Urban and regional planning and the interface with environmental management and transportation planning

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A vision without a plan is just a dream. A plan without a vision is just drudgery. But a vision with a plan can change the world. — Proverb

1 Introduction

Urban and regional planning (also referred to as spatial planning for the purposes of this lecture) and its interface with environmental management and transportation planning form the focal point in attaining sustainable development. The principle of sustainable development is not a new phenomenon. Many role-players have realized that there is a delicate balance between environment, human, economic, institutional, spatial and transportation planning and development. This balance is however negatively being impacted upon, due to the collapse of this relationship. This results in impacts such as ecological degradation and widening of development inequality. This also implies spatial in-efficiency and conflicts in planning and development priorities.

- Transformation in the spatial planning reality

With democratisation in South Africa in 1994 the new government inherited a segregated and fragmented spatial system guided by an evenly ineffective policy and legislative framework. The transformation of this framework, notwithstanding several authors referring to the spatial fragmentation consequences of its application by previous political dispensations within the national, provincial and local spatial systems, started out with the Draft Green Paper on Development and Planning prepared by the National Development and Planning Commission in 1999.

The spatial planning and the institutional context before 1994 can be described in terms the following periods that are mainly politically event focused:

- 1910 to 1930, spread of the British planning influence;
- 1930s, Second World War and the post-war reconstruction efforts;
- The post-1948 era and grand apartheid;
- The period following the SOWETO uprising in 1976;
- Post-1985 late apartheid reforms.

The development implications of the historical spatial planning and development practices in South Africa have been well documented by various researchers including Dewar, Todes and Watson (1984 and 1985), Tomlinson (1990), Swilling (1991), Mabin and Smit (1997), Planact (1997), Tilman and Wall (1997), Dewar and Todeschini (1999), CSIR (2000), White Paper on Spatial Planning and Land Use Management (2001 to 2007), Spatial Development Perspective (2003 and 2006) and the Final Draft of the Land Use Management Bill (2008).

For the purposes of this lecture spatial development in South Africa can be subdivided in the following phases:

- Phase 1: The urban and rural formation phase (1652 to 1948).
- Phase 2: The urban and rural separation (fragmentation) phase (1948 to 1994).
- Phase 3: The urban re-integration phase and rural development (post 1994).

Of significance in the transformation process related to spatial planning and development was the promulgation of the first new set of democratic laws that served as the pivotal point to restructure the characteristics of spatial planning in South Africa namely the Development Facilitation Act (67 of 1995). Refer also to the Constitution of South Africa (1996).

Eventually the spatial planning scene changed significantly with the promulgation of the Municipal Structures Act (117 of 1998) and the Municipal Systems Act (32 of 2000). This development resulted in the formulation of Integrated Development Plans (IDPs) for all institutional entities within the municipal sphere of government.

- Transformation in environmental management reality

South Africa was slow to develop and implement formal procedures for environmental assessment. It was only with the enactment of the Environment Conservation Act (ECA) (Act 73 of 1989) that provision was made to determine environmental policy to guide decision-making and to prepare environmental impact reports (Sowman *et al*., 1995). The publication of a document entitled Integrated Environmental Management (IEM) in South Africa (Council for the Environment, 1989) marked the introduction of the concept of environmental management in South Africa. The term IEM was chosen to indicate a general approach that integrates environmental considerations across all stages of the planning and development cycle and would be applicable to policies, programmes, plans and projects (Sowman *et al*., 1995).

Environmental management is a field that is rapidly growing in importance as a discipline on its own. It is "*the process of administering, supervising or handling the environment in order to achieve a desired outcome"* (Fuggle & Rabie, 1999).

The evolution of integrated environmental management (IEM) in South Africa was based on international experience and development in environmental policy and the application of environmental assessment techniques and the application of environmental assessment and management tools. IEM provided a "new way" of thinking from an environmental perspective in that it *"provides a holistic framework that can be embraced by all sectors of society for the assessment and management of environmental impacts and aspect associated with each stage of the activity life cycle, taking into consideration a broad definition of environment and with the overall aim of promoting sustainable development"* (DEAT, 2004)

The publication of the National Environmental Management Act (NEMA) (Act 107 of 1998) introduced new approach to and role of environment in development. NEMA provides the framework for co-operative environmental governance in South Africa and promotes the application of environmental assessment and management tools to ensure integrated environmental management of activities (DEAT, 2004). The intention of NEMA was formalized through publication of the EIA Regulations (2006). On 3 August, 2010 the revised NEMA EIA Regulations (Government Notices R.543 to R. 547, June, 2010) were promulgated that includes chances in the process, procedure and listing of activities.

- Transformation in transportation planning reality

Transport planning in South Africa became a statutory planning activity with the enactment of the Urban Transportation Act (Act 78 of 1977). Transport planning, development and management were guided by the National Land Transport Transition Act (Act 22 of 2000) up to 2009 when the National Land Transport Act (Act 5 of 2009) and its Regulations (2009) were promulgated. In this context various policy documents underpinned this transformation process: White Paper on National Transport Policy (1996); Moving South Africa (Vision 2020) (1999); Rural Transport Strategy for South Africa (2003); and the National Transport Master Plan 2050 (NATMAP 2050) (2006 -2010) (in process of formulation).

Based on the reality as summarized above problems and challenges related to the interface between spatial, environmental and transportation planning processes in South Africa is a well known area of debate. Practitioners in these disciplines within the public and private sectors have interpreted the interface for different reasons in various ways. The evolution over the past decade of policy and legislative frameworks (as indicated above) directing these processes did not necessarily promote a common understanding the interface between the processes involved.

The purpose of this lecture is to discuss the interface between spatial planning, environmental management and transportation planning from a policy, legislative, process, educational and research perspective. The interface between these disciplines and how it is aligned from a theoretical, training and professional practice point of view is of core importance in understanding the supportive functioning of these professions and its role in attaining and promoting sustainable development.

2 The domain of urban and regional planning from an integration perspective

Universally spatial planning (encompassing urban and regional planning) entails the consideration of what can and should happen where in spatial systems. It includes the investigation and interaction of different policies and practices across regional space, and sets the role of places and various other practitioners in a wider context. It goes well beyond 'traditional' land-use planning and includes a strategic framework (forward planning) to guide future development and policy interventions, whether or not these relate to formal land-use planning management and control (Wales Spatial Plan, 2004).

Pinson (2007:1) states that urban and regional planning is a notion that encompasses a set of social activities aimed at anticipating, representing and regulating the development of an urban or a regional area. It includes intellectual activities of study and prospective, of social and economic forecasting with more concrete activities such as infrastructure programming, land reservation and land use regulation. Pinson further concludes that planning operates at different scales: neighborhood, city or region. Litman (2010:3) points out that *"Planning refers to the process of deciding what to do and how to do it. Planning occurs at many levels, from day-to-day decisions made by individuals and families, to complex decisions made by businesses and governments".*

In broadest terms the Canadian Encyclopedia (2010) describes urban and regional planning as the process by which communities attempt to control and/or design change and development in their physical environments. It has been practiced under many names: town planning; city planning; community planning; land-use planning and physical environmental planning. The following core elements should be noted:

- The object of planning is the "physical environment" which implies land and all its uses.
- It includes everything that has tangible existence on or beneath the land surface.
- Planning also includes the manner and style by which buildings are laid out in a city, and the design of public places.
- Physical environments are partly natural and partly man-made.
- A sustainable man-made or "built" environment is the ultimate goal of planning, but relations between natural and built environments, and interactions between people and their environments, are of vital concern.
- Human activities can have negative impacts upon the natural environment, just as certain natural conditions are hazardous to human well-being.
- Planners are equally concerned to protect natural environments from the adverse effects of human use (e.g., water pollution), and to protect people from "risk" environments (e.g., flood zones).
- To plan the physical or spatial environment means to impose some deliberate order upon it, with the aim of achieving a desired standard of environmental quality and sustainability.
- Environmental quality is the heart of planning practice, although there is no universal agreement about the characteristics of a "good" or well-ordered environment.
- Different cultures have tended to value environmental qualities differently and to organize their environments and more specifically the meaning of sustainability in different ways.

Urban and regional planning thus aims to make the natural environment a better place for human inhabitants. It involves identifying land for new development, conserving historic buildings, facilitating community regeneration, protecting the countryside, promoting innovative forms of transportation and creating attractive public spaces and places. Planning attempts to accommodate the complex ways in which society and localities change yet at the same time ensure that there is equal access to homes, work, school, shopping and leisure activities. Urban planners develop an understanding of the built and natural environments and they possess the skills needed to tackle a range of challenging issues such as urban regeneration, regional and community economic development, rural enterprise and landscape improvement (University of Dundee, 2008).

Litman (2010) states that planning is a noble but underappreciated profession. Planner's assists communities to create their preferred future – good planning makes progress towards paradise while bad planning leaves a legacy of problems and disputes. He further points out that planners perform civilization's heavy lifting by anticipating and resolving community conflicts. Good planning requires special skills and perspectives:

- Most people prefer to ignore problems until they become unavoidable. Planners are *professional worriers* who seek out potential problems so they can be mitigated.
- Most people look at a problem from a single perspective. Planners are responsible for considering *multiple perspectives*; they ask "what is best for everybody overall?"
- Most people prefer simple problems and solutions. Planners learn to *appreciate complexity*, and search for *deeper meanings* and *underlying causes*. Planners learn to work with uncertainty and ambiguity. Most people consider compromise a sign of weakness and failure. Planners are *passionate about compromise* because it resolves conflicts and often leads to better solutions.
- Most people prefer to consider one issue at a time. Planners apply *integrated analysis*, so individual, short-term decisions are consistent with multiple, long-term goals (Litman, 2010:2).

Regional land use patterns are the result of both regional spatial strategies and urban planning policies at the local level, in addition to sectoral policies related to transport, infrastructures, economy, etc. and the regional cultural heritage (Oxford, 2008:3). The American Planning Association (2010) describes professional planning as follows:

- Professional planners help create a broad vision for the community.
- Planners research, design, and develop programs; lead public processes; effect social change; perform technical analyses; manage; and educate.
- Some planners focus on just some of these roles, such as transportation planning, but most will work at many kinds of planning throughout their careers.
- The basic element is the creation of a plan.
- Planners develop a plan through analysis of data and identification of goals for the community or the project.
- Planners help the community and its various groups identify their goals and form a particular vision.
- In the creation of a plan, planners identify the strategies by which the community can reach its goals and vision.

