

Professional Education Program for Land Management and Land Administration in Cambodia

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Key words: Professional Education, Curriculum Development, Land Management, Tenure

SUMMARY

Land Management and Land Administration is defined as a system of planning, management and administration methods and techniques that aims to integrate ecological with social, economic and legal principles in the management of land for urban and rural development purposes. The main objective is to meet changing and developing human needs, while simultaneously ensuring long-term productive potential of natural resources together with maintenance of inherent environmental and cultural functions.

Therefore, the Ministry of Land Management, Urban Planning and Construction in collaboration with the Ministry of Agriculture, Forestry and Fisheries initiate a long term capacity building process for Land Management in Cambodia. Subsequently the Royal University of Agriculture in Phnom Penh got the task in 2002 to set up a Bachelor program and a short-course training to obtain a Diploma degree for continuous education of ministry staff. In Cambodia, no such education was ever offered until the establishment of the new Faculty of Land Management and Land Administration within the Royal University of Agriculture. Consequently there was a deficient in human resources to develop the new curriculum and to establish the faculty on national level. The initiative is academically supervised by the Technical University of Munich and financially supported by a loan from the World Bank with technical assistance from the German Government. Since 2003 Royal University of Agriculture has been implementing the program in close collaboration with Component 2 of the Land Management and Administration Project on national level. Continuously the LMAP project will provide support to improve, organize and manage the new education program on land management and administration within a long-established Cambodian university.

In January 2003, the first draft of a curriculum for a four years bachelor program was developed in collaboration with TU Munich and settled in December 2003. The curriculum for the two years Diploma program and continuous short term training is drafted but the national approval is still pending. Several multi-donor supervisory missions of World Bank, TU Munich, gtz and others have given considerations to improve and adapt the curriculum to real need and capacity of the enrolled students. The Royal University of Agriculture is planning to offer parts of Land Management curriculum within their Rural Development Master program starting with the next semester.

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1. INTRODUCTION

1.1 Country Context

Cambodia's recent history of the late 20th century is well known. In 1975, after the revolution by the Khmer Rouge, the post-colonial society was completely reformed. The individual ownership of land was banned and all cadastral records were destroyed. Cities were emptied and people were forced to live in communes that engaged massive irrigation projects. The infrastructure was literally destroyed and the majority of higher educated people were killed. In 1979, Vietnamese forces overthrow the Khmer Rouge from the main parts of Cambodia even the Khmer Rouge still continued to occupy some parts of the country. In 1993, the general elections facilitated by the United Nations started a democratization and normalization process. In 1998, the Khmer Rouge finally gave up all resistance, and the legitimate government gained control of all the territory for the first time in thirty years. Today, only five years after the first democratic elections, Cambodia is a member of ASEAN and has completed signed negotiations for joining the WTO. Although some progress is made already the formal reconstruction of the Cambodian society, especially the land sector is right now a critical and still on-going process.

1.2 Professionals and education

Due to the restless history, Cambodia has an increasing need for young professionals in the sector of land management, land administration, surveying and remote sensing. Re-introduction of private ownership on land, mapping responsibilities for forestry monitoring, agricultural development, state land mapping and special task i.e. for multinational agencies like the Mekong River Commission demands a lot of qualified human recourses. In addition the Land Management and Administration Project (LMAP) funded by the Ministry of Land Management, Urban Planning and Construction (MLMUPC), the World Bank, the Government of Finland and the Government of Germany require a large number of specialists in the field of general geomatics.

For example, the main component, implementation of systematic land registration for one an estimated number of million parcels until 2007, as well as the development of a modern digital land registration system will require an amount of more than 700 professionals within the ministry and its provincial and district branches. A time period of 10 to 15 years is estimated to finalize systematic land registration in the whole country. Simultaneously other ministry and project components improve land administration and management; urban and rural planning in Cambodia, which increases the demand of qualified human resources. Many innovative tasks are introduced and decentralized responsibilities to provincial and district level in the future will lead to a steadily increasing demand of academic professionals and

trained staff at all levels. At the same time the private sector development of surveying and GIS companies remains very limited still. As a result a higher professional education on Land Management and Land Administration was required for continuous capacity building.

