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**THE JOURNAL OF AGRICULTURAL EXTENSION, AGRARIAN AND RURAL STUDIES (JAEARS)**  
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## **Editorial**

The Journal of Agricultural Extension Agrarian and Rural Studies (JAEARS) is aimed at those academic and practitioner who are dedicated to advancing the field of agriculture extension and rural transformation through their efforts. It is especially important for us in the agricultural and rural development sphere that sustainability of agriculture, development interventions and allied aspect of rural advisory services is high on the political and policy agendas. This should help us to generate greater consensus on priorities, builds stakeholders support and hopefully attract necessary resources.

The JAEARS provides a range of articles, short communications that speaks to the major issues in rural transformation across all contexts, themes and the disciplines. The journal is peer reviewed through a blind review process that utilized a national and international peer reviewers. JAEARS aspires to advance research in the field of agriculture extension and rural transformation through a collection of relevant and advanced interdisciplinary articles and research notes.

Growth of any discipline is directly proportional to the creation of knowledge. Through the research in this discipline, it was envisaged to develop sound methods and models to help in the field of functionaries in effective delivery of rural and urban services. Very little progress has been made in the past few decades. Before two years, the faculties and the post graduate students under agriculture extension agreed to publish a journal addressing the subject of extension, agrarian issues and rural study. There is increasing concerns on the declining quality and contribution of behavioural research and the limited influence extension research has on extension practice, designing new program and influencing policies. Reorienting the extension research is the need of real time which requires a coordinated approach by integrating 'state of the art' methods from other science to improve the quality and visibility of the extension, agrarian and the rural research outcome.

This the very first issue of JAEARS, a collection of insight focussed on the contemporary issues of rural development problems, prospect, rural transformation models theory, strategies, labor migration, communication preference of the farmers, stakeholders capacity building and so forth. This text will serve as a repository of knowledge based on the scholarly work of academician and practitioner in the field of agriculture extension, agrarian and rural study. Students, learners, faculties, research scholars in the field of agriculture extension, agrarian studies, education, rural development in university, college and institutions shall find the journal useful. The journal shall be helpful to the project coordinators, principle investigators and professional not only to conduct research but also to prepare project proposal and reports.

On this special occasion of very first issue of journal, I would like to congratulate all the concerns stakeholders, contributors and supporters to make it very successful and to make happen.

Mahesh Jaishi,  
Chief Editor  
Assistant Professor, IAAS, TU  
Co-ordinator, Research Development Training and Extension Centre (RD-TEC)

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## INTEGRATED APPROACH OF RISK SENSITIVE LAND USE ZONING: A CASE STUDY OF BANEPA, MUNICIPALITY

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### **Abstract**

*Land is a basic source of livelihood for most of the Nepalese. Land fragmentation, improper use of land, rapid urbanization and lack of formal plan has created serious problems mostly in urban areas including study area. So, proper Land use zoning is necessary for getting optimum benefit from land resource in sustainable way. Risk factor should also be considered in land use zoning process. Since Expert driven (Top down) approach has not gained satisfactory achievement, Participatory (Bottom up) approach has emerged to ensure public participation in land use planning but Participatory approach has also limitations. Therefore, the study seeks to implement integration of both expert driven and participatory approach to identify low risk land use zones in study area. Study targeted to identify risk areas from participatory approach before land use zoning. The case study was carried out in Banepa Municipality. Questionnaire, focus group discussion and interview techniques were used in the study for collecting primary information where as high resolution satellite imagery, municipal GIS database, Census data etc. were used as secondary data. GIS application was used for Multi-Criteria Analysis (MCA). To determine corresponding weight for each factor for land use zoning AHP (Analytical Hierarchy Process) was implemented. Different risk zones in the study area were identified using participatory approach. Final risk sensitive land use zoning map of the study area was prepared. Study concludes that integrated approach is useful for effective land use zoning and risk should also be considered in this process.*

**Key words:** AHP (Analytical Hierarchy process), Integrated Approach Risk Sensitive, Land Use Zoning, Multi-Criteria Analysis.

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## 1. Introduction

Land is basic resource of livelihood for more than 75 % of Nepalese. Most of the parcels are fragmented due to population growth. The issues of slums, land less, tenants etc. are also increasing. Nepal has a severe threat of facing problem of food insecurity and hunger in future. Similarly, unplanned settlement, detrimental habitat, rapid population growth, lack of urban infrastructure, natural disaster, and environmental degradation are other serious challenges to be faced in near future. Mostly population growth takes place in urban areas dramatically (Schmandt, 1961).

According to Basyal and Khanal (2001), urbanization in most cities of Nepal is taking place due to migration of people from rural to urban areas in search of employment, for commercial activities and in seek of education and other opportunities. Land use planning offers many opportunities and options to reduce human, economic, and physical losses due to natural disasters (UN-HABITAT,2015).

Land use zoning, i.e. the delimitation of homogenous zones in regard to their characteristics (topography, soil, vegetation, land cover, forest classification, ecological

system etc.) or functions (current land use, land use potential, agricultural potential, conservation values, ecosystem services etc.), should be part of any land use analysis. The categories for zoning should be derived from the key problems, major challenges and/or main potentials of the planning area or if already identified from the planning objectives (Pickardt, 2011). Land use zones are micro level of planning which has to be prepared mandatorily by each Municipality or VDC through community participation (KVDA, 2015).

Dhakal (2012) has concluded that the public participation in decision making, implementation, monitoring, evaluation, and benefit sharing of urban planning is well taken by the community itself. Conventional (top-down) planning approaches have had very little achievement due to a lack of dialogue and coordination among implementing bodies and local stakeholders. Hence, Public/local participation has been identified as key factor for a successful land use planning. The expert driven approach resulting in one way communication still exists in practice (Pickardt, 2011).

Rapid Urbanization is a major problem for most of the cities in Nepal. According to

Building Byelaws of Banepa Municipality, Banepa is one of the rapid growing city with increasing population and urbanization. Lack of formal planning increases the adoption of informal ways of planning, which may or may not be effective. So it is necessary to develop land use plan for optimum benefit in sustainable way. Since city is suffering from different hazards like land slide, flooding ,industrial hazard etc, we have to consider those risk in proposed land use plan. Many countries have failed to address natural disaster like flood in land use planning though it provides the missing basis for taking precautions against catastrophes (Sudmeier-rieux & Jaboyedoff ,2015).

The main objective of the study is to identify risk sensitive land use zones in Banepa Municipality from integrated expert driven and participatory approaches.

## **2. Study Area**

Banepa Municipality, a small valley lies in the north-west part of Kavre District, Bagmati zone of Nepal. It lies 26 km east from the capital city Kathmandu. Its geographical limits are latitude  $27^{\circ} 37' 1''$  to  $27^{\circ} 39' 2''$  north and longitude  $85^{\circ} 30' 55''$  to  $85^{\circ} 32' 59''$  east. The elevation varies from about 1400 meter to 1800 meter from mean

sea level. The political boundaries of this Municipality are: Rabiopi VDC in the north, Panauti Municipality in the south, Dhulikhel Municipality in the east and Ugratara and Ugrachandi VDCs in the west. Study area is lacking of formal Land Use Zoning (LUZ).

## **3. Methods and methodology**

Present land use of study area was analyzed and updated using high resolution Geo Eye-1 image. Risk was analyzed using participatory approach. Both spatial and Socio-economic data were analyzed using Multi-criteria and Subjective approach. Finally different land use zones were declared in final risk sensitive land use zoning map. Following two approaches have been applied for this study .

### **3.1 Multi-criteria analysis**

Land use zoning was carried out by considering various criteria collected from literature review and key informants interview. Those criteria are translated in GIS software and analysis is done. This is a scientific process and individual judgments cannot be made while applying the process. The suitability of certain use is judged by the software based on the provided criteria.

### **3.2 Subjective analysis**

Subjective analysis was carried out on the basis of Stakeholders requirement and

expert's opinion. As an example, although, if a small piece of land is found suitable for agricultural use, however, it is surrounded by residential area, then it is located in the residential area. The conceptual framework of overall research methodology is presented in the following figure 1.

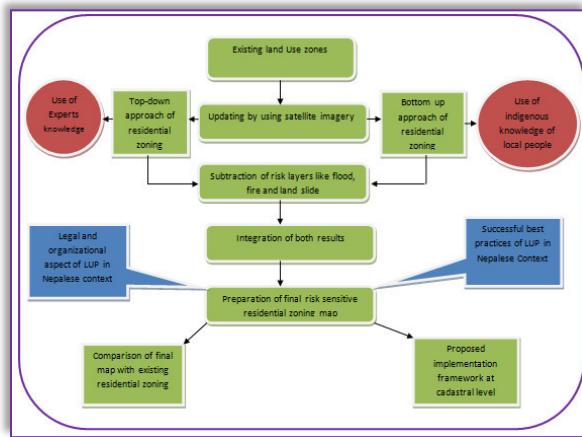


Figure 1: Conceptual framework

## 4. Result and Discussion

Results from the analysis of the collected data and discussion are presented below.

### 4.1 Population of Banepa Municipality

Banepa Municipality has 12597 populations according to 2048 Census. This increased up to 24764 in 2068 B.S. Population growth rate is 4.83.

The residential area is 6862509m<sup>2</sup> and forecasted area required for 10 years Period is 1061179 m<sup>2</sup>. So extra area required for 10 years for residential purpose is 344166 m<sup>2</sup>.

## 4.2 Present land use of Banepa Municipality

Banepa Municipality has 11 land use types (however, all categories are not as adopted by NLUP) and the area of different types of Present land use of study area are shown in the following figure 2.

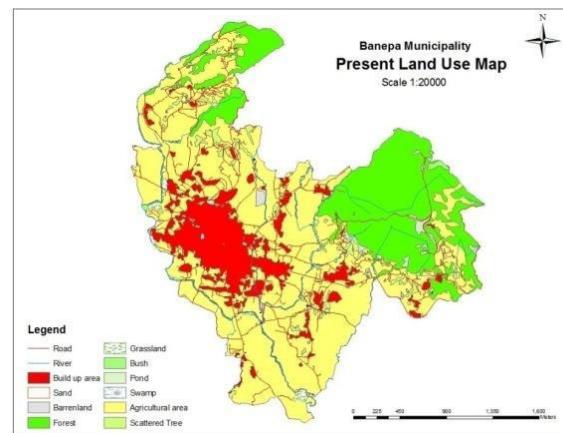


Figure 2: Present land use map of Banepa Municipality

Similarly corresponding area of different land uses are shown in the Table 1.

Table 1: Present land use distribution

Land use Type	Present land use (m <sup>2</sup> )
Buildup area	755031
Cultivation	3906118
Forest	1836761
Grass	42414
Bush	68673
Scattered Tree	183652
Swamp	1637
Sand	2477
Barren land	72756
River	27804
Pond	3199
Total	6862509

### 4.3 Risk zones in study area

Risk zones in the study area were identified from participatory approach. GPS field survey was also conducted for data collection as well as validation of the result. Some types of risk found in the study area are:

- Flooding
- Forest fire
- Industrial hazard
- Land slide

This study area is in moderate risk from earthquake perspective. So we haven't considered that risk in the study area.

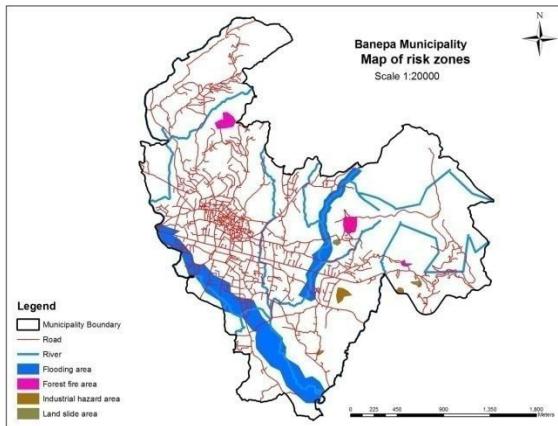


Figure 3: Risk map of Banepa Municipality

### 4.4 Parameters and mapping of different land use zones

The land use zoning should be carried out on the basis of multi criteria analysis using present land use, land resource data sets and socio-economic data sets. However, the

present land use is also given due consideration in the issue of cultural, forest, residential, commercial, industrial as well as public use. According to the Land Use Policy 2072 BS, there must be eleven land use zones. This paper has also considered all specified zones in land use zoning process as far as possible by analyzing data and public requirements. Some of the criteria's used for land use zoning of different categories and proposed zones are as follows:

#### A. Residential zone

Residential zone means the land used by people for shelter or housing and the word also includes animal shed, food container, garage, stable, well, tap, orchard, backyard, courtyard or land with any other use whether joined with the house or separate. Some of the criteria to identify appropriate land for these new settlements are:

- i. The area should be in the neighborhood of the existing settlement
- ii. Availability of road and infrastructures if possible
- iii. Not in the flood plain of any river
- iv. Geologically stable
- v. Not in the vicinity of dense forests and Industrial areas as much as possible

vi. The land should be of marginal utilization, i.e. the land should be less capable for agricultural crop production  
 According to LUP experts, factors like Risk, Accessibility, land capability etc. are responsible for residential zoning. Accessibility should be considered highly according to 17 respondents. Similarly other factors should also be considered. Table 2 describes about factors and their corresponding weights according to LUP experts.

Table 2: Factors for residential zoning

Parameters	Respondents
Risk	13
Accessibility	17
Land capability	12
Utility services	13
Social sentiments	5
Geology	10
Topography	7
Existing settlement	4
Land system	7

Different parameters are mentioned for residential zoning in Survey Measurement Act 1963.

By following all sources of parameters given, Some of the parameters considered as a factor for residential zoning are as follows:

- Slope- slope up to 30 degree is better
- Aspect-East west slope is better

- Present land use-Built-up area, barren land are better, Forest, water body are restricted
- Land Capability-Warm, temperate, humid and moisture regime is suitable.
- Accessibility- Near to road is preferable
- Nearness to river-Far from river is preferable

### **Making comparison matrix (reciprocal matrix)**

Based on the value obtained from pair wise comparison, comparison matrix was developed. Since factors are taken as parameters for pair wise comparison, the matrix size is  $7 \times 7$ . To fill the lower triangular matrix, the reciprocal values of the upper diagonal were used. If  $a_{ij}$  is the element of row  $i$  column  $j$  of the matrix, then the lower diagonal is filled using this formula:  $a_{ji} = 1 / a_{ij}$

### **Eigen value ( $\lambda$ )**

After determining the relative weights, the consistency of output was checked. This is iterative process. Principal Eigen Value is obtained from the summation of products between each elements of Eigen vector and the sum of column of reciprocal matrix. The Eigen value is in second iteration is 8.08.

### **Consistency Index (CI) and Consistency Ratio (CR)**

Prof. Saaty proved that for consistent reciprocal matrix, the largest Eigen value is equal to the size of comparison matrix, or  $\lambda_{\max} = n \cdot CI = (\lambda_{\max} - n)/(n-1)$

Principal Eigen Vector calculated in our result was found to be 8.08. Since the value of  $\lambda_{\max}$  is 8.39 and the size of comparison matrix is 7, thus the consistency index (CI) is

$$CI = (\lambda_{\max} - n)/(n-1) = (8.08-7)/(7-1) = 0.18$$

Now, our objective is to find Consistency Ratio (CR) which is ratio of Consistency Index (CI) to Random Consistency Index (RI).

$$CR = CI / RI$$

$$, CR=0.18/1.32, CR=0.136$$

Therefore, consistency Ratio= 13.6 %. So after testing the final consistency ratio of AHP parameters, using Weightage of each parameter, the weighted overlay operation in model builder was carried out. After all process weight of each parameter has been calculated as shown in the following table 3.

Table 3: Weightage of each parameter

Parameter	HP Values	Principa l Eigen Vector (%)
s		

1	Slope	0.0	7
2	Aspect	0.0	2
3	Road	0.3	33
4	Nearness to river	0.0	5
5	Land cover	0.1	15
6	land capabilit y	0.2	24
7	Land System	0.1	14
	Total		100

After weighted overlay was prepared and run, final residential zoning rating map was prepared. It describes about suitable and unsuitable areas for different land use zoning which is shown in Figure 4.

