

Education, Research and Capacity Development in Land Management, Geoinformatics and Geodesy.

THE TUM CONTRIBUTION IN CAPACITY BUILDING IN THE CONTEXT OF THE MANAGEMENT OF LAND

By Univ.-Prof. Dr.-Ing. Norbert Vogt, Dean of the Faculty for Civil Engineering and Geodesy;
Technische Universität München

Ladies and Gentlemen,

Our faculty is proud to host and organize the master study course program called **Land Management and Land Tenure** which is a programme to achieve a master of science. I want to present you the main outlines of this programme and our ideas which contribute to capacity building in the context of the management of Land. This study programme is successful since winter term 2000/2001. During the last year an accreditation by ACQUIN and an evaluation by DAAD took place and they pointed out the high quality of the course system. But the most important proof for our quality is that students from all over the world apply for it, come to Germany to study in Munich, go home during the preparation of their master's thesis, have their exams in Munich again and later go back into their countries to work there as experts with their gained knowledge. The alumni of the courses build up an international network with their colleagues and their former teachers and stay in well organised contact via the world wide web and by casual meetings in a so called centre of land management and environmental risks.

1 Scientific Concept

First of all a study course program needs a clarification of the goals and a scientific concept how to reach these goals.

The goal is to educate young people who shall work as experts, decision-makers and local multipliers towards good governance in developing countries helping that their further social, economic and ecological development is sustainable and contributing to fair and peaceful partnerships of the nations. It is well known that for this purpose the development of urban and rural areas, issues of land policy, land tenure, land administration and land management are of crucial importance. Use of and access to land are going to get high priorities and cause also a rising potential of conflict due to climatic and demographic changes.

Secure land rights and tenure, good governance, poverty reduction, social justice, sustainable economic growth, protection of natural living conditions as well as functioning land markets and planning systems are basic requirements for sustainable development. They are necessary to avoid continued loss of biodiversity, high levels of land degradation

and socio-economic disequilibrium in urban and rural regions as they are typical for many developing countries.

Single-sided or over-utilisation of natural resources constricts the living space of flora and fauna, but also the income basis for the mostly poor people living in rural areas. This causes migration to the cities which are put under pressure. The consequences are increasing informal settlements or slums and health and ecological problems. With this, criminality is increasing as well.

Examples of negative tendencies in developing countries are:

- Lack of integral spatial planning
- Uncontrollable city development
- Neglecting of the problems of rural areas and respective programme deficits
- Poor ecological planning
- Lack of legal certainty
- Half-hearted processes of agricultural reforms
- Lack of decentralisation and participation of civil society
- Deficits in governance
- High risks and defencelessness while facing rising natural hazards

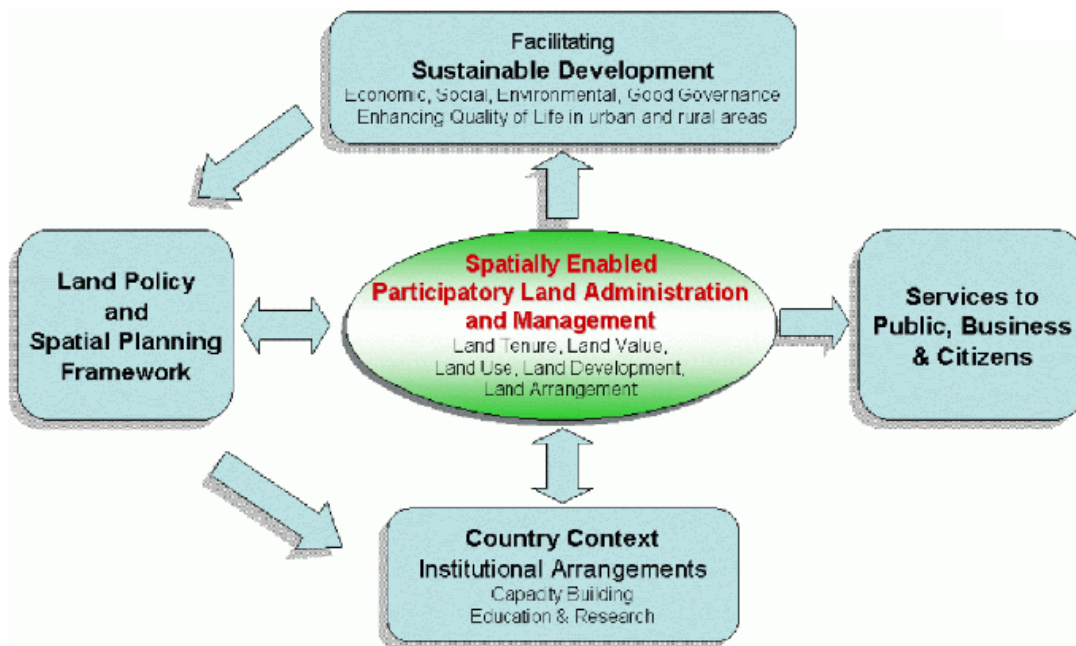
To overcome with these negative tendencies we need good and new strategies to implement fair land use and tenure systems, based on scientific and professional analyses of **S**trengths, **W**eaknesses, **O**pportunities and **T**hreats (so called SWOT-analyses). Highly actual and new theories and strategies of land and environmental risk management are needed, keeping in mind regional and national differences in culture, politics and law. Beside these, other main issues are land tenure and land administration, land use, land markets and valuation, land development and land readjustment, which are embedded in land policy, land law and spatial planning.

