has been prepared for use by university programs in developing countries. The courses are taught by a combination of local faculty members and an international faculty, and thesis supervision is also provided also by the international faculty. Some of the courses at the multidisciplinary level are offered to people working for national environmental and health agencies.

## **5. Regional consultative network**

Sustainability and continued human resource development of locally trained experts are important. Regional resource networks should also be established between government and local environment and health agencies, academic institutions and international agencies, and other international resource persons. Expertise is available at regional institutions, but is not widely acknowledged. However, it is important to enrol this knowledge base into solving local problems. Internet based information exchange between and amongst the network partners will facility knowledge and technology transfer. A part of the training activities should be focused on community workers that have the direct contact with the people at risk living in the developing cities. International experts could be linked to these networks.

## **A1.8 Functional Analysis – Developing Frameworks for Improved Organisational Performance**

*By Torben Lang*

### **The Functional Analysis**

#### **1. A Management and Planning Tool**

The functional analysis is effectively used for strategic planning, for optimising resource allocation, for budgeting purposes and for managing and improving performance of organisations. The process facilitates the assessment of the appropriateness of mandates and core functions, of organisational structures and staff deployment as well as of management systems and procedures. It is used as an organisational analysis tool for providing a well-documented basis for making organisational and management improvements and adjustments at institutional level. The approach and methodology is designed as an institutional management development and planning tool and not as a tedious exercise of data collection, capturing, and analysis.

#### ***Strategic Planning***

Government organisations are often facing situations where new policies, regulations and requirements are introduced. Such changes are likely to affect their mandates, roles and core functions and consequently they have to develop new organisational structures, and management and operational systems in order to respond to the new institutional environment. Strategic planning at sector level is required to define core functions within complimentary organisations in order to ensure compliance with Government policies and plans, to optimise synergies and to avoid duplications and overlaps.

Strategic planning is required at organisational level in order to improve performance in terms of public service delivery and responsiveness. Due to resource constraints it is not possible to implement all new management initiatives simultaneously. The change management process must adopt a phased approach based on clearly established priorities. The functional analysis enables the scheduling of tasks based on these priorities and on the resource allocation. It assists management in identifying alternative service providers who can undertake and/or support functions, in identifying opportunities for decentralisation and for outsourcing functions.

#### ***Optimise Resource Allocation***

The functional analysis allows the management to make informed decisions as how to optimise resource allocation as all functions and outputs are detailed in terms of activities and resource requirement – manpower as well as financial. The development of annual calendars allows management to establish an overall performance plan for specific functions and for the delivery of outputs. It enables management to optimise staff synergy at different organisational levels, and to organise and deliver functions in a more coherent and systematic manner.

#### ***Output Oriented Budgeting***

The budgets developed under the functional analysis are a consolidation of budgets for all functions, outputs and activities of the organisation. This approach is fully supporting the principles of Output Oriented Budgeting (OOB). As mentioned under Strategic Planning above, it is not possible to undertake all functions simultaneous and the management should adopt a phased approach. Hence, annual budgeting using the functional analysis constitutes an important management exercise in prioritising functions to be undertaken. The functional analysis is used as a basis for the preparation of annual plans and budgets for the organisation including for departments, divisions, and individual staff members. Key functions to be performed during a given year clearly dictate activities and resource

requirement and as such they provide important information for developing the budget for the organisation.

### ***Result Oriented Management***

The functional analysis defines for every output the activities and technical skills required as well as estimates the time required per staff category. This information facilitates the development of job descriptions and performance indicators for the staff and forms an integral part of the staff appraisal system. It enables management to assign staff in a more logic and systematic manner to functions. Once a staff member or a team of staff members has been assigned to a specific function, the functional analysis clearly indicates outputs to be delivered and activities to be undertaken. Identification of bottlenecks and problems is done more systematically, which allows management to respond faster. This approach to staff management enables the organisation to apply the modern management principle of Result Oriented Management (ROM). It forms the basis for developing HRD plans for the management and staff in a systematic and organised way.