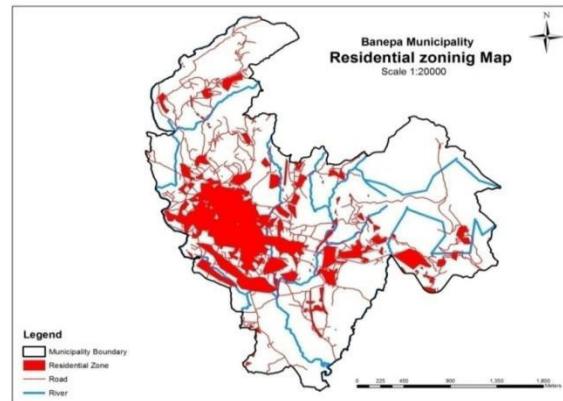


Figure 4: Residential zoning map

Similar approach has been applied to find suitable areas for different zones. Some of them are:

#### B. Agricultural Zone

The agricultural zone means the area where there is a presence of agro products (food grains, cash crops, horticulture, etc.), animal husbandry, fisheries, agro and forest products or orchards in a private land.

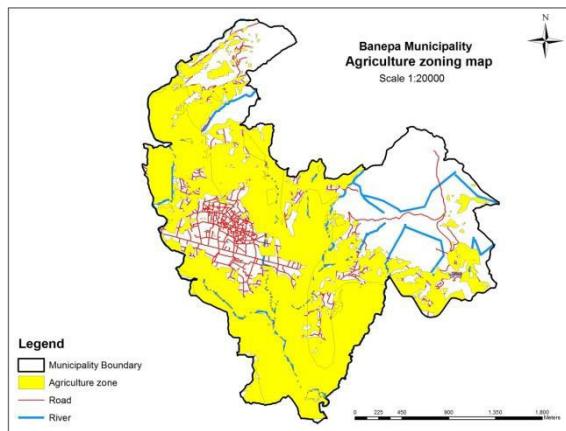


Figure 5: Agriculture zoning map

### C. Commercial Zone

Commercial zone means the land occupied by or allocated for shops, hotels, exhibition stalls, petrol pumps, warehouses, health and information facilities, commodities trade centre, an organization providing any literary, scientific or technical service or advice, fair venues, discos, clubs, etc. Different parameters like Existing settlement; Accessibility, geology topography etc. are responsible for commercial zoning according to the LUP experts. Area suitable for the commercial purpose are shown on the map in red color.

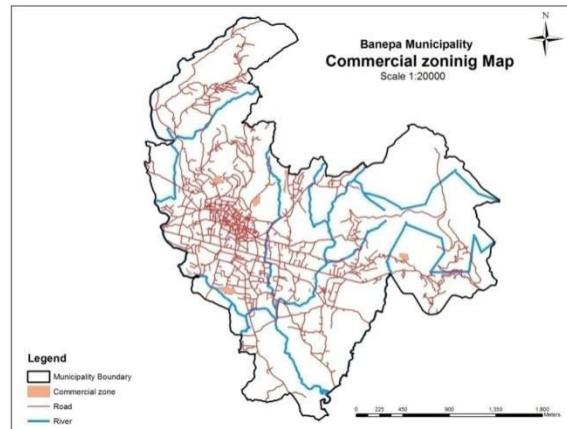


Figure 6: Commercial zoning map

### D. Industrial Zone

Industrial zone means the land occupied by or allocated for any workshop, goods manufacturing industry, the associated buildings and sheds. Different parameters like Existing settlement; Accessibility, geology topography etc. are responsible for commercial zoning according to the LUP experts. Areas suitable for industrial purpose are shown on the map in black color.

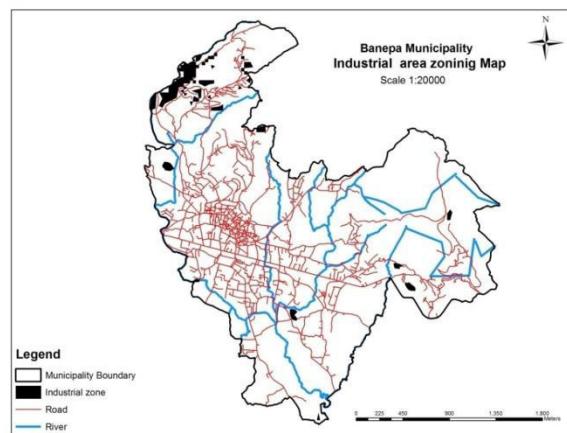


Figure 7: Industrial zoning Map

## E. Public Use Zone

Public utilities and open zone means land occupied by schools, colleges, vocational educational centers, academic institutions including the universities, security agencies, health centers, health posts, private or community hospitals, telecom, drinking water, government agencies involved in providing electricity etc. Public use zones are free to use for all public of the concerned area. Areas suitable for the Public use purpose are shown on the map in purple color.

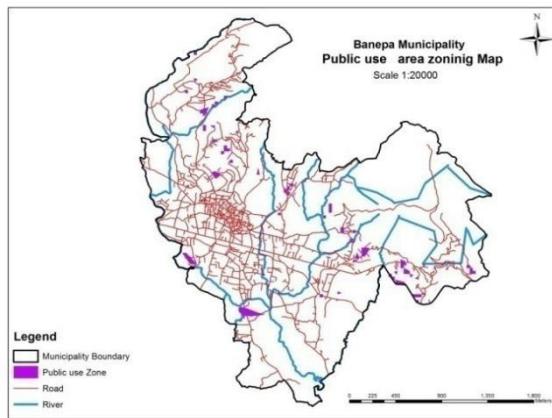


Figure 8: Public use zoning map

## F. Forest Zone

Forest zone means an areas being covered with public, community, leasehold, wildlife reserves, conservation areas, bushes, shrubs, plains, all types of jungles and places designated by the government as a forest

regardless of whether there are trees or not.

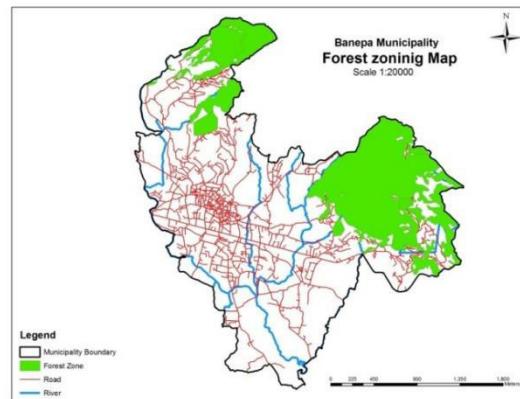


Figure 9: Forest zone map

## 4.5Final Risk Sensitive land use zoning map

Final risk sensitive land use zoning map with 10 different land use classes was prepared after identification of risk area. Four types of risk were identified in the studyarea.

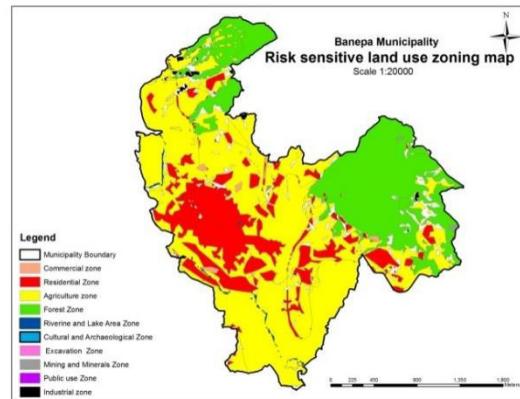


Fig 10: Risk sensitive land use management

## 4.6. Verification (Accuracy assessment) of Land Use Zoning Maps

The final proposed risk sensitive land use zoning map is verified by field visit and

observation. All proposed land use zones are visited and also interaction with local people was held. The real situation and map was compared and analyzed whether proposed zones are implementable or not in the study area. There was a work shop organized in Banepa Municipality with Municipality representative to approve and verify final map. Municipality and local people were agreed upon proposed zoning map and willing to accept implementation of the proposed zones at cadastral level. The 80 different random points are generated on the zoning map and are assessed on the ground with public participation to analyze feasibility of the proposed land use class in the real field. Following results were found and overall accuracy was calculated in the error matrix. Land use zoning from integrated approach was analyzed and overall accuracy was calculated as shown in Table 4.

Table 4: Result from Integrated approach

Ground Data					
Integrated data					
	Residential	Agriculture	Forest	Road	
<b>Residential</b>	20	5	0	0	25
<b>Agriculture</b>	0	30	0	0	30
<b>Forest</b>	5	0	20	0	25
<b>Road</b>	0	0	0	0	0
<b>Total</b>	25	35	20	0	80

Overall Accuracy:  $(70/80 * 100) = 87.5\%$

For overall accuracy assessment, 80 random points are generated through software and those points are assessed on the ground. The land use of those points are analyzed on land use zones integrated approach. The overall accuracy or the result was found 87.5%. From this analysis we can suggest for implementation of integrated approach for land use zoning .

#### 4.7. Implementation strategy of land use zoning

For effective implementation of proposed land use zoning, LUP professionals and experts have suggested different facts to be improved. To implement land use zoning at cadastral level, Strong political commitment is necessary. Public should be involved in land use zoning and implementation process .So government should ensure public participation. Similarly public should get compensation for their loss during the land use zoning implementation process. Land use policy is not sufficient for implementation of the proposed land use zoning. Acts, laws, guidelines and procedures should be prepared for effective implementation. All legal documents should be clear so that people can understand the process. But laws and policies and their strong implementation are necessary. Regular monitoring mechanism of

implementation process is suggested. Our organizational structure is not appropriate for land use zoning implementation. So separate implementation and monitoring body has to be established at local level with public participation.

### **1. Conclusion**

Land use zoning is necessary for getting optimum benefit from land in a sustainable way. Risk factor should also be considered in land use zoning process. The Banepa Municipality has dominant risk factors like Flooding, forest fire, industrial hazard and land slide. Those risk zones must be avoided for land use zones with human activities.

Banepa Municipality has prepared land use zoning map and approved it form Municipal Council but most of the residents of Banepa Municipality don't know about that zoning process. So considering different factors as suggested by land use planning experts, Survey and Measurement Act 1963 and Building Bylaws of Banepa Municipality, risk sensitive land use zoning map is proposed. Flooding, forestfiring, Land slide and Industrial hazards are considerd as a risk in the study area. Due to lack of proper land use zoning practices, we are not getting optimum benefit from land resources. Although NLUP has started land use zoning

at different level, it is not implemented yet. From the impact of reorganization of the state, it has to be reviewed. So it is highly recommend for following both expert driven and participatory approach in an integrated way to find suitable zones for different land uses. Risk factors should also be studied and considered in this process. Since present land use zoning map of the study area is not scientific and hasn't followed participatory approach, it is recommended to follow proposed risk sensitive land use zoning map prepared from integrated approach. Further research is necessary to follow scientific approach for risk mapping and look after land use zoning at local level with high accurate data. Implementation aspect of land use zoning from National Land Use Project can also be evaluated.

## References

- Basyal, G. K. & Khanal, N. R. (2001). *Process and characteristics of urbanization in Nepal*. Contrib Nepal Stud 28(2): 187-225.
- Dhakal, G. P. (2012). Policy and Practice of Urban Planning in Nepal: A Case of Public Community Participation. *Nepalese Journal of Public Policy and Governance*
- Kathmandu Valley Development Authority (2015). *Introduction to Kathmandu Valley Risk Sensitive Land Use Plan*.
- Kathmandu Valley Development Authority (2015). *Kathmandu Valley Risk Sensitive Land Use Planning Report*.
- Nepal Government (2015). *National Level Specification for the Preparation of VDC Level Land Resource Maps, Database and Reports*.
- Pickardt, A. E. T. (2011). *Land Use Planning Concept, Tools and Applications*. Eschborn, GIZ.
- Schmandt, H. J. (1961). *Municipal Control of Urban Expansion*. Fordham Law Review 29(4): 637.
- Sudmeier-rieux, K., Paleo, U. F., Garschagen, M., Estrella, M., Renaud, F. G., and M. & Jaboyedoff (2015). Incentives and challenges to risk sensitive land use planning: Lessons from Nepal , Spain and Vietnam. *International Journal of Disaster Risk Reduction*, Elsevier: 1–21.
- UN-HABITAT (2015). *Participatory Land Use Planning and Implementation in Designated districts: Surkhet, Nawalparasi, and Morang*.

## CAPACITY DEVELOPMENT OF EXTENSION AND ADVISORY SERVICE (EAS) PROVIDERS: CONTEXT AND OPPORTUNITY IN FEDERAL NEPAL

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### Abstract

*Extension Service Providers are responsible for speedy transfer of information and technology to farmers. It is responsible to reduce the time lag between generation of technology and its transfer to the farmers for increasing production, productivity and income from agriculture and allied sectors on a sustained basis. Of the biggest challenges in Extension and Advisory Services (EAS) in the world is how to reach the 570 million smallholder farmers with relevant and high quality information and services. Rather than advocating a massive increase of human resources in the public extension service in Nepal, the Agriculture Development Strategy (ADS, 2015-2035) is trying to promoting capacity building of existing human resources and the transformation of their role from delivery of services to facilitator of agricultural extension services. Based on the documents review, authors argued with focus with four research questions; what are the current context of the capacity building?; what are the major issues of capacity building and finally what are the existing need capacity of service providers and what will be the best strategy to tackle these issues. This review highlights that agricultural systems and practices are changing across the world, and producers' needs are changing, too. These challenges put pressure on extension professionals to be more knowledgeable, skilful and able, not only in technical subject matter but also in process skills.*

**Key words:** Capacity, EAS, Institutionalization, Need assessment, Pluralistic

### INTRODUCTION

Extension and Advisory Service (EAS) consists of all the different activities that provide the information and services needed

and demanded by farmers and other actors in rural settings. The services assist them in developing their own technical, organizational, and management skills and

practices so as to improve their livelihoods and well-being. EAS recognizes the diversity of actors in extension and advisory provision (public, private, civil society); much broadened support to rural communities (beyond technology and information sharing) including advice related to farm, organizational and business management; and facilitation and brokerage in rural development and value chains (GFRAS, 2012). Globally, agricultural sector is growing rapidly and farmers are facing with new set of challenges. Extension and Advisory Services (EAS) have to support farmers and concerned to deal with these challenges so, EAS needs new capacities to support farmers effectively (Chikaire et. al. 2015) Most of theoretical extension models of the past have been criticized so the field of extension science is struggling with its identity (Moulder, 2016). Paudel et. al. (2018) mentioned and analyzed the causes of low extension coverage because of the high ratio of extension personnel: farmers' household ratio (1:1333) and only 15% extension service coverage. It has resulted low satisfactory extension and advisory service delivery in Nepal and the location and access of extension and advisory service appear to be constraint for farmers.

Agriculture Skill Council of India, (ASCI, 2019) has defined Agriculture Extension Service Provider is responsible for speedy transfer of information and technology to farmers. He reduces the time lag between generation of technology and its transfer to the farmers for increasing production, productivity and income from agriculture and allied sectors on a sustained basis. The definition of EAS articulated by GFRAS (2012) 'as consisting of all the different activities that provide the information and services needed and demanded by farmers and other actors in rural settings to assist them in developing their own technical, organizational, and management skills and practices so as to improve their livelihoods and well-being'. It recognizes the diversity of actors in extension and advisory provision (public, private, civil society); much broadened support to rural communities beyond technology and information sharing including advice related to farm, organizational and business management; and facilitation and brokerage in rural development and value chains. An essential feature of capacity development (CD) is a common understanding of what capacity and capacity development mean (UNDP, 2009). To some, the terms are synonymous with workshops and training. For senior managers,

it might mean organizational development. Non-Governmental organizations (NGOs) associate the terms with empowering individuals and grassroots organizations. In the case of international agencies and donors, capacity and capacity development is about institutions development, governance, economic management and process (Horton 2002, Christopher and Richard (2004).

