

Land Administration and Management in South East Asia – Considering the Role of Higher Education

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SUMMARY

A 2000 World Bank report on higher education in developing countries highlighted the growing gap in the quality and participation rates of higher education between developed and developing countries. Some of the problems facing higher education institutions in developing countries include a heavy reliance on government funding, poor pay for academic staff, inadequate facilities, and poor governance. In this paper we focus on higher education in the land sector in South-East Asia, and find that similar problems exist. At the same time there has been an increase in the investment in land titling projects in developing countries resulting in a significant increase in demand for people with qualifications and skills in surveying, valuation, planning and associated disciplines.

In developed countries the objectives of higher education for the professions associated with land administration are relatively well established. There is a clear trend towards an increased focus in surveying education on the development of managerial skills, and the acquisition and application of interdisciplinary problem-solving skills (Enemark 2001, Enemark 2007). However, there is limited literature on the objectives of education in these professional areas in developing countries.

This paper looks at land administration higher education in three countries in South East Asia – Cambodia, Indonesia and the Lao PDR. The authors consider the challenges facing Universities and Colleges in the region to include limited capacity and a heavy reliance on land titling project funding. They argue that developing countries will need to develop more effective governance mechanisms and long-term funding models to bridge some of the gaps with developed countries. The role of the FIG in the development of land administration education in developing countries is also discussed. This paper commences the dialogue on this important issue and identifies areas that warrant further research.

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1. INTRODUCTION

A 2000 World Bank report on higher education in developing countries noted that much of the international development focus in developing countries has been on primary education, with insufficient funding provided for secondary and tertiary education (Task Force on Higher Education and Society, 2000). As a result many of the higher education institutions in developing countries operate on a very limited budget, with inadequate facilities, and poor pay for academic staff. The authors also noted the significant development of higher education facilities in developed countries and the increase in participation rates, claiming that higher education enrolment rates are five to six times higher in developed countries (Task Force on Higher Education and Society, 2000). Advances in information technology have played a significant role in the development of teaching and research methods in the developed countries and have further increased the gap in standards between the rich and poor nations. However, as developing countries develop their ICT infrastructure new opportunities for bridging the gap are created.

The authors quoted Malcolm Gillis, President of Rice University who argued that “Today, more than ever before in human history, the wealth—or poverty—of nations depends on the quality of higher education” (Task Force on Higher Education and Society, 2000, p15). In developed countries the objectives of university education for the professions associated with land administration - such as land surveying, land valuation, and land use planning – are relatively well established. There is a clear trend towards an increased focus in surveying education on the development of managerial skills, and the acquisition and application of interdisciplinary problem-solving skills (Enemark 2001, Enemark 2007). Many institutions are changing to project-based education assisted by coursework, and developing virtual media and web-based learning tools for course delivery.

However, there is limited literature on the objectives of education in these professional areas in developing countries. Should the objectives for land administration and land management education in developing countries be similar to those for developed countries? Or do they face vastly different challenges and have vastly different needs. Existing literature points to the significant role of education and training in capacity building in land administration, with an emphasis on combining technical education with management and social science (Enemark 2006). The authors of the World Bank report concluded that “Higher education is no longer a luxury: it is essential to national social and economic development” (Task Force on Higher Education and Society, 2000, p14). This is a powerful message and warrants an appropriately serious response by policy makers and government.

Better understanding of the challenges and opportunities will better help FIG to support education in developing countries. This paper considers these questions and looks at the approach taken in three countries in South East Asia – Cambodia, Indonesia and the Lao PDR. The authors consider the challenges facing Universities and Colleges in the region and the major objectives for land administration education. The role of the FIG in the development of land administration education in developing countries is also discussed.

In this paper *higher education* includes all public and private education institutions delivering programs at Diploma level or higher.

