



Technische Universität München

Postdoctoral Research

**Role of international higher education in developing
employment competences: Opportunity and limitations of
higher education system**

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Executive Summary

There has been a recent increased recognition of the need to enhance students' employability. And higher education institutions are becoming increasingly responsive to students and employers' needs. As anticipated by a French economist, "Each student will be competing with other students throughout the world with similar skills, but also ... the efficiency of the universities will be ... a major factor in a country's competitiveness"^a. Employability of graduates is also one of the current policy concerns emerging in higher education developments and the implementation of Bologna processes. It calls for a continued proactive role of universities and other higher education institutions toward developing lasting employability.

The term 'employability' is extremely complex and difficult to define. However, it is different from employment: being employed means having a job; being employable means having the qualities for maintaining employment, planning for progression and managing the next career step^b. In this research the term 'employability' refers to the 'career capital' that individual needs to get a job or acquire job specific skills while on a job or to manage the next step of career.

For describing the performance of the MSc Programme Land Management and Land Tenure in developing better employability in this research five indicators have been used:

- Level of job satisfaction of alumni in terms of income and position
- Prospect of self employment/ business
- Prospect of further study
- The extent of contribution of graduation degree to the graduates' academic/ professional careers
- Nature of problems the graduates face in job market

To gain insight into the above noted indicators primary data were collected across the three stages. Firstly, online survey was conducted with the alumni using two self-administered questionnaires including close ended and open ended questions. Secondly, focus group discussion was conducted with a total 30 alumni, and thirdly, semi-structured interviews were conducted with programme management team.

The research confirms that graduate employability has become an increasingly focus of MSc Programme Land Management and Land Tenure. It is evident that measures already adopted

^a Jacques Lesourne, "The Future of Industrial Societies and Higher Education," *Higher Education Management* 1(3), 1988, pp. 284-97.

^b Metcalfe and Gray (2005): *Employability and doctoral research postgraduates*, Learning and employability – Series Two, The higher education academy

by the MSc programme management show their awareness of the need of their students in terms of their particular job market and commitment to enhance their opportunity for employment. The programme is not only subject specific but also embedded into the pragmatic curriculum with a specific aim of developing managerial, technical, scientific and communication skills. Engaging employers and international consultants in delivering lectures and theses supervision is also a pragmatic step taken by the programme management to enhance the employability of graduates. The cooperation of the centre with different international organizations (e.g. GLTN and GIZ) and higher education institutions (e.g. ITC-university of Twente, Netherlands; Renmin University, China; Madrid Polytechnic University) provides a superb range of opportunities to help the participants of the programme to gain the experience, skills and knowledge that they need to succeed during their time at TUM and beyond. The survey results showed high levels of graduates' satisfaction concerning studies in MSc Programme Land Management and Land Tenure as a whole. During interview the alumni also confirmed that different aspects of the academic programme (e.g. curriculum, international experience, alumni networks) had the highest influence on their career development.

The data for the study gathered from alumni records showed that after graduation proportion of graduates going to employment in land related fields accounts around 85 percent. The difference in job satisfaction level between females and males are generally not very large, and in general, both sexes seem to be almost equally satisfied with their present job status. However, females seem to have comparatively less access to suitable jobs and that might be explained by the fact that there are substantially more females concerned about their job location.

The survey data also showed that large majority of the graduates are also pursuing doctoral research. Presently 11 percent of total graduates are doing doctoral research on full time basis and this percentage would be 27 percent if the part time doctoral study is being considered. To date, a total of 6 alumni of the programme have obtained a PhD degree from TUM and other German institutions.

The research came up with the conclusion that MSc Programme Land Management and Land Tenure is one of the highly regarded programmes for the practitioners working in land related fields. Being supported by the TUM president, DAAD, GIZ, BBIV and some other organizations the programme has developed an international reputation. The programme has its own financial commitment of raising income also. However, not only to roll the programme, but also to grow at larger scale it needs continuous support from TUM authority and sponsorship from remarkable foundations.

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Abbreviations

| | | |
|--------|---|--|
| BMBF | : | Bundesministerium für Bildung und Forschung |
| BBIV | : | Bayerischen Bauindustrieverbandes e.V. |
| DAAD | : | Deutsche Akademische Austauschdienst (German Academic Exchange Service) |
| ECOSOC | : | Economic and Social Council |
| GLTN | : | Global Land Tool Network |
| HEFCE | : | Higher Education Funding Council for England |
| HSS | : | Hanns Seidel Stiftung |
| LMLT | : | Land Management and Land Tenure |
| OECD | : | Organization for Economic Co-operation and Development |

Chapter One

Introduction

Does the university have to meet the expectations of students . . . or is the idea that the students grow to fit the expectations the university has of them? (Evans 1999, p. 10)

1.1 Higher education, employability and employment

Education is a key part of strategies to improve individuals' well-being and societies' economic and social development. During the last couple of years much emphasis has been put on the relationship between higher education and the world of work (Teichler, 1999, 2000; Kellermann & Sagmeister, 2000; Kivinen *et al.*, 2000; Woodley & Brennan, 2000 quoted in Maharasoa and Hay 2001, p. 139). At the Rio Summit, the role of education in promoting sustainable development was made explicit by Agenda 21, the global action plan for the 21st century:

"Education ... should be recognised as a process by which human beings and societies can reach their fullest potential. Education is critical for promoting sustainable development and improving the capacity of the people to address the environment and development issues".

MDGs also have emphasized education's essential role in building democratic societies and creating a foundation for sustainable economic growth as education contributes directly to the growth of national income by improving the productive capacities of the labor force. The OECD Report "Education at a Glance 2008" provides evidence in favour of that. According to the report, employment rates rise with educational attainment and unemployment rates are generally lower for higher-educated individuals. It found that unemployment rate for those aged between 25-64 with tertiary education was only 3.5 percent in 2006. Therefore, education is an evitable vehicle to achieve the sustainability in society.

'Higher education' and 'higher education system' became popular terms in the second half of the twentieth century. The term 'higher' suggests a specific quality, e.g. a certain degree of cognitive rigour, an expectation that students learn to question prevailing rules and tools and understand theories, methods and substance of 'academic' knowledge (Teichler 2004, p. 3). During the final decades of the twentieth century, terms such as 'post-secondary', 'tertiary' and 'third-level' gained popularity (OECD, 1998) also as synonymous words of higher education. On the other hand, 'employability' often seems to refer to 'work-readiness', that is, possession of the skills, knowledge, attitudes and commercial understanding that will enable new graduates to make productive contributions to organisational objectives soon after commencing employment (Mason, Williams and Cranmer, 2006). In an extended discussion of the employability concept, Hillage and Pollard

(1998, p. 11) put more emphasis on individuals possessing the capability 'to move self-sufficiently within the labour market to realise potential through sustainable employment'. In some instances, the ability of an institution to ensure employability has become an indicator of institutional quality and is depicted as a notion of quality (Maharasoja and Hay 2001, p. 139). The term 'employability' is being used since 2001 in the framework of the Bologna Process as the process originates from the recognition that in spite of their valuable differences, European higher education systems are facing common internal and external challenges related to the growth and diversification of higher education, the employability of graduates, the shortage of skills in key areas or the expansion of private and transnational education. However, employability implies something about the capacity of the graduate to function in a job, and is not to be confused with the acquisition of a job, whether a 'graduate job' or otherwise. Of course, all things being equal, the more employable graduates should be quicker to settle into graduate jobs (Yorke 2006, p. 7).