UNDP (2009) identifies three levels as the barometers of capacity development where capacity is grown and nurtured: In enabling environment, in organizations and within individuals. These three levels influence each other in a fluid way, the strength of each depends on, and determines, the strength of the others. There are four core issues that seem to have the greatest influence on capacity development at the different levels described above. These core issues are picked up from empirical evidence and UNDP's first-hand experience and it is in these four domains that the bulk of the change in capacity happens. They cover many contexts, and much of the work of UNDP and its partners fits naturally into one or more of these categories. The four core issues are: Institutional arrangements, the policies, practices and systems that allow for effective functioning of an institution.

Chikaire et. al. (2015) suggests that, extension professionals are increasingly required to have well developed technical skills across a broad range of farming systems, well developed socio-political perspectives on the place of farming in society through constant building process. The roles and responsibilities of an EAS may be classified into two broad categories: Process skills or functional competencies and technical skills. Networking with local organizations, facilitating group formation, resolving conflict and engaging stakeholders in program planning are examples of process skills or functional competencies. On the other hand, identifying the causal organism of crop disease, testing the soil pH and interpreting the results, and conducting a method demonstration on how to perform artificial insemination on dairy cattle are examples of technical competencies. A good EAS needs to possess both process and technical skills. Developing core competencies is fundamental to all EAS staff. In changing context, previous top-down approaches where EAS would simply transfer new technologies to producers can no longer address modern challenges, and it appears clear that the EAS will be able to effectively support producers only if it

develops new capacities to meet these fresh challenges (CRISP/AESA, 2019).

UNESCO Global Monitoring Report 2012 stated that “Skills development is vital in reducing unemployment, inequality and poverty, and promoting growth. It is also a wise investment for every \$1 spent on education, as much as \$10 to \$15 can be generated in economic growth.” The statement above clearly spelled out about the importance of training and capacity development. The terms ‘training’ and ‘capacity development’ are sometimes confused or used interchangeably (Halim and Ali. (2005). Training is just one element of capacity development. It usually focuses on providing skills for specific problems (e.g. using Face book or Twitter). Capacity development encompasses a whole range of activities designed to empower individuals and institutions (including the analysis of policy contexts, awareness building, institutional adjustments, policy research, policy immersion and more). Capacity development is about transformations that empower individuals, leaders, organizations and societies. If something does not lead to change that is generated, guided and sustained by those whom it is meant to benefit, then it cannot be said to have

enhanced capacity, even if it has served a valid development purpose.

This paper explores the current context and future initiatives of capacity development interventions of EAS providers in Nepal. Specifically based on the documents review, authors argued with four of following research questions;

- What are the current contexts of the capacity of the EAS providers?
- What are the major issues of capacity building?
- What are the existing need capacities of service providers?
- What will be the best strategy to tackle these issues?

## METHODS AND METHODOLOGY

This paper is a compilation of the views, themes and ideas of the numerous articles with insights and innovations about ‘How to reach large numbers of agricultural producers with extension advisory services and discusses the key challenges faced by farmers in Nepal. The authors argue that capacity building should emphasize in institutionalization and decentralization of service providers and condition to be met in a logical order if investments in development

are to pay off. This paper concentrates on this aspect, and uses as its context the Nepalese agriculture sector. Specifically, the paper reviewed the contemporary issues of capacities of EAS providers in supporting farmers and client to deal with these challenges. It also reviewed the existing capacity needs assessment of public as well as private sector of Nepal.

### **3. 1. Current context of Extension and Advisory Service (EAS) in Nepal**

#### **3.1.1 EAS Institutions in Nepal and their evolution**

An institutionalized agricultural extension service in Nepal began with Indian and American support in 1951 soon after the fall of the Rana Regime, and the creation in 1955 of the Department of Agriculture (DOA) under which a fully responsible Extension Division was operational through network of zonal extension offices (Shrestha et. al. 2003). The establishment of institutions dealing with agriculture development in Nepal comprise one of the early initiatives taken with modernization process in the 1950s (Jaishi et. al. 2015). Initial efforts concentrated on developing the government institutions, and from 1970s onwards for an evolvement of the extensive network of agriculture offices that primarily played a part in extension of agriculture services and

technology and in agriculture research. Through the political change of 1990, and with the adoption of liberal policies that also precipitated into the agriculture sector, the role of state agencies has given favor to that of the non-governmental and private sectors. The opening of the state to non-government and private sectors has allowed the increased role of a number of NGOs engaged in agriculture research, such as on promotion of technology, participatory varietal selection, and so on. The provisioning of agriculture inputs, such as pesticides, agriculture implements and machinery, fertilizers, are increasingly taken up by private entrepreneurs, small cooperatives and farmer groups as well. Similarly, farmer cooperatives, saving-credit cooperatives, development banks and commercial banks have their stakes and participation in agriculture, but at various levels. There have recently been concerns about and the need of evolving insurance on agriculture, but this has not fully gained momentum. Overall, the present landscape of actors in the agriculture sector comprises primarily the government institutions working in research & extension, and a most of private, community or community-led and civil society actors are shaping efforts on intensification of agriculture sectors. Increasing role of non-

state actors and gradual reduction yet substantial role of government agencies in agriculture is largely guided by the liberal outlook of the Nepal government over the past two decades and by such policies as long term Agriculture Perspective Plan (1997-2017) and Agriculture Policy (2004). This context provides new opportunities to harness national capacity for enhancing agriculture productivity through intensification (ADS, 2014). In Nepal, the private sector has worked to promote extension activities in the marketing of agricultural inputs and outputs largely in isolation from public sector activities (MEAS 2012). GFRAS, (2019) in its official page has mentioned that the private sector firms like agricultural suppliers, veterinarians and cooperatives offer quality and timely services to farmers. Also, private service providers (Agrovets, traders/processors, contractor/consultant, etc.), and farm consultants supply improved seed, seedlings, saplings, baby chicks, fingerlings, animal feed, pesticides, and veterinary services to producers

### **3.1.2 Agriculture Development Strategy: Focused on decentralized approach of EAS**

The ADS recognizes numbers of actors are involved in agricultural extension and over time their presence will become even more important. Rather than advocating a massive increase of human resources in the public extension service, the ADS promotes capacity building of existing government human resources and the transformation of their role from delivery of extension services to facilitator of agricultural extension services. This role change will be accompanied by a greater emphasis on the delivery at the local level, where Community Agricultural Extension Service Centers (CAESC) has been envisioned to be established and the technicians for the agriculture, livestock and agriculture information and communication will be recruited in the CAESC.

Today's agricultural extension and advisory services are being challenged to serve as the connecting actor in complex agricultural innovation systems (CRISP 2019). The role of extension in agricultural development is continuously evolving, and effective front-line staff members need skill sets that may differ from those they learned in school. Extension professionals must have an understanding of the communities they work

in and have compassion for the people they serve. They should be well-versed in adult education principles. Besides sound technical knowledge, they must possess adequate knowledge and skill in participatory tools and techniques for planning, implementation and evaluation of extension programs. Good communication skills are critical in all aspects of their work.

### **3.2 Contemporary issues of capacity development in Nepal**

Capacity development is a long-term process however, there is no clarity on the use of the term “capacity development” and people have different perceptions on this topic. Capacity development is not merely training individuals and it is more about organizational development. So, we need to do more to make our research and extension managers aware about the role of capacity development in organizational development. There is also a need to address rivalry among different layers of the organizational hierarchy (for example, para veterinarians versus veterinary doctors) in having specific types of knowledge, keeping in view the interest of the sector. In this section, some of the major contemporary issues of capacity development have been described hereunder.

#### **3.2.1 Changing EAS: Global and local context**

Ray (1991) conceptualize, agriculture knowledge information system (AKIS) as the “person, networks, institutions their interfaces and linkages between them, which engage in or manage the generation, transformation, transmission, storage, retrieval, integration, diffusion and utilization of knowledge and information, and which potentially work synergistically to improve goodness of fit between knowledge, environment and the technology used in agriculture.” As cited by Ragasa et. al. (2013) studied by Rivera Qamar and Crowdrl (2001) that the extension system and delivery methods in many developing countries have been constantly viewed ineffective in responding to the demand and technological challenges of various types of clients. The idea underlying AKIS is that farmers use many different sources to obtain the knowledge and information they need to manage their farms and that new knowledge is developed not only by research institute, but also by many different actors, policy maker, government agencies, media, development partners and so on (Smith 1997; Dongol, 2015). According to AESA (2016)

the capacities to perform varied roles to have these information and skills are limited across all levels – individual, organisational and the enabling environment. An study of capacity needs assessment of EAS providers undertaken in four South Asian countries (Bangladesh, India, Nepal and Sri Lanka) revealed several gaps in capacities at these different levels.

In addition to linking research to farmers, EAS is crucial for all other actors in the agriculture Information System (AIS) involved in (a) delivery of credit and inputs; (b) provision of training and other services; and (c) marketing and policy development. Agricultural research system, agricultural education system, input and service suppliers and agricultural advisory services, private sector actors, producer organizations and financial service suppliers are involved in AIS which depends on the government policy, regulatory framework and consumers' demand (GFRAS, 2018). To undertake the linking or bridging roles effectively, EAS need to broaden their mandate and strengthen their capacities. The increasing pluralism in EAS delivery has also brought an additional challenge of ensuring quality, collaboration and synergy among diverse EAS providers.

EAS are transitioning from a focus on technology transfer to a focus on facilitating a range of interventions in complex contexts (Subedi and Kaplowitz, 2016). No longer is extension first and foremost a conduit of innovations coming from research and passing them on to farmers. Today's agricultural extension and advisory services are being challenged to serve as the connecting actor in complex agricultural innovation systems. Ragasa et al. (2013) in a study conducted by IFPRI highlights the urgent need for human resource or civil service reform; public-sector commitment and funding; infrastructure rebuilding and skills upgrading in extension, education and training, and research organizations

Agricultural extension service have undergone a process of diversification in developing countries, large scale food crops production remains a focus, through organization at various administrative level increasingly recognize the need to reach out to small and often resource poor farmers, who make up the majority of farmers worldwide (Subedi and Kaplowitz, 2016) Various models of agricultural extension and advisory services have been tried to educate farmers and agribusiness, technology transfer was principle approach of extension services early on. Training and visit extension,

integrated rural development, market orient extension for example commodity focused and non- formal education for example farmers field school increasingly dominated approaches of extension services. Many types form and structures of agricultural extension services are found across the world. Subedi (2011) analyzed various extension models and identified six prevailing models based on four paradigm of extension service as shown in the figure. More recently, many nations are promoting pluralistic service delivery and market-driven or fee-for service system. Hence two paradigms seems to prevail-in some parts of the country, extension service providers persuade farmers to implement specific, predetermined practice. In other parts or program extension service seeks to educate farmers about technical options and management strategies and then let them decide which option would work best for them. In some settings, both of these approaches co-exist (Subedi and Kaplowitz 2016).

### **3.2.2 Pluralistic EAS systems and privatization in Nepal**

Chapman and Tripp (2003) in a study of privatized extension practice found that privatized extension can take many forms

and it has become clear that it does not represent a simple, undifferentiated alternative to the monolithic public extension system it is often expected to replace. Adequate funding for local level extension units is an essential element for the successful implementation of decentralized extension systems. The total investment of the government of Nepal in the agriculture sector was less than 3% of the national budget in 2011/12 (MoF 2011), and per capita household investment from the public sector for extension ranges from US\$ 0.26 to 6.5. Agricultural extension services in developing countries are currently grossly underfunded (Anderson and Feder, 2003). Private sector investments in agriculture extension services in Nepal are virtually non-existent.

In pluralistic EAS systems, a multitude of service providers interact with agricultural producers and these service providers are funded from various sources. The underlying idea is that all services are paid by those users who have a particular interest in the services. EAS dealing with public interest is financed from public funds, while EAS catering to private interests is financed privately. Current EAS systems don't fully reflect such market-based ideas. Instead, in today's EAS systems;

- Publicly financed EAS often serve private interests, mainly of better-off farmers,
- Benefits of EAS are not reliably attributed to the services, thus agricultural producers are reluctant to pay for EAS although they derive benefits from the services.

Key responsibilities of the government of Nepal (GoN) are to create an enabling environment for pluralistic and decentralized EAS. On the one hand, this comprises the support of private and civil society involvement in EAS. On the other hand, the government is accountable for an appropriate inclusion of EAS in concerned policies, as well as for decentralized planning and financing of public EAS. Besides, governments can contribute to the quality and outreach of pluralistic EAS systems by realizing the following functions:

- Defining EAS in public interests, and facilitating and financing its delivery;
- Monitoring the quality and outreach of EAS, in particular if services are expected to cater for public interests;
- Offering quality accreditation of EAS providers in order to ensure

quality of services and to increase EAS providers' potential to get mandated for service delivery.

Diverse extension funding and delivery arrangement have been undertaken since 1980s by government in the name of privatization (Rivera and Cary 2005). This process of funding and delivering the extension services by private individuals or organization is called Private extension. But privatization is actually reducing the role of government in the activity or ownership of assets. Privatization as a system of agriculture is gradually being adopted in Nepalese agriculture due to declining trend in government expenditure in public extension due to heavy financial burden. Reasons behind the privatization of issues are financial burden on government, disappointment performance of public extension service and commercialization of agriculture (Rani et. al. 2016). In the United Kingdom, public extension service has evolved over time into a private consulting business. In the Netherlands, farmers provide the majority of the cost of extension service. Other forms of privatization include cost recovery, out sourcing and contracting out extension services. In Costa Rica, for example, the government provides farmers with extension voucher, which can be used for

getting advice from private specialist (Rivera and Cary 2005).

Privatization of extension service does not mean that it is substituting private sector for public extension services but in fact, it adopts a variety of forms involving different stakeholders' viz. private corporate forms, farmers associations, credit institutions, non-government organization and media organization. The private extension approached tried in Nepalese agriculture is share cropping system, extension contract system, village extension contract system, farmer to Farmers system (FtF), Farmers field school (FFS), contract farming, (public extension through private delivery service, service for voucher and most recently establishment of AFEC, CAESC in VDC level farmers advisory service. (Jaishi et. al., 2015),

Presently Nepal's EAS system is trying to enter into the pluralistic and diverse in nature. Government and donors demand EAS system to serve a public interest in line with national agricultural development strategies; private companies want EAS to generate for social or environmental objectives; and agricultural producers expect to improve their livelihoods. The cumulative demand of all stakeholders is the driving force for a country

EAS system must meet following three conditions:

**1. Interventions in the public interest are financed from public sources.** Poverty alleviation and development sustainability are public interests, which may require different services than short-term private interests. Examples for EAS that is primarily in the public interest

**2. Interventions from the private interest are financed from private sources.** Such privately finance eas likely to neglect public interest. Therefore, strong policies and strengthened voice of agricultural producers are needed to mitigate the social risks.

**3. Agricultural producers are aware about EAS and able to articulate their demand:** Agricultural producers' capacities to articulate their demand for EAS to provide feedback and to advocate for policies and their implementation.

### **3.2.3 New Areas for Capacity Development**

The value of agricultural research and technological change and innovation in transforming economies is uncontested (Adiel and Hall 2012). Yet the search for ways to improve the delivery of agricultural

services to smallholders has exercised the minds of policy-makers for the entire 50 years of the development assistance era. Hilderbrand as stated by Chikaire et. al. (2015) said, capacity is the mean or the ability, to fulfill a task or meet an objective effectively. It refers to the skills of staff and strength of specific organizations; thus, training staff and creating or strengthening single organizations is equated with capacity building. The conventional extension approaches have traditionally focused on production advice only. But with the new set of demands from the ground, farmers as well as EAS providers have to equip themselves with information related to the entire value chain. Capacity development for EAS should focus on these new knowledge demands at different levels. Capacity development of young farmers needs emphasis as they will be taking care of farming in the coming years. The new requirements for trading/agribusiness such as traceability, good agricultural practices etc, especially those requirements which have emerged after globalization effect, have created new demands for enhanced capacities of extension personnel on these aspects. This is not going to be addressed by simply opening new Agricultural universities and research institutes but by improving the quality of

education at existing institutions so that scarce funds are better utilized (Halim and Ali, 2005).