1.3 Staffing and training at the Ministry of LMUPC

During the last 15 years the formal technical qualification of ministry staff in land management and land administration has improved tremendously. Until 2000 the total number of land surveyors with any kind of academic degree was about 220. Only about 15 of them hold a Master's Degree obtained from the University of Moscow during the 1990's. To re-establish a cadastral organization in a country like Cambodia this limited number of academic professionals was not adequate to implement land registration and even land reform policy activities throughout the whole country. Consequently, the General Department of Cadastre and Geography (GDCG), the former Land Title Department (LTD) organized special in-house training courses starting from 1994, to provide professional education to the national and provincial officers. These courses included seven months of intensive training for about 100 employees (Payne, 1996). Later in 1995 to 1997 the Prek Leap Agriculture College (PLAC) has provided a diploma on cadastre about 200 students in a two and a half year study. Detailed research about the formal qualification of students had not been carried out, but it is predictable that the educational level "a diploma educated" is equivalent to a primary or lower secondary school education to full secondary education in Australia (Payne, 1996). Out of 400 technical staff in 1995 that was directly involved land titling and registration less than 50 % had attended the internal Ministry training at Phnom Penh or had graduated at the Prek Leap Agriculture College until 1996. Payne (1996) had prepared recommendations and objectives for short-term training that was provided by LTD and contributing donor projects, i.e. the Cambodian Cadastral Project (CCP) implemented by the FINNMAP International, the Land Management Project (LMP) implemented by the GTZ from 1997 - 2000. Most of the training objectives were related to basic practical technical, legal and administrative issues. Payne (1996) also strengthens the need to review objectives of continuous technical and political changes in Cambodia as well as probable further donor assistance to the sector.

Törhönen and Suon (1999) prepared a study of human resources in the cadastral sector for some of the Cambodian provinces on behalf of the Ministry of Land Management and Land Administration (see table 1). The study mentioned major conclusion related to human resources and capacity building like the following:

- Situation in provinces varies from desperate to adequate up to being worst in very unfortunate areas
- Even with trained personnel there is no proper culture for quality assurance
- Administrative rules and regulations are quit well obeyed but technical execution is poor to weak. (Törhönen & Suon, 1999)

With the launch of the Land Management and Land Administration Project (LMAP) in 2002 remarkable sector wide changes took place especially in regard to human resources. In mid 2003, approximately 1.000 staff mostly trained in short course trainings was working with the MLMUPC and the LMAP-Project. In March 2004, there was 1.969 staff within the Ministry

in four central departments and in LMAP target provinces. In July 2004, 460 staff was operational in eight target provinces serving in land registration teams, while 90 were continuously participating in training on systematic land registration techniques proceeds to three more provinces. At the central ministry levels in the General Department of Cadastre and Geography (GDCG) there were about 250 employees in the year 2004 and more than 700 field staff in eleven provinces. The figures presented in Table 1 and 2 include staff for administration, land management and cadastre until the end of 1999 only. A revision of the ministry structure as well as an adjustment of the MLMUPC staff policy is still pending.

Province	Takeo	Kampong Speu	Sihanouk Ville	Kampot	Kep	Prey Veng	Svay Rieng	Kandal	Siem Reap	Total
M Sc	0	0	0	0	0	0	0	0	0	0
B Sc	7	6	3	3	1	2	1	9	8	40
Technician		7		2	4	3		34		50
Nat. training	11	11	8	12	3	17	8	35		105
Short training	12	33		47		29	27			148
pre-1975 staff	5	1	2		3					11
no training	52		41		2	45		66		206
TOTAL 1999	75	57	56	52	13	79	36	144	67	579

Table 1: Education levels in some of the Provinces 1999. (Törhönen & Suon, 1999)