Though apparently education has positive correlation with employability and employment, regional differences often bring an affect on this relationship as regional social and economic disparities affect graduates' job opportunity. Further more, work experience has emerged from the long-term studies as one of the key determinants of graduates finding suitable employment. Therefore, to have only higher education does not confirm always employability. One can be highly educated but not employed. The relationship between higher education and employment and the type of higher education provided varies in most respects more substantially by country than by field of study. There are more frequent 'national' cultures than 'disciplinary' cultures in the relationships between higher education and the world of work (European Commission, 2002).

Structures of higher education systems, or more precisely the shape and the size of higher education systems, have been among the issues of higher education policy in the economically advanced countries of the world for more than four decades (OECD, 1973; Papadopoulus, 1994; UNESCO, 1995 quoted in Teichler 2004, p. 2). But, according to Abrandt Dahlgren et al. (2006) as well as Johnston (2003) there is still a lack of research regarding the transition from higher education to working life, especially from interpretive and critical perspectives (quoted in Martinsson and Olsson, 2008). BMBF (2008, p. 25) also argued that to assure and develop the quality of an education system, a scientific basis for reliable assessment of the system's status and outlook must be provided. Therefore, the research paper suggests that through the reorganization of major trends and challenges of employability in different regions, it is possible to develop innovative approaches of higher education or strategies for the improvement of education system which can easily cope with situation demand and can enrich the research field on relevant issues.

1.2 Enhancing women's employability through higher education is crucial

The Fourth World Conference on Women, held in Beijing in 1995, recognized that women's literacy is key to empowering women's participation in decision making in society and to improving families' well-being. In addition, the United Nations has articulated the Millennium Development Goals (MDGs), which include goals for improved education, gender equality, and women's empowerment.

The differences in employment distributions of women and men within occupations have been, and continue to be, a prominent feature of the job market (Blau and Ferber, 1986). Different researches have indicated a high degree of difference that remained fairly constant from the early 1900s up until about 1970 (Cotter, et. al. 1995). But from 1980s women continued to make inroads into male-dominated occupations although the pace of change slowed (Cotter et. al., 1992). No doubt that with all other factors women's enrollment in higher education played a vital role to reduce the gender gap in employment. Therefore, the issue of gender employment has gained importance in recent years and focus has been given on rising educational attainment of women.

Despite of the improvements during the last two or three decades, access to higher education remains a problem for women in many countries while women have fairly equal access to higher education in the more developed regions. ECOSOC statistics show that though girls actually outnumber boys in tertiary level education in a very few countries, most notably in some of the Middle East and former Soviet bloc countries an obvious gender gap in education tends to appear and on average, grows more severe with each year of education (World Economic Forum 2005, p. 5). In addition, the number of women represented among tertiary level educators is lower than among primary level educators (ibid). The reason is that the interaction between higher education and employment are often affected by conservative culture and social norms, in which traditional gender roles are strongly enforced. Such type of situation is observed mainly in the Middle East and North African (MENA) countries. The poor access to higher education is also accompanied by under-representation of women in science and technology and a clustering of women in the traditional female studies of arts, humanities, languages, education, nursing and medicine (UNESCO 2002, p. 9). As reason behind this situation different researches suggest that women who specialized in a male-dominated occupation are particularly disadvantaged on the job market (Hultin 2003; Reskin and Roos 1990 quoted in Reimer and Steinmetz, 2007). However, the situation in the region is slowly changing. Women activists, who generally come from the educated segments of society, are challenging this social inequality and calling for women's economic, political, and social empowerment.

1.3 International higher education cooperation programmes for developing countries

The quality of higher education has become a primary agenda of the countries across the world. In spite of that in many developing countries higher education exhibits severe deficiency including lack of well designed academic programmes and resources. As a result, very few higher education programmes perform to a consistently high standard. Moreover, different studies shows that the donor institutions have tended to place more emphasis on primary education in developing countries and more recently on secondary education in their development assistance. Therefore, 'demand absorbing' higher education in developing countries is still a prime concern.

International higher education programme can contribute to the education of staff in public and private sectors as well as civil societies in developing countries through building capacity at master's level. As circulated by BMBF (Federal Ministry of Education and Research) that the Federal Government of Germany is supporting German institutions of higher education in their efforts to assert themselves in growing international competition. Higher education marketing is to attract students, young scientists and researchers worldwide to study and conduct research at German institutions of higher education. Deutscher Akademischer Austausch Dienst (DAAD - German Academic Exchange Service) is also committed to promote access and equity issues in higher education in developing countries through diverse range of postgraduate programmes. Through providing scholarship to the students from developing countries to support their education in German institutions (including Technische Universität München -TUM) DAAD is also making considerable contributions in the field of higher education in developing countries wherein students are expected to return back and serve their home country after completing their study. GIZ's close links to tertiary education also focuses strongly on sustainable human resource development. By improving the quality of teaching and learning, by strengthening linkages between universities and the industrial sector, and by promoting the efficiency of institutional governance structures, GIZ helps to make tertiary education more relevant for sustainable economic and social development in its partner countries.

1.4 Objectives of the research

The main objective of the research is to identify the realities between higher education and employability. The research has focused on how higher education is playing a key role in developing employability for men and women in developing countries and to bring the gender equality as well. The study took a detailed look at education opportunities in the Master's Programme Land Management and Land Tenure at Technische Universität München (TUM) in development of professionals in land related fields.

The research was also intended to identify the impact of higher education on women's employment avenues and to identify the barriers, if any, which are hindering their

employability. Taking a look at some of the trends the research has explored options that could provide a better avenue for improving the employability of TUM graduates and performance of TUM Master's programme as well.

1.5 Contribution of the research

It is not enough to make higher education more widely available; the quality and fields of education also need to be improved so that the gained knowledge can be applied in the professional careers. Education systems should be sensitive enough to respond the present and future needs. The research explored the development of the 'employability' agenda in higher education, examined the nature and implication of change in education system for graduates and assessed the attributes of graduates need to be competent in professional field. The research shed light on the pitfalls of present education system through the respondents' knowledge, experiences and opinions. Beside this Master's Programme Land Management and Land Tenure some other international programmes (i.e. Master of Environmental Engineering, Master of Transportation System and Master of Sustainable Resource Management) are also running in TUM where participants (including women) are mainly from developing countries. Therefore, the findings of this research can bring also favourable guidelines for other programmes.

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Chapter Two

Employability: What is it? And how to measure?

The research highlighted the significance of developing employability, in addition to required competence. Therefore, the first part of the chapter gives a critical account of current debate in the literature on employability. It presents a brief literature review to develop further the base of this research. Based on the brief literature review the later part of the chapter describes the graduate employability indicators and data collection methods adopted in the research.

2.1 Employability as a concept

Literature review revealed that the concept of employability was initially formulated during the 1950s but did not have a real impact until the end of the 1990. Yorke (2006a, p. 8) defined employability as a set of achievements – skills, understandings and personal attributes – that make graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy. Employability is suitability for employment, not the same as employment rate. And therefore, employment rate cannot be an indicator of employability.