OECD has defined “capacity” as the ability of people, organisations, and society as a whole to manage their affairs successfully unleashes, strengthen, create, adapt, and maintain capacity over time. It means that capacity development is needed not only at the individual level, but also at the organisational and system level. This might involve several activities including improving individual skills and abilities, strengthening an organisation’s vision and mission or its organisational capacities, developing more effective and dynamic relationships among the actors, and helping to promote collaboration and alliances.

### **3.3. Capacity development of EAS providers**

#### **3.3.1 Approach of capacity development of EAS providers**

Chikaire et. al. (2015) stated that existing training facilities across institutions and centres teaching extension should be upgraded. Institutionalization of capacity development of EAS providers is essential. In this regard, three approaches have turned out to be effective:

- 1) In a capacity building cascade, a small number of specialized extensionists train a large number of generalist extension staff. This approach is applied to initially or continuously train a large number of extensionists within a short period.
- 2) Extension training centers act as agents between researchers, private innovation bearers, line agencies and extensionists. They provide need-based training on extension.
- 3) Training through EAS-demanding entities: for example, input companies, out-put traders, line agencies, or financial institutions train EAS providers according to their requirements. This is only possible if eas providers are well co-ordinate and connected with demand entities. These approaches require continuous investments from public and private funds as well as the integration of extension in academic curricula.

### **3.3.2 Need Assessment of existing capacities of EAS provider**

The synthesis of the workshop discussions, group reflections and prioritization exercises held in Kathmandu regarding capacity needs assessment and review studies on extension situation in member countries were conducted in July 2016 organized by AESA. Similar exercise by Bangladesh Agricultural Extension Network identified the capacity

needs of EAS providers summarized the major four level of interventions.

Capacities required at field level for EAS functionaries

- Capacities for using ICTs effectively
- Capacities to organize need based training for farmers
- Capacities to develop Farmers' organizations

Capacities required at middle level for EAS functionaries

- Capacities to use ICTs
- Capacities in Leadership skills
- Capacities on Networking and Partnership development

Capacities required at senior level for EAS functionaries

- Capacities in strategy development and decision making
- Capacities on organizational development, mentoring and leadership
- Capacities on policy development and policy advocacy

Capacities required at organizational level

- Capacities on Resource mobilization
- Capacities on knowledge management (Infrastructure, ICT tools and networking)
- Capacities in result based management (SMART project management, M&E System)

With the capacity gaps identified, the next step is to find ways of addressing these gaps through appropriate interventions (Sulaiman et. al. 2019). These interventions must be appropriate to the level at which the staff are employed, with focus on organizational level capacity development at the same time.

### **3.4 Strategy for capacity building for EAS providers**

Among policy related issues regarding the funding, institutionalization and private investment in EAS system, three are particularly important for the functioning of EAS systems in Nepal.

**1. Decentralized public funding and local development participation in EAS processes.** Policies should thus provide a regulatory and institutional framework for local governments to allocate public funds for EAS delivery, be they funds from higher administrative levels or funds from local tax

revenue systems. Furthermore, policies should provide a frame work for dovetailing local and national development planning, which allows agricultural producers to articulate their RAS demands in an effective way.

### **2. Institutionalized capacity development of EAS providers:**

Continuous capacity development of EAS providers is key for the quality of EAS. Policies should provide the regulatory framework for (participatory) curricula development based on needs assessments, continuous in-service education, quality assurance and accreditation of EAS providers.

### **3. Solid frame for private investments to reaching out the large numbers of farmers:**

Private investments are necessary for reaching out to large numbers of farmers with EAS. Agricultural sector is evolving rapidly globally and rural producers are faced with new set of challenges. EAS have to support producers to deal with these challenges. But EAS needs new capacities to support farmers effectively. Capacity Development of EAS is emerging as a priority. But to organize appropriate capacity development programmes, we need to undertake a systematic assessment of capacity needs.

Furthermore, communication platforms that are reaching large populations, such as ICT and mass media are developing fast and offer additional potential that is not yet fully used.

In developing country like Nepal, public EAS providers are still the back-bone of the EAS system and the guarantor for coverage and equity. However, this potential is generally not yet fully exploited. A particular potential for scale and social orientation is seen in collaboration between:

- Private and public sector
- Private sector and civil society (including producer organizations)
- Public sector and community based institutions like CFUGs, Mother groups
- Private and private sector
- Private and community based institutions

In an ever-changing context, capacity development is a continuous process, which needs to be institutionalized. Capacities of EAS providers should offer services ranges from technology development and transfer to facilitator cum advocator and networking

activities. EAS providers require the following six equally important capacities.

- **Technical capacity:** Technical knowhow, crop selection, profitability and so on
- **Individual capacities:** EAS content, EAS methods, personal attitudes and attributes
- **Facilitation capacities:** Linking agriculture with other institution and program
- **Organizational capacity:** Management, decision making, collaborating, staffing
- **Advocacy capacity:** To strengthen producers' voice & to put policies into action
- **Networking capacity:** To be an effective member of the AKIS.

## **CONCLUSION AND WAY FORWARD**

Monopolistic service supply of public extension service providers has been criticized since long by producer's arena. The capacity of the public level extension service providers has not been fully utilized in facilitating and supporting of field activities. Capacity development of service providers in ever changing context of producers and the enabling environment forces to have technical, individual, facilitation,

organizational, networking and advocacy capacity to serve the global as well as local demand. Further, to create the best EAS platform, service providers having the multiple combinations of public and private essence, field, and middle, senior and organizational level could be exploited. In

case of the best strategy to have full utilized capacity of EAS providers, they should have decentralized public funding through the local bodies, institutionalized the capacity development process and ensure the private investment in the area of capacity development

## References

- Adiel n. M. And a. Hall (2012). *Capacity building for agricultural research for development: lessons from practice in papua new guinea*. United nations university-maastricht economic and social research institute on innovation and technology (unu-merit), the netherlands
- ADS (2014). Agriculture Development Strategy (2015-2035). Ministry of Agriculture Adevelopment (MoAD), Shingadurbar, Kathmandu
- AESA (2014). Proceedings of the first face to face meeting of AESA Network, Kathmandu, Nepal. Available at: <http://www.aesagfras.net/Resources/file/PROCEEDINGS-First%20AESA%20Meeting%202014-15%20Jan%202014-Kathmandu.pdf>
- AESA (2016). *Assessing capacity needs of extension and advisory services; A Guide for Facilitators*. Hyderabad, India. <http://www.aesanetwork.org/assessing-capacity-needs-of-extension-and-advisory-services-a-guide-for-facilitators/>
- Anderson J. R. & G. Feder. (2003). Rural extension services. The World Bank, Policy Research Working Paper 2976. Washington, DC Available at SSRN: <https://ssrn.com/abstract=636338>
- ASCI/NSDC (2019). Qualifications pack - occupational standards for agriculture and allied industry. Agriculture Skill Council India and National Skill Development Cooperation, India. Available at [http://pmkvyofficial.org/App\\_Documents/QPs/Qualification-Pack-Agriculture-extension-service-provider.pdf](http://pmkvyofficial.org/App_Documents/QPs/Qualification-Pack-Agriculture-extension-service-provider.pdf)

- Chapman r. And r. Tripp (2003). *Changing incentives for agricultural extension: a review of privatized extension in practice*. Odi, agricultural research & extension network, network paper 132. Available at [www.odi.org.uk/agren](http://www.odi.org.uk/agren)
- Chikaire J.U., A.O. Ani, C.N Atoma and A.R. tijjani (2015). *Capacity building: key to agricultural extension survival*. Sch. J. Agric vet. Sci. 2015; 2(1a):13-21
- Christopher P. and B. Richard (2004). [Systemic capacity building: A hierarchy of needs](#). *Health Policy and Planning*. 19 (5): 336-345. Retrieved on 20 August 2019.
- CRISP/AESA (2019). *Taking stock and shaping the future: conversation on extension*. CRISP/AESA, Hyderabad India
- Dangol B.B.S. (2015). *Extension Education (2<sup>nd</sup>ed)*. Prativa Shing Dangol, Kathmandu.
- DAT (2013). Annual report of annual agriculture training program. Directorate of Training, Hariharbhawan, Lalitpur.
- Gadhei K. (2016). Souvenir-cum abstract book. International extension education conference on education, research and services, Banaras Hindu University (BHU)
- GFRAS (2012). *The New Extensionists: Roles, strategies, and capacities to strengthen extension and advisory services*. Available at: <http://www.gfras.org/en/knowledge/gfras-publications.html?download=126:the-new-extensionist-position-paper>
- GFRAS (2015). Good Practice Note 13: Agricultural Innovation Systems. Available at: <https://www.g-fras.org/en/good-practice-notes/agricultural-innovation-systems.html>
- GFRAS (2018). What works in rural advisory service: Global good practice note? Global Forum for Rural Advisory Services (GFRAS), Lausanne, Switzerland
- GFRAS (2019) <https://www.g-fras.org/en/world-wide-extension-study/92-world-wide-extension-study/asia/southern-asia/314-nepal.html#extension-providers>
- Halim A. and M.M. Ali (2005). Training and Professional development. In Swanon B.E., RP Bentz and Andrew J. Sofranko (Eds.). *Improving Agriculture extension: A reference manual*, Divya publisher, New Delhi, India. Available at:

<http://www.g-fras.org/en/good-practice-notes/agricultural-innovation-systems.html>

ICIMOD (2008). NEPCAT Fact sheet. *Natural Resource Management: Approach and Technologies in Nepal*. Integrated Center for International Mountain Development (ICIMOD), Kathmandu Nepal.

Jaishi. M. and L. Shahi (2016). *Decentralized agricultural extension Service provision: Policy initiatives of extension approach to local people*. In Gadhei (Eds.). Agricultural Extension Compendium. Agro-bios, New Delhi

Jaishi M., R. Allen and L. Shahi (2015). *Challenges and Issues of Decentralized Agriculture Service at the VDC Level: Experiences from Okhaldhunga District*. Journal of Institute of Agriculture and Animal Science, Vol. 32/33:110-105pp.

Jha S.K. (2016). *Tendency to treat extension as ‘scapegoat’ for failure on the transfer of technology: A counter reckoning on the issues from Indian perspective*. In Gadhei (Eds.). Agricultural Extension Compendium. Agro-bios, New Delhi

Kaegi S. and P. Schmidt (2016). Rural Advisory Services and International Cooperation. How to reach large numbers of agricultural producers with rural advisory services. Swiss Agency for Development and Cooperation SDC. Switzerland.

MEAS (2012). Strengthening the pluralistic agricultural extension system in Nepal. A MEAS Rapid Scoping Mission. Modernizing Extension and Advisory Service, USAID. [www.meas-extenion.org](http://www.meas-extenion.org)

MoAD (2014). Agriculture Development Strategy (ADS). Ministry of Agriculture and Development (MoAD), Shinhadurbar, Kathmandu.

Mulder M. (2016). Emerging trends in competence based extension education science. In Gadhei (Eds.). Agricultural Extension Compendium. Agro-bios, New Delhi

OECD (2012). Supporting partners to develop their capacity: Twelve lessons from DAC peer review. [www.oecd.org/publishing/corrigenda](http://www.oecd.org/publishing/corrigenda) available at <https://www.oecd.org/dac/peer-reviews/12lessonscapdev.pdf>

- Paudel R., P. Baral, S. Lamichhane and B.P. Marahatta (2018 ). ICT based agro-advisory services in Nepal. *J. Inst. Agric. Anim. Sci.* 35: 21-28
- Ragasa C, J. Ulimwengu, J. Randrianamangy and T. Badibanga (2013). Assessment of the capacity, incentives and performance of agriculture extension agents in Western Democratic Republic of Congo. International Food Research Institute (IFRI)
- Rani S., N.B., Kranthi and T. Lakshmi (2016). *Privatization in Extension in India and its scenario in the present life*. Souvenir-cum abstract book. International extension education conference on education, research and services, BHU
- Rivera W.M. and J.W Cary (2005). Privatizing agriculture extension. In Swanon B.E., R.P. Bentz and Andrew J. Sofranko (Eds.). *Improving agriculture extension: A reference manual*, Divya publisher, New Delhi, India.
- Rivera, W. M., K. M. Qamar, and L. V. Crowder (2001). Agricultural and Rural Extension Worldwide: Options for Institutional Reform in Developing Countries. FAO, Rome.
- Schrder K. (2014): Sustainable Soil Management Programme. Outcome and Impact Assessment. Nepal, HELVETAS Swiss Intercooperation.
- Shivakumar P.S. and Sulaiman V.R. (20160. *Extension research in India: Current issues and challenges*. AESA working paper 2015-002. Centre for Research on Innovation and Science Policy (CRISP)/AESA
- Silverman J. (1992). Public Sector Decentralization. Economic Policy and Sector Investment Programs. The World Bank Group
- Smith, L. D. (1997). Decentralization and Rural Development: The Role of the Public and Private Sector in the Provision of Agricultural Services. Technical Consultation on Decentralization, FAO, Rome.
- SSMP (2014). Sustainable Soil Management Program Phase IV – External Review. Report to Swiss Agency for Development and Cooperation (SDC), Nepal.

Subedi M. and M. Kaplowitz (2016). What every extension worker should know:Core competency hand book. MEAS/.USAID Available at: <http://www.meas-extension.org>

Subedi, M. (2011). Evaluation of agricultural extension and advisory service: A MEAS training models. MSU/UI/USAID-MEAS. Accessed at: [www.meas-extension.org/meas-offers/training/evaluatingextensionprogram](http://www.meas-extension.org/meas-offers/training/evaluatingextensionprogram)

Sulaiman V. R., N. Mittal , Onima VT, and R. Puskur (2019). Capacity needs of extension and advisory services (EAS) in Odisha. Policy brief. Crisp/IRRI

UNDP (2009). Capacity development: A UNDP primer. United Nations Development Programme New York, USA

UNESCO (2012). Youth and skills: Putting education for all. United Nations Educational, Scientific and Cultural Organization, Place de Fontenoy, Paris, France. Available at [https://www.skillsforemployment.org/edmsp1/groups/skills/documents/skpcontent/mwdf/mdix/~edisp/fm11g\\_021828.pdf](https://www.skillsforemployment.org/edmsp1/groups/skills/documents/skpcontent/mwdf/mdix/~edisp/fm11g_021828.pdf)

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# USAGE AND PREFERENCE OF EXTENSION COMMUNICATION CHANNELS BY FARMERS OF KAILALI DISTRICT, NEPAL

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## Abstract

*A study was carried out among 120 sample farmers of Kailali district in western Nepal for assessing usage and preference of communication channels in obtaining agricultural information by the farmers. The different communication channels considered during the study were neighbour, progressive farmers, agro vets, extension workers, radio, television, landline phone, cell phone, newspapers, internet and indigenous channels which were analyzed to find relationship with personal attributes, socio economic and situational characteristics of farmers. The study revealed that the farmers have access, preferences and are using neighbour, radio, television, cell phone and extension worker as the source of technological knowledge respectively. Neighbour as an information source was found independent of personal attributes and socio-economic characteristics of farmer. Neighbour was most preferred communication channel which were followed by radio, television and cell phone. Radio was highly depended on affiliation to organization and depended on gender and education of farmer. Use of extension worker as a channel highly depends on types of farming, monthly income, and age group, presence of service centre and use of technology.*

**Key words:** Access, Communication channels, Preferences, Usage

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## 1. INTRODUCTION

Technological transformation developed in core countries still matter in developing countries. Mc Quail (1978) explained, communication serves as media for extending public education and promoting

innovation in agriculture, health and population control. Understanding of extension sources and channels used by clients to obtain agricultural information is a prime work for efficient educational method

because messages that remain at source cannot lead to change in rural areas (Israel and Wilson, 2006). The extension worker is primary source of new information. However, limited farmers are reachable to extension worker (Okwu and Daudu, 2006). Mathur (1994) suggested proper combination of communication channel provide cumulative effect on people through high exposure to an idea results in action thus has great impact. Nepal Agricultural Research Council, Department of Agriculture, Institute of Agriculture and Animal Sciences and other agricultural related International/National Government Organizations are focusing on communication method and channels for the development of agriculture (Mundy and Phuyal, 1999). This study provides the necessary information on the appropriateness or otherwise of the use of communication channels in disseminating information on improved agricultural technologies to farmers in Kailali and similar districts of Nepal. This research further sets up the agenda for selecting suitable channels for the audience: according to availability and accessibility of channels. The study was carried out with objective of finding the use

and preference of communication channels in obtaining agricultural information by farmers in Kailali district, Nepal.