- Planners are also responsible for the implementation or enforcement of many of the strategies, often coordinating the work of many groups of people. It is important to recognize that a plan can take a variety of forms including: policy recommendations, community action plans, comprehensive plans, neighborhood plans, regulatory and incentive strategies, or historic preservation plans.
- Other examples of plans include: redevelopment plans, smart growth strategies, economic development strategic plans, site plans, and disaster preparedness plans.

The role of South African planners is being described by South African Council of Planners (SACPLAN), South African Association of Consulting Professional Planners (SAACPP) and South African Planning Institute (SAPI) (2010) as follows:

- Development of long- and short-term plans to use land for the growth and revitalization of urban, suburban, and rural communities, and support local officials to make decisions concerning social, economic, and environmental problems.
- Urban and regional planners are also referred to as community, regional, or city planners.
- Promote the best use of a community's land and resources for residential, commercial, institutional, and recreational purposes.
- May be involved in various other activities, including making decisions relating to establishing alternative public transportation systems, developing resources, and protecting ecologically sensitive regions.
- Urban and regional planners address issues such as traffic congestion, air pollution, and the effects of growth and change on a community.
- Formulate plans relating to the construction of new school buildings, public housing, or other kinds of infrastructure.
- Some is involved in environmental issues ranging from pollution control to wetland preservation, forest conservation, and the location of new landfills.
- May also be involved in drafting legislation on environmental, social, and economic issues, such as sheltering the homeless, planning a new park, or meeting the demand for new correctional facilities.
- Examine proposed community facilities, such as schools, to be sure that these facilities will meet the changing demands over time.
- Keep abreast of economic and legal issues involved in zoning codes, building codes, and environmental regulations.
- Ensure that builders and developers follow these codes and regulations.
- Deal with land-use issues created by population movements. For example, as suburban growth and economic development create more new jobs outside cities, the need for public transportation that enables workers to get to those jobs increases.
- In response develop transportation models and explain their details to planning boards and the general public.
- Before preparing plans for community development report on the current use of land for residential, business, and community purposes.
- Reports include information on the location and capacity of streets, highways, airports, water and sewer lines, schools, libraries, and cultural and recreational sites.
- Provide data on the types of industries in the community, the characteristics of the population, and employment and economic trends. Using this information, along with input from citizens' advisory committees, design the layout of land uses for buildings and other facilities, such as subway lines and stations.

- Prepare reports showing how their programs can be carried out and what they will cost.
- Use computers to record and analyze information and to prepare reports and recommendations for government executives and others. Computer databases, spreadsheets, and analytical techniques are utilized to project program costs and forecast future trends in employment, housing, transportation, or population.
- Computerized geographic information systems enable planners to map land areas, to overlay maps with geographic variables such as population density, and to combine or manipulate geographic information to produce alternative plans for land use or development.
- Urban and regional planners often confer with land developers, civic leaders, and public officials and may function as mediators in community disputes, presenting alternatives that are acceptable to opposing parties.
- Prepare material for community relations programs, speak at civic meetings, and appear before legislative committees and elected officials to explain and defend their proposals.
- In large organizations, planners usually specialize in a single area, such as transportation, demography, housing, historic preservation, urban design, environmental and regulatory issues, or economic development.
- In small organizations, planners do various kinds of planning.

Table 1 shows a classification of the core focuses for planners based on the international and national norms applicable. The domain for urban and regional planners can, based on the literature study above, be grouped as follows: spatial planning; urban planning; policy and strategy formulation; land-use management; involvement in the built environment; land availability; transportation planning; involvement in environmental management; socio-economic and spatial development; facilitation and communication; human settlement development; rural development; feasibility studies; implementation; project management; and management and analysis through application of support systems (GIS).

Table 1: Core professional planning focuses based on classification of the norms for the domain internationally and nationally

Core professional planning focus	Domain as interpreted internationally and nationally
Spatial planning	Planning systems; practices in regional space; role of places; strategic frameworks; forward planning; scale of regional planning; development in physical environment; spatial plan formulation; impact of migration; regional spatial planning needs; regional corridor and nodal development.
Urban planning	Role of places; anticipating development; scale of urban planning; surface and beneath surface development; urban development; urban regeneration and development; urban design; site planning; urban spatial planning needs; neighborhood development; urban corridor and activity node development; urban renewal.
Policy and strategy formulation	Interaction of policies; policy interventions; multi-perspective approaches; disaster preparedness plans; input in drafting of policy and legislation.
Land use management	Land use planning; land use management and control; regulating development; control of land use; management of change in land use; legal issues related to land use and building codes; legal issues related to environmental regulations.
Built environment	Style of buildings; design of public spaces; conservation of historic buildings; development of public spaces and places; location, design and layout of buildings.
Land availability	Land reservation; identification of land for development.
Transportation planning	Innovative forms of transport; accessibility between places of residence, work and amenities; traffic congestion management; air pollution management; transport and land use models; transportation frameworks.
Environmental management	Relationship between built and environment; negative impacts on natural environment; natural impacts on communities; protection of natural environments; standard of environmental quality; environmental sustainability; landscape development; legal issues related to environmental management.
Socio-economic and spatial development	Social and economic status quo and forecasting; community regeneration; regional and economic development; rural enterprise; sectoral policies; planning research; technical analysis; smart growth strategies; economic development plans; development of resources; socio economic profiles.
Facilitation and communication	Compromise formulation; lead public consultation processes; education, training and capacity building; identification of community needs; community goals and vision compilation; development consultation; public address, meeting and facilitation.
Human settlement development	Housing development; housing strategies.
Rural development	Community development; area based planning.
Feasibility studies	Appreciation of spatial complexities; deeper underlying causes; integrated analysis.
Implementation	Infrastructure needs; infrastructure programming; general management; needs prioritization; implementation and enforcement strategies; determination of infrastructure and amenities capacity.
Project management	Management of programmes for planning and implementation; quality management.
Management and analysis support systems	GIS applications and techniques; modeling; systems analysis.

Source: Own construction (2010)

3 Planning education and its interface within the academic and research environment

The Subject Group for Urban and Regional Planning (as it is known today) was established in 1962 as a Department within the Faculty of Arts. In 1996 with the restructuring of the then Potchefstroom University for CHE the Department was transformed into a Subject Group and was located within the newly established School for Environmental Sciences and Development in the Faculty of Natural Sciences. Since 2004 the Potchefstroom University for CHE was incorporated into the North West University consisting of three campuses including the Potchefstroom Campus, Mafikeng Campus (previously known as the University of North West) and the Vaal Triangle Campus (Vanderbijlpark).

- Faculty of Natural Sciences

Figure 1 shows the organizational structure for the School for Environmental Sciences and Development within the Faculty of Natural Sciences indicating the positioning of the Subject Group for Urban and Regional Planning.

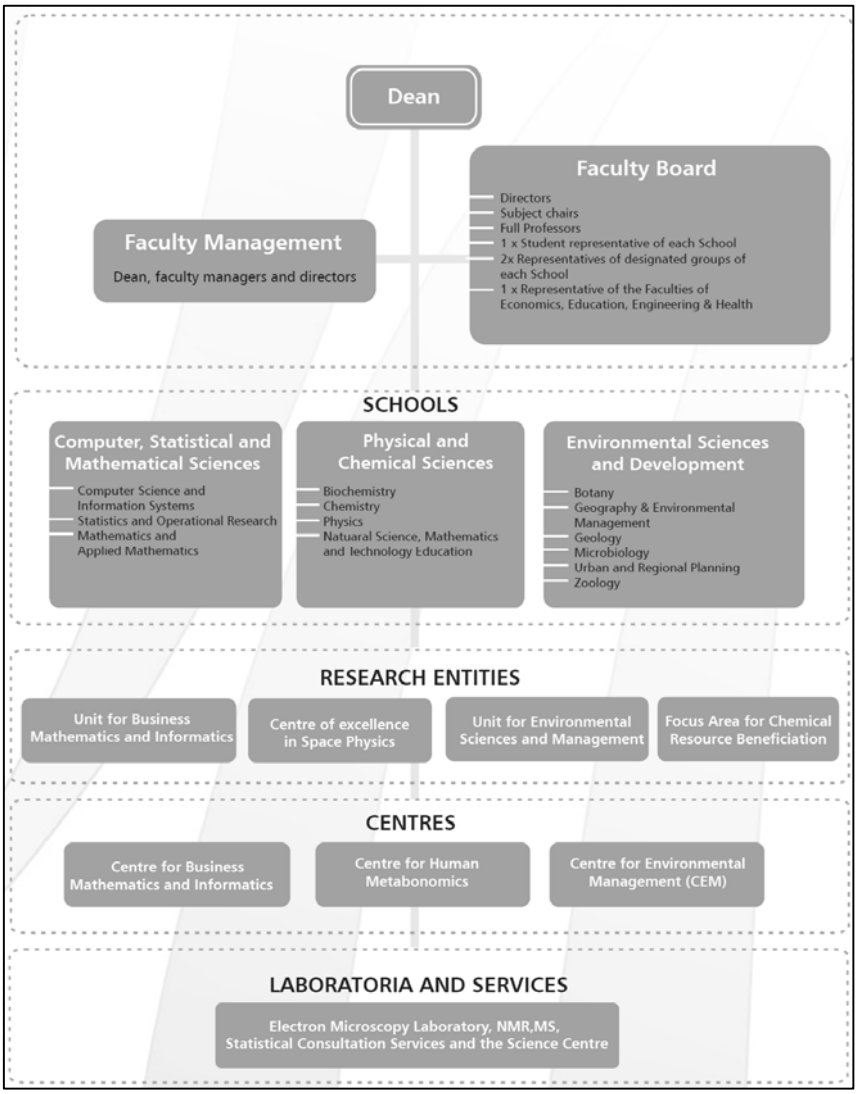

Figure 1: Organizational structure of the Faculty of Natural Science at the Potchefstroom Campus of the NWU.
Source: NWU, Faculty of Natural Sciences (2010).

- School for Environmental Sciences and Development

The urban and regional planning programme offered at the NWU is distinctive in the sense that it caters for the interface between environmental management and spatial planning. Urban and Regional Planning is located within the School for Environmental Sciences and Development that ensures this unique relationship. The subject groups within the School can, for the purposes of this lecture, be subdivided into fundamental biological sciences (Botany, Zoology, Microbiology, Geology and Water Sciences) and physical spatial sciences (Geography and Environmental Studies, and Urban and Regional Planning).

Figure 2 shows this interface between biological sciences and spatial sciences within the School.

