# Curriculum Assessment Framework of Land Management Education for Capacity Building in Nepal: A case of Master in Land Administration at Kathmandu University

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**Key words**: Curriculum Assessment, Land Administration, CIPP Model

#### **SUMMARY**

Land is an important resource in a global context and also a predominately important resource in the Nepalese context as the country itself is landlocked. The effective land administration system that integrates different land issues from different disciplines such as legal, social, economic, cultural, technical, and planning has been realized globally. The global report by UN-GGIM on a framework for effective land administration (FELA) reflects that capacity and education as one of the pathways among nine to achieve the set goals of the land administration system and achieve the sustainable development goals 2030.

In national context, there has been various initiatives from Nepalese government in strengthening the land administration and land management sector in country context. Besides policy initiatives, the Ministry of land has realized the requirement of technically sound graduate human resources in the geoinformation domain to bridge the technical gaps, for achieving effectiveness in land administration and service delivery. To narrow this technical gap, the Bachelor in Geomatics Engineering was commenced in 2007 at Kathmandu University (KU) by establishing a Memorandum of understanding (MOU) between the Ministry of land and KU and later ITC supported in faculty development.

Further, the requirement for higher education in land administration that can influence the both policy and technical domain of land administration felt necessary. The market study has been submitted to ITC in 2010 that shows the strengthening of the Land administration system is being on the high agenda of the Nepal government and a sufficient number of efficient land professionals is required. In 2011 the Memorandum of Understanding (MOU) signed between Kathmandu University, School of Engineering and University of Twente, Faculty of Geo-Information Science and Earth Observation (UT/ITC) concerning strategic academic partnership in Land Administration. Hence, Master in Land Administration (MLA) was

commenced at Kathmandu University in 2013 with tripartite collaboration. However, after the commencement of the program, there is no study conducted yet to identify either the curriculum of the program have contributed to improve land administration and land management of the country.

This study aims to develop an analytical framework based on the (Context, Input, Process, Product) CIPP model developed by Stufflebeam (2000) integrating with evaluation framework developed by Enemark et al. (2004). Finally, the way forward to combat existing laggings in curriculum and the capacity building in land administration and also way forward to connect current curriculum with responsible land governance curriculum is discussed.

# Curriculum Assessment Framework of Land Management Education for Capacity Building in Nepal: A case of Master in Land Administration at Kathmandu University

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# 1. INTRODUCTION

The effective land administration system that integrates different land issues from different disciplines such as legal, social, economic, cultural, technical, and planning has been realized globally. Various study has already shown that capacity building is a continuum process to strengthen the land administration system (Enemark et al., 2004; Steudler et al., 2004) Similarly, the global report by UN-GGIM on a framework for effective land administration (FELA) reflects that capacity and education as one of the pathways among nine to achieve the set goals of the land administration system and achieve the sustainable development goals 2030.

According to Enemark et al. (2004), capacity can be understand in various aspects but general capacity building is understood as in relation to education, training and human resource development to tackle the particular problems or sectors. UN publication of 1998 has defined capacity as "Capacity can be defined as the ability of individuals and organizations or organizational units to perform functions effectively, efficiently and sustainably". Further, it has been elaborated as "Capacity assessment" in which the need assessment of capacity characteristic needs to be identified and "Capacity development" in which the capacity is developed through proper education based on need assessment. Considering, the land administration sectors, Enemark et al. (2004) has developed a conceptual framework for capacity development in Land Administration sectors. The framework consists of three levels of capacity development which are societal/system levels, organizational/entity level and individual level. Similarly, Mitchell et al. (2017) have elaborated the requirement of global curriculum related to land administration studies for combating global issues related land and to obtain responsible land governance.

Looking from the broad concept of curriculum development stages there are three stages of curriculum process which are curriculum design, curriculum implementation and curriculum evaluation (Bharvad, 2010). The three basic stages are further explained by three specific models as Tyler model as deductive, Hilda Taba as inductive and Wheeler's model as cyclical (Bharvad, 2010; Bhuttah et al., 2019). These three models play a crucial and different role in the process of curriculum development. Ralph Tyler pioneered four questions in 1949 which are important to shape the curriculum. The models of Taba and Wheeler are modified version of Tyler. Taba starts the curriculum processing from identification of learners' needs and end with the evaluation but for Wheeler curriculum development process is circular that does not end at evaluation and starts again from first steps one after some improvements and curriculum

evaluation. Hence, it is important to adopt continuum process of curriculum development as explained by Wheeler.

