

Surveying and Land Administration – Sustainable Education for Developing Countries

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SUMMARY

Human resource development is one of the major development strategies of the Government of Lao PDR (GoL). There are numerous programs operating through various projects and aid organizations, including the Australian Government funded scholarship program, which are aimed specifically at assisting the GoL in supporting its key long term initiative of human resource development.

In the early 1990's the Government of Lao PDR made a decision to implement the Lao Land Titling Project (LLTP) to encourage the efficient use of land and to improve economic and social development. One of the challenges facing the implementation of the LLTP was the lack of national expertise to support the development of the project's initiatives. During the design phase, issues of education and training were seen as key factors in ensuring the long-term sustainability of project activities. However, potential trainees lacked the appropriate foundation skills on which the project's training was predicated and the existing education system lacked the capacity to build these base skills, as well as subsequent technical and professional expertise. After examining several possibilities, it was decided to develop an In-country Course in Surveying and Land Administration, through the Polytechnic School, which would provide an internationally recognised professional qualification and meet national needs for a skilled workforce to operate a modern land registration system.

The In-country Course, presented over a period of two and a half years, was developed around a model of capacity building being provided by an Australian educational training institution. The aim was to ensure that the Polytechnic School would be in a position to continue to operate and maintain appropriate tertiary education courses in surveying and land administration. This approach has proven to be extremely successful and has led to the development of a High Diploma in Surveying and Land Administration at the Polytechnic School, which is now providing graduates to the Land Titling Project and private sector.

The approach taken in Lao PDR to improve the capacity of a tertiary institution to provide an acceptable level of ongoing tertiary education to support a new government land registration initiative has proven to be very successful. The model that has been developed would appear to one that would be acceptable for implementation in most developing countries where there is a need to build capacity within the tertiary institutions.

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1. INTRODUCTION

In 1985, with the adoption of the New Economic Mechanism (NEM), the Government of Laos (GoL) recognised that if it were to shed its Least Developed Country status it was essential to, amongst other things, to introduce a land titling program which would encourage the efficient use of land to improve economic and social development. All land was nationalized following independence in 1975, and prior to that there had been no national systematic land tenure system. The NEM specifically allowed for private land tenure and accepted that defined property rights would enable owners to expand their economic horizons, as well as attracting foreign investment. In order to meet this need, the World Bank and the Australian Government, through the Australian aid agency, AusAID, entered a co-funding partnership to fund the first phase of the Land Titling Project, 1997-2003. The second phase, the "Laos Australia - Property Rights and Land Titling Project" commenced in November 2003.

Human resource development is one of the major development objectives of the GoL and is seen as a key initiative in building capacity within Lao PDR. There are numerous programs operating through various projects and aid organizations, including the Australian Government funded scholarship program, which are aimed specifically at assisting the GoL in supporting its key long term initiative of human resource development.

One of the challenges facing the implementation of Phase I of the Lao Land Titling Project was what was seen as a lack of national expertise to support the development of the project's initiatives. During the design phase, issues of education and training were seen as key factors in ensuring the long-term sustainability of project activities. However, potential educators lacked the appropriate foundation technical and professional skills on which the project's training was predicated and the existing education system lacked the capacity to build these base skills. After examining several possibilities, it was decided to develop an in-country course in Surveying and Land Administration, which would provide an internationally recognised professional qualification and meet national needs for a skilled and educated workforce to operate a modern land registration system.

Within Lao PDR the conditions of tertiary institutions including staffing, organisation and operations, low education and skill levels of personnel is seen as an inhibiting factor in the future human resource development of the country. Establishing an appropriate education system within a tertiary institution to support the Land Titling Project was seen as a high priority if a level of sustainability in project activities was to be achieved.

2. DEVELOPMENT OF AN EDUCATION STRATEGY

Education, by its nature is a long term process and involves acquainting personnel with *how and why* tasks are performed and in relation to applied subjects consists of three principal components:

- Theoretical background
- Application of theory to practice
- Problem solving.

From a land registration and land valuation perspective education systems should attempt to provide personnel with an understanding of the social and economic objectives together with an overview of the total processes necessary to achieve these objectives. The educational process should develop the ability of personnel to identify problems relating to the provision of land services, to analyse these problems and to formulate solutions.