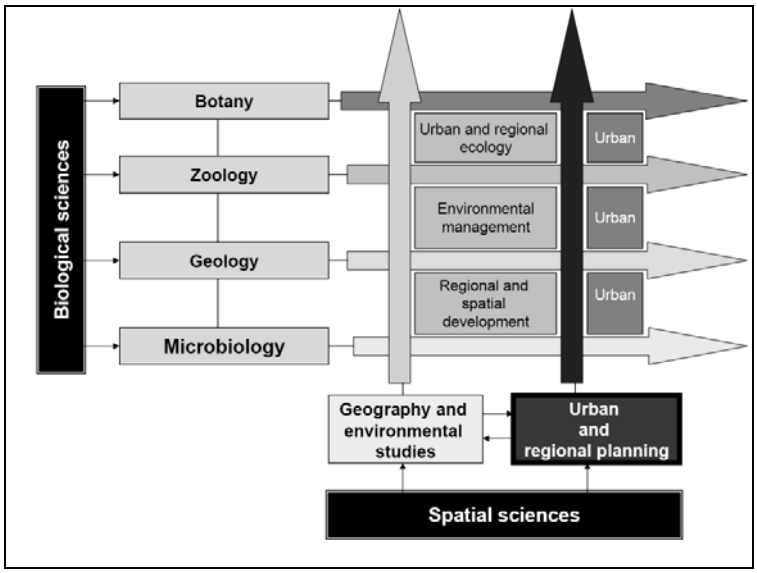

Figure 2: Interfaces between Subject Groups within the School for Environmental Sciences and Development.
Source: Own construction (2010).

From ***Figure 2*** the principle of integration between environmental management and spatial planning can be deduced. This interface culminates in multi-, inter- and trans-disciplinary academic and research opportunities and approaches towards urban and regional ecology, environmental management, regional and urban spatial development. The policy and legal framework applicable to planning and development requires an integrative approach between spatial planning, environmental management and transportation to ensure sustainable development.

- Research unit for Environmental Sciences and Management

Figure 3 shows the organization of the Research Unit for Environmental Sciences and Management with its Sub-programs.

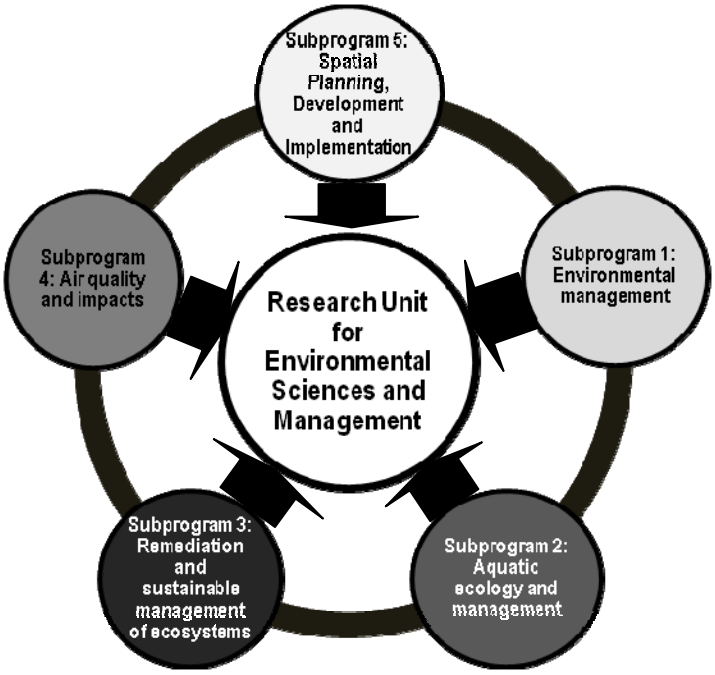

Figure 3: Sub-programs within the Research Unit for Environmental Sciences and Management
Source: Own construction (2010).

Sub-program 5 forms an important research resource focus for spatial planning, development and implementation in an integrated and sustainable fashion. Alignment between Integrated Environmental Management (IEM) and Integrated Development Planning (IDP) serves as a core consideration in the activities of this subprogram. It includes the following activities:

- Strategic regional planning and development
- Spatial planning and development solutions
- Integrated development planning
- Interface between IEM and IDP
- Housing strategies
- Strategic transportation planning
- Preparation of business plans to access resources
- Project management solutions
- Spatial performance management
- Rural development

- Subject Group for Urban and Regional Planning

The primary goal and objective of the Subject Group for Urban and Regional Planning is to educate and train undergraduate urban and regional planners in terms of the requirements as contained in the Planning Professions Act (Act 36 of 2002). The education philosophy is related to existing and scientifically deduced planning and development realities as applicable to the South African situation.

Global realities, tendencies and developments form an important focus in this regard. The core focus is to produce critical thinkers and not practitioners who implement existing planning policies and practices without considering moral grounds, ethical issues and other spatial planning related elements and dynamics.

The development of objectivity, creativity, innovative and critical thinking forms the foundation for holistic spatial planning thinkers and analysts. Development of conceptual thinking is considered to be an important focus in the education and training of professional planners.

The nature of the education and planning related philosophy consists of a combination of interactive, problem based, lecture, studio, community based activities and web-based approaches. It pivots on the need to teach a specific subject in context to predetermined outcomes for each programme and module but in context to best international practices. A formative assessment approach is followed in all curricula offered. This includes symposia, class tests, examinations, project assignments and site visits.

Table 2 shows the simplified modules as included in the four year under-graduate professional degree in urban and regional planning.

Table 2: Modules included in the education of Professional Planners at the NWU (Potchefstroom Campus)

Year level 1	Year level 2	Year level 3	Year level 4
First Semester			
Urban Planning	Regional Planning	Regional Planning	Research Project
Geogr/Env Studies	Urban Planning	Urban Planning	Regional Planning
Economy	Geogr/Env Studies	Geogr/Env Studies	Urban Planning
Mathematics	Economy		Regional Planning
AGLE	WVNS		Urban Planning
			Statistics
Second Semester			
Urban Planning	Regional Planning	Engineering	Research Project
Geogr/Env Studies	Urban Planning	Regional Planning	Planning Management
Economy	Regional Planning	Regional Planning	Statistics
Sociology	Private Law	Urban Planning	
AGLE	WVNS	Sociology	

Source: Faculty of Natural Sciences Calendar (2010).

The abovementioned approach towards education and training of professional planners is based on the assumption that the general objective is to deliver learners that will be able to promote the interface development between spatial planning, environmental management and transportation planning as discussed in this lecture.

Preparedness of the planning profession in the 21st Century relates to the ability to address global, national, provincial and local challenges within spatial systems. This ever changing environment is the key driver to address such planning and development challenges in a sustainable fashion. This dynamic environment requires ongoing analysis to ensure that these challenges are being addressed timeously and in a relevant way.

In essence it requires that the teaching of urban and regional planning, environmental management and transportation planning incorporates elements of a visionary but inclusive approach to depict needs, to re-act to such needs and to apply integrated management and planning solutions between such disciplines. It includes optimization of disciplinary (discipline), multi-disciplinary, inter-disciplinary to trans-disciplinary approaches based on inter-disciplinarily and stakeholder participation processes (refer to Fry, Tress and Tress, 2007 and Cilliers, 2008 for further background). This process is also fundamental to the formulation of Integrated Development Plans (IDP's).

Figure 4 shows the scope of inter-active disciplinary approaches to promote the interface between urban and regional planning, environmental management and transportation planning with stakeholder involvement in an endeavor to ensure sustainable development.

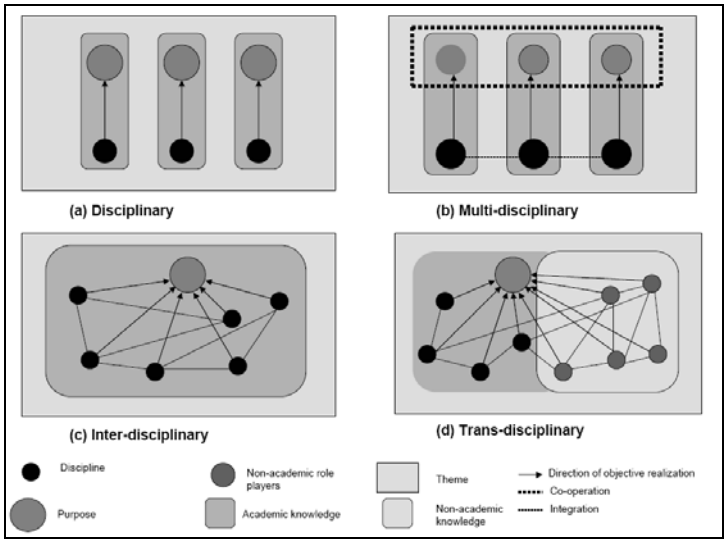

Figure 4: Application of the scope of disciplinary approaches in promoting the interface between disciplines and the interest of stakeholders.
Source: Fry et al (2007) and as applied by Cilliers (2008).

The ultimate goal is to guide the approach, thinking and insight capabilities of professionals and researchers based on complexity of functional involvement and strategic level as being illustrated in ***Figure 4***. Within the education environment it involves the process of insight and thinking development of learners in urban and regional planning (***Figure 5***)

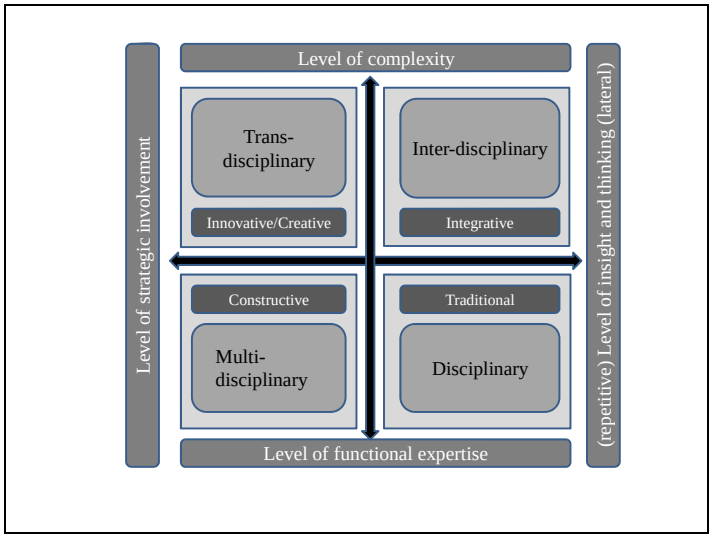

Figure 5: Process of development of insight and thinking by learners involved in professional planning education.
Source: Own construction(2010).