For dealing with these issues, there is a need for a mixture of different methods and skills from geodesy, photogrammetry, remote sensing, **G**eographic **I**nformation **S**ystems, cartography, land economics, geology, agricultural economics, rural and urban development and also land conflict management.

Many of these issues will have to be adjusted on global scale. Examples are the access to vital natural resources such as water or the global efforts for protecting the climate. These call for cross-linked thinking and an exchange of experiences among experts from different countries and continents.

The following diagram tries to picture the respective interrelationships by using the land management vision as an example, which was developed by experts from the International Federation of Surveyors (FIG):

An International Land Management Vision



Source: International Expert Group Meeting, Melbourne November 2005, adopted by Prof. Magel in 2007

Land management as an “umbrella” includes pivotal political and societal spheres as well as static and dynamic components of land tenure, land administration, land development and land readjustment, which are necessary for fulfilling the need for a holistic and sustainable development of rural and urban areas, as well as sufficient recognition and prevention of hazards.

These need to be adopted by well educated land experts.

Within this frame, the TUM master course „Land Management and Land Tenure“ has to be seen as a response to an increasing demand for scientific knowledge and practical skills of topics related to land management, land tenure and environmental risk management in the rural and urban areas, particularly in developing countries.

Since the year 2000 the postgraduate master course „Land Management and Land Tenure“ exists and focuses on development policies. The course is supported mainly by the German Academic Exchange Service (DAAD), Gesellschaft für Technische Zusammenarbeit (GTZ), Hanns Seidel Foundation (HSS) and the “Förderkreis Bodenordnung und Landentwicklung München e.V.”. The programme has been introduced by the Chair of Land Management at the Technische Universität München and is at the moment the only postgraduate master course in the field of land management with a focus on development policies in Germany.

This course is built on three pillars:

- Geodetic and engineering skills
- Methods of land administration, land management and environmental risk management
- Legal and socio-economic basics

These three pillars are embedded in the faculty of civil engineering and geodesy with their connections to other faculties within the TU München.

2 Students, Programme, Teachers

Who are our students, which program has to be followed, who are the teachers?

The study course programme addresses skilled persons who already have a relevant university degree and/or adequate practical experience and who have or want to get a leading position in their home countries in the described fields. The most important aim of this course is to empower them to face the complex and changing problems in land management with well-funded and rich knowledge and modern methods and instruments. One very important aspect is the skill to recognise a problem as such on time, understand, classify and solve it and to know adequate instruments for handling it.

These pivotal academic and leading skills are taught as “golden threads” during the whole master course and are practice-oriented deepened through different seminars, workshops and internships. Above all, a well-funded and rich knowledge will be communicated, which sensitises the students to the mentioned aspects of land management, land tenure and environmental risk management. In addition to the scientific education, the students are to be empowered to communicate their knowledge. For this, great importance is attached to techniques of presentation and rhetoric, as well as other soft skills – such as competences in conflict management.

The actual study programme of the first year is shown on the next slide

I. SEMESTER

Units	Duration of Unit	Credits
Unit 1 Global Framework for Land Management and Land Tenure	One week	2
Unit 2 Study Skills	One week	2
Unit 3 Team Building	Three days (weekend)	-
Unit 4 Rural and Urban Development	Two weeks	4
Unit 5 Land Rights and Land Tenure Systems	Two weeks	4
Unit 6 Land Economics	One week	2
Unit 7 Land Administration	Three weeks	6
Unit 8 Land Management	Three weeks	6
Unit 9 Internship	Four weeks	5

II. SEMESTER

Units	Duration of Unit	Credits
Unit 10 Environmental Risk Management	Two weeks	4
Unit 11 Project Planning and Impact Monitoring	One week	2
Unit 12 Photogrammetry and Remote Sensing	One week	2
Unit 13 Land Conflicts	One week	2
Unit 14 Conflict Management	One week	2
Unit 15 Visualisation of Geodata, Cartography, GIS and GPS	Three weeks	6
Unit 16 Land Policy	One week	2
Unit 17 Research Skills and Preparation of Master's Thesis	Two weeks	4
Unit 18 Scientific Preparation of Master's Thesis	Two weeks	4
Unit 19 Excursion	One week	1

The third semester is reserved to prepare the master's thesis which regularly deals with a problem in the country of the student where the students also work during that time.