## **2. Materials and methods**

The study was carried in purposively selected four VDCS of Kailali district, viz. Sahajpur, Masuria, Narayanpur and Bhajni VDCs. 120 respondents were selected randomly, 30 respondents from each VDC. Required information was taken with the help of interview schedule, observation and group discussion. The collected data were coded, tabulated and analyzed using both descriptive tools like mean, standard deviation, percentage and inferential statistical tools. The descriptive statistics was applied to describe the respondents' socio-economic characters such as sex, age, farm size, education etc. To determine the relation between dependent and independent variables chi square test was done. Categorization of age, income, land holding, and livestock holding was made on the basis of mean and standard deviation. The analysis was carried out with the help of statistical software, SPSS version 16.0 and MS -Excel programs.

## **3. Results and discussion**

Demographic characteristics of the respondents

Table 1: Frequency of respondents based on demographic and social characteristics

<b>Characteristics</b>	<b>VDC</b>				<b>Total</b>
	<b>Sahajpur</b>	<b>Masuria</b>	<b>Narayanpur</b>	<b>Bhajni</b>	
<b>Gender</b>					
Male	23 (76.67)	25 (83.33)	22 (73.33)	21 (70.00)	91 (75.83)
Female	7 (5.83)	5 (4.17)	8 (6.67)	9 (7.50)	29 (24.17)
<b>Type of Family</b>					
Nuclear	20 (23.33)	14 (46.67)	14 (46.67)	16 (53.33)	64 (53.33)
Jointed	10 (33.33)	16 (53.33)	16 (53.33)	14 (46.67)	56 (46.67)
Average ± S.E. (No.)	5.10±0.37	6.27±0.31	5.40±0.29	6.87±0.43	5.91±0.18
Standard Deviation (No.)	2.07	1.70	1.59	2.33	2.05
<b>Marital Status</b>					
Married	27 (90.00)	26 (86.67)	30 (100.00)	27 (90.00)	110 (91.67)
Unmarried	3 (10.00)	4 (13.33)	0 (0.00)	3 (10.00)	10 (8.33)
<b>Age</b>					
Average ± S.E. (Yrs)	43.23±2.70	47.53±1.97	39.86±2.93	46.40±2.18	44.25±1.25
Standard Deviation (Yrs)	14.81	10.67	16.05	11.95	13.72

Source: Field Survey

Figures in parenthesis indicate percentage

One fourth of the respondents of the study were female (24.17 percent) which seems to near with Nepal Living Standards Survey 2010/11 i.e. 26.6 percent (CBS, 2011). Nuclear family (53.33 percent) was higher than Joint family (46.67 percent) in the study area. Average family size was 5.91 can be said as 6 person in a family with standard deviation 2.05. Average age of the respondents was 44.25 years. Young farmers were dominantly distributed in Narayanpur VDC. 91.67 percent of farmers from study area were married.

#### **Economic characteristics of farmer in survey area**

From table 2 we can explain that agriculture was the major source of income of the farmers. Nearly half of the total farmers were engaged in other activities along with agriculture for earning their income. Main occupation of the respondents was agriculture and livestock rearing (80.83 percent) followed by business (7.50 percent) and Teacher (5.83 percent).

**Table 2: Frequency of respondents based on source of income and occupation**

Characteristics	VDC				Total
	Sahajpur	Masuria	Narayanpur	Bhajni	
<b>Source of income</b>					
Agriculture	16 (53.33)	21 (70.00)	14 (46.67)	11 (36.67)	62 (51.70)
Agriculture and Other	14 (46.67)	9 (30.00)	16 (53.33)	19 (63.33)	58 (48.30)
<b>Occupation</b>					
Farmer	21 (70.00)	27 (90.00)	27 (90.00)	22 (73.33)	97 (80.83)
Business	2 (6.67)	1 (3.33)	2 (6.67)	4 (13.33)	9 (7.50)
Service	3 (10.00)	0 (0.00)	0 (0.00)	0 (0.00)	3 (2.50)
Teacher	2 (6.67)	2 (6.67)	1 (3.33)	2 (6.67)	7 (5.83)
Abroad	0 (0.00)	0 (0.00)	0 (0.00)	1 (3.33)	1 (0.83)
Household Chores	2 (6.67)	0 (0.00)	0 (0.00)	1 (3.33)	3 (2.50)

Source: Field Survey, 2015

Figures in parenthesis indicate percentage

Table 3 revealed average monthly income and standard deviation of farmers of Kailali district was Rs. 12033.33 and Rs. 6645.18. Respondents had average land holding size of

1.31 ha, which is higher than national land holding size, 0.2 ha (FAO, 2005). Average livestock holding was  $1.30 \pm 0.09$  LSU which was larger in Masuria and Bhajni and least in Narayanpur VDC.

**Table 3: Monthly income, land holding and livestock unit of study area**

Characteristics	VDC				Total
	Sahajpur	Masuria	Narayanpur	Bhajni	
<b>Monthly Income</b>					
Average $\pm$ S.E. (Rs. '000)	12.17 $\pm$ 1.4	10.95 $\pm$ 1.11	11.12 $\pm$ 1.29	13.90 $\pm$ 0.98	12.03 $\pm$ 0.60
Standard Deviation (Rs. '00)	76.97	61.10	70.60	53.90	66.45
<b>Land holding</b>					
Average $\pm$ S.E. (Ha)	0.35 $\pm$ 0.68	1.86 $\pm$ 0.18	1.24 $\pm$ 0.18	1.80 $\pm$ 0.25	1.31 $\pm$ 0.11
Standard Deviation (Ha)	0.37	0.99	1.01	1.41	1.17
<b>Livestock holding</b>					
Average $\pm$ S.E. (LSU)	1.18 $\pm$ 0.16	1.41 $\pm$ 0.14	1.21 $\pm$ 0.22	1.41 $\pm$ 0.20	1.30 $\pm$ 0.09
Standard Deviation (LSU)	0.86	0.77	1.23	1.12	1

Source: Field Survey, 2015

### Usage of different communication channels

Among Interpersonal communication channel neighbour (82.50 percent) was used daily by of the farmers in study. Radio (85.00 percent) was daily used mass communication channel which was followed by cell phone (78.33 percent) and television (63.33 percent). Neighbour was mentioned as most important channel to get information of improved farm practices (Sinha and Prashad, 1980; Sharma, 1966). Study of Jan *et.al.* (2011) also concluded that neighbour, relative and friends primarily guide rural

farmers. According to study of Doordarshan (1994) most of the television viewers in rural area also listen radio. Radio emerged as the most used channel of information input (Singh and Ambastha, 1975). This result is nearly similar to the result of Yadav *et.al.* (2011) study, television ranked first in utilization of mass media for agricultural information followed by radio and cell phone. Internet (98.33 percent) was never used by most of the farmer which was followed by Landline phone (90.83 percent). This was because of lack of facility.

**Table 4: Frequency of using communication channels**

Communication Channels	Frequency				
	Never	Annually	Monthly	Weekly	Daily
<b>Interpersonal</b>					
Neighbour	4 (3.33)	1 (0.83)	3 (2.50)	13 (10.83)	99 (82.50)
Progressive farmer	80 (66.67)	2 (1.67)	7 (5.83)	24 (20.00)	7 (5.83)
Agro vet shop	37 (30.83)	2 (1.67)	62 (51.67)	15 (12.50)	4 (3.33)
Extension Worker	17 (14.17)	13 (10.83)	69 (57.50)	21 (17.50)	0 (0.00)
<b>Mass Media and Electronics</b>					
Radio	12 (10.00)	0 (0.00)	3 (2.50)	3 (2.50)	102 (85.00)
Landline Phone	109 (90.83)	0 (0.00)	0 (0.00)	5 (4.17)	6 (5.00)
Cell Phone	7 (5.83)	0 (0.00)	2 (1.67)	17 (14.17)	94 (78.33)
Television	18 (15.00)	0 (0.00)	3 (2.50)	23 (19.17)	76 (63.33)
Newspaper	49 (40.83)	6 (5.00)	22 (18.33)	35 (29.17)	8 (6.67)
Internet	118 (98.33)	0 (0.00)	1 (0.83)	1 (0.83)	0 (0.00)
<b>Indigenous</b>					
Indigenous	15 (12.50)	14 (11.67)	91 (75.83)	0 (0.00)	0 (0.00)

Source: Field Survey, 2015

Figures in parenthesis indicate percentage

## Preference level of different communication channels in study area

**Table 5: Preference level of different communication channels in study area**

<b>Communication Channel</b>	<b>Total</b>	
	<b>Index</b>	<b>Rank</b>
Neighbour	0.86	I
Progressive Farmer	0.41	IX
Agro vet shop	0.54	VII
Extension Worker	0.75	V
Radio	0.81	II
Landline Phone	0.25	X
Cell phone	0.78	IV
Television	0.80	III
Newspaper	0.45	VIII
Indigenous	0.63	VI

0.2= not preferable to 1= very highly preferable

Table 5 revealed that farmers of study area prefer neighbour (0.86) most as communication channel to get agricultural information. Radio (0.81) was ranked second followed by television (0.80) and cell phone (0.78) third and fourth respectively. Result of

the study was same as finding of Devi and Verma (2011) who stated that neighbour was ranked first interpersonal communication channel and radio was ranked first mass media channels followed by television whereas, Internet was least used and preferred channel.

**Table 6: Synthesis of different communication channels in relation to dependent variables**

<b>Communication channels</b>	<b>Dependent variables</b>										
	<b>G</b>	<b>AG</b>	<b>E</b>	<b>SI</b>	<b>MI</b>	<b>TF</b>	<b>FS</b>	<b>ToF</b>	<b>SC</b>	<b>AO</b>	<b>UT</b>
<b>Interpersonal</b>											
Neighbour								√	√	√	√
Progressive farmer								√	√	√	√
Agro vet shop								√	√	√	√
Extension worker	√				√			√	√	√	√
<b>Mass Media and Electronics</b>											
Radio	√		√							√	
Landline phone		√		√		√					√
Cell phone				√							√
Television	√	√	√				√				√
Newspaper		√	√					√	√		√
<b>Indigenous</b>											
Indigenous								√			

✓ indicates significantly dependent channel to different variables i.e. Chi-square significant at  $P<0.05$ ; G = Gender; AG = Age group; E= Education; SI = Source of income; MI = Monthly income; TF= Types of family; FS = Family size; Tof = Types of farming; SC = Presence of service centre; AO = Affiliation to organization; UT = Use of technology

Chi-square applied to test independence of interpersonal communication channels with type of farming results: Progressive farmers, agro vet and Extension workers were influenced by type of farming and neighbour was independent to type of farming. None of the interpersonal communication channels were influenced by education. Among different interpersonal channels, extension worker was influenced by monthly income level of the farmer. Extension worker was differentiated with age group of farmer. Presence of service centre in the VDC was an important factor in which interpersonal communication channel is depended. Except neighbour all interpersonal channels listed in this study were depended on presence of service centre in the VDC. Chi square test applied to test independence of interpersonal communication channel with use of technology revealed that progressive farmer, agro-vet and extension worker were dependent to use of technology.

Almost all communication channels except radio were significantly differs with the gender. Television and newspaper were mass media and electronics; differ significantly with source of income. Type of farming and

mass communication channels other than newspaper were independent with each other as calculated chi square was less than tabulated value at  $p < 0.05$  and respective degree of freedom. Radio, landline and television were influenced by education. Television, cell phone, landline phone and newspaper were highly influenced by level of monthly income. Mass media and electronics were tested independence with age group of farmer by chi square. Television was significantly differentiated with family size given by result of chi square test. Newspaper is only mass media which usage was depended on presence of service centre in VDC. Applying Chi square test to find independence of mass media and electronics to the affiliation of farmer to any kind of organization revealed that cell phone and radio were depended to affiliation to any kind of organization. Among listed mass media in this study television and newspaper are dependent to use of technology.

#### **4. CONCLUSION**

Mostly used and preferred communication channel is neighbour which is independent to any personal attributes and socio economic

characteristics of the farmer. Radio, TV and cell phone are most popular media in Kailali district but they were confined to literacy and monthly income. Extension worker does not seem to be regular in most of the VDCs and they were biased by types of farming, monthly income, age group, availability to service centre and technology use of the farmers. Radio, TV and cell phone were in similar use as neighbour, so none of single

communication channels were important to disseminate agricultural information. Internet, agro-vet shop, progressive farmer and newspaper were not suitable in Kailali district and have lot of limitation. Although indigenous channels were not used regularly but used by most of the farmers so, it cannot be separated while disseminating agricultural information.

## References

- Balan, K. R. & C. S. Rayadu. (1996). *Effective Communication*. Beacon Books, New Delhi.169 p.
- Bhagat, R. & P. N. Mathur. (1985). Mass Media and changing lifestyles of farm women in Delhi Territory. *Indian Journal of Extension Education*. 21 (3&4): 37-41.
- CBS (2011). Nepal living standards survey 2010/11: *Statistical report volume two*. Central Bureau of Statistics, National Planning Commission Secretariat, Government of Nepal, Kathmandu, Nepal.
- Doordarshan (1994). Television and its impact on rural areas. In: M. R. Duaand V. S. Gupta (Eds.). *Media and development themes in communication and extension*. HarAnand Publication, New Delhi. pp. 91-99.
- FAO (2005). *Livestock sector brief: Nepal*. Food and Agricultural Organization of United States, FAO.19 p.
- Israel, G. D. & K. M. Wilson (2006). Sources and channels of information used by educational program clients. *Journal of Applied Communication*.90: 55-78.
- Jan, M., K. Sultan and S. Ali (2011). Role of communication in diffusion and adoption of agricultural information. *Gomal University Journal of Research*. 27(1): 111-118
- Kharel, P. 2005. Sounds of radio broadcasting. Nepal Association of Media Educators Kahmandu.129 p.

- Mathur, K.B. (1994). Communications for development and social change. Allied Publishers Limited, New Delhi. 122p.
- McQuail, D (1978). Communication. London: Longman.
- Melkote, S. R. & H. D. Steeves. (2001). *Communication for development in the third world; theory and practices for empowerment*. Sage Publication, New Delhi. 422p.
- Mundy, P. and U. Phuyal. (1999). Developing agricultural communications in Nepal. Nepal Agricultural Research Council. Kathmandu.
- Okwu, O. J. & S. Daudu (2011). Extension communication channels' usage and preference by farmers in Benue State, Nigeria. *Journal of Agricultural Extension and Rural Development* 3: 88-94.
- Sharma, D. K. (1966). Role of Information sources and communications channels in adoption of improved practices by farmers in MP state India. *Indian Journal of Extension Education*. 2 (3&4): 143-148.
- Siddaramaia, B. S. & B. Rajana. (1984). Effectiveness of combination of radio, slide show and film show: experimental evidence. *Indian Journal of Extension Education*. 20 (1&2):7-11.
- Singh, K. N. & C. K. Ambastha. (1975). Communication pattern of farmers: a systematic analysis. *Indian Journal of Extension Education*. 11 (1&2): 25-31.
- Sinha, P. R. R. & R. Prashad (1980). Source of information related to adoption process of some improved farm practices. *Indian Journal of Extension Education*. 2: 86-91
- Yadav, B. S., I. M. Khan & M. Kumar (2011). Utilization pattern of different sources and channels of agriculture information used by the fenugreek growers. *Indian Research Journal of Extension Education*. 11(1): 44-49
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## USE AND SIGNIFICANCE OF ACTION RESEARCH IN AGRICULTURE EXTENSION

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### Abstract

*As extension mainly focuses on solving the farmers' problems and issues and improve livelihood of farm community, the extension professional lag behind in researches with same conventional research methods. In this context, there is a need of research methods which could resolve the ongoing farm problems in the research duration itself rather than the methods which would analyze the situation and problems first and recommend solutions for future. Action research emerges as suitable alternative in extension research which engages farmers in the research itself and promotes participatory and collaborative approaches in the research. This paper, conceptualizes the action research and its theoretical foundations, attempted to highlight the significance of action research in agriculture. The methodology used was review of different journal articles, case studies and reports along with internet surfing to gather relevant information. Encompassing the actions within the research process, this method was found to be flexible, socially responsive and effective dealing with complex problems and changing situations giving proactive and strategically driven immediate and effective response to changes as they arrive. It was found equally useful in developing professionalism and concluded that action research fits itself in changing rural context and avoids being paralyzed during research process. However, care should be given to its ethical principles and efforts to overcome its drawbacks.*

**Key words:** Action research, collaborative, flexible, participatory, professionalism, responsive.

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## 1. Introduction

Agriculture extension, in simple terms, is the bridge to reduce the gap between the agriculture research and farmers field condition. It is concerned with assisting the rural people and farmers to bring about continuous improvement in their physical, economic and social well-being through individual and cooperative efforts. It helps people with self-development and manage change in socio-economic and political arenas and promotes programs and activities that addresses people's needs. It often involves dealing in complex situations where exists many problems and uncertainties to be dealt with and explore the ways of solution. As agriculture extension is dynamic in nature changing in accordance with time and change in agricultural pattern and system, there is the need to address flexible approaches to deal such circumstances. The social and psychological behavior of farmer and the social situation he is in might be a complicating factor.