The skills required by any group to contribute to the development of a country change as that development proceeds. Surveying and land administration is no exception. In its present stage of development Laos is building the physical infrastructure such as large civil engineering projects for roads, bridges, drains, dams, irrigation; as well bringing land on to the "register" through the Lao Land Titling Project. To adequately support these activities, skills need to be *presently* focused on basic surveying (using modern and productive technology and techniques), mapping in support of engineering projects, and land administration and valuation. It is therefore important to note that strengthening the education courses in land administration would not only assist in meeting the requirements of the land registration system but, equally important, would also assist in providing trained personnel for the many tasks of national development, particularly those dealing with the physical infrastructure.

Issues relating to training and education are of fundamental importance to the development and progress of the LLTP. The successful implementation of the land registration system is dependent on a steady supply of personnel to support both the public and private sectors, who have the knowledge of the technical processes involved in land registration, land valuation, cadastral surveying, land record management, Customer Relations and Services (CRS) and the important inter-relationships between the processes.

2.1 Identification of Education Needs for the Land Titling Project

In developing an education strategy to support the Land Titling Project an initial assessment of educational institutions in Laos identified that there was insufficient capacity to support the necessary future requirements of the project. There were surveying and mapping subjects presented at a number of tertiary institutions but these were not of the depth required and did not cover key project activities such as land registration, land law and cadastral surveying.

To develop a solution for the longer term education requirements a number of options were reviewed. These included; (i) using courses that already existed in Thailand; (ii) maintaining the status quo; and (iii) improving the existing courses and facilities at the Polytechnic School in Vientiane. It was considered that the first two options were unsatisfactory and that there were a number of advantages in improving existing courses and facilities especially in relation to ongoing capacity building and sustainability.

2.2 The Polytechnic School

The *Lao- Soviet Friendship Intermediate Polytechnic School* was established in 1986 and resulted from bilateral assistance and cooperation between the Soviet Union and the Lao PDR government. This school initially included 7 vocational specialties. In 2000 the school was renamed the *Polytechnic School (PS)*. The Polytechnic School comes under the Ministry of Education, Technical, Vocational and Higher Education Department, and is divided into 4 divisions – Surveying and Mapping, Electrical Engineering, Mining prospectus (exploration), and Mining exploitation processing (Mineral processing). The School's objectives are to produce technical specialists for industry to support the Government of Lao socio-economic development plan.

At the time of reviewing the land administration educational requirements there existed a three year Diploma in Surveying and Mapping (DSM) course at the Polytechnic School, but it was under the jurisdiction of the National Geographic Department (NGD), part of the Prime Minister's Office and not under the Ministry of Education. Although the course did have some subjects that were relevant to project activities, it was specifically designed to support the mapping functions of the NGD and lacked the depth of subjects required to support land registration activities. It was also identified that the technical skills and education of graduates from the DSM were below the standard required to sustain a land registration system and there was a need for upgrading the existing education system to support land administration.

One of the outcomes from the "Final Report on Surveying Education Strategy and Draft Course Curriculum" was a proposal to establish an "In Country Course"¹ designed to upgrade the skills of land surveyors and land registration personnel employed by the Department of Lands and working on the Lao Land Titling Project. The main terms of reference were to:

- develop and implement an In Country Course (ICC) to upgrade the skills of approximately 20 existing DoL Surveyors working on the LLTP; and
- develop an upgraded curriculum for the Diploma in Surveying and Mapping and an implementation plan.

In 1998 senior officers from the Polytechnic School and the agencies involved in the Land Titling Project agreed on the goals and objectives of surveying education in Lao PDR. The overall goal was "*to significantly improve educational and training courses in surveying and land administration so that the courses provide graduates that meet government, industry,*

¹ The term "In Country Course" is commonly used in Lao PDR to denote a locally delivered education program as opposed to students studying overseas.

and employer needs” The short and medium term objectives in 1998 were about establishing the Higher Diploma in Surveying and Land Administration (HDSL A). For the longer term it is intended that future development of education for land administration will involve the creation of an appropriate degree course.