## **2. An Overview**

<b>The Functional Analysis – An Overview</b>	
<b>Rationale</b>	<ul style="list-style-type: none"> <li>• Significant unexploited scope for improving public service delivery in LDCs through developing frameworks for improved organisational performance</li> <li>• Introduction of new roles, mandates and functions of public institutions in connection with decentralisation strategies, devolution of public services to the private sector, focus on demand driven service delivery etc.</li> </ul>
<b>Objective</b>	<ul style="list-style-type: none"> <li>• The efficiency and effectiveness of public service delivery improved in order to meet the demands of the clients in particular and the society at large</li> </ul>
<b>Outputs</b>	<ul style="list-style-type: none"> <li>• Status assessment report with clearly defined role, mandate and functions</li> <li>• Operational manuals for all units including detailed functional analysis, planning frameworks, job descriptions and performance indicators</li> <li>• Improved appreciation of functions and duties to be performed by management and staff through the participatory approach of the functional analysis methodology</li> <li>• Human Resources Management (HRM) systems, including staff appraisal system</li> <li>• Human Resources Development (HRD) programmes based on the needs identified during the functional analysis</li> <li>• Plans for improved organisational performance</li> </ul>
<b>Activities</b>	<ul style="list-style-type: none"> <li>• Status assessment of role, mandate and functions including stakeholder consultations, identification of outsourcing options and alternative service providers</li> <li>• Technical analysis of functions/outputs to be delivered, activities to be performed, work schedules, assumptions and performance indicators</li> <li>• Financial analysis of functions including establishment of manpower requirement and resources needed</li> <li>• Develop plans for improved organisational performance including strategies for service delivery, prioritisation of functions and output delivery, design of optimal structures and management systems, new procedures for effective manpower development and application</li> <li>• Design and implement management change programmes – developing new and improved ways of doing business, introduction of new management practices and attitudes, capacitating management and staff</li> </ul>

<b>Resources</b>	<ul style="list-style-type: none"> <li>• Internal Functional Analysis Core Team with representatives from all sections of the organisation to guide and manage the process</li> <li>• Internal Technical Committees established under the Core Team to undertake detailed technical and financial analyses of functions</li> <li>• External management and institutional development expertise with key inputs during status assessment, technical and financial analysis of functions, and in the development and implementation of plans for improved organisational performance</li> <li>• External technical expertise to support and guide the analytical phases and the change management processes</li> <li>• Secretarial assistance to document the process and the outcomes in order to facilitate utilisation and to institutionalise the process</li> <li>• Funds for workshops, seminars, retreats and documentation</li> </ul>
<b>Assumptions</b>	<ul style="list-style-type: none"> <li>• Political will - Minister level - to implement organisational change</li> <li>• Administrative will - Permanent Secretary level - to support the analytical process and to free organisational resources for the change management programmes</li> <li>• Active participation of management and staff</li> <li>• Supplemented by general civil service reform programmes</li> </ul>

### 3. The Process

The functional analysis is undertaken in four different phases using a participatory and consultative approach:

1. Status Assessment including identification of core functions, SWOT analysis, staffing and budget levels for the institution
2. Analysis of functions, definition of outputs, activities, critical assumptions, clients, priority levels, and alternative service providers
3. Establishment of resource requirement in terms of manpower and funds for direct costs associated with the delivery of outputs
4. Development of proposals for improved organisational performance

During the functional analysis process, guidelines and templates are developed to support each phase. They are applied by a Functional Analysis Core Team, which is a cross technical team designated by the organisation to undertake the analysis together with a team of external consultants. Planning staff and finance and administration staff are also using the guidelines. The guidelines serve as a reference point in case functions are added, modified, or deleted from the portfolio of the respective departments.

The functional analysis is undertaken using a participatory and consultative approach in order to enhance ownership of the process and to ensure the institutionalisation of the analysis in the organisation. In other words, the top management should see the functional analysis in the broader context of organisational development including the development of managerial skills and of new management processes, systems and procedures. The analysis is establishing a clear and well-documented picture of the financial and manpower requirements of the organisation. Throughout the process external consultants are available to assist in developing the approach and methodology, in training and guiding the process and to lead the process of developing plans for improved organisational performance.

The functional analysis at departmental level is the responsibility of the Core Team (CT). Members of the CT should include representatives from each department and from the Planning, the Finance and Administration sections as well as from each branch office - if applicable. However, in many cases the data collection, capturing, and initial analysis is done by the respective technical staff (technical committees established under the CT) under the supervision of the CT. The consolidation and analytical work is done at central level with the assistance of the consultants.