Taking into national context of capacity development and curriculum development for strengthening the land sector, there has already been taken various initiatives from Nepalese government in strengthening the land administration and land management sector in country context. Bachelor in Geomatics Engineering was commenced in 2007 at Kathmandu University (KU) by establishing a Memorandum of understanding (MOU) between the Ministry of land and KU and later ITC supported in faculty development. According to (Shrestha & Bhatta, 2019), this model has been considered as knowledge transfer vehicle by which students from all seven provinces has got opportunity to obtain education. Later, realizing national need for capacity building in land sectors, Master in Land Administration (MLA) was commenced at Kathmandu University in 2013 (School of Engineering, 2012).

Despite of decades of commencement of the MLA program, there has not been scientific evaluation of this program yet. It reveals that, there is a need to develop a scientific evaluation framework to analyze curriculum from broader perspective. This study aims to develop an analytical framework based on the (Context, Input, Process, Product) CIPP model developed by Stufflebeam (2000) integrating with evaluation framework developed by Enemark et al. (2004).

# 2. BACKGROUND: STATE OF ART IN LAND ADMINISTRATION PROGRAM AT KATHMANDU UNIVERSITY

After land policy initiatives, the Ministry of land has realized the requirement of technically sound graduate human resources to bridge the technical gaps, for achieving effectiveness in land administration and service delivery. To narrow this technical gap, the Bachelor in Geomatics Engineering was commenced in 2007 at Kathmandu University (KU) by establishing a Memorandum of understanding (MOU) between the Ministry of land and KU and later ITC supported in faculty development. The details of this MOU has been highlighted in details by (Shrestha et al., 2019) and authors further indicates this education model as "knowledge transfer vehicle".

Further, the requirement for higher education in land administration that can influence the both policy and technical domain of land administration felt necessary. The market study has been submitted to University of Twente, Faculty of Geo-Information Science and Earth Observation (UT/ITC) ITC in 2010 that shows the strengthening of the Land administration system is being on the high agenda of the Nepal government and a sufficient number of efficient land professionals is required. In 2011 the Memorandum of Understanding (MOU) signed between Kathmandu University, School of Engineering and University of Twente, Faculty of Geo-Information Science and Earth Observation (UT/ITC) concerning strategic academic partnership in Land Administration. Hence, Master in Land Administration (MLA) was commenced at Kathmandu University in 2013 with tripartite collaboration. However, after the commencement of the program, there is no study conducted yet to identify either the curriculum

of the program have contributed to improve land administration and land management of the country and also it global impact.

# 2.1 Major Activities in Time Line:

The implementation level for the joint education for Msc in Land administration is outcome of various activities and strategic vision started from 2008. The fact finding mission was held during the period of 12th to 23rd April 2008 by the academician of ITC (Dr. Arbind Tuladhar and Dr. Klaus Tempfli). The purpose of this mission is to investigate the collaborative support to LMTC and KU in a lineup of ADB to support a technical assistance program to support the Government in assessing its policy on land tenure and seeking ways to capacity building and strengthening land administrative services. In this regards four ITC scholarships was awarded to the faculties of KU and LMTC.

The second visit was conducted on 19th June to 29th June 2009 by academician of ITC Dr. Arbind Tuladhar (AT), PGM department and Chris Paresi (CP), Former Director UNU-ITC School of Land Administration Studies, to investigate opportunities and feasibility for an academic partnership in land administration with KU (education, research, advisory services and mobility) and to prepare an action plan for this partnership. The meeting with Deans (School of Engineering, and School of Arts) including other faculties members are conducted to explore the possibility of starting the Master of Science in Land Administration (MLA).

Table 1: Major activities for initiating MLA program			
Time Line	Activities	Remarks	
12 <sup>th</sup> to 23 <sup>rd</sup> April	Fact finding mission for strengthening Land Administration Studies	Two Academia from	
2008		ITC visited	
19 <sup>th</sup> June to 29 <sup>th</sup>	To investigate opportunities and feasibility for an academic partnership	Two Academia from	
June 2009	in land administration with KU (education, research, advisory services	ITC visited	
	and mobility) and to prepare an action plan for this partnership		
6 <sup>th</sup> Feb to 15 <sup>th</sup> Feb	purpose of developing academic partnership in Land Administration	Delegates from KU	
2010	ITC-KU by Investigation of long term joint education and (PhD)	visited ITC	
	research in Land Administration, investigation on short term activities		
	(Short courses, workshops, seminars, fieldwork, mobility), information		
	of other ITC programs (UNU-DGIM,GFM)		