2.1.1 Employability is not employment

Employability is not same as employment. Rather it refers to achievement and potentials. Hillage and Pollard (1998, p. 11, quoted in Knight and Yorke 2004, p. 22) argued that employability is not just about what people need to get and keep a job, but should take explicit account of the level of demand for employment and the way employers articulate their demand. They also captured something of this in their four elements description of employability (quoted in Knight and Yorke 2004, p. 22) as

- What people have to offer employers – i.e. their assets in terms of knowledge, skills and attitudes
- The extent to which they are aware of what they have got and they choose to use it – deployment
- How they present themselves to employers and
- The context in which they seek employment

2.1.2 Employability: Is it only about higher education?

According to Harvey (2005) there is no true connection between being employable and actually getting a job, too many other variables are involved. Brown and Hesketh (2004 quoted in Johnston and Watson 2006, p. 236) analysed employability in their research with

graduate recruiters and fast track applicants and described the experience of learning in terms of a process of social construction of personal capital – in other words, who you are and what you know. They offered a useful breakdown of personal capital expressed as:

- Hard currencies: credentials, work experience and sporting achievement
- Soft currencies: interpersonal skills, charisma, appearance and accent

In this account personal capital evidently amounts to more than academic credentials, plus key skills and offers a goal for complex personal development. Employability is possession of skills which is not only limited into the skills gained from the higher education. Key skills (i.e. communication, team working, problem solving and own learning and performance) are the most important elements in making graduates employable and higher education not necessarily refers to developing all skills always. In the light of the literature the challenges facing graduates is much more complex than simply obtaining a good class of degree and a standard of set of key skills (p. 237). Therefore, a graduate has to be equipped with many personal characteristics to respond to the different expectations of employers which can vary from job sector to sector.

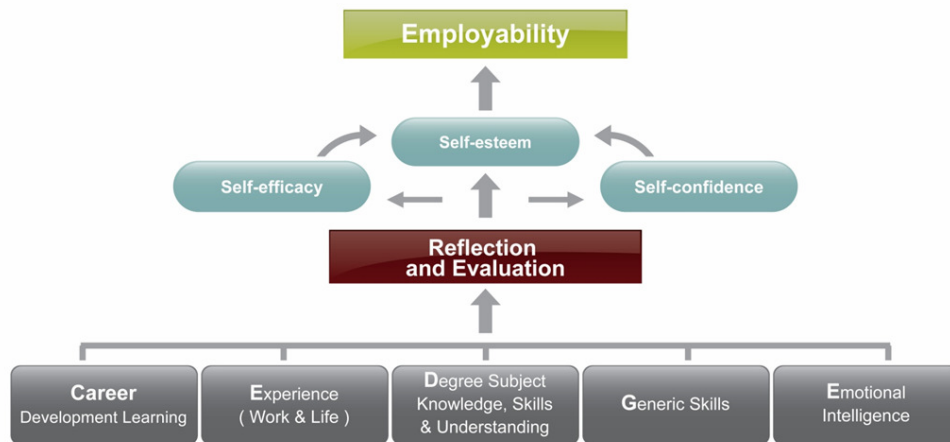
Through the TUNING Project¹ within which academics, employers and graduates from various disciplines were asked subject specific competencies and generic competencies need to work in their fields. The 10 most important generic competences the three groups presented are (Vukasović, 2006):

- Capacity for analysis and synthesis
- Capacity to learn
- Problem solving
- Capacity to apply knowledge in practice
- Capacity to adapt to the new situation
- Concern of quality
- Information management skills
- Ability to work autonomously
- Team work
- Capacity for organisation and planning

Harvey (2001, p. 103) developed the point with Little (2001, p. 126) that the impact of social and cultural capital (independent of the education) on the operation of the labour market varies by the countries (quoted in Knight and Yorke 2004, p. 10).

¹ TUNING Educational Structures in Europe started in 2000 as a project to link the political objectives of the Bologna Process and at a later stage the Lisbon Strategy to the higher educational sector.

Figure 01: The essential components of graduate employability



Dacre Pool & Sewell (2007)

2.1.3 Curriculum development has implications on employability

According to Yorke (2006b) curriculum design offers opportunity for students to develop employability. Employability is a slow growing crop which is not ideally served by short term curricular intervention. Co-curricular and extra curricular activities are important vehicles also to develop generic characteristics.

2.1.4 Unemployment does not show low employability

Low rate of employment does not necessarily reflect the low level of employability. Mismatch between limited supply of workforce and demand for labour market is not caused merely by lack of appropriate skill and knowledge of the graduates. The mismatch in the field of study and profile and lack of 'suitable job' (in terms of wage, responsibility and location) are the reasons behind being unemployed in spite of having employability. Wide and complex conditions including cultural and racial factors also decrease employment rate across many fields and qualifications.

2.2 Employability in Bologna Process

The Bologna Process² has had a strong and positive effect on the debate about the relationship between higher education and professional life, in particular concerning the preparation of the graduates for the labour market (Haug and Tauch, 2001). It has raised the

² The purpose of the **Bologna Process** (or **Bologna Accords**) is to create the European Higher Education Area by making academic degree standards and quality assurance standards more comparable and compatible throughout Europe, in particular under the Lisbon Recognition Convention. It is named after the place it was proposed, the University of Bologna in the Italian city of Bologna, with the signing in 1999 of the Bologna declaration by Ministers of Education from 29 European countries.

profile of the issue and increased the awareness that the employability of graduates has become an increasingly important and shared concern all over the Europe (ibid).

Before Bologna Declaration the Sorbonne Declaration³ of 25th of May 1998 also stressed the Universities' central role in developing European cultural dimensions. It emphasised the creation of the European area of higher education as a key way to promote citizens' mobility and employability and the Continent's overall development (Bologna Declaration 1999).

The Bologna Working Group on employability defined employability as: *the ability to gain initial meaningful employment, or to become self-employed, to maintain employment, and to be able to move around within the labour market.* The core mission of higher education in this context is to equip students with the knowledge, skills and competences that they need in the workplace and that employers require; and to ensure that people have more opportunities to maintain or renew those skills and attributes throughout their working lives (whether they are employed or self-employed). At the end of a course students should have an in-depth knowledge of their subject as well as generic employability skills. These should include the ability to engage in different disciplines; to pursue flexible learning paths and to ensure continued personal and professional development.

In summary, according to Bologna Declaration on **Employability in the context of the Bologna Process** skills, knowledge and personality are important for employability.

- Subject specific knowledge and skills
- Generic or soft or transferable skills (communication or presentation skills, leadership and teamwork capabilities, use of ICT, critical thinking etc.)
- Personal characteristics, such as motivation to learn and continuously improve one's own capabilities.

For employability it is necessary to have all the three present. However, depending on the field and position some may be more important than the other.

As a response of the universities to the Bologna Declaration in 1999 and formulation of the way forward employability has been acknowledged by universities, in particular in the academic convention 'Shaping our own future in the European Higher Education Area' which took place in Salamanca, Spain, on 28–30 March 2001. In the message of **Salamanca Convention of European Higher Education institutions** it was stated that

³ The Sorbonne Declaration was signed in 1998, by the ministers of four countries, namely France, Germany, UK and Italy. The aim of the Declaration was to create a common frame of reference within the intended European Higher Education Area. It was meant to ensure the promotion of qualifications, with regard to the job market.

European higher education institutions recognise that their students need and demand qualification which they can use effectively for the purpose of their students and career all over Europe and university acknowledge their role and responsibility in this regard.

The convention also focused on curriculum development with a view of life-long employability and flexibility of students as well as of programmes.

2.3 How to measure employability?

Employability outcomes can be measured in terms of ‘hard’ outcomes, such as movement into jobs (LSC 2008, p. 16). HEFCE (2001) measures employability in terms of graduates getting ‘any jobs’. Little (2001) argues in different way. He suggested that one of the measures of ‘output’ from higher education is the quality of graduates, and from this notion graduate employability has emerged. If getting ‘any job’ is used as a measure of success, it calls into question the notion of ‘quality’. In this respect the question of job satisfaction comes which has been defined as a measure of employability by Harvey (1999). Proceeding to further education can be also considered as employability as it enhances further the graduates’ attributes.