4 Planning as a profession and its interface with other professions

Thomas (1994:1-2) states that: *"The planning profession world wide……has shifted the focus of professional attention – in discussions and literature – towards topics which lend themselves to being presented as ' purely technical ' matters. In the UK, in particular, this tendency has been reinforced by the bureaucratisation of the profession through employment in local (and to a lesser extent, central) government. The tradition that technical officers should serve the government of the day 'impartially', whatever its party, has strengthened the incentive to try to divorce ' planning ' from 'politics'....."*

In addition Bickenbach and Hendler (1994:162) in a discussion of the moral mandate of the 'profession' of planning remark that the planning literature is replete with debates about the societal purpose and ethical imperatives of planning. This situation results in that planners started questioning the social status and duties of the profession. However, the planning profession is characterised by a specific moral mandate.

The following factors are of importance if an occupation is to qualify as a profession:

- It must be founded upon a corpus of specialised, esoteric, or systematic knowledge (or skills or arts) not commonly known or available to everyone;
- It must involve a community of like-learned individuals, professionals who share a common vision about the rationale and social value of their profession;
- It must offer services that are genuinely of benefit to society, in so as far as they promote, or exemplify, a self-evident social good;
- It must be in control of, and autonomous over, the expertise that defines its special contribution to society;
- It must be organised as an exclusive association, with mechanisms in place to secure its autonomy over its expertise (Bickenbach and Hendler 1994:164).

In assessing the planning profession and its interface with environmental management and transportation planning the following points of departure applies:

- The first feature concerns the understanding, growing and expansion to establish the boundaries of professional activity and that of the professions it interacts with;
- The profession must retain its autonomy and monopoly over a particular field of knowledge and activity involving the recognition of specific skills and abilities;
- The profession must retain its acquired social status (adapted from Rance, 1995:29)

There are two probabilities as professions (including environmental management and transportation planning) succeed and manage to grow:

- They incorporate a new area of activity not previously associated with a specific profession. For example, the planning profession has shown a remarkable ability to colonize related areas such as economic development, transportation planning etc.
- They establish a monopoly over a wider area of concern, often involving encroachment across professional boundaries. A good example is the professional disputes in roles and responsibilities between architects, quantity surveyors and civil engineers in the construction industry (based on Rance 1995:29-30).

Rance (1995:30) however also points out that one of the characteristics associated with professionalism is that entry to the profession is determined by the acquisition of approved qualifications. Professional education is thus concerned with:

- Acquisition of a body of theoretical knowledge.
- Acquisition of skills, expertise and judgement.
- Adoption of a set of professional values and commitment.

In the light of the abovementioned argumentation and approach it is clear that to become a profession much more than a community of learned practitioners is required. However, the content of the policy and legal framework that guides the planning profession should in the process also be noted.

The planning profession is being organized through the Planning Profession Act (32 of 2002). In this regard the preamble to the Act should be noted: *"To provide for the establishment of the South African Council for Planners as a juristic person; to provide for different categories of lanners and the registration of planners; to authorize the identification of areas of work for planners; to recognize certain voluntary associations; to protect the public from unethical planning practices; to maintain a high standard of professional conduct and integrity; to establish disciplinary mechanisms and an Appeal Board; and to provide for incidental matters".*

The Planning Profession Act (No. 36 of 2002) provides for three categories of registration:

- Candidate Planner.
- Technical Planner.
- Professional Planner.

Of importance in the light of the theme of this lecture is the code of conduct that guides the actions of professional planners in the light of its professional responsibility. The focuses of the code of conduct includes:

- The planner's professional responsibility towards clients.
- The planner's professional relationships.
- Professional Conduct (SAPI, 2002).

From the focus of this lecture the work focus of the professional planners and especially those focuses that is being shared with other professions should be looked at (***Table 3***).

Table 3: Core focuses of work carried out by Professional Planner's and members of other Professions

Category Reference	Activity Description
A	**IDENTIFICATION OF WORK TO BE RESERVED FOR PLANNERS**
A.1	**STRATEGIC PLANNING AND CO-ORDINATION OF NATIONAL SPATIAL PLANS AND SPATIAL FRAMEWORKS**
A.1.1	Human settlements, which include housing and urbanisation
A.1.2	National spatial frameworks
A.2	**STRATEGIC PLANNING AND CO-ORDINATION OF REGIONAL SPATIAL PLANS AND SPATIAL FRAMEWORKS**
A.2.1	Preparing regional spatial frameworks
A.3	**STRATEGIC PLANNING AND CO-ORDINATION OF SUB-REGIONAL SPATIAL PLANS AND SPATIAL FRAMEWORKS**
A.3.1	Preparing sub-regional spatial plans and spatial frameworks
A.4	**STRATEGIC PLANNING AND CO-ORDINATION OF SPATIAL PLANS AND SPATIAL FRAMEWORKS AT MUNICIPAL LEVEL, INCLUDING CATEGORY A, B AND C MUNICIPALITIES**
A.4.1	Preparation of spatial development frameworks
A.4.2	Physical planning of a single municipal area
A.4.3	Physical planning of functionally interrelated areas
A.4.4	Arrangement of land uses
A.4.5	Intensity of land uses
A.5	**STRATEGIC PLANNING AND CO-ORDINATION OF LOCAL SPATIAL PLANS AND SPATIAL FRAMEWORKS**
A.5.1	Land use and spatial arrangement of local activities
A.6	**PLANNING SURVEYS, ANALYSES AND/OR POLICY FORMULATION**
A.6.1	Land use planning and policy formulation
A.7	**LAYOUT-, TOWNSHIP- AND LAND DEVELOPMENT PLANS**
A.7.1	Preparation of layout-, township- and development plans
A.7.2	Proposes layouts of land uses
A.7.3	Land development applications for projects which are not in accordance with approved plans and policies
A.7.4	Redevelopment or urban renewal schemes
A.8	**DEVELOPMENT EVALUATION**
A.8.1	Evaluation of spatial implications of development proposals
A.9	**PLANNING ADMINISTRATION AND IMPLEMENTATION**
A.10	**HOUSING**
A.10.1	Integrated planning of housing and ancillary land uses
A.11	**LAND USE MANAGEMENT**
A.11.1	Formulation and amendment of land use management systems and policies
A.11.2	Defining demarcating of specified use zones including amendments

B	**IDENTIFICATION OF WORK: NEGOTIATION WITH OTHER PROFESSIONS**
B.1	Upgrading of existing settlements
B.2	Design of urban development
B.3	Investigation of the physical form of buildings and the space between buildings
B.4	Planning of access roads
B.5	Investigation of the technical implications of services and infrastructure
B.6	Solving questions relating the feasibility, design standards and site valuation
B.7	Considering land use relationships between buildings
B.8	Preparation of site development plans
B.9	Preparation of targeted business plans, budgets and programmes for development
B.10	Leading a multi-disciplinary team to guide a development project
B.11	Formulation of planning legislation, regulations or any statutory instruments

Source: Proposed work reservation for Professional Planners, SACPLAN (2008).

From ***Table 3*** the incompleteness and lack of alignment with the theme of this lecture are clearly evident. This statement is even more pronounced if the contents of the domain of the focuses as 'identified' to be the task of the urban and regional planner (***point 2*** above) (***Table 1***) are taken into consideration.

In order to articulate the position to that applicable in the case of environmental management and transportation planning, the legislative framework guiding those professions should also be considered.

- Environmental management and related professions within natural sciences

The South African Council for Professional for Natural Scientific Professions (SACNASP) (2003) states that professional registration is an important career milestone for scientists. It shows that such a professional have the technical competence which is valued by industry. Professional registration identifies a highly skilled professional with technical knowledge and competence. This is basically aligned to the position of the professional planner as discussed above.

The related professions within this category and its activities and conduct are being subject to the provisions as contained in the Natural Scientific Professions Act (Act No 27 of 2003) (NSPA). The preamble to the Act reads as follows: "*To provide for the establishment of the South African Council for Natural Scientific Professions; and for the registration of professional, candidate and certificated natural scientists; and to provide for matters connected therewith" (NSPA, 2003).*

Categories for registration in the natural scientific professions include the following:

- Professional natural scientist.
- Candidate natural scientist.
- Certificated natural scientist.

As in the case of the professional planner, the scientific professions are also subject to a specific code of conduct (Section 28 of NSPA, 2003). As far as identification of work and fields of practice is concerned (Section 27 of NSPA, 2003) makes provision for the following categories as shown in ***Table 4***.

Table 4: Fields of practice in terms of the NSPA (2003)

Fields of practice as contained in NSPA (2003) (Schedule I)	Revised fields of practice (2010) (Schedule I)
Agricultural Science	Agricultural Science: Includes Forestry Science
Animal Science	Animal Science
Biological Science	Aquatic Science: Marine Science and Water (Care) Science.
Botanical Science	Biological Science*
Chemical Science	Botanical Science
Earth Science	Chemical Science: Includes Industrial Science
Ecological Science	Earth Science: Geographical Science, GIS Science, Hydrological Science
Environmental Science	Environmental Science – See special requirements on page 8.
Food Science	Food Science
Forensic Science	Geological Science
Forestry Science	
Geographical Science	
Geological Science	
Hydrological Science	
Industrial Science	
Marine Science	

Materials Science Mathematical Science Mathematics Education Science Metallurgical Science Microbiological Science Natural Science Education Science Physical Science Radiation Science Water Care Science Zoological Science	Materials Science: Includes Metallurgical Science Mathematical Science Microbiological Science***** Physical Science: Includes Radiation Science Soil Science Zoological Science

Source: Own construction (2010).

Of importance to the theme of this lecture is the following exclusions being provided for in the NSPA (2003):

"Notwithstanding subsection (3), a person registered in terms of the following Acts may perform those elements of the natural scientific profession which are essential for the practicing of his or her profession, if his or her education, training and experience render him or her competent to perform that work:

(a) Town and Regional Planners Act, 1984 (Act No. 19 of 1984);
(b) Professional Land Surveyors' and Technical Surveyors' Act, 1984 (Act No. 40
(c) Architectural Profession Act, 2000 (Act No. 44 of 2000);
(d) Landscape Architectural Profession Act, 2000 (Act No. 45 of 2000);
(e) Engineering Professions Act, 2000 (Act No. 46 of 2000);
(f) Property Valuers Profession Act, 2000 (Act No. 47 of 2000);
(g) Project and Construction Management Profession Act, 2000 (Act No. 48 of
*(h) Quantity Surveying Profession Act, 2000 (Act No. **39** of 2000)"*

The implication of the abovementioned provision implies an important interface between the planning profession and some of the elements as identified in terms of the fields of practice within the domain of the NSPA (2003).

- Transportation planning and related professions

Although transportation planning does not enjoy the professional status as in the case of the planning and natural sciences professions, the need for objectivity necessitates that the position as regulated by the Council for the Built Environment Act (43 of 2000) (CBEA) and the Built Environment Professions Bill (BEPB) (2008).