2. PROBLEMS FACING HIGHER EDUCATION IN DEVELOPING COUNTRIES

The 2000 World Bank report on higher education in developing countries noted several deficiencies in the capacity of higher education institutions including:

1. The qualifications of faculty. Few academic staff members have graduate-level training, which limits the quality of the knowledge imparted to students, and their ability to access existing knowledge.
2. The use of outmoded teaching methods such as rote learning.
3. Faculty pay is very low in comparison to other professional occupations and the public sector. Many academic staff work other jobs to supplement their incomes.
4. Severely overcrowded classrooms, poor library facilities, and few student services.

(Task Force on Higher Education and Society, 2000)

Many of these issues result from the limitations in resources available to the higher education institutions. In many developing countries higher education institutions are highly dependent on the central government for their funding and this often leads to a lack of autonomy.

In countries where a land titling project has been supported by international donors there is often a component related to the development of higher education courses. In the short- to medium- term this provides a significant financial gain for the higher education institution involved as it reduces the reliance on central government funding through the normal education ministry channels, and often involves considerable capacity building such as training, technical assistance, curriculum development, guest lectures, the construction of new buildings, and the provision of equipment. However, this can lead to an over-emphasis on development of curricula to support the donor-funded project, with limited planning for long-term sustainability.

The following case studies provide a discussion on the objectives for land administration and land management education, and the unique challenges and opportunities in each country. They provide an opportunity to assess whether the deficiencies listed above apply to the land sector.

3. SOUTH-EAST ASIAN CASE STUDIES

In this section we provide case studies of land administration courses in three countries in South-East Asia – Cambodia, Indonesia and the Lao PDR. These countries vary considerably in size and level of development. An inspection of the Cadastral template (www.cadastraltemplate.org) shows that there are large differences in the estimated total number of professional land surveyors active within the cadastral system – 5000 in Indonesia, and 200 in Cambodia. Although there are no figures in the cadastral template for Laos, it is likely to have similar numbers to Cambodia. However, each has considerable poverty and is presently implementing a land titling project supported by the World Bank and other donors. At the same time many other donor-sponsored development projects have contributed to large growth in property market and land values, and many construction projects resulting in a rapid rise in the demand for surveyors, valuers and to a lesser extent land use planners.

In each country an educational institution with an existing surveying or related course was chosen at which to develop a new land administration course. However the highest level of education varied from Higher Diploma to Masters. In Cambodia, the Royal University of Agriculture was chosen to offer a degree. In Laos a Higher Degree in Surveying and Land Administration was developed at the Polytechnic School. The approach taken in Indonesia differs from the other two countries as three existing higher education institutions were chosen to provide Masters-level courses in different aspects of land administration. The following case studies discuss the initial rationale for development of a land administration course, the approach taken, the institutional context, and some of the major challenges faced.

3.1 The Royal University of Agriculture in Cambodia

As Cambodia recovers and rebuilds following the atrocities in the latter part of the 20th Century, it faces many challenges. General elections in 1993 were facilitated by the United Nations that commenced a democratization and normalization process. Although progress has been made in the reconstruction of Cambodian society, the land sector is at a critical stage of development (Sopha *et al*, 2006). As construction of society continues corruption is rife, and the land sector has been affected. In 2006 the World Bank suspended funding on the Land Management and Administration Project (LMAP) due to concerns over the mis-procurement of funds.

The re-introduction of private ownership to land, and the associated surveying and mapping, has resulted in a strong demand for qualified people. In addition LMAP, supported by the World Bank and the governments of Finland and Germany, requires a significant number of land administration specialists. However, at the time of commencement of LMAP there was limited private sector development in surveying and related professions, and no existing professional higher education in land administration and management (Sopha *et al*, 2006). Until 2000 there were only about 220 land surveyors with higher education qualifications (Sopha *et al*, 2006).

In the mid-1990s special in-house cadastral training courses were arranged by General Department of Cadastre and Geography, the Land Title Department, and the Prek Leap Agriculture College (Sopha *et al*, 2006). The Prek Leap College ran a two-year surveying and mapping diploma to support sporadic land adjudication and titling. There were approximately 200 graduates and this met the short term needs and the program closed down (Nichols, 2004).