2.4 Conceptual framework

Operationalization is the process of defining a fuzzy concept so as to make the concept clearly distinguishable or measurable and to understand it in terms of empirical observations. In other words, operationalization is the process of going from a theoretical concept to a measurable index (Harvey and MacDonald, 1993). Based on the theory of operationalization, Harvey (1999) identified the following stages of operationalization in employability of higher education institutions:

- To *define* the theoretical concept
- To break it down into *dimensions* that cover the meaning of the concept
- To identify a *range* of indicators for each dimension
- To *select* one or more indicators for each dimension
- To design *instruments* to collect information on each indicator
- To *decide* whether to have a multi-dimensional set of indicators, an array of indices or a single index
- Where appropriate, to *combine* indicators into an index

Based on above noted stages and theories discussed earlier the research adapted the following operationalization of employability:

Table 01: Operationalization of employability

| | |
|--|---|
| Stage | |
| Theoretical definition | Employability is the ability of graduates to get a job |
| Dimensions | e.g. Nature of employment and further study |
| Indicators (discussion in more detail under section 2.5) | e.g. i) Level of job satisfaction in terms of income and position ii) Prospect of self employment/ business iii) Prospect of further study iv) How the graduation degree helped academic/ professional career v) Nature of problems they face in job market |
| Instruments (discussion in more detail under section 2.5) | e.g. i) Questionnaire survey through online ii) Face to face interview iii) Focus group discussion |

2.5 Methodology

The methodology adopted was a case study approach, carrying out a study of employability skills in the MSc Programme Land Management and Land Tenure to evaluate current impact and consider areas for improvement. MSc Land Management and Land Tenure (LMLT) is an international MSc programme for the professionals at Technische Universität München which was officially started in 2001. The first batch graduated in 2003. By March 2011, 9 batches have graduated and presently the programme has a total of 106 alumni covering 38 countries. When the research was started in 2010, 9th batch had not graduated. Therefore, this study is confined only within 8 batches covering 93 alumni from 35 different countries (Annexure A).

The research has relied on two types of data sources:

2.5.1 Secondary data

- A literature review to set the context for the term 'employability' and its indicators
- Official records on alumni as a source of quantitative data
- Records of strategic management of the MSc programme

2.5.2 Primary data

To get comprehensive data on graduate employability from alumni and programme management team the primary data was collected through three different methods -

Questionnaire survey: Two different questionnaires were distributed through the monkey survey software to the alumni of the programme. The researcher received 39 responses in both cases which account for nearly 42 percent of total. Respondents' ethnic origins are ranged from South and South-East Asian to African to Latin American.

The first questionnaire related to alumni's employment status (Annexure B) was sought to ascertain basic information on the contribution of higher education to the respondents' professional career. This includes their level of job satisfaction, the challenges they face in job market and particular aspects of the higher education from which they have been benefited most. The questionnaire also focused on identifying obstacles (i.e. sexism or racism) in the post-graduate job market and social and cultural perceptions on their employment. There was an open question to give suggestion(s) on how to improve the efficiency of higher education to contribute more in creating employment opportunity.

The second questionnaire was designed to identify the extent of the opportunity of further education the alumni received and the best aspects of the MSc degree in helping the opportunity to seek further study.

Focus group discussion: In October 2010 the alumni summer school was arranged in TUM and 39 alumni from 24 different countries participated. The researcher took the opportunity to arrange a focus group discussion with the alumni. The main focus of the discussion was to evaluate the importance of their study at TUM in developing employability. During the discussion the female participants equally expressed their personal experiences in their professional life.

Key informant interview: Structured and semi structured interviews were carried out with the programme management team. In this respect interview of Prof. Magel, Director of Centre of Land Management was taken to know his opinion to improve higher education policy. During interview he gave suggestions to improve the performance of TUM Master's programme to increase employability of professionals from developing countries. Mr. Jorge Espinoza, the Programme Manager also provided valuable information on programme management.

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Chapter Three

Job profile survey:

Employment conditions, job requirements and job satisfaction

The chapter looks more closely at the relations between education and jobs. It also provides an insight on the commitment of TUM master's programme in developing students' employability through study. The intention of the chapter is also to focus on the change in employment condition after attaining higher education, graduates' job requirements, job satisfaction and problems faced by the graduates in the job market.

3.1 The commitment of the MSc Programme LMLT to enhance employability

The MSc programme stresses the importance of making the land professionals specialized on their respective fields and enhances their employability through development of skills and competencies. The programme provides wealth of employability initiatives as part of academic studies.

Team work

Teamwork is used as a strategy for enhancing learning process in the programme. Group of students often work together during their course of study. Through the unit of 'Team Building' the students are explicitly trained to understand the process of team work and means of resolving the tension that stem from team work.

Curriculum

The programme has given its focus on helping its students to improve their employability skills through embedding employability in the curriculum. All courses seek to develop students' attributes that will be sought by the employers alongside academic knowledge, such as communication, presentation and problem-solving. Therefore, besides land management related courses the curriculum is designed to include soft skill development courses (e.g. study skills, research skills, project planning and mediation and conflict management) and technical skill development courses (e.g. GIS, GPS, cartography, surveying, remote sensing and photogrammetry and LIS).

Internship

Work experience can significantly enhance the prospects of getting a graduate job at the end of MSc study. The internship organised by the chair gives an opportunity to keep skills update and potentially helps the students into employment at the end. The students in the MSc programme have also the opportunity to do one month internship in different land

related organisations within and outside Germany. Every year the students are doing internship in different state organizations in Munich (e.g. Bayerisches Landesamt für Umwelt, Amt für Ländliche Entwicklung Oberbayern, Referat für Stadtplanung und Bauordnung, Landesamt für Vermessung und Geoinformation LVG), international organizations (e.g. GIZ, FAO) and in land related organizations abroad (e.g. students' home countries, Canada and UK).

Involvement of professional bodies

Professional bodies work with the programme in variety of ways. They not only offer internships, but also they collaborate in the development and delivery of lectures on courses and projects. Many of the courses have involved many international consultants from Germany and abroad (e.g. UK, Portugal and Turkey) to share real world experience. The programme also involves wide range of officials from different German Ministries to enable the students' access to quality resources.

3.2 Career destinations of alumni

It is important for the programme to know the destinations of its graduates. The data for the study collected from alumni records provided present occupational status of alumni. The data showed that alumni have achieved success at the top level in a variety of sectors. The researcher categorized the career destinations of the graduates into 7 major sectors:

- Core land management related fields like land administration, land valuation, land acquisition and distribution, land surveying
- Education sector including teaching, research and programme management
- Urban development and planning, civil engineering and architecture
- Environment, agriculture, rural development and forestry
- International organizations (e.g. GIZ, USAID, UN-Habitat, ADB)
- Other land related fields (e.g. GIS, LIS, cartography, real estate etc)
- Further study (i.e. doctoral research)

The data further showed that 29 percent of the alumni are working in core land management fields and are holding good positions in relevant ministries/ agencies in respective countries. 15 percent are involved in education sector. There is also a high degree of professional employment in environment, agriculture, rural development and forestry sector and urban development and planning sector which accounts 12 and 10 percent respectively. For employed graduates working in other land related fields the figure is over 11 percent with many of them working in the field of GIS and LIS. Presently 8 percent of the alumni are working in international organizations either in their home countries or in abroad. 11 percent of the alumni are engaged in fulltime further studies. The percentage would be almost double if the part time doctoral study is being considered.