Province	Takeo	Kampong Speu	Sihanouk Ville	Kampot	Kep	Prey Veng	Svay Rieng	Kandal	Siem Reap
Advanced Surveying Skills	exist	poor	exist	some	weak	exist	weak	poor	exist
Surveying Skills	exist	poor	some	exist	poor	exist	poor	exist	some
Legal Skills	no data	basic	basic	No data	weak	No data	No data	weak	No data

Table 2: Estimation of skill level in some Provinces 1999 (Törhönen & Suon, 1999)

Although a large amount of training was provided the surveying and administration capacity still remains unfortunate for numerous tasks ahead, especially for subsequent transactions and land reform issues. Despite all contributions of multi-donor support to MLMUPC, land registration teams or provincial land administration staff over the past 15 years, major concerns about basic computers literacy, practical surveying capacity as well as knowledge and experience of most recent surveying equipment still exists. An appropriate solution for improvement and sustainable capacity development in the long term was the establishment of a comprehensive professional higher educational program on Land Management and Land Administration with a new Faculty of Land Management and Land Administration (FLMLA: www.rua.edu.kh/land_mgt.html) at the Royal University of Agriculture (RUA) in Phnom Penh with the academic year 2002-2003 (Mund et al 2005).

2. FACULTY OF LAND MANAGEMENT AND LAND ADMINISTRATION

2.1 Background

To provide a solution for a long term, the Ministry of Land Management (MLMUPC) in 2002 decided together with the Royal University of Agriculture (RUA) to set up a credit point Bachelor program (4 years) as well as to elaborate a short-term education program (2 years) to obtain a Diploma certificate. A Memorandum of Understanding (MoU) between the MLMUPC and the RUA was signed December 2003 to establish the Faculty of Land Management and Land Administration in the RUA in Phnom Penh under the support of LMAP. The initiative is financially supported with a loan from the World Bank and technical assistance is given by the Government of Germany via German technical cooperation (gtz) and the German Center for International Migration (CIM).

The subject of the new Bachelor study course on Land Management and Land Administration is defined as a scheme of geomatics and surveying techniques in combination with planning and land management methods that aims to integrate ecological with social, economic and legal principles in the management of land for urban and rural development purposes to meet changing human needs. In Cambodia, no such professional higher education program was offered before, thus there was poor lecturing and teaching recourses in that field, too (RUA, Draft Curriculum for Bachelor program, 2003).

The objective of this new Faculty is to offer students a BSc. Study course with the technical and scientific qualification, morality, and practical ability in land management and land administration to respond to the requirements of a sustainable development of the land sector in Cambodia. Students will receive a comprehensive higher academic education on:

- Ecological, economic and social aspect of land management,
- Legal aspect such as land rights, land law, land policy,
- Technical methods needed for surveying, land administration and land information management,
- Financial issues related to land such as land taxation,
- Long-term productive potential of natural resources,
- Preservation and protection of environmental and cultural functions,
- Land management such as urban and rural land use planning, and
- Conflict management to deal with land disputes

Implementation of the BSc. Program is carried out so far with the Royal University of Agriculture and LMAP under Component 2 (Institutional Development) which will provide support to four main topics covering:

- Long-term institutional development of the Ministry,
- Project management to implement the project,
- Establishment of a land management and administration professional education program in an established university,
- Development of the private surveying industry.

2.2 Development and international cooperation objectives

Specific international cooperation objectives in academic education are to qualify human resources in land management and administration that meet the needs of ongoing socio-economic development in Cambodia. The professional higher education program is supported by the German Technical Cooperation agency GTZ, with technical and academic assistance to the curriculum development process as well as grants of basic teaching material and equipment. In addition, the German Government is providing one international academic expert via the Integrated Expert Program (CIM) to advise the establishment of the study course for four years at the university, until December 2007 (LMAP 2003).