The project design process for LMAP acknowledged the importance of developing higher education and included a sub-component on education and training. A Memorandum of Understanding between the Ministry of Land Management, Urban Planning and Construction (MLMUPC) and the Royal University of Agriculture (RUA) was signed in 2003 to establish a new faculty at the RUA called the Faculty of Land Management and Land Administration (FLMLA) (Sopha *et al*, 2006). The result is that the FLMLA is responsible to three ministries: Agriculture, Land Management, and Education (Nichols, 2004). This initiative is funded through credit from the World Bank and technical assistance from the German development agency GTZ. The LMAP support includes curriculum development, a professor exchange program, a building, furniture and office equipment, and equipment. LMAP also contributed competitive additional salaries to FLMLA faculty (Nichols, 2004). GTZ technical assistance includes assistance in curriculum development and grants for basic teaching material and equipment. The German government has also provided an international expert through the Integrated Expert Program (CIM) to advise on the establishment of the courses.

The FLMLA currently offers a two-year Diploma and a four-year Bachelor degree. The initial objectives of the FLMLA were to offer Diploma and Bachelor level study that provides graduates with a technical and scientific qualification, practical ability in land management and land administration (Sopha *et al*, 2006). The first batch of students (74) graduated in 2006 and there is expected to be a significant increase in demand over the next few years.

Much progress has been made in the establishment of the FLMLA and the curriculum of the degree course. However, a number of institutional and academic challenges exist. The quality of infrastructure at the Royal University of Agriculture (RUA) is poor. The degree course is effectively run from a converted dormitory building, and there is no surveying equipment on campus, and only 2 computers for students to use. There is no access to the Internet.

Academic staff receive lower salaries than the government staff and it is hard to attract and retain staff at the FLMLA. There is a critical short- and medium term shortage within the MLMUPC of staff with diploma, degree and Masters qualifications. The courses rely heavily on LMAP staff to provide guest lectures, and there are limited people available with expertise in areas such as land economics and land readjustment (Sopha *et al*, 2006). There is little evidence of financial support from the RUA for capacity building.

The government of Germany has provided significant support to curriculum development, but this is hampered by the political framework. In 2005 the Ministry of Education unified the first year curriculum (*studium generale*) for all universities. The result is that specialised study does not commence until Year 2 limiting the flexibility of curriculum design.

The Ministry of Land Management, Urban Planning and Construction (MLMUPC) has indicated that 100 staff will retire in the next 2 years with around 70% of these in the cadastral surveying area. The Ministry plans to recruit 400 degree graduates, 300 Diploma graduates and 60 Masters graduates during 2008/9. The capacity of the RUA at present does not allow an increase in the intake of students without significant capacity building of its human resources and facilities.

The degree course relies heavily on the financial support from LMAP, and on considerable support provided to the faculty by the German development agency GTZ, and the full-time presence of technical assistance. Without this financial and technical support the program may not have been able to continue. However, the development of this program will continue during the remainder of the LMAP project, and provides an opportunity for sustainability to be established in the medium- to long-term. It is clear that the success of the land administration degree and LMAP are closely linked.

3.2 Land Administration education in Indonesia

In the wake of the collapse of the Suharto government, Indonesia has attempted to reinvent itself. One of the important aspects of this has been the land and agrarian reform agenda. One of the challenges facing the land reform agenda is that 74 per cent of terrestrial land is designated as forest land under the Ministry of Forestry which has been accused of mismanagement of the state forests (Thorburn, 2004). At present approximately 30% of the non-forest land has been titled and the agency responsible – the National Land Management Agency (*Badan Pertanahan Nasional BPN*) has a reputation of entrenched corruption (Thorburn, 2004).