3.3 Overall job satisfaction of alumni

The term job satisfaction is difficult to define. According to Locke (1983) there is no real consensus developed in the thousands of studies on job satisfaction, and Rainey (2003) noted that it can be measured in a number of unique ways. According to Spector (1997) job satisfaction *is simply how people feel about their jobs and different aspects of their jobs. It is the extent to which people like (satisfaction) or dislike (dissatisfaction) their jobs.* Harvard professional group (1998) sees job satisfaction as *the key radiant that leads to recognition, income, promotion, and achievement of other goals that lead to general feeling of fulfilment.*

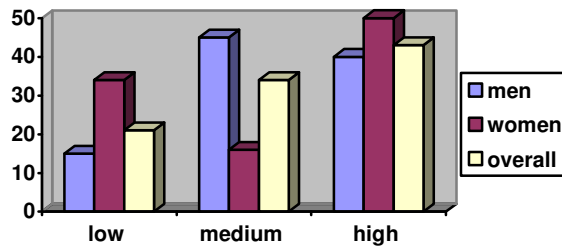
Other theorists (e.g. Rose, 2001, quoted in Eurofound 2007) viewed job satisfaction as a bi-dimensional concept consisting of intrinsic and extrinsic satisfaction dimensions. Intrinsic sources of satisfaction depend on the individual characteristics of the person, such as the ability to use initiative, relations with supervisors, or the work that the person actually performs; these are symbolic or qualitative facets of the job. Extrinsic sources of satisfaction are situational and depend on the environment, such as pay, promotion, or job security; these are financial and other material rewards or advantages of a job (p. 4).

This research defined job satisfaction in terms of getting a desirable job or job promotion and better salary which covers extrinsic satisfaction and creating new business and doing consultation which refers intrinsic satisfaction.

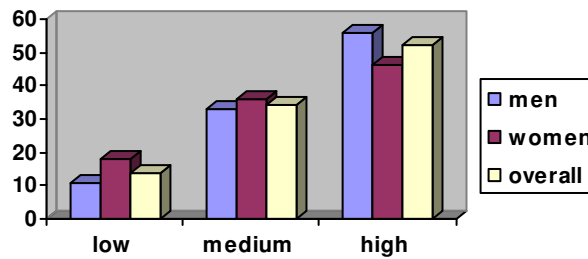
The study confirms that the overall job satisfaction level of men (in getting new job, job promotion and receiving better salary) is higher than that of women. But in case of starting a new business in both cases the satisfaction level is very low. The results from the survey seem to confirm that extrinsic satisfaction level is higher among alumni than intrinsic satisfaction. The detail analysis on job satisfaction level is given in the following page.

Figure 02: Job satisfaction level of alumni - (low, medium and high)

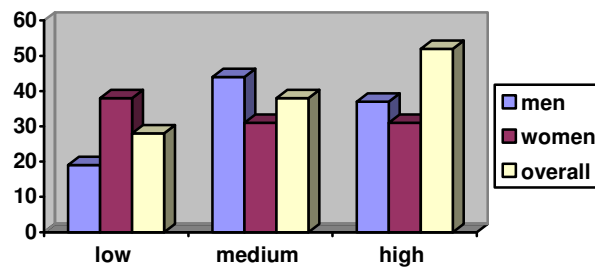
Indicator One: Getting new job



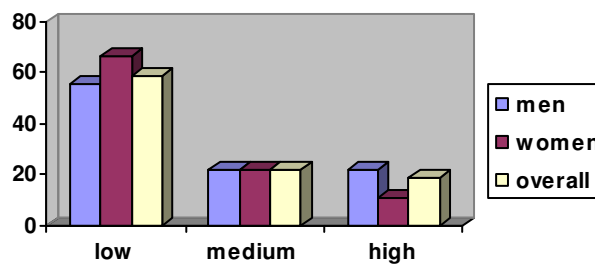
Indicator Two: Getting job promotion



Indicator Three: Getting better salary



Indicator Four: Creating new business or doing consultation



3.4 Job satisfaction among women

The survey revealed that for 81 percent alumnae study in TUM was their first study abroad. Most of them (75 percent of the total) started the education with a motivation to gain international experience. However, getting better job (44 percent) and gain opportunity for further study (31 percent) also account for a considerable portion.

Regarding the level of job satisfaction a mixed impression is found. Nearly 50 percent women expressed high level of job satisfaction in terms of better position in job (i.e. promotion on existing job or getting new job) whereas the rest have given consent to low to medium level satisfaction. Regarding salary they receive, satisfaction level is comparatively lower. The respondents mentioned that international experience, curriculum in MSc and networking (i.e. alumni) had positive effects on their career.

The study clearly showed that women who are not satisfied with their job exhibits a certain type of limitation which is related with nature of job. Most of the alumnae (64 percent) replied that non availability of desirable job is the main hindrance they face. Suitable location of work place plays a definite role in selecting job. During focus group discussion alumna from Mongolia mentioned,

'Job location is important for me in selecting job as I have to think about my safety'.

Alumna from Turkey stated,

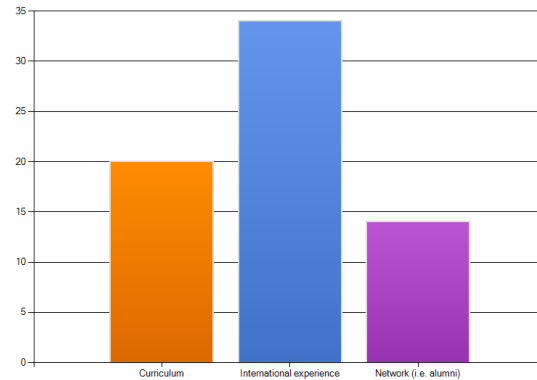
'I had many good job offers actually which are located outside my city (Istanbul), but I preferred to work in Istanbul so that I can stay with my family'.

Gender and racial discrimination is often considered as a barrier to obtain employment. There is also considerable evidence from literature review that gender and racial discrimination has been assimilated well enough into the employment patterns. However, the collected data showed opposite situation. Only a male respondent mentioned racial discrimination as a barrier to get job. Surprisingly the female respondents did not mention gender or racial discrimination as barrier in obtaining commensurate employment.

3.5 Aspects of Master's Programme contributing to career development

The roles of different aspects of the MSc programme in career development were readily codified into the list presented in figure 3. During the interview 87 percent of the alumni confirmed the connection perceived between international experience and graduate employability. International experience provides the ability to operate in culturally diverse environment which is a critical component for jobs in international organizations.

Figure 03: Role of master's programme in career development



Employability is a curriculum issue and there is a variety of ways in which curriculum can foster employability. 51 percent of the alumni confirmed that curriculum in the MSc programme contributed to their career more and this fact was applicable for the alumni who had already jobs in the land related fields before they started their MSc study.

According to 36 percent of alumni, outcomes associated with forging of alumni network also contributed to career development. Cluster of alumni within a country (e.g. 13 TUM alumni in Ghana) also provided a network which had remarkable contribution in finding career opportunity.

The survey results also supported that higher education (i.e. TUM master) can create international job opportunity. The alumni confirmed during the interview that international experience and network, TUM reputation, international standard of higher education and language skills are the favorable factors to get opportunity in international job market. On the other hand, some of the alumni mentioned that applicant's performance in terms of high level of knowledge, analytical skills and relevant work experience are mostly important to get international jobs. However, the research findings showed that for 94 percent of the alumni from TUM master's education paved the way to get job abroad whereas only 6 percent did not think so.