Originally developed as a set of principles to maximize the utility of the technologies and processes generated by organized agricultural research, the extension has long served rural communities in applying improved practices through advising,

equipping and organizing them (Shivakumar and Sulaiman, 2015). With the current struggle to attain the multiple development goals related to sustainability, resource conservation, food and nutrition security and poverty alleviation, agricultural extension science needs to innovate its practices and for this research has crucial role to play. When it comes to research, special focus is to be laid on the identification and assessment of primary needs and designed to improve the competence in the field keeping in mind the dynamic nature of agriculture extension. Basic principle of agriculture extension being 'Learning by doing', the research needs to be practically oriented and be able to solve real-life problems of the farmers. It should provide the co-learning environment among farmers, extension agents and other stakeholders. Hence, selection of appropriate research design/method becomes useful.

However, the recent vogue of research method used in agriculture extension research in Nepal shows the survey method as the leading one with other methods at shadow. Generally, the researchers collect data and analyze them which enables them to describe the existing situation and analyze to produce a long list of recommendations for others and has little efforts to change the situation itself (Mutimba and Khalia, 2011).

As the main theme of agriculture extension research rounds around solving farming problems and issues, there is a need of a research design that would allow such solutions for farmer's needs and problems during the research period. There is a need of action-oriented method in extension research so as to have better impact on farmers' issues.

In this regard, action research emerges as an alternative for agricultural extension research. Being flexible, adaptive and participatory in nature, this method seems effective in this field. This paper firstly focuses on the concept and cycle of action research. It then lays focus on the epistemological foundations of action research and describes its significance and the way it could be applied in agriculture extension with basic steps for conducting the research. It then highlights the strength and weakness of action research with its ethical issues. It discusses some examples of action research in agriculture and finally the paper ends on deriving some conclusions.

## **2. Methods and Methodology**

The paper was prepared based on secondary data sources. Various journal articles, reports, case studies and books related to action research were reviewed thoroughly. The internet sources and articles were also

used to gather certain information and experts and professors were also consulted for preparing the paper.

## **3. The concept of action research**

With the assumption that the social phenomena are complex and best understood by introducing interventions or "actions" into those phenomena and observing the effects of those actions, the basic concept on action research is oriented in achieving two set of outcomes at same time; action and research. It is believed to be developed by psychologist Kurt Lewin in the context of experimental community projects in the USA, involving contexts of equal employment opportunity and integrated housing (Lewin, 1946). It is simply defined as the process of systematic inquiry that works for improving the social issues affecting everyday life. (Stringer, 2008) Sriskandarajah and Fisher (1992) defined action research as 'a process in which a group of people with a shared issue of concern collaboratively, systematically and deliberately plan, implement and evaluate actions. Action research combines action and investigation. The investigation informs action and the researchers learn from critical reflection on the action.' It is considered as a set of collaborative ways to conduct a social research which satisfies the scientific

requirements and promotes democratic social change (Greenwood and Levin, 1998). Often viewed as both research strategy and reform practice, it focuses on collaborative building of knowledge and design action (activities) involving all the stakeholders. It centers on ‘doing with’ rather than ‘doing for’ and gives equal credit for stakeholders with rich source of experiences and reflective possibilities that long experience living in complex situations (Greenwood and Levin, 1998). Generally, action research seems comprised of 5 C’s: Commitment, Collaboration, Concern, Consideration and Change. It has following basic characteristics which makes it suitable for social research:

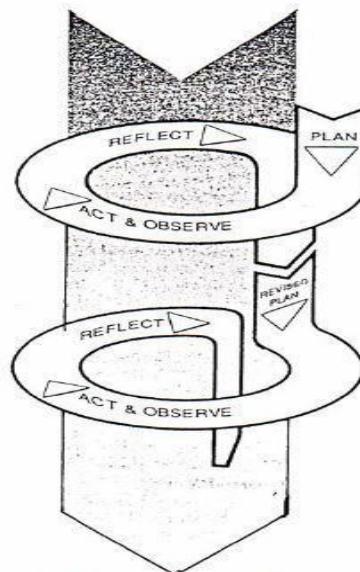
- It is group activity and participatory in nature.
- It is socially responsive and takes place in context.
- It enhances the innovative capacity of stakeholders.
- It is proactive and strategically drive immediate and effective response to changes as they arrive and are strategic to those changes as is based upon analysis of research information.
- It is problematized the basic social norms and situation.

Certain situations exists when action research is used as methodological framework, as listed by Fisher (2004), is listed below:

- Complex problems involving diverse elements.
- When we don’t know where to start solving the problem.
- Changing situation or context
- Differing perspectives and conflicting objectives.

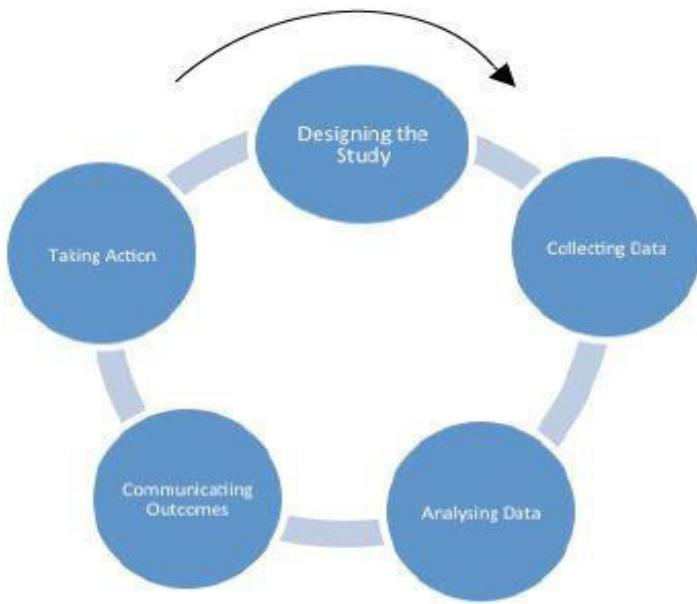
#### **4. Cycle of Action research**

Action research cycle comprises mainly of four phases namely planning, action, evaluating and re-planning. Kemmis and McTaggart presented the action research spiral as shown in figure below:



**Figure 1: The action research spiral**  
[From Kemmis and McTaggart, 1988a]

This action research spiral can be broadened by the 5-stepped action research cycle below:



**Figure 2: Action research cycle (adapted from Stringer, 2004, p. 5)**

The important aspect of this cycle is its iterative nature rather than being linear which makes it different from other applied research. In most applied research approaches, first research is done for investigating a problem and action/solutions are implemented later whereas research and action go parallel in action research.

## **5. Action research and its epistemological foundation**

Scientific method is not the methodological blueprints written, rather it is applying research method in the complex settings of

the social world (Latour, 1987). It is the standardized set of techniques to build scientific knowledge. Scientifically, Action research is powerful approach for social research. Its epistemological foundations can be directly connected with General System Theory (GST), pragmatism and critical theory.

GST is a set of holistic concepts about the way the world is organized. The differences among an inorganic, an organic, and a sociocultural system are to be understood as the product of the differences in the way these

systems are organized—the kinds, sequences, and parameters of processes that take place within them. Humans are understood to exist only within social systems, and these systems have properties and processes that condition human behavior and are in turn conditioned by that behavior. Social systems are not mere structures, but are processes in continual motion. Action research and GST both relies on this system approach. They are dynamic and historical. They operate within material boundaries and are capable of transforming material living conditions. They are also interlinked, entwining the individual social structures and the larger ecology of systems into complex interacting macro-systems.

The pragmatism philosophy focuses that the research problems and strategies needs to devise the solutions using a mixed research methods. The pragmatist researchers are concerned with what and how to research, based on the intended consequences rather than focusing on methodological procedures (Sivakumar and Sulaiman, 2015).

With focus on solving the pertinent problems in a given context, action research has the effective collaboration of the researchers with the participants and seek solutions of major problems to local people. In doing so, action research engages in system-based,

pragmatic social science. It challenged to practice the scientific practice with a commitment to social transformations of the society (Greenwood and Levin, 1998). It takes on more complex problems, solutions to which is possible with mixed research methods and demands action not to be separated from theory. It is committed to idea that testing of theory means its capacity to resolve problems in real-life situations.

The action researcher has a different view of the world based on critical theory. Critical theorists, who believe that where there is imbalance of power between two parties, one of them will end up being disempowered (Ellis and Crookes 1998), aim to change the world by empowering the subjects of inquiry to bring about social change. According to Webb (1990), traditional approaches to research involve ‘smash and grab’ – the researcher enters a situation, grabs the data required and leaves again. The action researcher attempts to work with participants on an equal basis. Action researcher acts as facilitator and all are integral to the process. Decentralizing and democratizing the research process are integral aspects of critical theory (Karim, 2001). Which is followed by action research.

## **6. Action research and its significance in agriculture extension**

Application of action research is being found in many fields as result of its action oriented nature which makes it appropriate to investigate ‘why’ and ‘how’ problems focusing on solutions for the problems encountered during action. Thus, it is an attractive alternative when it comes to agriculture extension research. It is applicable for any extension programme implementation which are extremely based on identified needs and are demand driven. It has great significance in extension science in bridging the gap between research and practice (Johnson, 2012). It is directly linked with increase in professionalism and development of extension and provides knowledge on improving the practices and resolving problems in field condition.

When traditional extension approaches, being linear, assumed that agricultural researchers carry research to develop or improve agricultural technologies and the extensionists communicate the knowledge to farmers, in practice, the knowledge was found poorly adopted by farmers raising a question in the need of new approach to address the aspects of farming systems which would be applicable in farmer’s field. Action research, being flexible and adaptive,

responses back to this need through farmer’s participation in research itself and increase adoptability in local farmer’s field. It views farmers as researchers and encourages their knowledge and innovations in the research. Many researchers present action research as a series of reflective cycles of planning, action, evaluation. Some people say “we do that anyhow, we always modify what we do according to what happens” (Fisher and Jackson, 1998). It may be true to some extent, however, the practitioners of action research argue that the deliberate and conscious cycle of action research cycle imposes a new level of discipline and is different from ad hoc processes of managing change. Unlike linear methods, that ignores changes until a problem arises, action research prioritizes the modification in plans in response to the changing situations without any delay. Thus, action research has high significance in agriculture extension.

## **7. General steps for conducting action research by extension professionals**

As agriculture extension centers in enhancing the knowledge and skills of farmers to enable them for effective and efficient farming, the role of extension professionals appears to help farmers with key recommendations for

successful farming. Thus, during conducting research, they should analyze the knowledge and skills of farmers on the recommendations; if farmers are following those recommendations and the reasons why the farmers are rejecting recommendations. This would enable the professionals to identify the action required to improve the current situations and apply the action so as to achieve target. This can be referred as action research. Mutimba and Khaila (2011) developed 18 steps to be followed by the extensionist to carry out action research. Those steps are as follows:

Step 1: Accessing a specific area to investigate.

Step 2: Brief background of the situation/context that is to be investigated.

Step 3: Statement of the problem

Step 4: Objectives specification

Step 5: Identification of key recommendations

Step 6: Constructing oral test to assess farmers' knowledge.

Step 7: Constructing checklist to assess farmers' applications/practices.

Step 8: Constructing marketing scheme for making oral test and checklist of farmers' practice.

Step 9: Deciding which farmers to test and the number (sample size).

Step 10: Deciding sample strategy and technique.

Step 11: Selecting the sample.

Step 12: Constructing the research design table.

Step 13: Administering the test.

Step 14: Marking the test.

Step 15: Analyzing the results.

Step 16: Identifying the areas of improvements.

Step 17: Presenting results to focus group.

Step 18: Planning and implementing the plan together with farmers.

## **8. Some examples of Action Research being used in Agriculture**

**Case I: Participatory action research in drip irrigation in Kavrepalanchok, Nepal**  
A participatory action research was carried out by the People and Resource Dynamics

Project (PARDYP) in collaboration with University of British Columbia (UBC) in Spices Crop Development Center, Kabrepalanchok to test the low cost drip irrigation set so as to address the problem of lack of irrigation water during dry season bringing all stakeholders and primarily the farmers in the research and tested the drip irrigation in farmers farms too. Several farm visits for stakeholders was made by project to the research station for testing and demonstrating the technology in their farms subsidizing the 50% cost in pump set. Technical support, advices and training was organized to farmers as part of research and interaction meetings allowed farmers to provide feedback to the project. The research's key points were:

- Problem was identified as the inadequate water availability for agriculture, lack of systematic on-farm research on drip irrigation and challenge in scaling up the drip irrigation technology.
- Objective was set to test, demonstrate and evaluate drip irrigation under local conditions and share the results, experience and benefits with farming communities ensuring their active participation in research period.

The research was success with following outcomes:

- Higher interactions among the farmer groups and different stakeholders was obtained.
- Land users started cropping land previously left fallow in dry season.
- The sustainable adoption was recorded and participation of farmers was encouraging.
- The on-farm problems of farmers was solved by consultation with specialists and farmers acquired in-depth knowledge in drip irrigation.

#### **Case II: Action research in a rain fed lowland rice farming system in Cambodia**

On the issue of unsatisfactory lowland rice production in Cambodia and farmers little interest in adopting the green manuring technology, a Cambodian researcher Soliemg Mak conducted an action research on the rainfed lowland farming system. Dr. Sak studied the farming community in first phase highlighting that the labor demand required for keeping livestock out of field during growth of green manure crops; rice production used for local need and palm sugar collecting established as main source of income were major constraints in farmers for adopting green manuring technology. He

then initiated an action research participating the villagers in the research process where most farmers responded in negative way, however, some farmers did carried out trials with green manuring and also modified the instructions given trying own variations making themselves as researchers. Research outcomes were listed as:

- Clear understanding of lowland rice system and reasons for conservatism in adopting green manuring in local farm situation.
- Insights into the adoption process – re-experiment and adaptation to local conditions was undertaken by supposedly ignorant and conservative farmers, clearly showing that they were neither ignorant nor conservative.