The current land titling project is the Land Management and Policy Development Project (LMPDP) that commenced in 2004. LMPDP is implemented by three agencies - BPN (land registration), Bappenas (policy development), and the Ministry of Home Affairs (capacity building at the provincial level). Like the LMAP project in Cambodia education and training is a sub-component of LMPDP that aims to establish sustainable higher education courses.

LMPDP has supported the development of Master's courses at three academic institutions. Each of these had existing courses in disciplines related to land administration and were deemed suitable for further capacity building. At Bandung Institute of Technology (ITB) a Masters in land administration has been implemented. The Faculty of Engineering at Gadjah Madja University (GUM) has implemented a Masters in land information systems, and at Bogor Institute of Agriculture (IPB) a Masters has been developed for studies in management with a specialization in agrarian issues. As the students come from different backgrounds, their knowledge and understanding about land administration and land management vary. In response a matriculation program has been developed to provide a bridge to the relevant Masters program. In 2007, a total of 45 students were enrolled at the three institutions, and 44 of these were BPN personnel. The first batch of students is expected to complete the courses by June 2008.

One of the challenges that is unique to Indonesia is the involvement of 3 agencies in the implementation of LMPDP, and 3 academic institutions in the development of land administration higher education. This will require effective communication and cooperation.

The course at each of these institutions is progressing reasonably well. The quality of facilities and equipment at GUM and IPB are very good compared to other Asian countries. However, the facilities at ITB are more basic and need capacity building to bring into line with the management capacity, facilities and equipment at GUM and IPB. In particular, there is a shortage of surveying equipment such as total stations and global positioning system equipment.

The level of financial support to each of the three academic institutions is much higher than in Laos or Cambodia, and this is evident in the standard of infrastructure. In addition, each of the three higher degree courses have a narrower focus than in Cambodia or in Laos, and involved a modification of existing courses to suit the needs of LMPDP. This means that the expertise generally existed within the institution, and gaps in expertise could be generally provided by BPN staff. However, inevitably the quality of teaching in the new areas (ie specific to the land administration project) will be less. Continual development in the qualifications of academic staff is needed.

The initial intake of students in each of the 3 courses came predominantly from BPN and many of these were staff already working on LMPDP. The sustainability of these programs requires that they take in students from other government agencies and from industry. It will take time for each of these three programs to be fully established and promoted within government and industry in Indonesia.

3.3 The Polytechnic College in the Lao PDR

The Lao Peoples Democratic Republic is one of the poorest and least developed countries in South East Asia. The Second Lao PDR Land Titling Project (LTP II) commenced in 2003 and aimed to improve the security of land tenure and the development of institutional capacity.

Before LTP II commenced there were no existing courses in land administration. The establishment of a relevant tertiary course in surveying and land administration was considered a high priority during the design of LTP II. Virachit and Lunnay (2005) noted the need to upgrade the existing education system for land administration, resulting in a recommendation that “the first priority was to improve technical level education and the second priority to introduce a professional level course”. Burns (2006) stated that an innovative approach was required to respond to the lack of expertise in land administration and associated disciplines. In developing a long-term education strategy several options were considered – using existing courses in Thailand, maintaining the status quo, and improving the existing courses and facilities at the Polytechnic School (Lunnay, 2006). The last option was chosen and solutions for building capacity in the Polytechnic School developed. An “In Country Course” (ICC) was designed to upgrade the skills of land surveyors employed by the

Department of Lands, provincial land offices, other government departments, and lecturing staff from the Polytechnic School working on the Lao Land Titling Project. An Australian education institution provided delivery and accreditation of the ICC, at a level equivalent to an Australian TAFE Certificate IV or Diploma (Lunnay and Virachit, 2005). The Ministry of Education recognised the qualification in 2003 and each graduate was awarded a High Diploma in Surveying and Land Administration (HDSL A). Since the first intake the HDSL A has been run by the Polytechnic School.