The main objectives of the German supported project to professional education program are:

- Establishment of an administrative structure of the new faculty and the LMLA study course
- Draft of curriculums for a Diploma and a Bachelor program,
- Draft course descriptions including main topics and lecture notes,
- Create a concept for the capacity building of academic staff in the RUA and the MLMUPC, (Werhmann, 2003, Nichols 2004)

The objective for the diploma program is to qualify students on a technical level providing them a basic understanding of land issues and to offer them special technical training in surveying or land administration. The aim is to offer technical personnel to the land sector in several Cambodian ministries and the civil society. Eligible to enroll to the Diploma program would be students with graduation from higher secondary education or students passing the RUA entry exam or persons who have at least three years of practical experience within the MLMUPC. Eligible to enroll to the Bachelor program are students with graduation from higher education only who passed the RUA entry exam or persons holding another higher education degree.

Related to World Bank regulations FLMLA students are recently suspended to pay their enrollment fee of 375\$/p.a to the university. Instead of the study fees the LMAP contributes competitive additional salaries to RUA teachers lecturing at the new faculty (Nichols 2004). Moderately negative feedback from RUA, FLMLA lecturers and the ministries to this salary solution, solely based on a World Bank loan requires all stakeholders for a revision or improvement of this strategy to meet long term sustainable progress of these study courses. Economic support alternatives, like an individual higher education credit line offered to FLMLA students via international private banks operating in Cambodia, has to be discussed and agreed by all stakeholders of the education program for sustainable continuation.

As complementary capacity building measures four Cambodian LMAP personnel and one RUA member have been supported by scholarships to finish the Master program in Land Tenure and Land Management at the Technical University of Munich (Annual report 2002/2003) with two of them already providing lectures at the faculty. Additionally LMAP project and GTZ encourages the RUA faculty to establish a new topical library as well as to purchase up to date basic surveying and research equipment and geomatics software supported by ESRI Thailand and the World Bank. Due to several administrative hurdles only a small number of surveying equipment is available for education purposes until now.

Supplementary objectives of the education projects includes collaboration with the private sector of land and real estate agents, valuers and land developers, thus far a system of licensed surveyors is not legally approved.

Faculty development and curriculum improvement

During the pre-preparation phase of the education program and curriculum development in 2002 several international recognized curricula on land management, land administration, professional surveying, land economic and land resources on different academic level were reviewed with support from FIG and TU Munich. Based on these reviews a tailored BSc. curriculum version on land management and land administration for requirements of developing countries was drafted by academic personnel of the TU Munich and international FIG partner institutions. Later, it was soundly adapted to other existing MSc. curricula and improved to a credit point system which could be recognized internationally. Build on this, a draft curriculum for Cambodian requirements of a diploma and a bachelor program was prepared in collaboration with RUA and the MLMUPC. Subsequently, academic requirements like selection and training needs for academic and teaching staff were defined in close collaboration between RUA and MLMUPC followed by an administrative structure of the faculty, drafted by administrative RUA personnel. Based on a needs assessment and available academic human resources it was decided to establish five faculty departments with responsibility for the following topics of the education program (figure 1):

1. Land Policy
2. Surveying and Mapping
3. Land Administration
4. Land Management
5. Geomatics

The draft curriculum for a four years Bachelor program was finally agreed by the RUA and the MLMUPC in December 2003 and a MoU among RUA and MLMUPC was signed in 2004. However, the faculty has started the education program already in October 2003 with the intake of the first promotion of 73 students. Although the mean annually enrollment to the faculty is projected up to 40 students per year the second promotion enrollment was reduced only to 45 students in May 2004. A multi-donor supervisory mission in collaboration with the RUA and the MLMUPC agreed to limit future intakes and consider an international review of the study course for national accreditation with the Ministry of Education Youth and Sports. This review shall include: student selection measures, examinations, assessment and BSc. thesis procedures, curriculum, financial arrangements, student fees as well as formal and informal and academic salaries of the teachers. The program progress was assessed later in 2004 by Dr. S. Nichols from New Brunswick University with recommendations and major improvements in adapting the curriculum to the Cambodian situation. Additionally a revision of detailed “teaching plans” were carried out, to guarantee that lecturers follow minimum international standards and course content does not overlap in major subjects thought by different lectures. Further international experts (Wehrmann 2003; Zuelsdorf 2005) as well as the university advisors (Mund 2004) proposed an introduction to higher education pedagogy and university didactic for all lecturers recruited from Ministries and other non-education

institutions to become more familiar with modern and appropriate lecturing and instruction techniques. It was proposed that Ministry staff should collaborate in practical course issues closely with lecturers of the University furthermore.