3.6 Role of TUM Master's Programme in further study

The nature of doctoral research is being changing. Higher education institutions are not only looking at how to support researchers to complete their PhD successfully, but also working to provide opportunities to develop their researchers' communication skills, teaching skills, and the management and commercial awareness needed to equip them for

the professional demands of modern academic life and wider employment as researchers (Metcalf and Grey, 2005). Therefore, nowadays the doctoral students are considered not only as 'going to be academic staffs', but also a prospective competent staffs of many development organizations. To express the motivation to do doctoral research in TUM, the alumnus from Philippines who is presently working in an international organization said,

I want to be a better person - assuming that by completing a PhD, my competence and competitiveness will greatly improve my abilities to better do my current work and will open opportunities for me to land a better job in the future.

Alumnus from Ethiopia who is also working in an international organization, and presently doing doctoral research in TUM said,

PhD study will provide me a better bargaining capacity in employment and career development. Employers may use high level studies as measurement to see competence and knowledge level in the subject matter.

TUM Master programme is also paving the way for doctoral research. 6 alumni of the programme (7 percent of total) have been awarded already PhD from German institutions (e.g. TUM, University of Hohenheim, University of Dortmund and Bauhaus University of Weimar). 27 percent of total alumni are doing presently PhD in Germany (TUM), UK, New Zealand, Mongolia and Croatia on full time and part time basis. The research revealed that TUM graduates consider Germany as main destination when choosing foreign higher education institutions for doctoral research. One of the reasons is strong ties in culture and environment which had been developed during the MSc study. The research demonstrates that through the MSc programme the students developed a particular lens of competence to pursue further studies in foreign countries. TUM reputation, strong networking, knowledge and skill acquired during MSc helped to pursue PhD opportunity, the alumni said during interview.

3.7 Support in developing further employability of alumni

The Centre of Land, Water and Environmental Risk Management is also focused on fostering employability skills development amongst Alumni through networking. By 2010 the chair has arranged two alumni summer schools in 2006 and 2010 with the support of DAAD in Munich. By organizing various international summer schools (i.e. each year in Cambodia) and subject-related workshops (i.e. land use planning workshop in Namibia in 2011) in collaboration with different international organizations (e.g. GlZ) the programme has been able to facilitate the development of expertise among the alumni further.

3.8 Different factors affecting education-job match

The research findings show that various factors affect the extent of matching or correspondence between educational attainment and job requirements.

Lack of work experience and personal network

The role of work experience is an issue in getting employment. Almost in every case employers consider the candidates with relevant work experience as better equipped compared to a fresh graduate without having experience. Even, many international organizations (e.g. UN Habitat) accept first-level university degree in combination with qualifying experience in lieu of the advanced university degree. The situation is not different for TUM alumni also. According to 22 percent of the respondents, lack of relevant job experience is one of the barriers in getting suitable job. The present job status of the alumni shows that TUM degree has been an asset for them who had already job experience in relevant fields. The data confirm that the relationship between employment experience and education-job matching is significant. The alumnus from Nigeria has described the situation in following way:

'The alumni who had already job and took part in the programme get more benefits from the programme as they know how to use their knowledge. But for the fresh graduates who did not have any job and took part in the programme face problem to find a suitable job after their graduation'.

Alumnus from Uganda added further that

'The programme is useful for getting job promotion. But, fresh graduate without work experience may face challenges in finding a job'.

Social ties and personal networks are also recognized as crucial to finding a job and succeeding at work (Granovetter, 1996). 35 percent of the respondents have mentioned that personal networks are important in job market. During the focus group discussion the alumnus from China mentioned that

'To get a job in China, especially in private sector, personal contact with higher officials is essential. It has been more likely a cultural issue'.

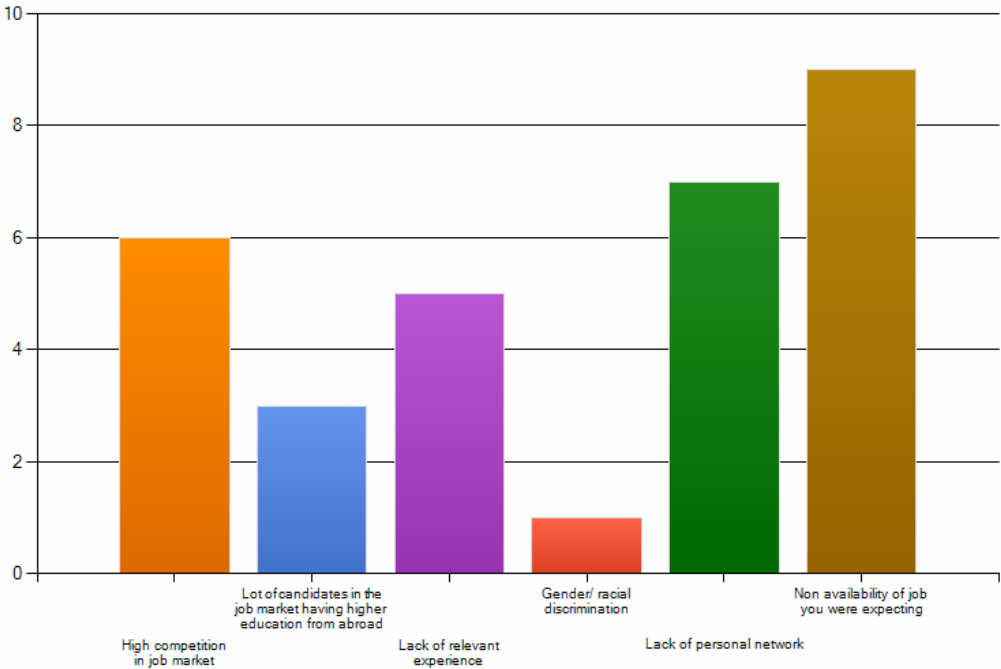
The alumnus from Chad showed the same attitude. He said,
'it's almost impossible to get a job without networking'.

High competition and lack of jobs in job market

Lack of job in job market or high competitive job market has been stated by the respondents as one of the constraints they generally face. According to 13 percent of

respondents, there are a lot of candidates in job market with similar qualifications (i.e. with higher education degree from abroad) which is one of the barriers in obtaining a job. Similarly, 26 percent of respondents have experienced job market as very competitive. Many respondents have mentioned that there is also fairly close relationship between field of study and availability of relevant job. Jobs with desired position or/and salary and benefits can also be unavailable.

Figure 04: Problems facing in job market by the alumni



Non availability of desirable jobs

Non availability of job is somehow related with job location. The survey reveals that it is not that due to low qualification the TUM graduates fail to get their desirable jobs. The fact is that, location of job is one of the determinant factors which often limit the availability of desirable jobs.

Alumna from Bangladesh mentioned

‘Job location is very important for me. I would not prefer to work in any country which is not safe for me. Personally, I would like to work in a developed country, though I know it will limit my job opportunity’.

The alumna from Latin America mentioned that

‘I will not be willing to go to a place which represents dangerous position for my family. My concern is my family, especially my son. The environment is important for me in which my child will be brought up. Security is concern in general also’.

3.9 The excellent practice must be taken forward

MSc Programme Land Management and Land Tenure is always playing part in developing employability. The last ten years have shown a much more explicit engagement of the programme with two major aspects of the employability agenda: developing student attributes (to make them better employable and to improve their recruitment chances), and developing students' ability to continue learning (further study). The alumni survey also highlighted many areas of strength in the programme. Currently 96 percent of LMLT graduates are in employment or in further study. However, data from questionnaire survey also showed that some graduates were also disadvantaged on entry to the labour market. Very diverse socio-cultural problems and lack of relevant job experience create this uneven access to suitable employment. The researcher suggests that the programme should continue its mission to pursue excellence in professional development and should take a more strategic approach to employability development which has been discussed in the following chapter.