In order to ensure uniformity, and that data and information are captured in a systematic and structured manner a number of templates are developed and tested in collaboration with the external consultants. Each template is accompanied by a set of guidelines for the CT members.

An important element during the process is the thorough consultations with clients and other stakeholders. One objective of these consultations is to establish a clear understanding of roles and expectations of the different actors in the sector. Another objective is to ensure that systems and procedures developed adhere to Government policies and regulations and that manpower and funding requirements are within a framework that one reasonably can expect to be provided.

The four main steps of the functional analysis are summarised below.

#### Step 1: *Status Assessment*

A list of functions for each department is identified following review of the role and mandate of the organisation. The departmental resources (manpower and financial) and perceived strengths, weaknesses, opportunities and threats are identified as part of a SWOT analysis. This assessment provides an overall picture of functions, the available resources and the prevailing threats and opportunities to be addressed in meeting the new mandate. The status assessment is captured in templates. The identified functions are discussed internally in order to eliminate duplications of functions between different departments. They are also presented to external stakeholders in order to confirm their relevance and to ensure that duplication of efforts with other organisations, the universities, the private sector, and other service providers is minimised. To support this analysis the templates are designed to capture, for each function, alternative service providers and the scope for decentralisation and outsourcing.

#### Step 2: *Analysis of Functions*

This is divided into two phases – a technical and a financial phase. The technical phase defines the outputs for each function. For each output, the activities, indicators, assumptions, priority level, clients, and complementors are identified. The defined outputs and activities are discussed and reviewed with key clients. The analysis is captured in a template, which together with its guidelines will be developed after completion of Step 1.

The financial phase involves the establishment of the resource requirements (human and financial) for each output. The objective of the financial phase is to develop output oriented budgets (OOB). Templates and case studies for the budgeting exercise are developed on commencement of the financial analysis phase. The functional analysis introduces the concept of an annual calendar for the delivery of outputs, which is also captured in a template. The annual calendars can obviously be consolidated for functions, divisions, departments, etc. and as such constitute a powerful planning tool.

Finally, the technical and financial analyses are consolidated into an overview of the optimum manpower levels and financial requirements. Templates are used to consolidate the manpower

and financial requirements for each output by the respective departments. These templates also serve as instruments for analysing the resources gap discussed in Step 3 below.

A staff manual with detailed job descriptions and staff appraisal system is subsequently developed by the Human Resources Development Division together with the Personnel Unit in collaboration with the CT using the outcome of the functional analysis.

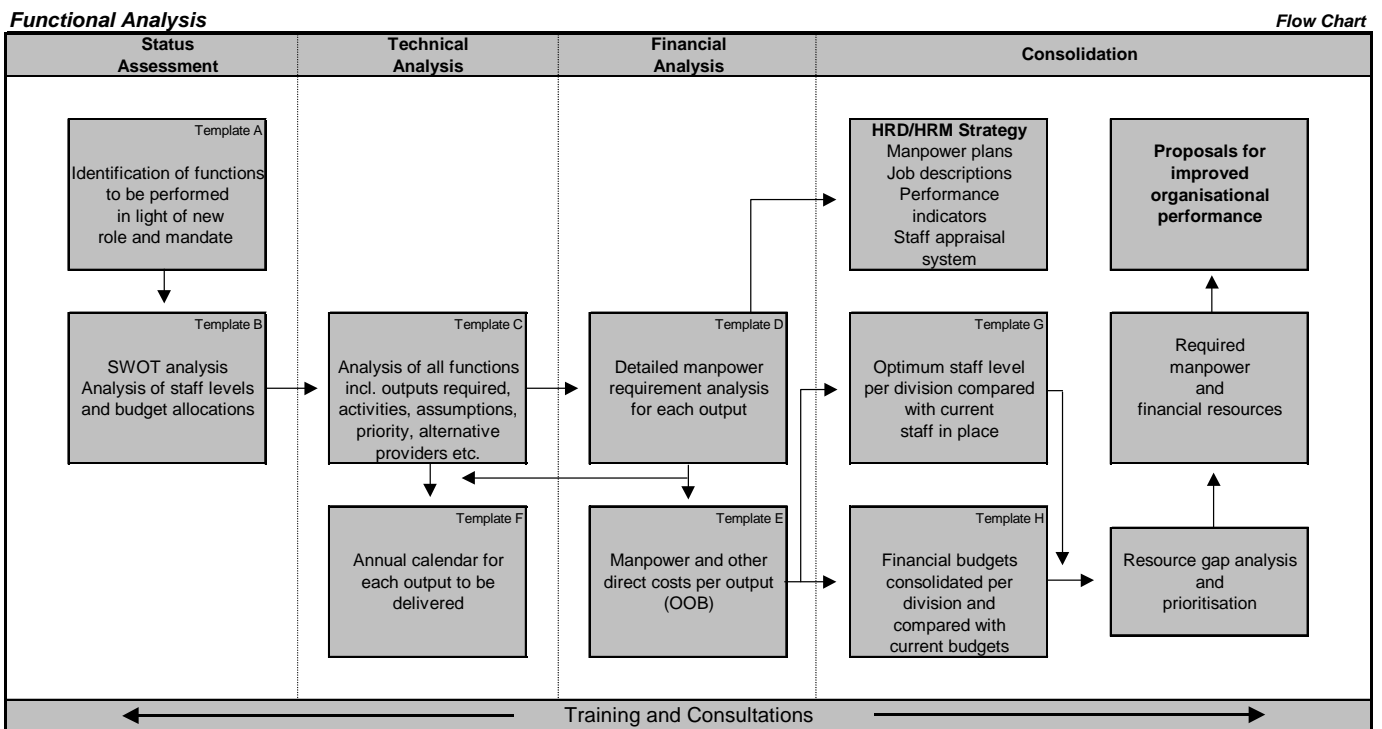
**Step 3: *Definition of resource gaps and prioritisation of functions.***