With regards to experience and results of the first full time four years study course completed in July 2006 a further reassessment of the BSc. study program has to be considered among all stakeholders. It should focus on the technical capacity of graduated students in various topics of the study course as well as personality development and foreign language capacities. Based on non systematic assessment of BSc. grad student's academic capacity further adjustments of the course content with strengthen or specification to only a few major subjects in geodesy and geomatics should be considered. A supplementary one year study course with a MSc. certificate could be established which would cover more general subjects like ICT development, Real Estate or land reform policies.

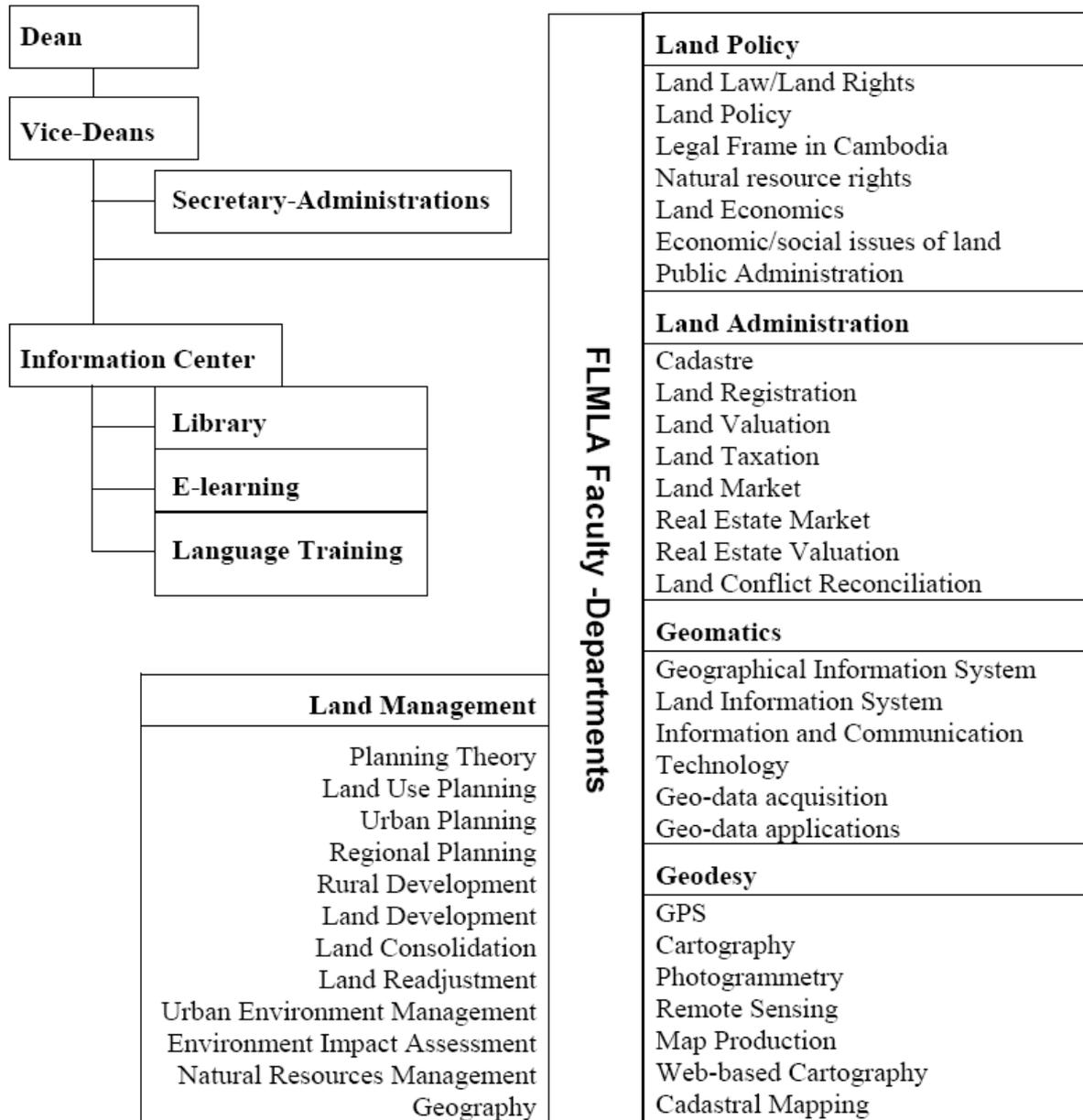


Figure 1: Faculty of Land Management and Administration: Structure

The curriculum development for a two years diploma program, which was already started in early 2003, is principally agreed, but neither RUA nor the MLMUPC have improved on the pending accreditation situation since two years. Originally three major specialization subjects were discussed; Land Management, Land Administration and Surveying. The drafted curriculum includes now only the first two and further discussions are needed to define if Surveying or Land Rights should be become another major subject or will be included into subjects already agreed. Furthermore course issues and adjustments of all four semester content shall be discussed if more courses will be provided, or alternatively the time for

preparing the final report has shorter than proposed. However, there are still some open questions related to implementation of the Diploma program, so this program has not yet started due to the lack of resources and general agreements within Ministries.

2.3 Current Status of the Faculty

In July 2006 FLMLA has already finished its fourth academic year with a first Bachelor graduation of about 70 students of the first enrollment batch from 2002. The whole amount of students sums up to 170 in four years with a slight fall over the last two years. Recently, there are 38 students in the third year and a group of 28 in the second year, with around 35 completing the common first year of the program this August. Major