Abstracts in this Session

**Adaptive Planning Policy Dynamic Simulation in Urban Planning**
Dr. Elisabete Silva, University of Cambridge, Dep. Land Economy, Cambridge, UK

**Abstract text:** This paper links theory of planning, planning support systems and dynamic modelling in order to build the argument that new planning policy requires adaptive planning and models that go beyond snapshots of analysis and scenarios. This move towards adaptive planning policy requires dynamic models that produce multiple simulation scenarios though time, that engage the public and the decision maker in the production of such results. By doing so, it requires a new practice of spatial planning, it questions the idea of certainty, and the legal and institutional framework of current planning as well the production of spatial plans. Ultimately it produces advances in a new planning theory that brings together systems theory, participation/communicative planning and the advocacy of planning and contributes to the body of literature on Complexity and Adaptive Planning Theory and Policy. This presentation will detail multiple pilot and fully operational dynamic simulation models and discusses the importance and usage of the produced model results.

**Decision Support Systems in Urban Planning Evaluating GIS in Municipalities**
Dr. Rania Qutieshat, Balqa Applied University, Amman, Jordan

**Abstract text:** Control over development is critical for better urban design not only for existing area but also for the future. Ever increasing demand for development control with few resources has resulted in the emergence of new techniques & technologies. Geographic Information Systems (GIS) is one of the technologies to better control and manage the existing development from local to global level. GIS is the best example of information technology, which captures, manipulates, processes and displays multi source and voluminous geo-referenced data. Within the last 30 years this technology has encompassed the science and technology of remote sensing, cartography, surveying, geodesy, photogrammetry and geography. The integration of GIS could be intra- or inter-organizational. When inter-organizational integration is required, i.e. when different organizations are sharing the same GIS data, the interoperability between various software data formats becomes a major issue to be tackled. Along with these, the system security, scalability, modularity and the capability to adapt to increasing demands of the users are all major topics of concern to the field of GIS technology.

Rate of urbanism growth in Jordan as well as in the entire world is very high. Because of fast growing population, size of main cities especially Amman; becomes doubled in almost 20 years. Public bodies are responsible to control and manage this rapid development with limited resources, which necessitates the application of new practice and technology for development control. Geographic Information Technology (GIS) is such a leading emerging tool, which can perform an active role in development control.

It is the ability of a GIS to reference and describe objects by a location that distinguishes it from traditional database and spread sheets. "Planning intelligence," is one of the major and most time-consuming planning functions. GIS technology has been found applicable to a number of planning tasks: zoning; land use, transportation, and economic development planning; site selection; and land suitability analysis. In spite of the cost of GIS acquisition by municipalities and local governments, particularly planning departments, is widespread. The proliferation testifies to the optimistic belief in this new technology's capabilities and prospective benefits GIS technology beside its common jobs could help with managerial tasks, policy design, decision-making, and communication with the public.

**Learning Objective 1:** The aim of the study is defined as: "Build up the knowledge base on the most relevant research and development activities in the field of the application, use and impact of GIS, particularly in Amman municipality"
The motive for studying the use of GIS in municipalities in developing countries originated from one of the focus areas of the socio-Urban Sciences Division, i.e. "Institutional Dimensions of Geo-Information Technology", to encompass such aspects as the role of GIS in decentralized planning; The subject of this study links to the role of GIS in Municipalities.

**Learning Objective 2:** One of the objectives of this study is to make a structured overview of the actual experiences on the use of GIS in municipalities.

**Case Studies:** The study aims to examine the effectiveness of using GIS in urban municipalities planning. GIS effectiveness is considered in two realms: (a) improvements in the quality and quantity of planning-related data (operational effectiveness); and (b) facilitation of planning-related decision making (decision-making effectiveness).

Amman municipality will be taken as a main case study area.

**Research:** There is a considerable amount of information about the implementation process of GIS both in developed countries and in developing countries. There are methodologies and strategies developed for the implementation process. However, the use and institutionalization of GIS in organizations, like Municipalities, has received much less attention. Also information on different ways of executing evaluations studies can be found. Nedovic-Budic (1998) distinguishes categories in the field of evaluation studies on Information Systems. Also Calkins and Obermeyer (1991) have made classification for surveying the use and value of geographical information. Few systematic studies have been carried out on the diffusion of GIS and the field was largely characterized by personal accounts of individual experiences or by partial studies with no comparable methodology.

**Focal area of the study**

The intersection of the following three fields defines the focus of this study:

- Institutional GIS
- Municipality Units
- Urban development planning

**Skills:** One conclusion is expected from this study is that a few organization or persons are specifically engaged in the subject of evaluating the use of GIS in Municipalities in developing countries. Evaluation is understood as the search for the factors that can stimulate or hamper a successful use of GIS within the organization of the local Municipalities units. It can be concluded that there is a need for evaluating the use of GIS in local Municipalities units in a more structural way. As the field of "GIS in Municipalities in developing countries" is a fast growing field, there is a need to gather all the experiences and to take advantage of this by concluding some general "lessons to learn".

Furthermore, for a proper understanding of the real life situation it is important not to focus on GIS in local Municipalities only but rather on how GIS can contribute to make the organization function better. GIS should not be seen as ’just a program with which one can make nice maps’ but GIS should be an integral part of the whole information system of an organization. GIS should be seen as supporting ’service’ for increasing the accessibility and exchange of information within the organization but surely also to the ’customers’ of the organizations (citizens in the case of the Municipalities. The outcomes of such a study can contribute to the work of the consultants as well, as they know about experiences in this field.

**Outline:** Section 1 will interface the study problems and its objectives, hypothesis; methodology
Section 2 will discuss the need for the evaluation of GIS use in municipality mainly in developing countries. This section will be based partly on communication with key persons. Section 3 will investigate the second and third aims by given an overview of all the information that was found. Based on the available case studies and some general articles a number of lessons - that can be drawn from the adoption of GIS in municipalities particularly in developing countries - will be briefly described. In section 4 it will pay attention to the case study area - Amman city and its Municipality as a rabidly urban developing capital exploring its experiment in GIS Systems. In section 5 there will be an evaluation to this experiment from deference aspects, and finally there will be results for this study and some recommendations on this subject and the maintaining of the database.