At present, Acts of parliament regulate some professions, while other professions are not regulated in the same manner. The professions regulated by law are the engineering profession, architectural and landscape architectural profession, project and construction management professions, quantity surveying profession, and property valuation profession. The Minister of Public Works is responsible for the administration of the Acts regulating the above professions.

The following councils manage and regulate the associated professions within the built environment:

- South African Council for the Architectural Profession, established by the Architectural Profession Act, 2000 (Act No. 44 of 2000);
- South African Council for the Project and Construction Management Professions, established by the Project and Construction Management Professions Act, 2000 (Act No. 48 of 2000);
- Engineering Council of South Africa, established by the Engineering Profession Act, 2000 (Act No. 46 of 2000);
- South African Council for the Landscape Architectural Profession, established by the Landscape Architectural Profession Act, 2000 (Act No. 45 of 2000);
- South African Council for the Property Valuers Profession, established by the Property Valuers Profession Act, 2000 (Act No. 47 of 2000);
- South African Council for the Quantity Surveying Profession, established by the Quantity Surveying Profession Act, 2000 (Act No. 49 of 2000); and
- Council for the Built Environment, established by Council for the Built Environment Act, 2000 (Act No. 43 of 2000).

These councils will continue to exist, and may perform their functions, after the commencement date of the CBEB (2008) being promulgated and the effective date announced. This development will impact on the interface between all professions involved within the built environment as well as related professions such as urban and regional planning and environmental management. Transportation planning, however, is not a field of competence reserved for any is one of the professions as discussed above.

From an organizational point of view the interface between professional planners (urban and regional planners) is being managed and regulated by the Department of Land Affairs whilst environmental management practitioners specifically and professional natural scientists are being dealt with by the Department of Science and Technology. This in itself poses specific challenges in the management of interfaces between various disciplines and professions as far as integration and the promotion of sustainable development is concerned.

5 Policy and legislative framework as foundation and integration between professions

Table 5 shows the core policy frameworks applicable to the interface between urban planning, environmental management and transportation planning. ***Table 6*** contains the core legislative framework that guides the interface between these disciplines. The content of the two tables are not meant to be an all inclusive overview of the existing policy and legislative framework that organizes, drives and regulate the activities between urban and regional planning, environmental management and transportation planning. However, it contains only the core documents relevant to the reasoning within this lecture.

From an assessment of the content of ***Table 5*** (policy) and ***Table 6*** (legislation) the conclusion can be drawn that restricted provision for the integration of the interface between the professions exist. As an example in the case of the National Land Transport Act (5 of 2009) provision is made in the case of Chapter 4: Transportation Planning that in terms of general principles for transport planning and its integration with land use and development planning:

"31. *Land transport planning must be integrated with the land development and land use planning processes, and the integrated transport plans required by this Act are designed to give structure to the function of municipal planning mentioned in Part B of Schedule 4 to the*

Constitution, and must be accommodated in and form an essential part of integrated development plans, with due regard to legislation applicable to local government, and its integrated transport plan must form the transport component of the integrated development plan of the municipality".

This provision, although very general and of a pure philosophical nature, should be read with the objectives as identified in the National Framework for Sustainable Development in South Africa (2008:10) that makes provision for enhancing systems for integrated planning and implementation; sustaining ecosystems and using natural resources efficiently; economic development via investing in sustainable infrastructure; creating sustainable human settlements and responding appropriately to emerging human development, economic and environmental challenges.

The problem form an interface perspective between the professions relates to the fact that the policy and legislative framework can be classified as complicated; confusing and incomplete. The lack of a comprehensive and overarching guideline document to promote and integrate planning and development processes can clearly be deduced. It is recognized that the Constitution (1996) in itself laid the foundation for silo approaches in the policy and legislative framework. If real sustainable development is the goal and objective it seems that the policy and legislative process that came along with democracy needs a thorough review and rethink. This conclusion will become even more evident in the next point in this lecture.

Table 5: Core policy framework guiding the interface between urban planning, environmental management and transport planning

Urban and regional planning	Environmental management	Transportation planning
Reconstruction and Development Plan (1994) Growth, Economic and Redistribution Strategy (1996) White Paper on South African Land Policy (1997) Urban Development Framework (1997) Rural Development Framework (1997) Green Paper on Development and Planning (1999) White Paper on Local Government (1998) National Integrated Rural Development Strategy (2000) White Paper on Spatial Planning and Land Use Management (2001) National Spatial Development Perspective (2006) Mining Charter (2003) Construction Charter (2005) King Report II on Corporate Governance for South Africa (2002) White Paper on Integrated Pollution and Waste Management for South Africa (2000) White Paper on Water and Sanitation (1997) ASGISA, 2006 National Spatial Development Perspective (2006) Housing Atlas (2006) Sustainable Human Settlement Planning: Resource Book (2008) (NDoH) Area Based Planning. Department of Rural Development and Land Reform (2008/2009) Comprehensive Rural Development Programme. Department of Rural Development and Land Reform (2009)	Global Biodiversity Strategy: Guidelines for action to save, study and use earth's biotic wealth sustainably and equitably (Published by the WRI; IUCN and UNEP in 1992) Balancing the Scales: Guidelines for increasing Biodiversity's Chances through Bioregional Management, (Published by the World Resources Institute in 1996). Strategic Environmental Assessment in South Africa (2000) Minimum requirements for the Classification, Handling and Disposal of Hazardous Waste (Second Edition (1998) (DWAF) Integrated Environmental Management Guidelines Series (1992) DEAT: An Environmental Policy for South Africa (Green Paper) (1996) DEAT (2002a) *Screening, Information Series 1,* Department of Environmental Affairs and Tourism (DEAT), Pretoria. DEAT (2002b) *Scoping, Integrated Environmental Management,* Information Series 2, Department of Environmental Affairs and Tourism (DEAT), Pretoria. DEAT (2002c) *Specialist Studies, Information Series 4,* Department of Environmental Affairs and Tourism (DEAT), Pretoria. DEAT (2002d) *Impact Significance,* Integrated Environmental Management, Information Series 5, Department of Environmental Affairs and Tourism (DEAT), Pretoria. DEAT (2004a) *Overview of Integrated Environmental Management,* Integrated Environmental Management, Information Series 0, Department of Environmental Affairs and Tourism (DEAT), Pretoria. DEAT (2004b) *Criteria for determining Alternatives in EIA*, Integrated Environmental Management, Information Series 11, Department of Environmental Affairs and Tourism (DEAT), Pretoria. DEAT (2004c) *Environmental Impact Reporting,* Integrated Environmental Management, Information Series 15, Department of Environmental Affairs and Tourism (DEAT), Pretoria. Strengthening Sustainability in the Integrated Development Planning Process (2001) State of the Environment Reporting: Draft Guidelines for Local Municipalities (2005) DEAT Information Series (2004-2009) National Framework for Sustainable Development (2008)	White Paper on National Transport Policy (1996) Moving South Africa (1996) Rural Transport Strategy for South Africa (2003) Draft minimum requirements for the preparation of integrated transport plans (ITP) (2007) National Land Transport Strategic Framework (2006-2011) (2002) (Draft) NDOT: National Transport Master Plan 2050 (NATMAP) (2010)

Source: Own construction (2010).

Table 6: Core legislative framework guiding the interface between urban planning, environmental management and transport planning

Urban and regional planning	Environmental management	Transportation planning
National Building Regulations and Building Standards Act (103 of 1977) Town Planning and Township Ordinance, Ordinance 15 of 1986 Land Use Ordinance (Cape of Good Hope), Ordinance 15 of 1985 Removal of Restrictions Act 84 of 1967 The Less Formal Township Establishment Act, Act 113 of 1991 The Physical Planning Act, 88 of 1967 (Sec 6, 8 and 11) Development Facilitation Act, Act No. 67 of 1995 (DFA) Constitution of the Republic of South Africa (108 of 1996) Bill of Human Rights (1996) Physical Planning Act (88 of 1967) Municipal Structures Act (117 of 1998) Restitution of Land Rights Act (22 of 1993) Interim Protection of Informal Rights Act (76 of 1995) Prevention of Illegal Eviction from Unlawful Occupation of Land Act (19 of 1998) Reconstruction and Development Programme Act (79 of 1998) Municipal Systems Act 32 of 2000 Development Facilitation Act 67 of 1995 (DFA) Physical Planning Act 125 of 1991 Less Formal Township Establishment Act 113 of 1991 (LEFTEA) Subdivision of Agricultural Land Act 70 of 1970 (SALA) Removal of Restrictions Act 84 of 1967 Community Land Reform Act 28 of 1996 (CLARA) Housing Act (107 of 1997) National Land Use Management Bill (Draft 2008) Local Government: Municipal Integrated Development Planning Regulations, 2001.	Health Act (63 of 1977) Water Act (54 of 1956) National Water Act (36 of 1991) Water Services Act (108 of 1997) National Environmental Management Act 107 of 1998 (NEMA) National Environmental Management: Air Quality Act (39 of 2004) National Environmental Management: Waste Act 59 of 2009 National Environmental Management: Biodiversity Act 10 of 2004 (NEMBA) National Environmental Management: Protected Areas Act 57 of 2003 (NEMPAA) National Heritage Resources Act 25 of 1999 (NHRA) Mineral and Petroleum Resources Development Act 28 of 2002 (MPRDA) World Heritage Convention Act 49 of 1999 Biodiversity Act 10 of 2004 R.543: National Environmental Management Act (107/1998): Environmental Impact Assessment Regulations, 2010 (33306) R.544: Listing Notice 1: List of activities and competent authorities identified in terms of sections 24 (2) and 24D (33306) R.545: Listing Notice 2: List of activities and competent authorities identified in terms of sections 24 (2) and 24D (33306) R.546: Listing Notice 3: List of activities and competent authorities identified in terms of sections 24 (2) and 24D (33306) R.547: Environmental Management Framework Regulations, 2010	Advertising on Roads and Ribbon Development Act (21 of 1940) Fencing Act (31 of 1963) National Land Transport Transition Act (Act 22 of 2000)* Urban Transport Act (Act 78 of 1977) National Transport Interim Arrangements Act (Act 45 of 1998) Transport Appeal Tribunal Act (At 39 of 1998) Cross Border road Transport Act (Act 4 of 1998) Road Traffic Act (Act 29 of 1989) National Road Traffic Act (Act 93 of 1996) The South African National Roads Agency Limited and National Roads Act (7 of 1998) National Land Transport Act, 2009 (Act 5 of 2009) and Regulations (R.1208, 2009) R. 877 National Land Transport Act (5/2009): National Land Transport Regulations on Contracting for Public Transport Services.