challenges for the academic year 2005-2006 will be providing courses mainly thought by recruited guest lecturers for all three classes 2nd and 3rd and fourth year simultaneously as well as to improve the employment situation of the first group of FLMLA graduates within ministries and Cambodian administration. Due to several administrative reasons and still very limited human resources of qualified academic teachers some course like land economics or land readjustment are still missing a experienced academic lecturer. Due to typical Cambodian teaching situation most recent members of the RUA lecturer or guest lecturer team has either a Master degree or extensive technical experience in their lecturing subject or in perfect cases they hold both of it. Only some of them hold advanced degrees like international Masters or PhDs. In the near future it is highly recommended to offer more advanced education opportunities and incentives to learn teaching methods to FLMLA teachers, including international exchange programs or foreign collaboration in developing teaching materials to improve Cambodian capacity in higher education.

The gender goal to have 30% of women among the 30 to 40 student enrolled each year could not be reached but there are approximately 10-15% women in the program which is consistent with many well-established geodetic course programs worldwide, although the percentage of women in Europe is usually higher. The representation of students from poor or rural families or other marginalized groups was not well observed during the first intakes and some systematic fraud was reported.

The RUA and the FLMLA faculty personnel themselves have less to no experience in land management and administration, thus these are not typical agricultural subjects except for farm management and soil evaluation. There is an essential requirement to upgrade the current faculty situation not only by international cooperation, to meet long term development necessities. In example RUA lecturers and young assistant teaching staff has to assist in courses taught by Ministry Guest Lecturers at the moment. Therefore LMAP will ensure involvement through research or practical work for the RUA staff in the project. Further opportunities for studies abroad will be also explored for younger staff.