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Chapter Four

Conclusions and Suggestions

4.1 Conclusions

The aim of the research was to measure employability of graduates of MSc Programme Land Management and Land Tenure and the problems they face in job market. Furthermore, it was intended to find out whether women with an academic degree are disadvantaged compared to men in job market. The research came up with some concrete conclusions.

- 4.1.1 Employability initiatives are increasingly being integrated into the MSc programmes. All courses offered by the programme incorporate the development of subject specific and transferable skills to enhance graduates' employability. The programme has taken a strategic approach to employability development through internships and professionals' involvement into the programme. The feedbacks received from the alumni are overwhelmingly positive from employability perspective. The survey results showed that LMLT graduates are highly employable. 85 percent of the graduates are presently working in land related fields and 11 percent are involved in full time further study (i.e. doctoral study). The alumni mentioned during the interview that the combination of teaching methods and curriculum, alumni networks and above all international experience helped them to develop the qualities that today's graduate employers seek.
- 4.1.2 The research results showed that employability attributes (discussed in chapter two) are necessary for getting jobs but not always sufficient. Employment opportunities are affected to some extent by non-employability factors also. The research analysis indicated fairly obvious criterion of relevant work experience which is necessary for getting a job. Alumni confirmed that some other factors like high competition in job market, lack of personal contact, lack of desirable jobs may create problem in getting suitable job. Tie with family responsibility and safety issue in remote area also squeeze the job opportunity. But these factors are stronger for women than men.
- 4.1.3 The research also found that many alumni are interested to pursue doctoral research as they consider it as one of the strongest drivers to get promotion on existing job. The study confirmed that alumni prefer to do doctoral research in TUM due to its international reputation and their previous ties with the institution. Presently in the Centre of Land, Water and Environmental Risk Management 6 alumni are doing full time doctoral research whereas 3 alumni are on part time basis. 2 alumnae have been already awarded doctoral degree from the centre in the year 2009 and 2010. No doubt, TUM Master's Programme has been able to create a better platform of further study for alumni. The programme management also confirmed that they are

providing continuous support in finding research fund to a significant proportion of their graduates who choose to go on to further study. However, the alumni opined that the centre should start a full fledged PhD programme which will broaden the academic networks and funding opportunities for them.

4.2 Suggestions

4.2.1 Enhancing employability: Further role of MSc programme

The main intention of the MSc Programme Land Management and Land Tenure is to educate professionals in land related fields. The research also confirmed that the alumni who had relevant work experience have been benefited more from this MSc programme. Therefore, the researcher suggests to focus more on the applicants' job experience at the time of selecting participants in the programme as theoretical competence accompanied with practical experience are decisive for success in labour market.

The research proved that networking has positive effects on the alumni's career development. To strengthen the network at country level, the programme management authority should give more focus on **country based students' cluster development** which will reduce, in the word of Prof. Magel, 'the danger of being isolated'.

During the interview alumni were asked to give suggestions to improve the effectiveness of the programme in enhancing employability and to help their career further. Considering their failure and success factors the following suggestions have been drawn:

- To keep curriculum update and pragmatic with full involvement of stakeholders according to the current needs of job market;
- To extend the duration of internship and to create opportunity to do internship in international organizations;
- Frequent exchanges/ties with job providers (i.e. international organizations, NGO) in knowledge sharing (i.e. lecture or/and theses supervision);
- To create more opportunity for Master led PhD programme;
- To involve the alumni in different projects undertaken jointly by TUM and international organizations;
- To strengthen the alumni network. To arrange summer school, training or workshop programmes as means of lifelong learning which can offer to the alumni strategies and ways to update their own knowledge; and
- More research and investment into career opportunity.

The programme management confirmed that they have already adopted many of the above noted measures. But of course there is always opportunity to improve the performance further.

4.2.2 Further role of TUM in enhancing employability

The significance of employability has been acknowledged by TUM. The TUM authority is playing a vital role in developing students' employability skills through an integrated approach though it should be noted here that university does not have power to make all arrangements stick. At the end it is often the willingness and responsibility of the faculties or departments to implement the policies. However, TUM should put more efforts to adopt following strategies by the respective faculties and departments:

- Students' skill should be recognised, reflected upon, recorded in order to maximise their employability in a competitive environment;
- To facilitate and disseminate knowledge on employability across all level and all subjects areas. In this respect development of pragmatic curriculum on subject specific skills with a range of practical work should be encouraged by TUM authority which will definitely enhance students' prior experience;
- To involve employers in various stages of the students' experience, for example in lecture or in research supervision. Internship opportunity in different organisations can also help to develop core attributes required for graduate employment;
- To create opportunity for joint project with local employers which can create further opportunity; and
- To develop local, national and international employers' networks and partnership to support employability of students and job market needs.

TUM is committed to work together with students. Their collaborative engagement should be continued through counselling, volunteering, careers and job shop etc.

4.2.3 Measuring success is essential

The researcher argues that alumni feedback is a key element of the programme evaluation criteria. The programme should gather further information in this area as part of programme assessment, asking the alumni to report and reflect upon how the study in TUM has helped them to develop their employability and obtain satisfactory jobs. University planning authority also should improve the system for monitoring and tracking alumni's achievement in their professional career to know the success and failure factors and job satisfaction on graduation.

4.2.4 Support to the doctoral students

It has been already mentioned that a good number of alumni are presently doing doctoral research in the Centre of Land, Water and Environmental Risk Management. The researcher suggests involving the PhD students in full range of functions (i.e. teaching, supervision of research at BSc and/or MSc level, student counselling, administrative work etc) besides

research activities. This diversified involvement will give them opportunity to develop inter personal and managerial skills.

The research suggests that DAAD and some other scholarship providing organizations (e.g. HSS, KAAD) should respond to the necessity of doctoral research in further enhancement of employability through helping in structuring doctoral programmes, (i.e. providing support in establishing PhD programme officially in the Centre of Land Management). In this respect, Prof. Holger Magel, Director of the Chair of Land Management, TUM states that *it's totally a wrong conception that doctoral degree holders only can serve as researchers or employees in education sector. Doctoral study gives one kind of further qualification to solve problem in a more in-depth way than a master degree holder. Therefore, doctoral study increases the employability to serve both at education and non education sector.* Prof. Magel recommends that DAAD should support alumni in career development by offering PhD scholarships after their MSc. He further added that PhD is final elite degree which will make not only scientific researchers but also future leaders. MSc graduates of German institutions go to different countries as they receive less financial support from Germany to do doctoral research. Germany should play a vital role in developing leaders across the world.

4.3 Concluding remarks

Considering the present need, many European universities have now come to terms with a wide variety of professional higher education programmes. But still it is a challenge to connect the objective of such programmes with employability. Knowledge based education alone is not the solution for professional development, what is required is radical re-thinking about the purpose of the professional development to fulfil the objectives of employability.

No doubt, TUM Master Programme is playing a vital role in developing career of professionals from land related fields. As most of the participants have minimum two years work experience in the field of land management, the certain intellectual skills through the programme serve well regardless type of job and position in society. The MSc Programme Land Management and Land Tenure is committed to provide effective and efficient services that will allow fulfilling its strategic objectives in teaching, research, knowledge transfer and developing employability of the graduates. But to fulfil the commitment the programme also requires increase in staff engagement and financial sustainability. University authority should address both the desire not only to roll out the programme, but also to grow at a larger scale.