3. IN COUNTRY COURSE IN SURVEYING AND LAND ADMINISTRATION

The In Country Course was designed to upgrade the skills of approximately 20 DoL staff with other government departments and the Polytechnic School staff also participating. It was also proposed that the series of 8 course modules be delivered by visiting lecturers from a contracted Australian tertiary institution which would work in conjunction with a full time national education adviser and a full time translator. Assistance would also be provided by the staff from the Polytechnic School.

The Australian Government through AusAID agreed to provide the necessary funding to establish and run the In Country Course. This included the funding for technical assistance as well as the refurbishment of lecture rooms, installation of airconditioning and provision of lecturing facilities.

3.1 Course Delivery

The delivery and accreditation of the In Country Course was contracted to an Australian Education Institution, the Western Australian Central TAFE, which was required to present the modules at a level equivalent to an Australian TAFE Certificate IV or Diploma. The modules covered during the In Country Course were as follows:

- Module 1: Land Valuation
- Module 2: Surveying, Maths and Survey Computations 1
- Module 3: Surveying, Maths and Survey Computations 2
- Module 4: Surveying, Maths and Survey Computations 3
- Module 5: Total Stations and GPS
- Module 6: Land Administration and Registration
- Module 7: Cadastral Surveying and Mapping
- Module 8: Survey Project Management

Lecturers from the Central TAFE were responsible for the delivery of five of the modules; maths, surveying, survey computations, GPS and total stations and surveying project management. The other 3 modules, land valuation, land administration and registration and cadastral surveying and mapping were delivered by International Advisers who had worked on the Project and had experience in the specific subject areas as the subject material related directly to the Project. All modules were presented in English with direct translation being provided by a translator.

The translator also had the responsibility for translating all lecture material from English into Lao and for the translation of all written tests and examinations that were set. As would be appreciated the translation issues imposed some unique conditions on the presentation of the education program.

An output from the ICC was a set of comprehensive lecture notes for each module which are in English and Lao languages. The preparation and translation of the lecture notes were critical to the overall success of the delivery of the ICC.

Each lecturer was required to prepare their lecture material at least 8 weeks prior to the commencement of their module to enable the lecture material to be translated into Lao before the commencement of each module. A copy of the lecture notes was provided to each student at the commencement of the module. Following the completion of the ICC the Polytechnic lecturers along with help from the national technical assistance updated the lecture material and translations for each of the modules. A large number of copies of the lecture notes were then produced and included in the Polytechnic School library as reference material. The lecture notes will also be used by the Polytechnic School lecturers in presenting the modules which form part of the High Diploma in Surveying and Land Administration.

The In Country Course commenced in February 2001 with 26 students (11 women) participating; 17 selected from 6 of the provinces in which the project was to be implemented, 2 from the National Geographic Department, 3 from the Polytechnic School and 4 from the central Department of Lands. The presentation of the 8 modules was successfully completed in May 2002.

Following the completion of the first 8 modules that comprised the In Country Course in Surveying and Land Administration, the Western Australian Central TAFE obtained Australian accreditation for the course with certificates of accreditation being issued on 31 March 2002 for:

- Certificate II in Surveying and Land Administration.
- Certificate III in Surveying and Land Administration.
- Certificate IV in Surveying and Land Administration.

Given the standard set by the Australian lecturers and the different lecturing style that the students had to adapt to it was excellent to see that all 26 students who commenced the 2 year course graduated. A graduation ceremony was held on 24 May 2002 for the graduates of the In Country Course.

In the original design for the ICC there were 11 modules but it became necessary to remove 3 modules due to an identified weak foundation of skills and knowledge in the lecturing staff at the Polytechnic School. During the 2 years of presentation of the ICC these lecturer weaknesses were addressed. With AusAID approval for funding for a 14 month extension of technical assistance support for the main project, AusAID also agreed to fund the remaining 3

modules of the original design for the In Country Course. These modules were delivered from December 2002 through to May 2003 and consisted of the following modules:

- Module 9: Land Adjudication
- Module 10: Customer Relations and Service/Gender and Development
- Module 11: Control Surveys

The only student not to complete all 11 modules was a student who had been awarded an

AusAID scholarship to study surveying in Australia and who was not available for the last 3 modules.