3. CURRENT CURRICULUM CONDITION

According the draft curriculum of the Bachelor program, the educational goals are to instruct students to obtain the technical and scientific qualification, morality and practical ability in land management and administration to respond to the requirements of a sustainable development. The objective of the new faculty is to provide an international accredited

bilingual academic education at the RUA on Land Management and Land Administration in cooperation with the MLMUPC – LMAP. Students will therefore receive a comprehensive education with courses including:

- Ecological, economic and social aspect of land management,
- Legal aspect such as land rights, land law and land policy,
- Technical methods needed for surveying, land administration and land information management,
- Financial issues related to land such as land taxation
- Land management such as urban and rural land use planning ,and
- Conflict management to deal with land disputes.

Course work including Bachelor thesis consists of 154 credit points and will take four years with an academic year divided into two semesters with both 16 weeks of duration. The whole program is divided to three phases: two semesters for general education at the agricultural university, five semesters for specialized education and one semester for research and thesis writing (tables 3-5).

Knowledge	Credits	Percentage
General Education Courses	43	28 %
Specialized Education Courses	103	67 %
Student Thesis	8	5 %
Total	154	100 %

Table 3: Credit courses, Bachelor Program

Groups of Knowledge	Credits	Percentage
Social Sciences	2	4.5 %
Natural Sciences	29	68 %
Economic Sciences	6	14 %
Languages	4	9 %
Computer Science	2	4.5 %
Total	43	100 %

Table 4: General Education Courses, Bachelor Program.

Knowledge	Credits	Percentage
Compulsory Courses	88	85.5 %
Elective Courses	12	11.5 %
Field Work and Undergraduate Seminar	3	3 %
Total	103	100 %

Table 5: Specialized Education Courses, Bachelor Program.

The detailed course descriptions and lecture outlines (Mund et al, 2005) are developed with in order to provide details of content divided into theory and practice, comprehensive objectives and complete course contents. The tables above presents the differentiation of the BSc. curriculum divided into various knowledge field and subject groups. The General Education Courses are divided into social, natural and economic sciences, natural sciences

and mathematics having the main weight. The Specialized Education Courses are divided into Compulsory Courses, Land Policy, Surveying and Mapping, Land Management, Land Administration, Geomatics and Foreign Languages. Elective Courses are mainly focused on applied technical topics and subjects in Land Management and Administration like as natural resources management, environmental protection, sustainable suitable agriculture and urban as well as rural development.

The Diploma program for Land Management and Administration (table 6) will take 2 years, including 4 semesters each 16 weeks of duration. The Diploma Course will focus more on applied technical subjects to improve technical experience and professional skills among technical personnel of the MLMUPC ministry and could provide young specialized staff with appropriate basic technical skills. The first two semesters will focus on a general introduction on land issues, while the second phase focus on specialized instructions in two different fields, either land management or Geomatics. All Diploma students have to participate in a field exercise and have to present a comprehensive report on their field of specialty to complete the diploma course work.

Knowledge	Credits	Percentage
Basic/Introductory Courses	27	52 %
Specialized Education Courses	14	27 %
- Field Exercise	1	
- Undergraduate seminar	1	
Language	3	6 %
Student's specialized report	8	15 %
Total	54	100 %

Table 6: Curriculum for Diploma Program.

4. CONCLUSION

After four years of academic experience with a new established Bachelor course on Land Management and Land Administration at the Royal University of Agriculture in Cambodia, there are still a number of institutional and academic challenges for the new study program. Priority has to be given to improvement of administrative framework, didactical capacity and experience of teachers as well as enlargement of academic personnel at the faculty and inside the group of lectures. However, first bachelor thesis and student graduation experiences, one international Australian scholarship student in Geomatics as well as three international accepted conference abstracts of student BSc. topics already, have given a first insight that the academic education program has provided an adequate amount of technical and academic skills for further professional tasks and functions. Taking this into consideration it seems to be worth to expand efforts and improve capacity together with all existing national partners and more new international partners for the continuation of this first study course on land Management and Land Administration in Cambodia ever since.

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BIOGRAPHICAL NOTES

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