As well as the HDSL A, the Polytechnic School also offers a Diploma of Surveying and Mapping (DSM). Students in the DSM do not study the same courses as the first 2 years of the HDSL A, and they are not provided with the same level of resources as HDSL A students. For example, the DSM students mainly use older optical theodolites, while the HDSL A students have access to some modern Total Stations. Students currently entering the DSM and HDSL A are either graduates from secondary school, or from the Education Ministry's apportioned plan (Mitchell, 2006). The Ministry of Education and the University of Lao allocate students to the Polytechnic based on their interests and their score at tests at the University of Lao. The Polytechnic School conducts mathematics entry tests to select the fee-paying stream of students. However, oversubscribing occurs and several students are selected that don't pass the test. The result is that the level of mathematics capability is low. The Polytechnic School has been now upgraded to a College and this has brought positive benefits in terms of additional support for development of curriculum, and in the standard of School graduates entering the College.

The standard of the initial graduates from the Higher Diploma in Survey and Land Administration (HDSL A) continues to be adequate. However, the standard of education is being affected by limitations in equipment (especially Total Stations), and gaps in expertise of academic staff particularly in land adjudication and registration. The Polytechnic School had expertise in surveying and mapping, but not in land administration. This limitation was identified during LTP1 and the Polytechnic School staff members have been provided with training in various technical aspects of surveying and land administration. However, at present the academic staff members do not have experience in land registration, land adjudication, land law, land use planning and other aspects of land administration. The delivery of subjects in these areas relies on guest lecturers involved in the project (Mitchell, 2006).

The support of the project in providing staff with experience in these areas is significant and reflects the good relationship between the project and the Polytechnic School. However, this arrangement is not sustainable in the long term. Support from LTP II has resulted in steady improvements to the facilities and equipment, and to the quality of teaching in the HDSL A. However, the management budget is very small and the facilities are very basic, compared to developed countries. The Polytechnic College still relies heavily on the financial support from LTP II.

There has been considerable work on curriculum development in preparation for the implementation of a degree in Surveying and Land Administration. The implementation is on

track for the first intake of HDSLAs graduates to commence the 3rd year of the Degree in 2011. Planning for the introduction of a Valuation Diploma is in the early stages.

4. DISCUSSION

4.1 Challenges

The major issues raised in the case studies are broadly consistent with the problems identified in the 2000 World Bank report – lack of qualifications in academic staff, very low faculty pay, poor infrastructure, limited equipment, and a lower standard of secondary education than in many developed countries. In general the level of capacity in each of the academic institutions was low, especially in Laos and Cambodia. In the short- to medium- term these institutions rely heavily on the land titling projects for financial support. However, long-term capacity building and financial support is needed. The development of human resources is much harder in the countries discussed. The level of pay in academic institutions is less than equivalent positions in government, and many people have additional jobs to make ends meet. It is very difficult to recruit and retain staff. Academic staff are also under-qualified with few having Masters qualifications or higher. There are also significant gaps in knowledge at each of the academic institutions listed that is overcome through the use of project staff as guest lecturers.

The cost of the specialized equipment used on land administration projects (such as modern surveying and computing equipment) is beyond the reach of the academic institutions – particularly in Laos and Cambodia. For example the annual revenue of the Polytechnic College Division of Survey and Mapping is approximately US\$20,000 – about the cost of one item of surveying equipment such as total stations. Therefore the academic institutions rely on access to the project equipment for teaching purposes.

4.2 Some objectives for land administration education in South East Asia

There is a clear link between land reform aimed at poverty reduction and improving tenure security, and the development of land administration higher education courses. In each of the case studies discussed a long-term land administration project is under way and each includes a sub-component aimed at establishing sustainable higher education in land administration. Indeed, education and training is seen as an integral part of the capacity building initiatives in these countries.

Developing the capacity of higher education for land administration and land management in developing countries is a complex area. Enemark (2005) argued that capacity building is an ongoing process that must be based on national priorities and an analysis of the contribution higher education may make to the social, economic and political development. The higher education institutions and courses must be developed in accordance with the unique national priorities. Graduates must possess a strong understanding of these national priorities and how they may contribute.