At the end, it will not be irrelevant to mention here the statement of Prof. Holger Magel regarding the future opportunity of the programme. He mentioned during the interview that

Being supported by the TUM president, DAAD, GIZ, BBIV, HSS and some other organizations the MSc Land Management and Land Tenure has been able to create

reputation for TUM. The programme has reached to an international standard with having cooperation with different international organizations and higher education institutions like ITC in University of Twente in Netherlands, Renmin University in China, Madrid Polytechnic University in Spain. The programme has its own financial commitment of raising income. But, to run the programme successfully and fulfill the objectives of employability it needs continuous support from TUM authority and more stable financial condition. Getting sponsorship from remarkable foundations, from BMZ via GIZ and above all financial support from TUM authority will definitely give a stable position of the programme and opportunity to support professionals from developing countries to develop their employability.

ANNEXURE A

Alumni of the MSc Programme Land Management and Land Tenure 2001-2010

| No. | Country | Male | Female | Total |
|--------------|--------------------------------|-----------|-----------|-----------|
| 1 | Bangladesh | 2 | 1 | 3 |
| 2 | Brazil | 0 | 1 | 1 |
| 3 | Bhutan | 0 | 1 | 1 |
| 4 | Cambodia | 7 | 1 | 8 |
| 5 | Chad | 1 | 0 | 1 |
| 6 | Chile | 1 | 1 | 2 |
| 7 | Croatia | 1 | 0 | 1 |
| 8 | China | 3 | 3 | 6 |
| 9 | Ethiopia | 6 | 0 | 6 |
| 10 | Georgia | 1 | 4 | 5 |
| 11 | Germany | 1 | 0 | 1 |
| 12 | Ghana | 8 | 3 | 11 |
| 13 | Guatemala | 1 | 0 | 1 |
| 14 | Indonesia | 1 | 1 | 2 |
| 15 | Iran | 1 | 1 | 2 |
| 16 | Jamaica | 1 | 1 | 2 |
| 17 | Jordan | 2 | 0 | 2 |
| 18 | Kenya | 2 | 2 | 4 |
| 19 | Libya | 1 | 0 | 1 |
| 20 | Montengro | 0 | 1 | 1 |
| 21 | Mongolia | 2 | 6 | 8 |
| 22 | Myanmar | 0 | 1 | 1 |
| 23 | Nepal | 1 | 0 | 1 |
| 24 | Nigeria | 1 | 0 | 1 |
| 25 | Philippines | 1 | 2 | 3 |
| 26 | Russia | 0 | 1 | 1 |
| 27 | Sri Lanka | 1 | 0 | 1 |
| 28 | Syria | 1 | 0 | 1 |
| 29 | Tanzania | 1 | 4 | 5 |
| 30 | Tajikistan | 1 | 0 | 1 |
| 31 | Thailand | 0 | 1 | 1 |
| 32 | Turkey | 1 | 3 | 4 |
| 33 | Uganda | 2 | 0 | 2 |
| 34 | United States of America (USA) | 0 | 1 | 1 |
| 35 | Vietnam | 0 | 1 | 1 |
| Total | | 52 | 41 | 93 |

Participants of focus group discussion during Alumni Summer School 2010

| | Country | Male | Female | Total |
|----|----------------|-------------|---------------|--------------|
| 1 | Bangladesh | 2 | 1 | 3 |
| 2 | Brazil | 0 | 1 | 1 |
| 3 | Cambodia | 3 | 0 | 3 |
| 4 | Chad | 1 | 0 | 1 |
| 5 | Chile | 1 | 0 | 1 |
| 6 | China | 1 | 1 | 2 |
| 7 | Croatia | 1 | 0 | 1 |
| 8 | Ethiopia | 3 | 0 | 3 |
| 9 | Georgia | 0 | 1 | 1 |
| 10 | Ghana | 2 | 0 | 2 |
| 11 | Indonesia | 1 | 1 | 2 |
| 12 | Iran | 1 | 0 | 1 |
| 13 | Kenya | 1 | 0 | 1 |
| 14 | Mongolia | 2 | 2 | 4 |
| 15 | Nepal | 1 | 0 | 1 |
| 16 | Philippines | 1 | 1 | 2 |
| 17 | Russia | 0 | 1 | 1 |
| 18 | Tajikistan | 1 | 0 | 1 |
| 19 | Thailand | 0 | 1 | 1 |
| 20 | Turkey | 1 | 1 | 2 |
| 21 | Tanzania | 0 | 2 | 2 |
| 22 | Sri Lanka | 1 | 0 | 1 |
| 23 | Nigeria | 1 | 0 | 1 |
| 24 | Uganda | 1 | 0 | 1 |
| | Total | 26 | 13 | 39 |

Questionnaire for TUM Alumni

Role of higher education in developing employment competences and career

(The questionnaire was circulated through monkey survey software)

Year of graduation.....

Gender: Male/ Female

Continent: Asia/ Africa/ Europe/ America

1. Is it the first time you did your higher study in abroad? Yes/ No

2. With which expectation you started your MSc in TUM?
 - a. To get a new job
 - b. To get promotion in present job
 - c. To get better salary
 - d. To gain international experience
 - e. Social upliftment
 - f. With the motivation to do PhD in future
 - g. Other (please specify).....

3. How will you evaluate the contribution of H.E to your career?
 - a. got a new job
 - b. got promotion in present job
 - c. got better salary
 - d. you have started independent business/consultancy firm
 - e. you have completed/ going to complete your PhD
 - f. social upliftment (i.e. receiving extra attention from your boss and /or colleagues).
Please specify
 - g. it has not affect your job career at all

4. What aspects of higher education actually contributed to your career?
 - a. curriculum of the course
 - b. international experience
 - c. network (i.e. alumni)
 - d. other (please specify)

5. If higher education could not contribute to your job career as you expected what are the reasons behind that?
 - a. high competition in job market
 - b. lot of candidates in the job market having H.E from abroad

- c. lack of relevant work experience
- d. gender or racial discrimination
- e. lack of personal network
- f. non availability of job you are expecting
- g. other (please specify).....

6. Do you think higher education can also play role to get job in abroad?

- a. If yes, how?
- b. If not, why?

7. Please give your suggestion(s) to improve the effectiveness of our programme in creating job opportunity.

Questionnaire for TUM Alumni

Role of higher education in developing employment competences and career

(The questionnaire was circulated through monkey survey software)

Year of graduation.....

Gender: Male/ Female

Continent: Asia/ Africa/ Europe/ America

1. Did you have any motivation to do further study (PhD study) when you started your MSc in TUM?

- a. Yes
- b. No
- c. It was not firmly decided

2. What is your current status?

- a. Presently you are doing PhD research
- b. You have awarded the PhD degree already
- c. You are seeking opportunity to start PhD
- d. You have not received any opportunity so far
- e. You are not interested to do PhD

3. The name the institution from where you have completed your PhD/ you are doing PhD/ you are pursuing presently PhD.

4. Do you think, MSc in TUM has a played vital role in pursuing further study?

Yes / No

If yes, How?

5. Do you have any suggestion(s) to flourish the opportunity of doctoral study for TUM graduates?

Questionnaire for MSc Programme Management Team

(This semi structured questionnaire was used for face to face interview)

1. What was the motivation behind starting the programme? Do you think it has been fulfilled?
2. Many alumni are facing challenges in finding suitable jobs- what are the reasons behind it, you think?
3. Can MSc programme really play role to avoid these problems?
4. Do you think further education (i.e. doctoral study) after MSc should be strengthened? If yes, how and why?
5. What are your suggestions for DAAD and TUM authority to increase the employability of TUM students and enhance the performance of the programme as well?