These methods and instruments are taught by a number of lecturers with a relevant academic background, but also by practitioners. The students will get a view into land management, which is application-oriented. Many lecturers have been given this responsibility as they work internationally and have experiences in different national

contexts. Academic lecturers guarantee a profound theoretical education with a simultaneous focus on use-oriented research.

Complemented by a lot of lecturers, which are practitioners in the area of land management – such as the GTZ, relevant agencies or private consultants – the students will get a global understanding of land management and relevant issues.

After successful completion of the programme, students receive the academic degree “Master of Science (MSc) in Land Management and Land Tenure” which will qualify them for professional work and scientific research. This academic degree will enable students to enter PhD programmes.

3 Recruitment of students

The master courses should optimally be attended by 15 to 20 students. This allows for an intensive interchange as well as for good supervision and mentoring. It would also be difficult to find funding for more students as only few of them can pay study fees and residence in Germany by own resources. To come to this number much more applications are necessary to allow for choosing according to high qualification and suited candidates.

During the first 5 years there were 323 applications from 52 countries. 63 Students from 25 countries attended the courses, 34 % of them were female. With one exception all reached their master's degree, few of them with half year's delay.

To come into contact with interested students local activities in developing countries are necessary. Here the international contacts of Prof. Magel have been very helpful. Also fact finding missions and intensive exchange of ideas with members of local political institutions have been undertaken by the members to create and stabilize cooperations. As we can see during this conference, this international network is active and successful.

Asia (27 participants)		Africa (23 participants)		South East Europe (11 participants)		America (2 participants)	
Kambodscha	5	Ghana	9	Georgien	5	USA	1
China	4	Äthiopien	6	Türkei	4	Chile	1
Bangladesch	3	Tansania	4	Kroatien	1		
Mongolei	3	Kenia	3	Montenegro	1		
Philippinen	2	Libyen	1				
Jordanien	2						
Vietnam	1						
Myanmar	1						
Bhutan	1						
Syrien	1						
Palästina	1						
Indonesien	1						
Sri Lanka	1						
Iran	1						

4 Resources

We all know that such a program needs resources.

The financial situation is trusted. As the study course programme is an advanced training for candidates which are already professionals at a certain level, the students have to pay fees which come up to 4000 € per participant. Additionally there is funding for tutorials and special teaching by DAAD and other generous partners. The university, the department and the chair of Bodenordnung and Landentwicklung do not charge for giving capacities in form of rooms, manpower (2 persons) and means for equipment. Professors and scientific staff of our department and also from other faculties are involved in teaching, most of them far beyond their duties. On the other hand, it is always necessary to apply for third party resources and help where ever possible.

Many of the courses are held by external lecturers with high experience and expertise. They bring in their time and knowledge and the biggest part of their payment is a high appreciation by the students and colleagues. We are very grateful for their engagement.

Of course there is a library, working places provided with computers and a suited room for seminars and assemblies.

5 Quality Management

To approve that our goals will be achieved and that corrections are possible where they are necessary a quality management system is necessary. At the end of each course the participants are asked to evaluate it. The results are used to prepare the courses of the following year and to give a response to the lecturers.

At the end of the programme each year students and lecturers participate in an integral evaluation – based on the concept of Appreciative Inquiry. It takes place under consideration of possibly new topics and activities to develop the study program and keep it actual. Following these evaluations the course program and examination regulations have stepwise been changed and enhanced over the time.

Last but not least the accreditation and evaluation processes which took place during the last two years help to assure the quality of the programme, at least by making everything very transparent.

6 Alumni networking

Many of the 72 alumni (updated 2007) are by now working in their home countries holding different important positions related to land management. These alumni and also future graduates have an important meaning as multipliers as future leaders in agencies or private

companies. They are welcomed to use the internet alumni-network for staying informed about recent developments in the field of land management.

An Alumni newsletter is published regularly four times a year. The contact data of the alumni are given to interested international and local organisations and the centre of Land Management and Environmental Risk acts as a market place for relevant informations.

Additionally, meetings of the alumni in Munich shall take place regularly and the first one was organized in 2006 with a very high number of alumni coming to their alma mater again for discussions and exchange of ideas.

I hope you could get an idea of how the TUM contributes to capacity building in the context of the Management of Land. I offer my respectful thanks to those persons in our faculty who take care for these activities and I than the audience for their attention.