A comparison of available human and financial resources, as established during the status assessment, with requirements defined during the function analysis defines the resource gap. Functions are prioritised to establish the most important functions to be delivered given the resource constraints. This represents one of the most significant challenges to the management and is done carefully in close consultations with external stakeholders.

**Step 4: *Plans for improved organisational performance***

The functional analysis culminates in proposals for improving the organisational performance of the organisation. The proposals recommend the way it should be structured, organised, and resourced in order to enable it to efficiently and effectively carry out the most critical functions for the successful development of the sector given its role and mandate. A training needs assessment based on the functional analysis forms the basis for the organisation's HRD plans and strategies.

The flow chart presented below outlines the functional analysis process and shows how the different templates applied are interlocking.



#### 4. A Dynamic Management Tool

The functional analysis is a dynamic management tool and as such requires to be updated and revised at least on an annual basis in connection with the preparation of annual plans and budgets. During the year, it may also be found necessary to revisit parts of the functional analysis in cases such as:

- New functions are given to the organisation. This will necessitate that a complete set of templates (A-F) are developed for the function and included in the consolidated templates G and H. The resource envelope may have to be adjusted accordingly depending on the significance of the function.
- Functions are deleted from the portfolio. This will affect the consolidated templates G, H, and consequently also the resource envelop.
- The nature of a function is changed. The function of developing and establishing a specific service function, say developing a comprehensive database, is a good example to illustrate this type of changes to a function. Once the database has been developed and implemented, which is quite resource demanding, it will move into the maintenance mode, which is a very different operation. This will obviously affect activities to be performed and resources required. Consequently, the templates for the output should be adjusted (A-F) as well as the consolidated templates G and H. It will again also affect the resource envelop for the organisation.

The responsibility for updating and revising the functional analysis is resting with the respective Heads of Department, Divisions, and Units. However, it should be stressed that the Planning Unit has an overall responsibility for ensuring that it actually happens and that the quality of the revisions adhere to the agreed standards. This unit will also ensure that significant changes to the functional analysis are reflected in job descriptions and in the performance indicators. The Planning Unit will, furthermore be responsible for ensuring that changes to templates A-F are incorporated in the consolidated templates G and H, and as appropriate, that adjustments are made to the resource envelope of the organisation.

## **Annex A.1.9 - Water, Sanitation and Health**

*By Palle Lindgaard-Jørgensen*

### **1. Introduction**

Water supply, sanitation and health are closely related. Poor hygiene, inadequate quantities and quality of drinking water and lack of sanitation facilities or poor standard of inadequately maintained existing facilities cause millions of the world's people to die from preventable diseases each year. The poorest, and among these primarily women and children are the main victims.

Inadequate supply, sanitation and hygiene account for a large part of the burden of illness and death in developing countries and countries in transition.