Where a donor-supported land administration and land management project includes provision for the development of higher education, the curriculum must provide graduates with the skills to implement the land reform needed. This requires graduates with strong management skills and also graduates with the necessary technical skills to implement the various components of the project. However, the curriculum should also be designed to be satisfy the long-term need for qualified professionals in the land and development sectors.

The 2000 World Bank report listed what the authors considered as desirable features of a higher education system, and these included:

- a) Adequate and stable long-term funding from the central government.
- b) Competition. The Task force argued that competition for faculty, students and resources would help to improve standards.
- c) The flexibility to adapt quickly to varying levels of enrolment, and the rise and fall of different fields of study.
- d) Immunity from political manipulation, through excluding partisan political interests. The authors argue for a reduction in state control and the development of buffer mechanisms such as councils of higher education, professional councils, and governing councils or boards of trustees.
- e) Well-defined links to secondary education, and other related public and private entities.
- f) A supportive legal statutory framework that encourages innovation and discourages corruption.

(Task Force on Higher Education and Society, 2000).

It is clear from the case studies that very few, if any, of these features exist in the countries discussed. As with many aspects of capacity building in developing countries effective governance is a central objective in the development of improved higher education institutions. In fact the Task Force on Higher Education and Society believed this to be the key issue facing higher education in developing countries.

4.3 How FIG can assist

A profile of surveying education that attempted to integrate the new IT-paradigm and an increased focus on multidisciplinary education was promoted at the 2000 Delft FIG/CLGE seminar on Enhancing Professional Competence of the Surveyor in Europe, and subsequently endorsed by the FIG. This profile of surveying education in the future combines the technical aspects of surveying (such as surveying and mapping) with the judicial or managerial disciplines associated with land management (See Figure 4-1). The aim is that surveying graduates have strong skills in the managerial and technical aspects of land administration and land management. The authors see no reason why this is not also relevant to developing countries.

More discussion is needed on the desirable features of land administration and land management education in developing countries. This will assist those responsible for capacity

building and curricula development to bridge the gap that currently exists between developed and developing countries, without compromising the unique cultural traditions and characteristics of each country.

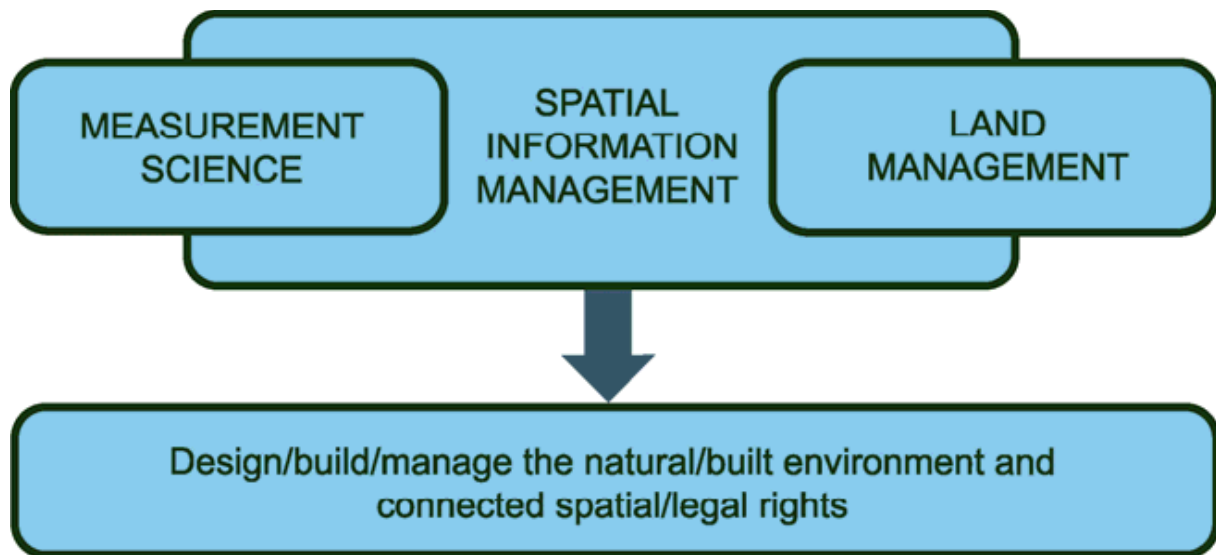


Figure 4-1 The profile of surveying education in the future (Enemark 2007)