Source: Own construction (2010)

6 Interface relationships between urban and regional planning, environmental management and transportation planning

From the presentation above, the following specific interface relationships can be deduced:

- Educational and research relationships

The institutional environment (***Figure 1***) within which the School for Environmental Sciences and Development (***Figure 2***) and that of the Research Unit for Environmental Sciences and Management (***Figure 3***) function are shown above. In order the ensure that the macro educational and research content is perceived in an applicable way related to the theme of this lecture, ***Figure 6*** was compiled to illustrate the macro context of the educational and research relationships influencing the nature of the interface as being discussed.

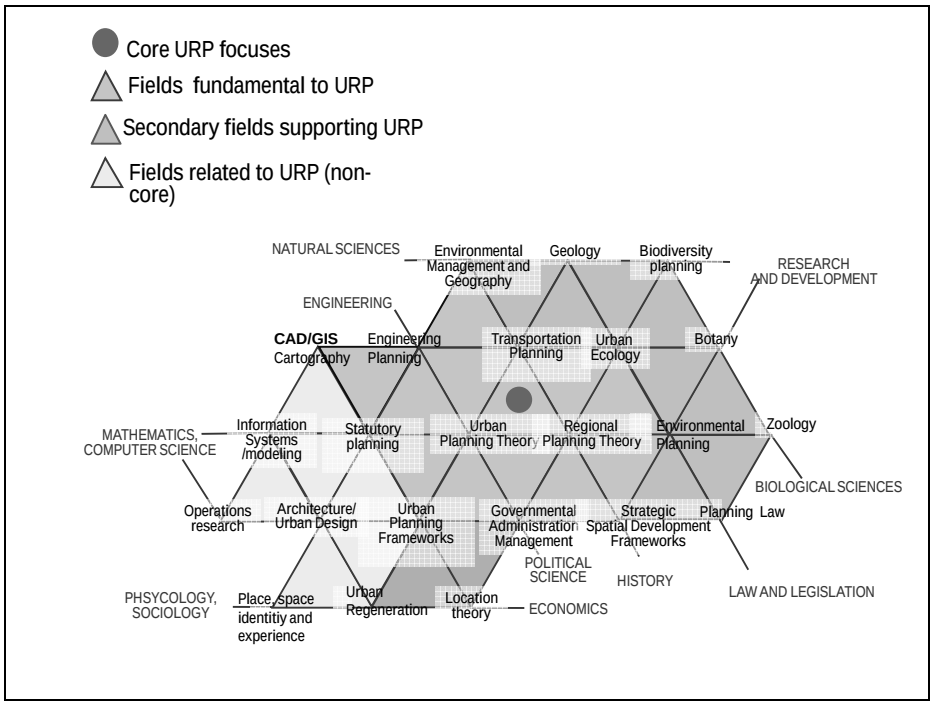

Figure 6: Macro and micro subject fields within education and research directing
the interface relationships
Source: Adapted from existing sources.

Figure 7 depicts the micro educational and research focuses and relationships that determine the interface between urban planning, environmental management and transportation planning directly. This figure was created based on a cluster analysis of the focuses and study fields related to each profession from an educational as well as research perspective as dealt with above.

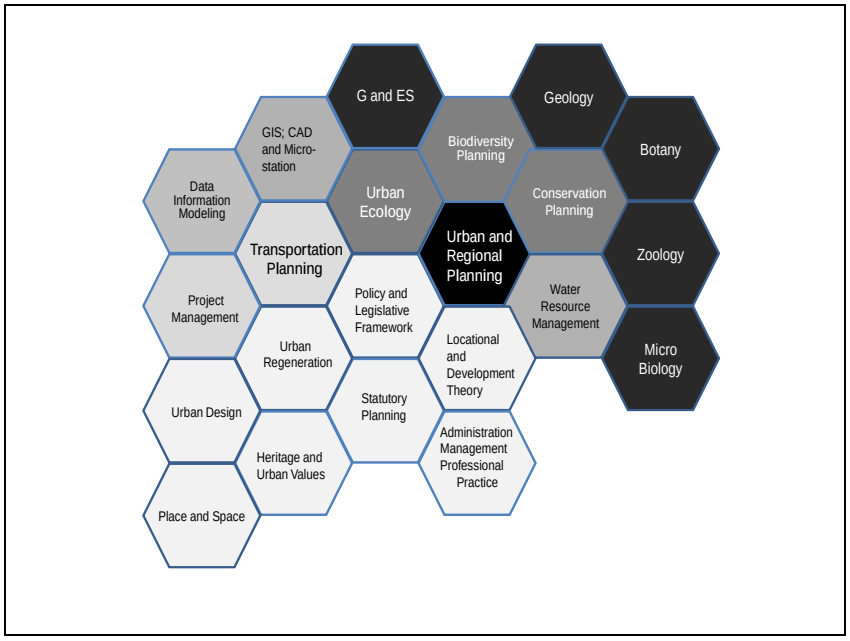

Figure 7: Educational and research relationships of the interface based on fields and focuses
Source: Own construction

From ***Figure 7*** the dependencies of the various focuses and themes making up the core business of urban and regional planning, environmental management and transportation planning can be deduced. These relationships are fundamentally being supported through the School for Environmental Sciences and Management and Research Unit for Environmental Sciences and Management as to grow and develop the interface and other business directly and indirectly related to it.

- Management and functional relationships

Table 7 shows the level of management and functional involvement between urban and regional planning, environmental management and transportation planning based on the deductions of the lecture and line of argument presented thus far. From the table the activity category together with an assessment of the level of involvement are indicated. This process is based on the focus of the domain as discussed above, policy and legislative framework applicable to each of the profession. This assessment is indicative if the interface between them. A distinction is made in classification between direct, indirect, application and no involvement categories.

Table 7: Assessment of the interface between urban planning, environmental management and transportation planning based on activity characterization.

Sustainable development					
	Implementation	Intervention	Direct	None	Indirect
		Monitoring	Indirect	Indirect	Indirect
		Operation	None	None	Indirect
		Implementation	None	Indirect	Direct
		Project management	None	Indirect	Direct
		Design	None	Direct	Direct
	Spatial planning	Feasibility	Indirect	Direct	Direct
		Accessibility	None	Direct	Direct
		Statutory planning	None	Direct	Indirect
		Need and desirability	Direct	Direct	Direct
		Services	Indirect	Direct	Direct
		Movement patterns	Indirect	Direct	Direct
		Settlement patterns	None	Direct	Direct
		Socio-economic	Direct	Direct	Direct
		Planning	Indirect	Direct	Direct
		Integration	Indirect	Direct	Direct
		Systems approach	Indirect	Direct	Direct
		Strategy formulation	Direct	Direct	Direct
	Management	Leading	Direct	Indirect	Indirect
		Coordinating	Direct	Indirect	Indirect
		Organizing	Direct	Indirect	Application
		Life cycle	Direct	Indirect	Indirect
		Quality management	Direct	None	Indirect
		Resource management	Direct	Indirect	Direct
		Risk management	Direct	Indirect	Application
		Controlling	Direct	Indirect	Application
		Mitigation	Direct	Indirect	Application
		Impact determination	Direct	Indirect	Indirect
	Level of involvement		**Environmental Management**	**Urban and Regional Planning**	**Transportation planning**

Source: Own construction (2010).

- Process relationships on municipal development level

Table 8 gives an overview of the guiding principles related to spatial planning, environmental development and general principles of development including transportation considerations.

Table 8: Guiding principles for spatial planning and development within municipalities

Normative planning principles	**Spatial planning principles**	**Environmental planning principles**	**General principles**
Principle of sustainability Principle of equality Principle of efficiency Principle of integration Principle of fair and good governance (White Paper on Spatial Planning and Land Use Management, 2001)	Chapter 1 Principles of the DFA, 1995. Local Government: Municipal Integrated Development Planning Regulations, 2001. Rural and urban form. Rural and urban integration. Promotion of sustainable development. Merit of the land development. Promotion of economy of scale in infrastructure and services provision. Promotion of integrated development. Security of tenure. Interest of various sectors (Provincial and Municipal). Market considerations. Spatial Development Framework (SDF) content. Integrated Transport Plan (ITP), accessibility, mobility and movement patterns. Local growth and development strategies. Provincial SDF and transportation plans. Housing Atlas (2006) Sustainable Human Settlement Planning (2008) NSDP (2006) ASGISA principles (2006)	Principles as contained in NEMA (1998) Economic rights and basic needs of people. Framework for environmental management (EMF) Guidelines for environmental management. Needs of people. Sustainability considerations. Factors in sustainable development: biodiversity and ecology. Integration of environmental management. Environmental justice. Access to resources. Life cycle responsibility. Interest, needs and values. Well being and empowerment. Development impacts. Transparency. Intergovernmental coordination. Conflicts and interest. International responsibilities. Public interest. Cost of pollution. Woman and youth. Sensitive ecosystems.	Administrative justice. Stakeholder participation. Urban and rural quality. Health considerations. Protection of agricultural resources. Protection of natural resources. Life style enhancement. Heritage resource protection. Quality of the built environment. Improved access and connectivity Modal choice Transport system development Corridor and nodal development Integrated transportation Movement of people, goods and services Passenger transportation services Urban form Places of residence and work Accessibility Land use and transport integration Transportation economics System analysis Cost effectiveness and efficiency

Source: Own construction form contents of lecture.

Figure 7 shows the process relationships based in the interface between spatial planning, environmental management and transportation planning from the perspective of Integrated Development Plans (IDPs) and IEM processes prepared or applied within the municipal sphere of government.