### **Case III: Scaling up off season vegetable production in Nepal (ongoing)**

Similarly, this action research was conducted by MEAS in Nepal under its action research project pilot projects with objective of enhancing food and nutrition security by increasing farm productivity of high value crops. This project involved two approaches of scaling up the off season production and develop leadership and entrepreneurship in farmers at grassroot level who would work as

farmer-cum-extension agent in future. Different stakeholders, Indragufa Community Development Foundation, Representatives from DoA and NARC were part of this action research. Participatory action research was employed as research method to demonstrate new innovations and efficiency enhancing technologies to benefit small and marginal farmers. 15 Lead farmers were selected and trained along with 2 day study visit before production season who would provide extension and advisory service to the village in future. Baseline survey was conducted for studying socio-economic demographics, determine current status of production and identify problems and constraints. Farmers' field was organized in first phase and 200 farm families directly participated and benefitted from the project and were provided with inputs bearing the costs. They were given training on vegetable production including control and containment of diseases and pests, and agricultural entrepreneurship, group and/or cooperative mobilization, saving and credits, etc. An interaction meeting was arranged among stakeholders where farmers and participants suggested actions for scaling up the project and identified Vegetable collection center as an immediate need which

the project is currently taking under consideration.

## **9. Strengths and weakness of action research**

Action research has its own strengthens and weakness which are highlighted in points below.

### *Strengths*

- Action research are easy to use in community situations. The participants can use it as part of their normal activities.
- Action research cycle can be regarded as the learning cycle where the participants has potential to increase their knowledge consciously from their experience Schön (1983, 1987) argues strongly that systematic reflection is an effective way for practitioners to learn and improve their professionalism.
- It has direct relevance to practice and real world with real working situations and produces worthwhile outcomes for clients.
- The participating nature of action research implies partnership between researchers and participants and the

research method becomes ethically satisfying.

- The technology if developed, has high potential of solving the existing problem at farmer's level with higher rate of adoptability.
- Action research ameliorates the situation investigated.

### *Weakness*

- It is harder to do than other conventional research with responsibilities of both change and research that involves the practitioners in more work.
- It might ignore the requirements which are considered to be part of ideology of the conventional research which might make it 'counter-cultural'.
- It is costlier, time-consuming and longer than conventional research.
- It is more demanding and difficult.
- The cause-effect relationship, being specific to the context, may not be generalized and the outcomes would be suited locally.
- This method suits only for the democratic and participatory inquiries.
- Scientific rigour might be less important than the methodology's

usefulness to participants (Argyris and Schon, 1991).

## **10. Ethical issues to be considered in action research**

A social research method is always subjected some ethical issues that needs to be considered while conducting. As action research calls for increased and systematic documentation and data gathering; more self-reflection and writing about one's experiences and increased sharing about the completed work (Parsons, 2015), the following ethical principles might have to be prioritized.

- Minimizing the risk of harm to the participants.
- Obtaining the informed consent.
- Protecting anonymity and confidentiality.
- Avoiding deceptive practices.
- Providing right to the participants to withdraw.

### **1. Summary and Conclusions**

The action research serves as an effective alternative for extension research. Its focus lays on resolving the real life problems with participatory and collaborative management. It can be made relevant and responsive to the

needs of the researchers, participants and the working environment. It can be used as the powerful tool to bridge the gap between theory and practice commonly seen in agricultural extension. Though it often lends itself to smaller-scale methods, its value is increasing because of its ability to make significant contribution to the problem based, contextual and future oriented practice. The above mentioned steps are the common ones for conducting the extension research. When used appropriately, it would be effective in terms of knowledge, skill, professionalism, farmer's practice and solving their constraints and helps in identifying opportunities for improvement. One key point of agriculture extension is promoting change to specific rural context and the action research is very important means to work in such situation. It is the one way to avoid the state of being paralyzed in research process and provides a way to commence implementation regardless lack of information on what to do and where to start.

It can thus be concluded that action research can be a valuable method on conducting the research in agricultural extension. However, special attention is to be given in its ethical guidelines and avoid its drawbacks.

## References

- Argyris, C. & D. A. Schon. (1991). Participative action research and action science compared: a commentary. In W.F. Whyte, ed., *Participatory action research*. Newbury Park: Sage [85-96].
- Ferrance, E. (2000). *Action research: Themes in Education*. Brown University, US.
- Fisher, R. J. (2004). *An introduction to action research for community development*. University of Sydney, Australia.
- Fisher, R. J. & W. J. Jackson. (1998). Action research for collaborative management of protected areas. Workshop on Collaborative management of protected areas in the Asian region. Sauraha, Nepal.
- Greenwood, D. J & M. Levin. (1998). *Introduction to action research: social research for social change*. 2<sup>nd</sup> ed. New delhi: Sage Publications.
- Hine, G. S. (2013). *The importance of action research in teacher education programs. Issues in Education Research*. Vol 23(2): pp 151-164.
- ICIMOD. (2000). *Participatory action research on drip irrigation*. Pdf retrieved from: [www.icimod.org/?q10309](http://www.icimod.org/?q10309). 2<sup>nd</sup> June, 2017.
- Johnson, A. P. (2012). *A short guide to action research*. 4<sup>th</sup> ed. New Jersey: Pearson Education.
- Kemmis, S. & R. McTaggart. 1990. *The Action Research Planner*. Geelong (Aust): Deakin University Press.
- Latour, B. (1987). *Science in action*. Cambridge, MA: Harvard University Press.
- Lewin, K. (1946). Action research and minority problems. *Journal of Social Issues*, Vol 2(4):34-46.

- MEAS. 2014. *Improving Agriculture Extension: improving Off season Vegetable Production in Nepal*. Pdf retrieved from: [www.meas.org/](http://www.meas.org/). on 2<sup>nd</sup> June, 2017.
- Mills, G. E. (2011). *Action research: A guide for the teacher researcher* (4th ed.). Boston: Pearson.
- Mutimba, J. K. & S. Khalia. (2011). Action research: a practical step-by-step guide for agriculture extension professionals. *South Africa Journal of Agriculture extension*. Vol. 39: pp 26-34.
- Oli, K. P. (1998). Collaborative management of protected areas in the Asian Region. Proceedings of workshop. IUCN. Sauraha, Nepal. May 25-28:pp 235-243.
- Parsons, J. (2015). *An Introduction of action research and its ethical practices*. Retrieved from: [www.teacherresearch.ca/blog/article/2015/05/30/](http://www.teacherresearch.ca/blog/article/2015/05/30/) on 2ns April, 2017.
- Schön, D. (1983). *The Reflective Practitioner: How Professionals Think in Action*. New York: Basic Books.
- Shivakumar et. al. 2015. Manual on good practices in extension research and evaluation. AESA.
- Sriskandarajah, N. & R. J. Fisher. (1992). A Participatory Approach to Improving Rural Livelihoods of People in the Goilala District of Papua New Guinea. Report on a research project funded by the Australian International Development Assistance Bureau under the Development Research Grants Scheme.
- Stringer, E. T. (2008). *Action research in education*. 2nd ed. New Jersey: Pearson.
- Tripp, D. (2005). *Action research: A methodological introduction*. Murdoch University.
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## DECENTRALIZATION AS AN APPROACH TO RURAL DEVELOPMENT IN NEPAL

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### Abstract

*Despite seventy years of democracy, huge political changes, sixty years of planned development and several attempts to execute decentralization practices in the country, rural issues were not addressed properly and attempted practices could not lead the development process. On the ground of this issues, this paper raises the questions of; what is the overall belief of decentralization around the world, how it is perceived through a lens of development, and how Nepalese reform of local government could lead this process to development. The study was based on the secondary sources information and it has gone through the review of different documents, decentralization related journals, books, review papers, the constitutions of Nepal, local governance operation act, world bank reports and others. With the help of these information sources, this paper discusses concept of decentralization and existing practices around the world. Further, brief instances of different countries on decentralization practices are included. On top of that, Nepal's attempts on decentralization practice based on theory of functionalism at local level has discourses the various components and their interaction to give output is presented. In this way, the paper concluded that decentralization practice has been initiated via local bodies and the impact of this practice is yet to be assessed. Though practice of decentralization is not first experience of the country, the constitution of Nepal has imagined the maximum use of decentralization principle as an approach to rural development.*

**Key words:** Components, decentralization, discriminations, local bodies, system.

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### 1. INTRODUCTION

#### 1.1. Context

Several countries in the world have tried to reform administration after some movement

in political change for better planning, implementing and institutionalizing political change in the country (Conyers, 1981). Similarly, in the last sixty years of

development progress, Nepal has arrived through family-based Rana regime to Federal Democratic Republic Nepal. During this period, many movements, forces, and dynamics have come with issues of rights of rural people including minorities, backward communities. LSGA (Local Self-Governance Act) 1999 had come to existence for decentralization of authority from superordinate level to subordinate level; district, village, and municipality level, (Rai, 2011). Constitution of Nepal (2015) has imagined ending of all forms of discrimination and oppression created by the feudalistic, autocratic, centralized, unitary system of governance through protecting and promoting social and cultural solidarity, tolerance and harmony, and unity in diversity by recognizing the multi-ethnic, multi-lingual, multi-religious, multi-culture, and diverse regional characteristics, resolving to build an egalitarian society founded on the proportional inclusive and participatory principles in order to ensure economic equity, prosperity, and social justice, by eliminating discrimination based on class, caste, region, language, and gender and all forms of caste based untouchability. And, Nepal has conducted local level election by which autonomous local body set federal law for

social, cultural protection and economic development for its own betterment.

Nepal is multi-ethnic, multi-lingual, multi-religious, multi-culture country with diverse regional characteristics. National Population and Housing Census (NPHC) 2011 has highlighted 126 caste/ethnic groups, 123 languages as mother tongue, and 10 religions. Among the entire population of the country rural population contribute for 83% showing large number of populations resides in rural areas. Most of the households are engaged in agriculture work and 56% household get remittance (NLSS, 2011).

## **1.2. Issues of the study**

Before Federal context, election of local bodies had been held in 1997 AD and the bodies work for 3 years. Then local systems are out of elected local bodies. This time gap has obviously hampered the political culture of exercising power, and authority among the local leaders. Now, local bodies are provided with full authority on social, cultural protection and economic development rights (TCON, 2015). In practice of decentralization, LSGA 1999 couldn't be free from role ambiguities and authorities in relation with other local bodies. Long chain of command and direct intervention of

higher authorities; lack of autonomy on DDC (District Development Committee)'s work and plan has also contributed for ineffective role (Rai, 2011). And another factor is TIN (2017) has shown its inability to predict the range of expenditure that candidates of local election have done. And it has explained that, the source of money collected for election purpose is unknown, but it's in large amount and illegal. Decentralization in developing countries has made evident that, if it is led by minorities rich people and make supremacy over others; then it becomes most awful and it has long lasting impacts (Lamour, 1985). Now, questions arise here; is it possible to transform rural areas to accountable, transparent, equitable, and socially just structure through decentralization? Nepal is multiethnic, multilingual, secular, and multiparty countries (NPHC, 2011). It signifies for large variation and diversity among the elected members in local administration. And development of homogeneity and common understanding, for smooth running and well-functioning among the elected members is also seen as challenge. In the same way, poverty gap and food insecurity (MoAD, 2013) will also challenge the effective implementation of decentralization for rural development.

In the problematic context, the paper here dealt to find the answer of; what is the overall belief of decentralization around the world, how public perceive decentralization through the lens of development, and how restructuring of current local government could act to lead this decentralization process to development.

In order to clarify, the restructuring process and its way to development is examined through the view of theory of functionalism. Theory of functionalism interprets social bodies as system with interrelated functional parts and they interact to give outcomes. A change in one part leads to a change in other parts to function properly, and the system will seek equilibrium and it has boundary (Gauttam, 2016; Newton, 2017). Local level reform has arrived as a system to eliminate discriminations (i.e. caste based, wealth based, gender based, race based, origin based, religion based, and others) and has to maintain social and cultural harmony, and unity in diversity. So, it becomes necessary to understand how it functions to reduce such issues. It is indispensable to get the pictures of the functional relationship between different concerned local bodies. As discussed, it demands for structural representation rather linear explanation as in the constitution. It is essential to understand

the boundary of the system and what forces maintain the boundary.

### **1.3. Objectives of the study**

The paper helps to have brief reflection and understanding on the concept and perception of decentralization around the world. Further, it gives local level framework of Nepal. It won't only be the framework, but also works to illustrate the different functional components and their interacting relations diagrammatically. Though, autonomous local bodies; municipality and rural municipality has just formed and their years of experience is less, but based on constitution of Nepal 2015 and LGOA-2017, it helps to define their interaction on roles, authorities, capacities and to result outputted performance. In this way this paper would be definitely helpful for students, researchers, professional persons, development workers, related agencies for the understanding and implementing new local level reform.

## **2. METHODS AND METHODOLOGY**

In this review paper, information needed for the study was mostly collected from secondary sources. Different journals, books were reviewed and net surfing was done. Almost fifty national and international journals and reading materials were

downloaded from internet and reviewed thoroughly. These materials are mostly talking about different forms of decentralization, decentralization practice in different countries, necessities of decentralization. To understand the social condition, interpretation of different social theories were done. Among them, structural-functional (functionalism) by Talcott Parsons is reviewed thoroughly. The Constitution of Nepal, Local Self Governance Act 1999, National Life Standard Survey 2011, National Census 2011, Poverty report are repeatedly reviewed to understand and present Nepal's situation and current dimensions related to decentralization. In this way study materials were managed and reviewed.

## **3. DISCUSSION**

### **3.1. Concept of decentralization**

General review of decentralization over the world shows that, it has contextual, timely, and purposeful meaning. Political, administrative, social, cultural, development agendas over the world has defined it in their own way. In the time of 1950's and 60's decentralization is just to be independent from colonization and setting preferred democratic structures and service delivery with participation of marginalized groups in

colonized countries (Conyers, 1983). Later in 70's and 80's decentralization is conceptualized as diffusing authority to lower level; local administration so as to make it responsible, more competent in-service delivery (Cheema, 1983) and increasing public participation in development (Conyers, 1983). At the same time, decentralization is seeming to be more effective in resource utilization during scarcity (Ahmad, 2011). In western societies, liberal democratic belief has taken decentralization as foundation of political constancy, leadership development, welfare and inclusion, responsiveness and autonomy (Smith, 1985). However, it is de-concentration of powers, responsibilities and authorities (Cramer, 2004). Debate on decentralization has been summarized; decentralization as to increase accountability, responsiveness, and transparency, diminish mishandling of powers, granting authority to lower levels, accessibility and representation of minorities, improvement of political cultures of struggle (Faguet, 2011). Decentralization is practiced with different modalities; de-concentration (administrative decentralization), delegation (functional decentralization), devolution (political/democratic decentralization), and privatization.

Furthermore, principle of subsidiarity advocates, functions that can be run efficiently by lower bodies should not be run by higher or greater one. The higher authority rather encourages the lower bodies for coordination and functioning of programs. Higher authority should be limited to those activities which could not be function effectively and efficiently by lower authorities (DP, 2017).

In Nepal, decentralization term is not frequent during ancient and medieval (i.e. Lichhibi, Kirants, and Malla's) period. But their power exercise, authority granting, decision making authority, social reform activities assured the practice of decentralization principle (Dhungel et. al, 2011). Though the practice became limitation, but the panchayat period also had attempted several reforms to develop and strengthen local levels through decentralization (Subedi, 2016). Moreover, decentralization after restoration of multiparty democracy in 1991 was characterized as way to ensure public participation in governance (SAC, 2014). Further, decentralization after the release of constitution 2015 is interpreted as jar: '*Shinhadarbar laai gaaun-gaaun maa puryaune*' (i.e. delivery of service provided by largest central administration to local

level). It is both political and administrative reform. It has transferred large number of authorities to lower level, redistributed resources, sketched political territory, and made lower administrative body autonomous. So, it is devolution model of decentralization. Provision of election of Mayer, Deputy-Mayer, Ward president, female members, Dalit members are political reform. They are able to set law for cultural protection, economy development and social issues. In next part, such wards and municipal are granted with authority to perform services explained by LGOA-2017 and indicated by Schedule-8 and schedule-9 in the constitution is administrative reform.

### **3.2. Perception and existence of decentralization as a key to development**

Several theories related to decentralization are proposed from different scholars. But in gist, all scholars have common perception about decentralization as; it is means to higher efficiency, accountability, proficient operation, and autonomy. Further, public perception of nearer government with better addressing of local issues and their participation from input-output strengthen it (Stigler, 1957).