- lack of clean water and sanitation is the second most important risk factor in terms of the global burden of disease, after malnutrition
- Approximately 4 billion cases of diarrhoea per year cause 2.2 million deaths, mostly among children under the age of five. These deaths represent almost 15% of all child deaths under the age of five in developing countries. The number is equivalent to 20 jumbo jets with children crashing every day.
- intestinal worms infect about 10% of the population of the developing world, and can lead to malnutrition, anaemia and retarded growth
- 6 million people are blind from trachoma and the population at risk is about 500 million
- 300 million people suffer from malaria
- Inadequate sanitation, hygiene and water results not only in more sickness and death, but also in higher health costs, lower worker productivity, lower school enrolment and the denial of people to live a life in dignity.
- Urban areas concentrate not only people and enterprises but also their wastes, and when infrastructure and services are lacking, urban areas are among the most life-threatening environments.

Water, sanitation and health are linked in many ways:

- Contaminated water that is consumed may result in water-borne diseases including viral hepatitis, typhoid, dysentery and other diseases that cause diarrhoea.
- Drinking water supplies that contain high amounts of certain chemicals (like arsenic, nitrates and pesticides) can cause serious disease.
- Without adequate quantities of water for personal hygiene, skin and eye infections can spread easily
- Diarrhoea is the most important public health problem affected by water and sanitation and can be waterborne and water-washed. Adequate quantities of safe water for consumption and its use to promote hygiene are complementary measures for protecting health.
- Water-based diseases and water-related vector-borne diseases can result from water supply projects (including dams and irrigation structures) that inadvertently provide habitats for mosquitoes and snails that are intermediate hosts of parasites that cause malaria, schistosomiasis, Japanese encephalitis etc.

### ***Many people are still without access to water and sanitation***

The percentage of people served with some form of improved water supply rose from 79% (4.1 billion) in 1990 to 82% (4.9 billion) in 2000. Over the same period the proportion of the world's population with access to sanitation increased from 55% (2.9 billion served) to 60% (3.6 billion). At the beginning

of 2000 one-sixth (1.1 billion people) of the world's population was without access to improved water supply and two-fifths lacked access to improved sanitation.

The majority of these people live in Asia and Africa, where less than one-half of all Asians have access to improved sanitation and two out of five Africans lack improved water supply.

Although an enormous number of additional people gained access to services between 1990 and 2000, with approximately 816 million gaining access to water supplies and 747 million additional people gaining access to sanitation facilities, because of population growth the number of people who lack access to water supply and sanitation services remained practically the same in 2000 as in 1990.

WHO and UNICEF in their Global Water Supply and Sanitation Assessment Report 2000 have used technology as an indicator for access to improved water supply and sanitation. Improved water supply technologies are considered to be: household connections, public standpipe, borehole, protected dug well, protected spring and rainwater collection. Improved sanitation is considered to be connection to public sewer, connection to septic systems, pour-flush latrine, simple pit latrine and ventilated improved pit latrine.

## **2. The curative approach and its limitations**

The health sector is under pressure to control many of the water associated diseases. For a number of diseases, prevention through vaccination campaigns is not an option, simply because a vaccine does not exist. Insecticide use for transmission interruption of vector-borne diseases become increasingly less effective because of the development of resistance in the important vector species, while international regulation of Persistent organic Pollutants (POPs) are also limiting the use in some cases. Curative approaches are often undermined by resistance in bacteria and some parasites, and even where effective tools are still available, they are often out of reach for the poor.

Water can be polluted by the use of pesticides and excess fertiliser in agriculture. Industry is a source of pollutants in groundwater and surface-water and improper waste and wastewater management can lead to the dissemination in the environment of contaminants that threaten human health. The solutions of health problems and disease caused by such pollutants lie outside the direct control of the health sector, in sectors concerned with environment, water and sanitation, agriculture and finance.

## **3. The preventive approach**

### ***Health improvements through improved access to water, sanitation and hygiene***

There is evidence that provision of adequate sanitation services, safe water supply, and hygiene education represents an effective health intervention that reduces the mortality caused by diarrhoea by an average of 65% and the related morbidity by 26%.

Sanitation facilities prevent human faecal contamination of water and soil. There is evidence that sanitation is at least as effective in preventing disease as improved water supply.