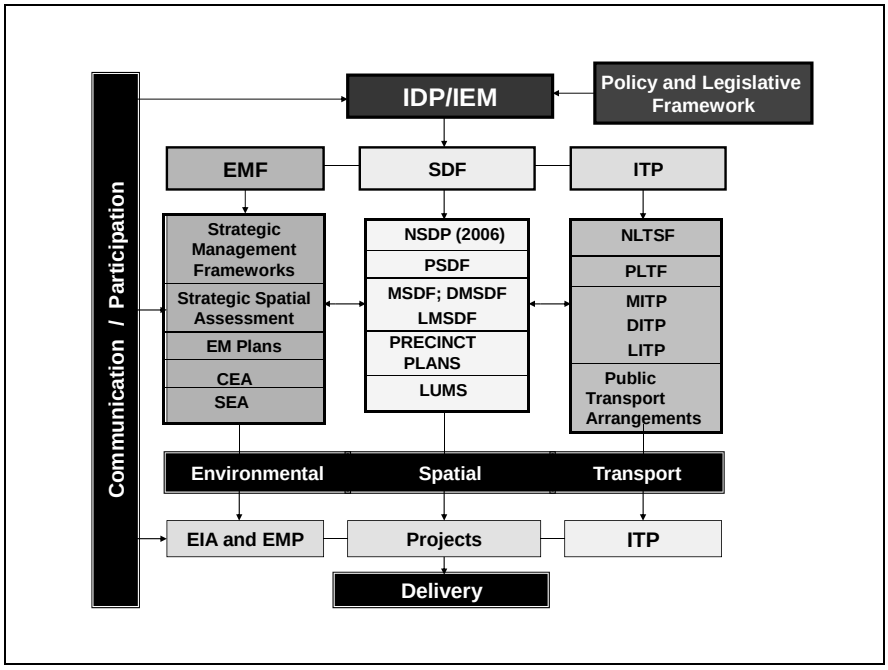

Figure 7: Process relationships between spatial planning, environmental management and transportation planning.
Source: Own construction (2010).

Table 9 shows the overview of the minimum requirements for preparation of SDF's, EMF's and ITP's for municipalities. The overview together with the process considerations as included in ***Figure 7*** is indicative of the complex and diverse nature of the interface between spatial planning; environmental management and transportation planning if the instruments, tools and plans are considered (refer also ***Figure 8***).

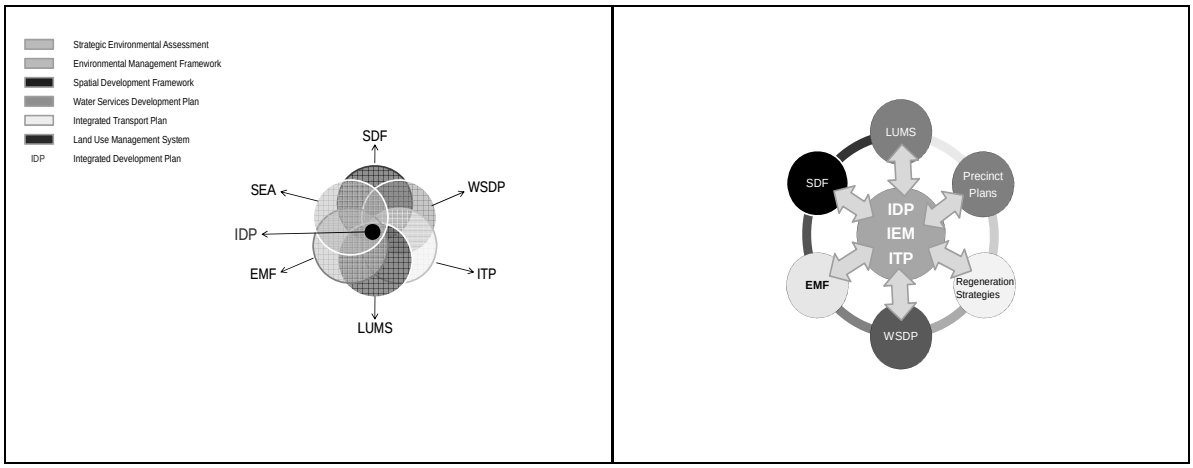

Figure 8: Collaborative practice in plan and framework integration.
Source: Own construction (2010).

Table 9: Overview of minimum requirements for preparation of SDF's and EMF's

Provincial Spatial Development Framework (PSDF)	**District and Local Municipal Spatial Development Frameworks (DSDF and LSDF)**	**Environmental Management Frameworks (EMFs)**	**Integrated Transport Plans (ITPs)**
A provincial SDF must reflect the following minimum requirements: • Accelerating growth and development. • Sharing growth and development. • Ensuring long term sustainability. • Integrated terrestrial and aquatic management. • Sustainable use of biological resources. • Network of conservation areas. • Promoting equal and fair access to opportunities and assets. • Enhancing competitiveness, profitability and SMME development. • Ensuring safe and secure environments through sustainable resource and environmental management. • Focusing economic growth in economically sustainable areas. • Spending on fixed investment to be focused on localities of economic growth and potential. • Efforts to address past and current social inequalities should focus on people not places.	A DSDF and LSDF must reflect the following minimum requirements: • A policy for the overall spatial distribution of development • A framework for detailed land use planning and management • An overview of current realities, spatial plans, future development determinants as well as a spatial development policy that could be used for the prioritisation of future projects and development • Consideration of the impact of provincial, district and neighbouring municipal policies, growth strategies and spatial development plans and frameworks • Consultation and participation of all role-players (government structures, private sector and civil society) • Development of an annual review and updating process • Training and capacity building programme • A spatial development framework for a municipality (DSDF and LSDF) forms part of the Integrated Development Plan (IDP) prepared by a municipality in terms of Section 32 of the Local Government: Municipal Systems Act, 2000. • Formulation of precinct plans. • Local Government: Municipal Integrated Development Planning Regulations, 2001 (Section 4).	The minimum requirements for EMF is contained in Guideline 6 of Government Gazette 28854 in support of the EIA Regulations 2006: • An identification of the area • Specification of the environmental attributes of the area: sensitivity; extent; interrelationship; and significance of attributes. • Identification of any parts in the area to which the attributes relate to. • An indication of the conservation status and environmental management priorities. • Description of the environmental priorities. • Information on activities that would have a significant impact • Information on activities that would be undesirable in the area. • Any other matters as applicable. • Desired state of the environment. • Development pressures and trends. • Opportunities and constraints. • Management proposals and guidelines. • Environmental Management Frameworks (EMFs) to be prepared for the geographical area of the SDF (Part 1 of Chapter 8 the NEMA EIA Regulations) (Figure 1) • Bioregional Plan: To be prepared in accordance with the procedures stipulated in the National Environmental Management: Biodiversity Act (NEMBA)	Government Gazette 30506 (2007) requires that Comprehensive Integrated Transport Plans (CITPs) must include the following minimum content*: • Transport vision and objectives. • Transport register (CPTR; Traffic; Roads; and Land–Use) • Spatial Development Framework (SDF) • Transport needs assessment. • Transport operations strategy. • Transport infrastructure strategy. • Traffic Demand Management. • Other transport related strategies. • Summary of the LITPs in the case of DITPs. • Funding Strategy of Proposals and Programmes. *Refer also to the National Land Transport Act (5 of 2009)

Source: Own construction from the sources as indicated.

- Land use rights and environmental authorizations and the interface

Perhaps the most confusing aspect of the interface between urban and regional planning, environmental management and transportation planning relates t issues within the processes to obtain land use rights, environmental authorizations and project implementation approval in terms of transportation plans.

Statutory planning forms one of the last outposts in the built environment required to complete the process of social, economic and spatial transformation in context to the Constitution that was approved in 1996. The lack of pro-active actions by the First Sphere of Government to address the issue resulted in a long and outdrawn action to finalise the Land Use Management Bill (period 2001 to 2008). However, the Constitutional Court Ruling (2010) related to the application of certain sections of the DFA (1995) being unconstitutional will ensure that within a period of two years spatial and development by all spheres of government will be guided by a new and constitutional correct legislative framework. Refer to Van Wyk, (2010: 214-234) for the impasse on the current parallel planning mechanisms and its impact on planning and development.

The complexity of current legislation processes and procedures relating to both land use rights and environmental authorizations causes a lot of confusion within municipalities and also increases the administrative burden of under capacitated municipalities. This makes land use decision making fragmented and requirements of recent national policies and acts are therefore not properly reflected and articulated in land use decisions and environmental authorizations. (Refer also to Kidd, 2008: 85-102).

The need for an overarching Land Use Management Bill and Regulations, with guidance from all spheres of government in terms of the competencies as provided for in the Constitution (1996), relates to the fact that development and land use within the national spatial system is still regulated by a set of outdated acts and ordinances from the earlier regime. Such acts and ordinances are for instance:

- Town Planning and Township Ordinance, Ordinance 15 of 1986.
- Land Use Ordinance of other provinces.
- Removal of Restrictions Act 84 of 1967.
- The Less Formal Township Establishment Act, Act 113 of 1991.
- The Physical Planning Act, 88 of 1967 (Sec 6, 8 and 11).
- Development Facilitation Act, Act No. 67 of 1995 (DFA).

Some provinces such as Western Cape, Kwazulu-Natal, Gauteng and Northern Cape have reviewed this outdated legislative framework and promulgated a framework that captures the integration of both land use and environmental management in a new policy and legislative framework. However, the Constitutional Court (2010) as quoted above may take us back depending on the outcome within the next two years.

This situation gives rise to land use decisions that is not only time consuming but is being construed by the public, stakeholders and developers in different ways. This situation was dealt with in 2009 by the NWP with the formulation of the following documents:

- Review of best practices applied in land use management (NWP, Report 1, 2008).

- Land Use Policy Framework (LUPF) (NWP, Report 2, 2008).
- Land Use Management Bill (LUMB) (NWP, March, 2009).
- Explanatory Memorandum and Final Report (NWP, 2009).
- Guidelines for Land Use Schemes (LUS) (NWP, Report 3, 2008).
- Formulation of Draft Regulations (NWP, Final Report, March, 2009).

This process also endeavors to address the problematic nature of duplication between land use management applications and environmental authorizations in terms of process and approval procedures. In the initiative by the NWP much of the stated problems are being addresses been addressed in an innovative and ground braking way, although the Constitutional Court Ruling related to the DFA (1995) and its outcome may change the process, content and promulgation timeframe as initially formulated for the NWP LUMB.

However, during the initiation of the NWP LUMB initiative, a further Constitutional Court Ruling in 2007 complicated matters further. In a judgment concurred in by all the justices (except Sachs J), Ngcobo J held that the Constitution recognises the interrelationship between the protection of the environment and socio-economic development. It contemplates the integration of environmental protection and socio-economic development and envisages that the two will be balanced through the ideal of sustainable development. The Judge held that sustainable development provides a framework for reconciling socio-economic development and environmental protection and thus acts as a mediating principle in reconciling environmental and developmental considerations (Refer also to Kidd, 2008: 82-102); Retief and Kotze, 2008: 139-155)

This ruling do have important consequences for the interface between land use rights and environmental authorizations (impact of activities) from a process and interface perspective and for the roles between the professions. At the same time the practice to consider need and desirability in land use applications were reduced to need considerations only by planning practitioners since 2002. This principle is being dealt with accordingly in the NWP LUMB (2009) through the application of the principle of “wise use of land”. The Constitutional Court Judgment sets a precedent that will have to be addressed from a land use as well as environmental management development perspective. Possible revisions and adaption of the principles contained in the policy and legislative frameworks will have to be considered (Refer also to Western Cape Provincial Government, 2009). This conclusion relates to transportation planning as well.