2010, July	Market Study Report has been submitted to ITC	Prepared by Dr.
		Reshma Shrestha on
		behalf of SOE
2011	Memorandum of Understanding (MOU) between Kathmandu	
	University, School of Engineering (KU/SOE) and University of Twente,	
	Faculty of Geo-Information Science and Earth Observation (UT/ITC)	
	concerning strategic academic partnership in Land Administration	
2012	Implementation Plan Developed	Committee formed

The market study investigating the demand in terms of needs for capacity building in Land Administration (Nepal and South Asia region) was recommended to submit. Prof. Bhola Thapa, current Vice Chancellor of Kathmandu University, (Dean School of Engineering at that time), visited ITC, The Netherlands on 6th Feb to 15th Feb 2010 with a purpose of developing academic partnership in Land Administration ITC-KU by Investigation of long term joint education and (PhD) research in Land Administration, investigation on short term activities (Short courses, workshops, seminars, fieldwork, mobility), information of other ITC programs (UNU-DGIM,GFM). In this visit the draft report on Market study for Joint education has been submitted and taken back the feedback and comments from ITC academician.

Market study report has been submitted to ITC in July 2010, prepared by Dr. Reshma Shrestha (on behalf of Department of Civil and Geomatics Engineering/ SOE). The report shows that the strengthening of Land administration system is being at high agenda of Nepal government, in order to fulfill this mission, the sufficient number of efficient land professionals is required. Finally, after approval of Market Study report and submission of prefeasibility report, in 2011 the Memorandum of Understanding (MOU) between Kathmandu University, School of Engineering (KU/SOE) and University of Twente, Faculty of Geo-Information Science and Earth Observation (UT/ITC) concerning strategic academic partnership in Land Administration has been signed by Prof. Dr. Tom Veldkamp (ITC Rector/Dean) and Prof. Suresh Raj Sharma (founder Vice Chancellor, KU).

# 2.2 Curriculum Design of Master in Land Administration:

In 2012, the curriculum design workshop was conducted in which experts from government, private sectors, and CSOs working in land sectors had attended the workshop. The workshop was conducted in 2012. Firstly, the draft curriculum was developed by the relevant expert and

during the workshop the feedback was taken. The curriculum was finalized after incorporating all the feedbacks.

However, it seems that there is some room for improvement adopting some scientific process. The systematic process of curriculum mapping as described by Uchiyama and Radin (2009), that consists of stages like, (a) develop individual maps for each course (b) review and aggregate maps (horizontally) by course (c) aggregate the maps (horizontally) by course (d) the group

# 2.3 Curriculum Implementation of Master in Land Administration:

After designing the curriculum, the implementation plan was developed by implementing committee. The implementation plan committee was formed consisting a team of Mr. Ganesh Prasad Bhatta (Former Director Ganeral of Survey Department), Mr. Janak Raj Joshi (Joint Secretary of Ministry of Land), Prof. Dr Sagar Raj Sharma (Former Dean, School of Arts) in coordination of Dr. Reshma Shrestha (currently Associate Professor, Kathmandu University).

The two models of implementation plan was developed for double degree with University of Twente and also full fledge at Kathmandu University. The details of the model is as follows:

### 2.4 Current Status of Master in Land Administration Program:

### 2.4.1 Status of enrolled and graduated students of Master in Land Administration:

As shown in figure, the number students in each year seems very fluctuating. The students of batch 2013, 2014 and 2016 is graduated whereas batch 2019 and 2020 are ongoing. The new batch 2021 was also started. There is some delayed in graduation due to impact of COVID-19.

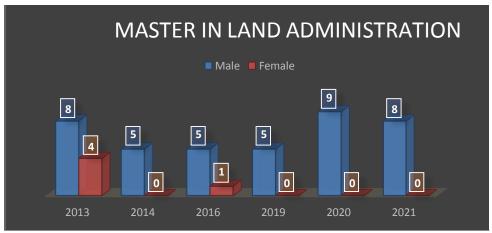
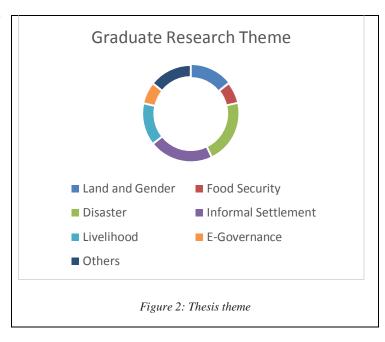


Figure 1: The number of students in various batch

# 2.4.2 Thematic area of Completed Thesis

The following figure shows distribution of master thesis which was completed in various thematic area. However, it is important to identify the thematic research gaps and research needed for societal benefits. Based upon identifies research outcome, the curriculum mapping need to be done.



