

Using and Maintaining Environmental Management Information System (EMIS) for Better Urban Planning and Management

The Challenge

Information is crucial to any planning and management activity, but unfortunately, information about a city is often scattered in different institutions. In addition, individuals and institutions are often unwilling to share their information in fear of losing ownership. Thus, decisions about priority investments are often based on fragmented information and therefore sometimes do not succeed.

The Response

An Environmental Management Information System (EMIS) helps solving these problems. As a participatory information system, it manages the collective know-how of different stakeholders and institutions in a city. Generally speaking, the EMIS covers the gathering of all relevant information for the Environmental Planning and Management (EPM) Process.

Introduction of EMIS - Applications in SCP/LA21 cities

In the first part of the session Karin Buhren UN-HABITAT, gave an overview of EMIS as a tool for Environmental Planning and Management (EPM). GIS is used more and more for urban planning and management, replacing cadastres on paper, helping to manage infrastructure, organising public transport and providing the necessary data for citywide development plans. An EMIS is a system for managing spatial information in the environmental planning and management, focusing on the inter-linkages between environmental resources and development activities in a city. EMIS collects information about the various environmental issues facing the city, supports the issue-specific working group process in strategy formulation and action planning, including the mapping, and last but not least covers the gathering of information necessary for institutionalization of the EPM process.

EMIS as a tool for EPM was tested from 1997 onwards and a handbook was published in 2000 drawing from this experience. It is now used in more than 20 cities worldwide.

Six short examples illustrate the wide range of use: In Shenyang, China, a map was produced to identify polluters and hotspots for better Air Quality management. Pollution of the river system through various urban activities was illustrated with a map in Nairobi, Kenya. Bayamo, Cuba, used EMIS to identify under-serviced areas by public transport and propose new tracks. In Dar es Salaam, the results of the different issue-specific working groups were combined, analysed and a Strategic Urban Development Planning Framework (SUDPF) developed to guide the city's management. The MILES Project in Sri Lanka introduced a map server which allows the projects to publish their maps in the internet. Lusaka City Council is using their system to provide politicians with background information on plots affected by pending decisions, making them more transparent.

The examples show that an EMIS can be operational quite fast, but its full impact will only be reached after some years of consistently collecting information. Institutionalisation is crucial for mainstreaming EMIS into an urban management tool. The focus lies on updating the information, maintaining the users' skills, making the system routine and monitor the impact of EMIS. This

Report

EMIS Fair – Thematic session, Wednesday morning

means it is crucial that the system receives ongoing support in the form of necessary resources (funding, staffing, etc.) and 'political' backing.

The participants of the session gave their feedback on what in their opinion are the biggest difficulties in mainstreaming EMIS.

Difficulties, limitations in mainstreaming EMIS	#
Qualified personnel	8
Funds for maintaining/ updating hardware and software	6
Funds for purchasing data and satellite images	1
Using EMIS in day to day practice	2
Linking technical tool with participatory approach	4
Lobbying, convince politicians	3

b) Presentation and Discussion about maintaining EMIS

In the second part of the session Fahmy Ismail, Sri Lanka, Ana Mkusa Tesha, Dar es Salaam, Tanzania and Saul Peña Céspedes, Bayamo, Cuba presented and discussed their experience in using and maintaining EMIS. In three separate rounds each of them gave an introduction to their project, analyzed challenges they faced and gave their final comment about the tool.

In Sri Lanka EMIS is used in several municipalities. When they started, they realized the advantages for identifying hot spots and areas of intervention e.g. areas highly affected by Dengue fever, so that they could concentrate action there. Main challenges are seen in human resources (staff members are not working full-time; skills transfer still in progress), lack of equipment and lack of satellite images. To overcome these challenges a well-equipped EMIS unit is established at the Sri Lanka Institute of Local Governance (SLILG), which will be providing maps and training to the municipalities.

Dar es Salaam is using EMIS since 10 years; nowadays to support the council's decision making in implementing various programs and projects, to identify and tax land property and to land use planning and zoning. Their challenges are the low level of awareness among technical staff and the general community on the importance and use of EMIS as well as the shortage of resources to put in place and maintain the software and hardware for EMIS.

In Bayamo, Cuba, they started in 2002 with installing the equipment for EMIS. The system developed satisfactorily in parallel with the project phases providing the necessary inputs for the process with maps, posters and presentations. To overcome challenges they faced, they undertook various awareness conferences with other departments in the city and started now with a broad and in-depth training on GIS and EMIS for the planning department. Though the initial costs for EMIS are high and it also takes a lot of time and costs to actualize the data, it is an important tool for the city as it provides information of higher quality for decision making.