Throughout the presentation of the In Country Course the students expressed concerns about the recognition of the In Country Course by the Ministry of Education and the students felt that their 2 years of studies may not be recognised. Following completion of the delivery of all 11 modules there was still no decision by the Ministry of Education on recognition of the course. With pressure being applied by the management staff of both the Polytechnic School and Department of Lands, the Ministry of Education eventually agreed to recognise the In Country Course and each student was awarded a High Diploma in Surveying and Land Administration. The awarding of the High Diploma was recognised at a special ceremony held at the Polytechnic School on 5 December 2003.

3.2 Lecturer Involvement

During the design of the In Country Course it was recognised that there was a need to ensure that sustainability was also a key focus of the education process. Agreement was reached with the Polytechnic School that as well as those lecturers undertaking the course at least one selected lecturer would also sit in on each module of the course. This ensured that lecturers also received education from the Australian lecturers presenting each of the modules which assisted with knowledge transfer. This initiative proved very successful and was critical in the development of the course and ultimate acceptance by the Ministry of Education of the three year High Diploma in Surveying and Land Administration.

4. HIGH DIPLOMA IN SURVEYING AND LAND ADMINISTRATION

In between the publication of the initial report on the strengthening of education in surveying and mapping and the undertaking of the curriculum development for the proposed new High Diploma in Surveying and Land Administration course, the original Diploma in Surveying and Mapping had been reduced to a two year course and its jurisdiction transferred from the National Geographic Department to the Ministry of Education. The reduction in course duration undermined the proposed curriculum development process and significantly weakened the education requirements required to support the land titling activities.

The original curriculum for the High Diploma in Surveying and Land Administration was developed by the Technical Assistance Advisers in cooperation with staff from the Department of Lands, National Geographic Department and the Polytechnic School. The development process was preceded by an initial Develop a Curriculum (DACUM) workshop with a follow up workshop some 6 months later.

A new curriculum for the Diploma of Surveying and Mapping was developed and in order for the Polytechnic School to implement the new course, it was necessary to seek approval from the Ministry of Education.

The Polytechnic School submitted the course for accreditation in mid-2001 and it was subsequently accredited as the 3 year High Diploma in Surveying and Land Administration by the Ministry of Education in March 2002. Ministry of Education

officials would not accept the course in its original form and the Polytechnic School was obliged to accept extensive changes in order to have the course approved. The impact of

these changes was to significantly reduce the number of technical subjects for more social and politically related subjects in the first year of the course. The Diploma in Surveying and Mapping was retained as a 2 year course whose curriculum closely corresponds to the first 2 years of the HDSL A.

A key component of the curriculum development for the HDSL A was the integration of the 11 modules from the ICC into the last 3 semesters or one and a half years of the HDSL A. Through the ICC the lecturers of the Polytechnic School received extensive exposure to the subject content that they are required to present and the additional modules have been presented with minimal involvement from external sources. However where a specific part of a module relates directly to a project related component it is normal for the Polytechnic School to call on the resources of key government personnel to present those components.

4.1 Progression of Student Enrolments

The HDSL A and revised Diploma of Surveying and Mapping were implemented in September 2002. The HDSL A commenced with an initial intake of 32 students followed by an intake of 89 students in the second year with the Polytechnic School also commencing a fee paying HDSL A. To ensure ongoing development of government staff involved in land registration activities the project offers scholarships to the top ten students each year. With 3 years being run at any one time this means that 30 students are being provided project funded scholarships.

The following table provides an overview of the total intake of students for the High Diploma in Surveying and Mapping and highlights the significant increase in students since the new courses began.

Year	Intake Numbers Each Year for HDSL A			Total Numbers at Polytechnic School in HDSL A		
	Male	Female	Total	Male	Female	Total
2002/03	23	9	32	23	9	32
2003/04	56	33	89	79	42	121
2004/05	89	57	146	168	99	267
2005/06	52	10	62	187	100	287

Both surveying courses at the Polytechnic School have become very popular and in some ways the courses have become “their own worst enemy.” Early efforts to publicise the course through radio and newspaper and inform potential students of the course proved very successful. The government has seen the success of the courses as an opportunity to generate

revenue and now runs two streams; one fee paying and the other the normal annual tertiary institution intake. This has resulted in student numbers being well above the capacity of the Polytechnic School to manage which has 11 full time and 4 part time lecturers.