#### Table 2: Academic Output in MLA

Women Empowerment on Access to Land Right and Impact on food security "A case study of SANKHARAPUR MUNICIPALITY"

Analyzing land Re-adjustment on a tool of access land for urban fringe

Analyzing the characteristic and effects of land fragmentation (A case Study of Sitalpur Settlement, Okhaldhunga)

Developing a framework of implementation of land use plan: A case study of Nepal

Towards invention Approaches : An Assessment of Informal Settlements from Sustainable livelihood Perspectives - A Case study of Nahar Godawari

Land cover Change and impact on tenure security after koshi Food: A case study of Koshi Gaunpalika

Assessing the impact of Labor migration on land use change: A case of Nepal

Evaluation of land use planning form disaster management perspective: A case study of Nepal

Assessing the land readjustment from the public Private Partnership Perspective ( A case study of Kamerotar Land Readjustment Project, Dhulikhel Land Readjustment Project and Kantipur Colony

Land Development tool for Regularization of informal Settlements

Women's Access to land and their Empowerment Assessment from Gender Perspective

Livelihood of Satellite Settlements: Analysis from tenure Security Perspectives

Assessing the importance of RRR in Cadastral System

Land Distribution and Rehabilitation in Poverty alleviation of Ex- Kamaiya: An Analysis from Livelihood perspective of freed bonded labor

Integrated Approach of Risk Sensitive and Land Use Zoning: A Case study of Banepa Municipality

Designing E-Land Administration System for Enhancing Cadastral Service Delivery

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#### 3. THEORETICAL FRAMEWORK OF EVALUATING CURRICULUM

Various models of curriculum evaluation has been elaborated by Bharvad (2010) which are Curriculum Product Evaluation and Curriculum Program Evaluation.

The Curriculum Program Evaluation reflects how a particular curriculum works within its instructional setting. In addition, it indicates towards the methods to be used for data collection by means of class-room observations, interviews and documentary analysis. Under this category, there are two models which are as follows:

- (a) Stake's Congruence contingency Model: This model emphasized on a full description of the educational program and the curriculum process. Three sources of information are taken into account (i) Antecedents (ii) Transactions and (iii) Outcomes.
- (b) Stuffluebeam's CIPP Model: The full-form of CIPP is Context, Input, Process and Product

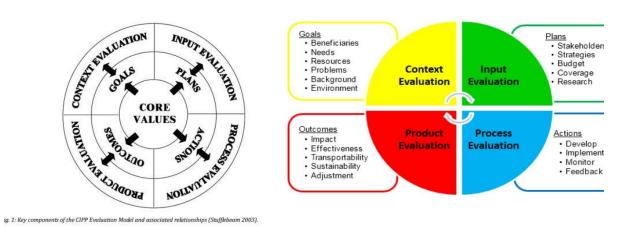


Figure 3: The CIPP model

The reason why this model has been preferred is that it involves various evaluation types such as context, input, and process and product evaluation. With context evaluation component, it involves studying the reality in which the programme is run. Basically, this model evaluate what needs to be done? It assesses needs, assets, and problems within a defined environment. With input evaluation, it provides information for alternative curricular strategies align with curricular intentions. Basically, context evaluation involves studying the reality in which the programme is run. With process evaluation, it examines the implementation process. Basically, monitor, document, and assess program activities. With product evaluation, it determines to which extent the objectives are achieved. The product evaluation part is divided into impact,

effectiveness, sustainability, and transportability evaluations. Impact evaluation assesses a program's reach to the target audience. Effectiveness evaluation assesses the quality and significance of outcomes. Sustainability evaluation assesses the extent to which a program's contributions are successfully institutionalized and continued over time. Transportability evaluation assesses the extent to which a program could successfully be adapted and applied elsewhere.

# 4. METHODOLOGICAL FRAMEWORK FOR EVALUATING MASTER IN LAND ADMINISTRATION PROGRAM

Table 3: shows the conceptual analytical model developed by (Enemark et al., 2004). The framework has explained firstly, the dimensions of capacity assessment that is needed to conduct prior of designing any capacity development curriculum. Secondly, the framework explained about capacity development to be considered at societal, organizational, and individual level. It reveals that the framework can be applied as a tool or a checklist for

assessing capacity problems and constraints, capacity gaps and

opportunities.