FIG can play a supporting role in the capacity building needed in three ways:

- 1) Professional development – through providing a forum for discussion and exchange of experiences and new developments.
- 2) Institutional development – FIG provides support in developing basic capacity to member countries through providing guidance and guidelines.
- 3) Global development – Cooperation with international NGO's such as the United Nations agencies and the World Bank allows FIG to provide a forum for global development. This cooperation provides an opportunity for joint efforts in addressing the issues facing developing countries (Enemark 2006).

These areas allow FIG to play a strong role in supporting the capacity building process that many developing countries are facing.

5. CONCLUSIONS

Higher education in the land sector in the developing countries discussed displays many of the problems facing higher education in developing countries generally, and is especially dependent on central government and donor support. Some ways forward suggested by the authors of the World Bank report (Task Force on Higher Education and Society, 2000) are improving education infrastructure (especially ICT and Internet), the development of new curricula and academic programs, the development of long-term well-trained academic staff, increasing the access for disadvantaged members of society, and conducting more science education and research of a higher standard. There are lessons in this for the land sector also.

Each of the higher education institutions discussed requires significant capacity building. In particular, improvements in the qualifications and experience of academic staff and in the facilities available to students are urgently needed. However, the longer-term issue is the need to move from reliance on land titling project funding to financial sustainability.

Further discussion is needed on the desirable features of higher education for land administration in developing countries. FIG can assist in fostering professional development, the development of guidelines and the facilitation of international forums to discuss the issues. The profile of surveying education in the future endorsed by FIG provides guidance on the direction that higher education is expected to take.

Developing countries will also need to develop more effective governance mechanisms and long-term funding models in order to bridge some of the gaps that exist with developed countries. This will provide a platform for the capacity building and curriculum development needed to achieve the education profile envisaged for the future.

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BIOGRAPHICAL NOTES

David Mitchell is a Senior Lecturer at the Department of Geospatial Science and in 2005 completed a PhD on the interface between land administration and natural resource management. He obtained his license for cadastral surveying in 1992 and worked in private practice for 12 years before joining RMIT University in 1997. He is the Australian delegate to FIG Commission 7, and a member of Working Group 7.1 on the development of pro-poor land administration and land management . David is also Director of the *Land Centre* at RMIT University (<http://user.gs.rmit.edu.au/landcentre/default.htm>) focusing on the development of effective land policy and land administration to support tenure security, improved access to land and pro-poor rural development. Since 2005 he has combined work as an academic with international consultancies for the World Bank and the UN FAO in South-East Asia.

Stig Enemark is President of the International Federation of Surveyors (FIG). He is Professor in Land Management and Problem Based Learning at Aalborg University, Denmark, where he was head of the School of Surveying and Planning between 1991-2005. He has a Master of Science in Surveying, Planning and Land Management and he obtained his license for cadastral surveying in 1970. He worked for 10 years as a consultant surveyor in private practice, and was President of the Danish Association of Chartered Surveyors from 2003-2006. From 1994-1998 he was Chairman of Commission 2 (Professional Education) of FIG, and is an Honorary Member of FIG. He has undertaken consultancies for the World Bank and the European Union especially in Eastern Europe and Sub Saharan Africa. He has more than 250 publications to his credit, and has presented invited papers to more than 60 international conferences. For more information and a full list of publications see <http://www.land.aau.dk/~enemark>.

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