5. LESSONS LEARNT

There have been a number of lessons learnt during the development, implementation and follow on activities of the In Country Course. These lessons should be considered in the implementation of any similar approach to capacity building in the education sector and include:

- (a) There needs to be a strong commitment from the relevant tertiary institution to changes in the approach to the presentation of education.
- (b) The tertiary institution must be prepared to accept changes in the curriculum.
- (c) Selection of personnel to undertake the program must follow strict guidelines and pressure to nominate personnel that do not meet the selection criteria must be resisted. In the case of the In Country Course there was pressure applied to nominate people who did not meet the selection criteria. This pressure was resisted and the results are reflected in the 100% success in graduation.
- (d) Support needs to be provided to the lecturers of the tertiary institution to ensure they have the skills, knowledge and ability to be able to present the subjects that are included in the curriculum.
- (e) Follow up support is required to the tertiary institution after the completion of the course. Although lecturers were actively involved in the education program, there was still a need to provide them with some hands on support, especially with the very technically based subjects.

The involvement of external organisations in the future student selection process needs to be monitored. Experience at the Polytechnic School has shown that external influence by the Ministry of Education in selection of students has resulted in students being selected to undertake the High Diploma in Surveying and Land Administration who have limited skills in some of the basic subject areas such as mathematic.

An unfortunate outcome of the support for developing education in land administration has been a failure by the Government of Lao to appreciate the importance of quality education. Emphasis has, certainly for the short term, been placed on the quantity of students graduating due to revenue generating opportunities and an unfortunate measure of success imposed by the government that measures education success by the number of students graduating not the quality of graduates. There have been attempts to change this performance measure but unfortunately the Ministry of Education is reluctant to change.

To strengthen the diploma and high diploma courses attempts have also been made to develop articulated courses instead of the current two independently run courses. The Ministry of Education has refused to accept this approach even though it would improve the overall quality of course, the effectiveness of the lecturers and the quality of the graduates.

The large number of students graduating will mean that eventually it will be difficult for many of them to gain jobs in the fields related to their studies.

Initially this will not be a problem as the current development in the country means that graduates from the first few years of the course will be able to find jobs on many of the infrastructure projects being undertaken. However with the education level in Lao being at a very low level, graduates will have little difficulty in finding employment in other fields because they will at least have an educational qualification.

6. LAND ADMINISTRATION AND FUTURE DIRECTIONS

The Food and Agricultural Organisation of the United Nations (FAO) commissioned a study and a paper to be prepared on capacity building in land administration (Childress et al). The objective of the paper was to analyse emerging needs for capacity-building in land administration and strategies and approaches for responding to those needs. It was based upon issues and experiences in seven countries for examples of which Lao PDR was one of the countries. The paper specifically refers to the capacity building activities that have been undertaken as part of the Lao Land Titling Project and highlights that:

“Smaller countries may need to accomplish the same ends through international university training and upgrading of vocational training, such as in the example of the High Diploma in Surveying and Land Administration now being offered by the Polytechnic School in Laos.”

The success of the In Country Course in Surveying and Land Administration has resulted in the concept being looked at closely for the possible development of a course in valuation and property management. At the present time the only education available in the country in valuation is a module that is presented as part of the HDSL A and there is no course in property management. The need has been identified for a course in valuation to be established but with the limited market for such a course a proposal for the establishment of a course that covers both valuation and property management is being considered.

During the LLTP and the provision of support for the Polytechnic School and project generally some cooperative arrangements have been created with tertiary institutions in Thailand. It is therefore being proposed that the establishment of an In Country Course in Valuation and Property Management would possibly involve a contractual arrangement with a tertiary institution in Thailand which would have an advantage in reducing the language difficulties associated with lecture material being presented in English.

The success of the High Diploma in Surveying and Land Administration has highlighted that the concept of developing education capacity through the running of an In Country Course is worth being considered in other developing countries.

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BIOGRAPHICAL NOTES

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