Linking up the framework with current MLA education at KU, the market study report conducted in 2010 already provided the capacity assessment of current land administration system and concluded capacity has that development in higher education is needed. Such capacity can contribute in evidence based land policy formulation and changes. Based upon the market educating study, individual land professional has been determined by commencing Master in Land Administration. To do so, curriculum was designed to obtain graduate

Table 3: (Enemark & Williamson, 2004)

Capacit	y Building in Land Adn  Dimensions of Capacity Assessment	ninistration  Dimensions of Capacity Development
Societal/Systems Level	<ul> <li>Policy dimension</li> <li>Social and institutional dimension</li> <li>System dimension</li> <li>Legal and regulatory dimension</li> </ul>	Land policy issues Land administration vision and system Land administration system Land tenure principles Legal principles
Organisational/Entity Level	Cultural issues     Managerial and resource issues     Institutional issues and processes	Institutional infrastructures     Spatial Data Infrastructures (SDI)     Professional institutions
Individual Level	Professional competence     Human resources needs     Educational resources	Educational programs     Sandwich or franchise programs     Training programs     CPD programs     Virtual programs     Other measures     Education and research centre

attributes which carry technical capability of geoinformation and its application in land management domain.

Hence, to evaluate the capacity development in individual level in the domain of land administration, the CIIP model has been adopted to develop methodological framework for the evaluation of the MLA program.

As described in section 3, this model consist of the four values: context, process, product and impact. To evaluate each aspect of core values, the technique of evaluation is needed. As described by Bharvad (2010), there are various methods that can be applied. Some major methods are observation, questionnaire, checklist, interview, group discussions and evaluation workshops by Delphi techniques are the major one. Here, some proposed Methodological Framework for evaluating the aspect of CIIP model.

Components of CIPP Models	Core Values	Factors	Methods	Aspect of Evaluation Workshop
Context Evaluation  What needs to be done Vs. Were important needs addressed? – Identifying the need of Master in Land Administration Program in Nepal	Goals	Beneficiaries Needs Resources Problems Background Environment	Market Study has been conducted in to capture other factors expect problems in 2010  To identify the current problems that arises in fulfilling the gaps in graduate capacity will assessed by Interview with various government officials  Evaluation  Workshop is Proposed	Identify the problems related to Land Administration Program (Interaction with Land Experts from gov/non gov organization)
Input Evaluation  How should it be done? It assesses competing strategies and the work plans and budgets of the selected approach.	Plans	Stakeholders Strategies Budget Coverage Research	Conducted Market Study in 2010 Evaluation Workshop Proposed for 2022	Research Coverage will be discussed with Land Experts/ Geotechnology experts from Gov./non Gov. organization
Process Evaluation	Process	Develop Implement Monitor Feedback	Conducted Market Study in 2010  Developed Implementation Plan in 2012  Evaluation Workshop Proposed for 2022	Monitoring/ Feedback will taken from Land Experts/ Geotechnology experts from government/non- government organization +

				Alumni of MLA
Product Evaluation	Product	Impact Effectiveness Transportability Sustainability Adjustment	Evaluation Workshop Proposed for 2022	Critical Reflection on Impact, Effectiveness, Transportability, sustainability and Adjustment will be taken from Land Experts/ Geotechnology experts from Gov./non Gov. organization + Alumni of MLA

#### 5. CONCLUSION AND RECOMMENDATIONS

The methodological framework proposed consists of all the aspects of the CIIP model. Basically problems in existing curriculum, the research coverage of the curriculum, monitoring and feedback on the process of curriculum implementation process has been considered. All aspect of product evaluation has been considered as there is no assessment in any of the factors has been carried out. Therefore, impact & effectiveness in learning outcomes, transportability of the existing curriculum with international curriculum in land management, sustainability of the current curriculum and required adjustment in the curriculum has been considered.

Further, to obtain the evidence on each factors of the proposed methodological framework workshop design and its implementation is recommended. According to Ahmed and Asraf (2018), the workshop is one of appropriate method to collect qualitative data. In addition, the world café as mentioned by Fouché and Light (2011) is a very effective method of group discussion and interaction. Hence, it is recommended to design workshop by world café approach and collect the qualitative data. The qualitative data obtained from the workshop can be applied in the proposed methodological framework and evaluate the curriculum in holistic approach. In addition it is important to explore further how to bring Responsible Land Administration Teaching Essentials structured knowledge base developed by GLTN and its partners into context of Nepal Land Administration education

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### **BIOGRAPHICAL NOTES**

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