For the purposes of this lecture and more specifically with regard to the interface between the professions the following should be noted:

- Transportation planning considerations are just as important as need and desirability, socio economic and physical impacts of activities as it quantifies and qualifies planning, development and implementation in space from a land use, environmental, and transportation integration perspective.
- Environmental authorizations only deal with the impact of activities in space and include measures to mitigate in the interest of the environmental protection. It does not imply that such approval is part of the land use rights being approved or granting of implementation rights for construction.
- All development, notwithstanding land ownership, historical practices, and sphere of government, individual, or any institution may develop any land without

environmental authorization and obtaining the necessary land use rights. These are parallel processes with separate development requirements.
- The Constitution (1996) does not make provision for parties or stakeholders to ignore such processes.
- The current division of competencies to spheres of government in the Constitution (1996) prohibits optimal process integration.

The abovementioned description clearly indicates the intricate nature of the interface between the roles and processes involved in statutory planning, environmental management and transportation planning under discussion in this lecture.

7 Challenges to promote the interface between professions

From the content of this lecture the challenge remains how to integrate the interface between urban and regional planning, environmental management and transportation planning. The need for the promotion of this interface is beyond doubt in the light of the arguments above, line of argument and the present "disjointedness" in development. The core problem is that all three professions functions in isolation. The principles of "subsidiarity" as provided for in the Constitution (1996) and the Municipal Structures Act (1998) will have to be debated further. To this situation the application of "delegated management" principles in land use and activity authorizations will cause further havoc and confusion.

Activities within the professions can be compared to professionals functioning in cubicles with glass walls and roofs. This restricts the development of potential and valuable attributes such as cooperation and integration. We are so transparent in our endeavors that we are not visible in the application of our much deserved and valued academic freedom and subject knowledge.

Professional identity is important but shouldn't be a hindrance in achieving the promotion of the interface amongst professions and excellence in promoting sustainable development.

8 Opportunities from an academic and research perspective to promote the interface

In the light of the abovementioned discussion the NWU (Potchefstroom Campus) should consider the introduction of a new programme in transportation planning. In the process it will be possible to restructure the way in which we capacitate urban and regional planning and environmental management within the academic and research environment to ensure support to sustainable development.

Figure 9 illustrates the restructuring proposal based on the contents of this lecture. It consists of:

- Introduction of an initial and final selection of B.Art et Sc (Planning) learners.
- Creation of new exit level in BSc (Development Planning) for learners who do not succeed to move onto professional planning degree.
- Application of the 3 plus 1 (professional degree) programme principle for B.Art et Sc (Planning) learners.
- Introduction of a BSc (Honnors Transport Planning) taught programme and MSc (Transport Planning) (Research work only). Learners who exit B.Art et Sc (Planning) programme will follow an adapted third year to allow for the exit option (BSc Property

Development) or to apply for selection for Transport Planning or Environmental Management (Hons. to Masters).

- Marketing in prospective learners for transportation planning and environmental management programmes to include qualified persons who have completed an accredited degree course within the built environment. Learners with other fields of specialization will be selected on merit.
- Improved and dedicated alignment between the proposed Transportation Planning, existing Environmental Management and BSc (Hons. Professional) degrees on post-graduate level.

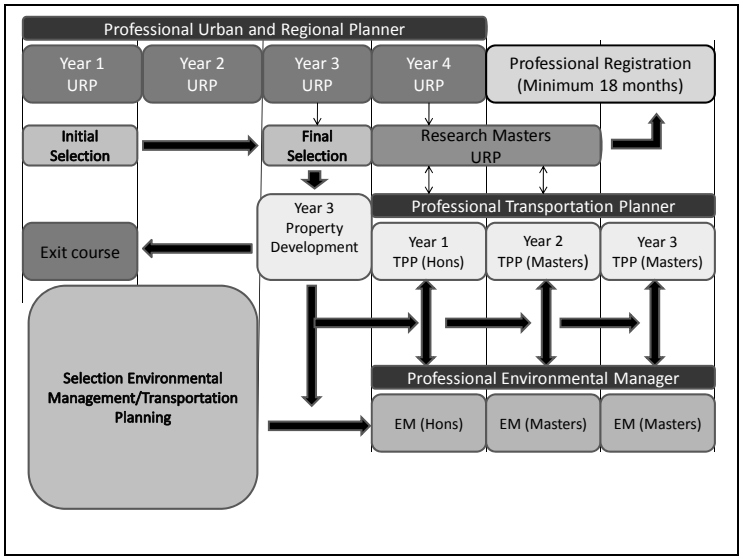

Figure 9: Proposed restructuring to accommodate integration and interface between professions
Source: Own construction (2010)

As far as market demand for the professions are concerned, JIPSA Report 1 (2006:9) defines priority skills as an absolute or relative demand (current or in future) for skilled, qualified and experienced people to fill particular roles/professions, occupations or specializations in the labor market.

A three-point strategy was adopted for the acquisition of priority skills:

- Five high-profile priority skills areas were identified for immediate attention:

  ⇒ High-level, world-class engineering and planning skills for the 'network industries' – transport, communications, water, energy.
  ⇒ City, urban and regional planning and engineering skills.
  ⇒ Artisanal and technical skills, with priority attention to infrastructure development, housing and energy.
  ⇒ In other areas identified as being in strong demand in the labour market.
  ⇒ Management and planning skills in education and health.
  ⇒ Mathematics, Science and language competence in public schooling.

The JIPSA Report 2 (2006:15) states that: "*Town and regional planning has a long-term impact on society and the economy. The quality and efficiency of planning the country's spatial*

development is thus critical for growth. Initial research and consultations by Jipsa indicate that the constraints on effective and efficient planning operate at two levels:

- *Aspects of planning legislation and institutional arrangements require review. These lie outside the remit of Jipsa and will need to be addressed by the AsgiSA technical team.*
- *The determination of the competencies and qualifications required by planners, their professional registration and continuing professional development. These issues are being taken up with the relevant statutory authority, the South African Council for Planners"*

The HSRC (2008:48) also concludes that there is a demand for the education and training of more planners in the various categories. This in itself supports the argument stated above that the opportunity exists to rethink the way in which we as a higher education institution from an education and research perspective approach the interface between the professions. A trans-disciplinary approach towards this endeavor will address the issues related to earlier in addressing strategically and critical thinkers within the broader scope of professional judgement and involvement under discussion in this lecture.

9 Conclusions for optimal integration and growing of the interface relationships

- Points of departure to assume professional responsibility

There are few nations in the world where the state had not attempted to manipulate the spatial pattern of settlement to some or other political, social, or economic end. State interference in the settlement pattern of South Africa dates back to the 1940's. (Dewar *et al*., 1984:3) It has extremely far-reaching influence on the task and role of the urban and regional planner and other professions. It will thus also have important implications for the environmental manager and transportation planner working with the urban and regional planner.

The new democratic South Africa changed the face of planning and development forever. It contains the elements necessary to do away with the legacy of inherited fragmented spatial planning and development influence. In the light of the direct and indirect involvement of the planning profession in South Africa in the implementation of racially based disintegrated spatial development system during previous political dispensations, the question may justifiably be asked how the profession should be transformed and positioned to the professions of environmental management and transportation planning in order to turn this perception around.

The mere fact that members of certain profession are still willing to implement government's policies without questioning the planning, environmental and transportation values and ethics involved, place an important question on whether the members deserved to be endowed being part of a 'profession'. Planning for people and communities is still an accepted planning practice but with a presumed public and stakeholder consultation process that can hardly be classified as more than "window-dressing".

Notwithstanding questions about human rights being asked today, it still results in planning and development that may be termed to be subservient to the political will of the democratic government. It also tends to take the form of application of technocratic planning and development approaches, solutions and practices without addressing the real community, social, economic and quality of life issues at stake.

It should also be remembered that members of the planning related professions do not operate in a vacuum. It functions mostly in teams consisting of engineers, architects, geologists, environmentalists, sociologists, economists and other professions in the built environment. The issues and approaches included in this paper are also relevant to those professions and its roles prior to 1994 and their engagement in the reality of the South Africa of today. It includes the approaches and arguments raised in this lecture related.

From the above-mentioned arguments the question remains unanswered whether or not urban and regional planners, environmental management practitioners and transportation planners as being practised in South Africa today meet the requirements of a profession. This situation will become clear over the next decade subject to how it will be reacting to the challenges of the new political dispensation based on the development of political imagination supported by ethical sensitivity.

It will require the transformation of our approach to education and research. This transformation will have to include the development of values and ethics in planning and development involvement by all professionals. All urban and regional planning, environmental management and transportation planning tasks, decisions and work are politically sensitive and successful results or lack thereof will be the yardstick whereby such professions will be judged and assessed by the stakeholders they are serving.

However, the popular argument and belief that the professions functions within a specific legal framework provided by the government of the day, can no longer be accepted as an excuse for professional insensitivity and non accountability towards society and the environment. Members of the professions in the first instance are citizens of democratic South Africa and should assume their professional duties against this background.

The enactment of legislation to control and lay down education standards; access to the 'profession'; categories of membership; rules and codes of conduct; in itself will not ensure and replace the preconditions for professionalism, responsibility and judgement as discussed above.

The education and training of members of the three professions as dealt with in this lecture needs to develop:

- A worldview.
- Political imagination.
- Sense for public interest.
- Ethical approaches.
- Morality approaches.
- Value system.
- Sense of responsibility.
- Objectivity.

In this regard, the position with regard to ethics as it has developed in the USA through the American Planning Association should be considered. In May 1992, the American Planning Association adopted a statement as a guide to ethical conduct for persons involved in planning as well as advisors, advocates, and decision makers. It consisted of a set of principles to be held in common by certified planners, other practicing planners, appointed and elected officials, and others who participate in the process of planning and development. The American Planning

Association (APA, 1992) uses the following approach as their point of departure in setting up the guidelines:

- The planning and development process exists to serve the public interest.
- Planning issues commonly involve a conflict of values and, often, there are large private interests at stake.
- Those who practice planning need to adhere to a special set of ethical requirements that must guide all who aspire professionalism.
- The approach is formally subscribed to by all participating and certified planners.
- The ethical principles were derived from both general values of society and from the planner's special responsibility to serve the public interest.

The directive principle driving urban and regional planning, environmental management and transportation planning should give preference to sustainable, equal; efficient; integrated development and be based on good and fair governance. This represents a normative approach towards planning and development and will enhance the interface between the professions and create a sound basis for sustainable development our ultimate aim.

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