While adequate quantities of safe water and sanitation facilities are necessary conditions for healthy living, their impact depends on how they are used. Hand washing, safe disposal of faeces and safe water handling and storage are three hygiene behaviours that greatly benefit the impact of investments made in water supply and sanitation facilities.

### ***Health improvement through improved water resources management***

Management decisions on water resources and water services will all potentially have an impact on human health, yet they are made by different actors in many different public sectors as well as in the private sector often with little awareness of the implications. In many countries, institutional arrangements and other mechanisms for intersectoral co-ordination are rudimentary at best. As a result, considerable opportunities are lost to protect and promote health in the management process.

Integrated water resources management (IWRM) is a process, which promotes the co-ordinated development and management of water. The process focuses on developing appropriate policies, strategies and legislation, putting in place the institutional framework for implementation and setting up the management structures required by these institutions to do their job. An IWRM process has a real potential to integrate health concerns into water resources management, securing intersectoral co-ordination and establishment of relevant management instruments.

Water resource development programmes and projects offer a range of options for water management practices that will contribute to a reduction of risks to human health. The earliest possible opportunity in the planning of water resource development needs to be seized to initiate a process of some form of health impact assessment.

### ***Health improvements through improved environmental management***

Even if good infrastructure for water and sanitation exist and water resources is ample, lack of pollution control measures may result in bad water quality and impacts on people's health. Pollution control sources like industries, improved waste management (both domestic and hazardous) and treatment of wastewater are all measures needed to improve quality of groundwater and surface water with a good impact primarily in the urban areas. Good agricultural practices can reduce the use of fertilisers and pesticides and improve groundwater quality of rural water supplies and in catchments for urban water supplies.

### ***Health improvements through improved environmental health services***

The health sector structure is made up of a well-defined core of health service delivery institution. In the margin of these services environmental health services reside. These services tend to be characterised by a lack of functional programme structure, poor career opportunities and a general lack of resources. Yet the functions of environmental health services are of great health importance in relation to the regulation of environmental and social health risk factors. A number of these relate to water resources, water supply and water management. Strengthening of these services in the health sector can improve health impacts originating from water through actions like:

- The identification and definition of essential environmental health functions, combining some of the traditional functions, such as those related to drinking water supply and sanitation, with new functions, such as those related to health-impact assessment of water resources development.
- the readjustment of the balance between operational functions and regulatory functions, to ensure that sectors responsible for water resource development and management decisions are accountable, within existing health legislation, for adverse health impacts of their actions
- Maintaining intersectoral co-ordination and co-operation between the health sector core (epidemiological surveillance and health service delivery) and those responsible for water resource development and management in other sectors.
- Regular economic evaluation of the hidden costs transferred to the health sector because of water resource development that does not consider health issues and cost-effectiveness analyses of water supply and management intervention in comparison with conventional health sector ones.

## Annex 2

### List of Abbreviations

CBO	Community Based Organisation
CD	Capacity Development
CDE	Capacity Development in Environment
CSR	Civil Service Reform
DANCEE	Danish Co-operation for Environment in Eastern Europe
DFID	Department for International Development (UK)
DUCED I&UA	Danish University Consortium on Environment and Development – Industry and Urban Areas
DUCED SLUSE	Danish University Consortium on Environment and Development – Sustainable Land Use and Natural Resource Management
EC	European Commission
ENRECA	Enhanced Research Capacity Programme
FAO	Food and Agricultural Organization
HRD	Human Resource Development
IIED	International Institute for Environment and Development
IWRM	Integrated water resources management
LDC	Least Developed Countries
LFA	Logical Framework Approach
LGSP	Local Government Support Programme
MDG	Millennium Development Goal
MIFRESTA	Danish acronym for the Danish Environment, Peace and Stability Facility
NGO	Non-Governmental Organisation
NSDS	National Sustainable Development Strategy
OECD	Organization for Economic Co-operation and Development
PIP	Pilot Investment Programme
POP	Persistent organic Pollutants
PRSP	Poverty Reduction Strategy Paper
RTSD	Rural Towns Development Study
SCP	Sustainable Cities Programme
SME	Small and Medium Enterprises
SWOT	Strengths, Weaknesses, Opportunities and Threats
UASU	Urban Authorities Support Unit
UEM	Urban Environmental Management
UNDP	United Nations Development Programme
UPF	Urban and Peri-urban Forestry
WHO	World Health Organization

### Annex 3

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