For instance, Ghana couldn't develop with its potential till 50 years of independence. But, integrated rural development (IRD) (Kostov,

2004) through decentralization is taken as basis for extensive development of Ghana (Kodi, 2007). Goals of decentralization are contextual. In Bolivia, it is the means of collective decision-making process, well exercise of democracy, fulfillment of needs, and overall socio-economic development of the country (GoB, 2010). While goal of decentralization in UK, is to make stability of power among the citizen and government (Blair, 2001). Decentralization is considered to expand public participation in government and maintaining equality for way in to opportunities (GoP, 2011), while to reinforce and deepen democracy by operating it in local level for democratic representation, public participation, accountability, and efficient governance (Romeo, 2003; GoC, 2005). Similarly, Mexico has also taken decentralization as collective decision making and recovery of political attachment and fortifying the development intensity (Munoz, 2006). Decentralization has worked as political representation of minorities and ethnic groups in Ethiopia. It assists to endure necessity and aspiration of diverse population (IFAD, 2004). In case of India and Tanzania, decentralization is selected to enhance less efficient characteristics of public goods (IFAD, 2004; USAID, 2009).

Misuse and improper use of public goods and divisible goods, implementation of laws, detection and protection of rights demands for restructure of public sector (World Bank, 2000; Economist, 2001). Local participation through user group formation and encouragement enhance the management and utilization of natural resource (Ostrom, 1990; Baland, 1996; IFAD, 2001) as they acquire the ideas, skills, and information to manage and preserve the resources as they are dependent on it (Baland, 1996; Agrawal, 1999). Joint management of public sectors and local groups are able to obtain better outputs (Evans, 1996; Ostrom, 1996). It can be supported through examples of joint forest management (IFAD, 2001), fisheries co-management (Pomeroy, 1997), and participatory watershed management (Farrington, 2000). Political practice culture in local level through strengthening of local administration helps to uplift the participation of marginalized groups in decision making process (Crook, 1998; Blair, 2000; Crook, 2001). In case of Brazil, Colombia, and West Bengal; decentralizations have attained way to poverty decline, and increasing regional disparity (Crook, 2001).

In Nepal, ancient and medieval period is characterized by period of socio-economic

reform with established local structure for their development. Later, many attempts were done to reform Panchayat system, but it could not mark such good print in public perception (Dhunegel et. al, 2011). However, LSGA 1999 had come into existence. Though, it was designed to promote autonomy and to increase role of local structures, but it couldn't function more than three years. In the act, ambiguities in authority, its' overlapping, unclear working areas increased contradiction among VDC with DDC as both of them are considered as planner as well as implementer. Programs of DDC were to be approved by higher authority of central government and monitoring and evaluation functions are done by them. So, lower bodies were responsible towards upper ones rather to public. But it practices some sort of decentralization. It advocates for local participations in development activities. So, it is considered as a milestone for the devolution (Rai, 2011).

## Conceptual framework of local government

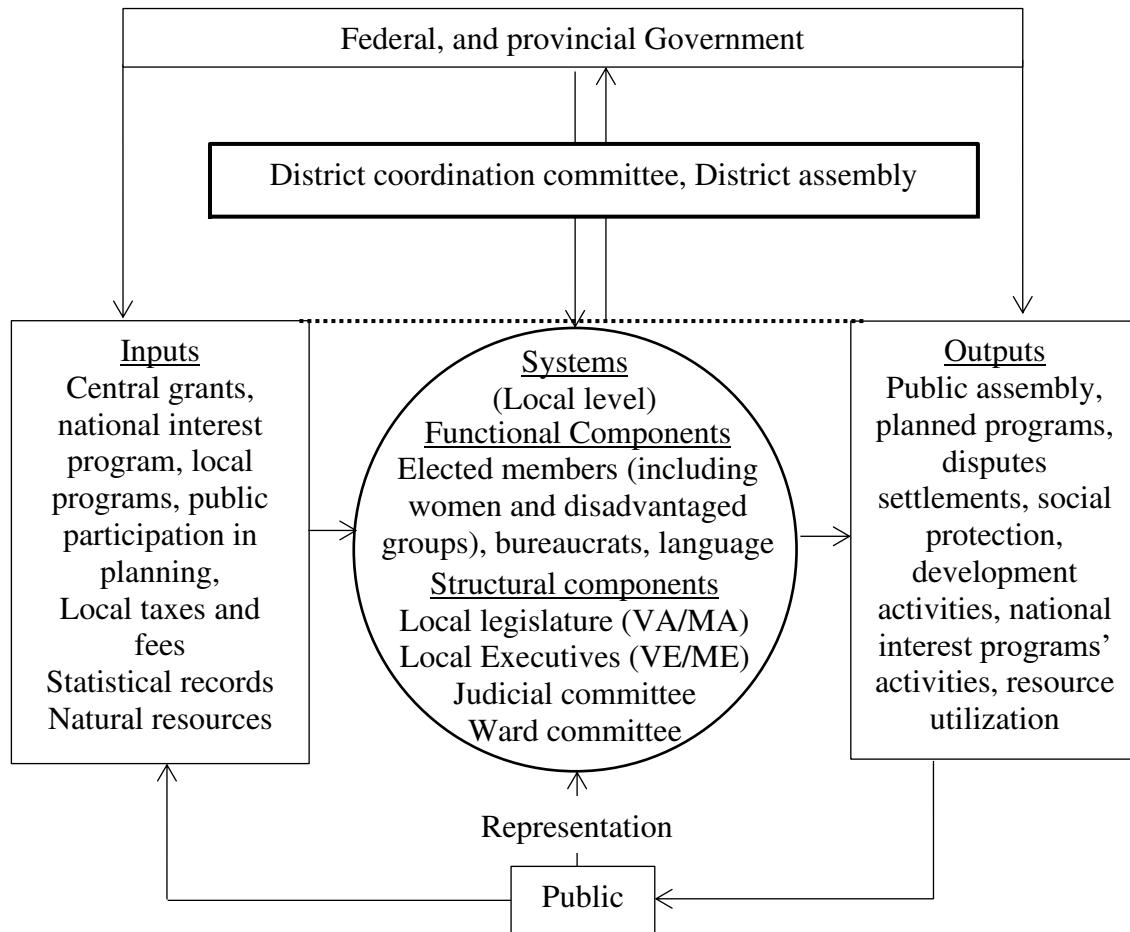


Fig 1: Conceptual framework of local government based on functionalism

### 3.4. Different components of local bodies (village/municipality) and their roles

#### 3.4.1 Functional components

Functional components include elected members and bureaucrats in local level bodies. Elected members are from local level election and bureaucrats are appointed by Public Service Commission. In order to make components inclusive and participatory, the

constitution has provisioned for compulsory participation of women, Dalit, and marginalized community members in the body. Inclusion of backward, disadvantaged groups in development process will help them to work-out on their economic, social and political rights. So, they become able to capacity buildup, use and create chance on the available resources. This is shown to lead minor communities towards livelihood

improvement, economic development, and less vulnerable to natural settings (IFAD, 2016).

In Nepal, only 44.6 percent of people speak Nepali language as their mother tongue followed by Maithili 11.7 percent, Bhojpuri 5.98 percent, Tharu 5.77 percent and so on (NPHC, 2011). These languages speaking communities are not scattered rather they are concentrated in particular place. Over this, Constitution of Nepal (2015) has provisioned for more than one language (Nepali) as its official languages of the state, which should be spoken by majority of the people. This would surely help to increase the service taking ratio of those communities as they will feel easy for service taking. People can easily express their problems to locally elected members and the members could easily understand them and their problems.

### **3.4.2 Structural components**

Local legislature power is in the Village/Municipal Assembly (Article 221). It will operate on the fields, included in the inputs and outputs of the system as in fig 1. It is composed of village assembly with elected members of wards and chairperson/Mayor and vice chairperson/Deputy mayor (Article 222, 223). It formulates local policies (taxes policy, housing policy, advertisement policy,

conservation policy) in cooperation, coordination and coexistence with state level body (Article 226).

Local executive (village executive or municipal executive) will use power persuading with the constitution of Nepal and Federal law (Article 214). Local executive exercises the power in the system as in the figure 1. By utilizing the inputs, they will process plan, policies, and strategies and give outputs to the local people. Local executive consists of a Chairperson/Mayor, a Vice-Chairperson/ Deputy Mayor, elected ward chairpersons, women members (four in village executive and 5 in municipal executive from village/municipality assembly), Dalit or minorities (two in village executive and three in municipal executive from village/municipality assembly) (Article 215, 216). It is striking door of services. So, local people directly interact with the body for services. It has to implement local, state, federation laws, policies and exercises most of the power.

Judicial committee (Article 217) of three members will be coordinated under Vice-Chairperson/Deputy Mayor from village/municipal assembly. It plays role to settle conflicts arose under respective jurisdiction in accordance with law.

Ward committee (Article 222) composed of directly elected ward chairperson, and four other members (including Dalit/minorities and women). It gives letter of recommendation for different executive works for e.g. citizenship, relationship verify and others.

### **3.4.3 Integral components**

District assembly elects district coordination committee. It makes coordination between villages bodies and municipalities within the districts. It monitors development and construction works to make balance development within the districts. It also works as linkage between federal, province levels and local levels (Article 220).

Publics are the input suppliers and ultimate output consumers of the system. They have election power to select the members in the federal, state and local level bodies in democratic ways as guided by the constitution. They have major roles in system operation as inputs are fall under their duties and outputs are their rights.

## **4. CONCLUSION**

As described, decentralization over the world is carried whether for administrative or for political or for both reforms. Its use is very dynamic, contextual, and timely. It was just

establishment of democratic structures early on. Later, diffusion of authority to lower level comes to known. It is summarized to increase accountability, responsiveness, and transparency. In Nepal, though it's not first use of principle of decentralization, the constitution of Nepal has imagined the maximum use of decentralization principles to end all forms of discriminations due to existing systems and parallel development of the country. With the vast diversity in socioeconomic characteristics and lack of power exercising political cultures in local level, new system of decentralization is going to be operated. It is come with provision of transfer of authority to lower level, redistribution of resources, and autonomous lower level administration with compulsory participation of women, disadvantaged groups. In Nepal, LSGA 1999 had come to existence but because of fragile situation of the country and ambiguities in roles and authorities among the concerned bodies, it couldn't function well. The act made lower tires responsible towards upper ones rather to public. As context derived, the constitution of Nepal has provisioned for autonomous system of local bodies with many more authorities concerning with day to day activities. The system consists of functional components and structural components;

directly elected members, bureaucrats, administration language and local legislature, local executives, judicial committee, ward committee respectively. These system works on the perspective of functionalism. Public has power to determine the components of systems through election. Inputs are their

duties and they will enjoy the outputs. Inclusive components of system will help to function efficiently. This shows that their direct control over every aspects of the body. As stated, it will obviously lead towards rural development.

## References

- Ahmad, M.S. and N.B. Talib. (2011). *Decentralization and participatory rural development: a literature review*. Technology University of Malaysia, Malaysia.
- Agrawal, A and J. Ribot. (1999). Accountability in decentralization: a framework with South Asian and African cases. *J. Journal of Developing Areas*. 33:473-502.
- Baland, J.M. and J.P. Platteau. (1996). *Halting degradation of natural resources: is there a role for rural communities?* Clarendon Press for the Food and Agriculture Organization. Oxford, UK.
- Blair, H. (2000). *Participation and accountability at the periphery: democratic local governance in six countries*. *J. World Development*. 1 (28): 87-118.
- Blair, A.(2001). *Speech to the welsh assembly*. Website:  
<http://www.totalpolitics.com/speeches/devolved-politics/devolution/33433/tony-blairs-speechto-the-welsh-assembly.html>. (Retrieved on 22<sup>nd</sup> June 2011).
- Conyers, D. (1981). *Decentralization for regional development: a comparative study of Tanzania, Zambia and Papua New Guinea*. *J. Public Administration and Development*. 1:107-120.
- Conyers, D. (1983). *Decentralization: the latest fashion in development administration*. *J. Public Administration and Development* 3 (2): 91-110.
- Cheema, G.S. & D.A. Rondinelli. (1983). *Decentralization and development: policy implementation in developing countries* (ed). Sage publication. London, UK.

- Cramer, W. (2004). *Local government in the Caribbean*. National Democratic Institute for International Affairs (NDI).
- Crook, R.C. & J. Manor. (1998). *Democracy and decentralization in South-East Asia and West Africa: participation, accountability, and performance*. Cambridge University Press. Cambridge.
- Crook, J., C. Richard & A.S. Sverrisson. (2001). *Decentralization and poverty alleviation in developing countries: a comparative analysis or, is West Bengal unique?* Institute of Development studies. Brighton.
- Dhungel, D.N., M.R. Sapkota, M. Haug, & P.P. Regmi. (2011). *Decentralization in Nepal: laws and practices*. Norwegian Institute for Urban and Regional Research 23.
- DP (DemocraciaParticipativa). (2017). *Principle of subsidiarity*. Website: [http://democraciaparticipativa.net/documentos/Principle\\_of\\_Subsidarity.html](http://democraciaparticipativa.net/documentos/Principle_of_Subsidarity.html) (Retrieved on June 2nd, 2017).
- Economist. (2001). *Survey of India*. The Economist (Published on June 2<sup>nd</sup> 2001).
- Evans, P. (1996). *Introduction: development strategies across the public private divide*. J. World Development 6 (24): 1033-1037.
- Faguet, J.P. (2011). *Decentralization and governance*. London School of Economics and Political Science, London, UK. Website: <http://eprints.lse.ac.uk/37346/.html>
- Farrington, J., C. Turton & A.J. James. (2000). *Participatory watershed development: challenges for the twenty first century* (ed). Oxford University Press. Delhi, India.
- Gauttam, S. (2016). *Contribution of structural-functional theory (with criticisms)*. Website: <http://www.sociologydiscussion.com/social-system/contribution-of-structural-functional-theory-with-criticisms/2842.html> (Retrieved on April 14, 2017)
- GoB (Government of Bolivia). (2010). *Framework law of autonomies and decentralization*. La Paz. Bolivia.

GoC (Government of Cambodia). (2005). *Strategic framework for decentralization and de-concentration reforms*. Phnom Penh. Cambodia.

GoP (Government of Peru). (2011). *Programa de descentralizacion y buengobierno*. Website: <http://www.defensoria.gob.pe/programa-gob.php.html>(Retrieved on 23 May 2011).

IFAD (International Fund for Agriculture Development). (2001). *Rural poverty report 2001: the challenge of ending rural poverty*. Oxford University Press. Oxford, UK.

IFAD (International Fund for Agriculture Development). 2004. *IFAD's performance and impact in decentralizing environments: experiences from Ethiopia, Tanzania, and Uganda*. Rome, Italy.

IFAD (International Fund for Agriculture Development). (2016). *Rural development report 2016*. Quintily, Rome, Italy. 23p.

Kodi, P.M.(2007). *The role of integrated rural development and decentralization in Ghana's development*. Undergraduate Thesis, Mount-Holyoke College. Ghana.

KOSTOV, P. AND L. JOHN. (2004).Integrated rural development-do we need a new approach? Website:<http://www.ideas.repec.org/p/wpa/wuwpot/0409006.html>(retrieved on april13, 2017).

MoAD (Ministry of Agriculture Development). (2013). *Food and nutrition security plan of action a national programme for food and nutrition security*. MoAD, Sinhadarbaar, Kathmandu.

MoLJ (Ministry of Law and Justice). (1999). Local Self-Governance Act 2055. MoLJ, Law Book Management Board. Kathmandu Nepal.

Munoz, L., A. Acosta, & D. Moreno. (2006). *Aspectosbasicos de la decentralization en Mexico*. Instituto Nacional Para el Federalismo y el. Mexico City.

Newton, K. (2017). *Structural functionalism: definition, theory and examples*. Website:<http://study.com/academy/lesson/structural-functionalism-definition-theory-examples.html> (Retrieved on April 15, 2017)

NLSS. (2011). *Nepal life standard survey*. Government of Nepal, Central Bureau of Statistics. Kathmandu Nepal.

NPHC. (2011). *National Population and Housing Census, national report*. Central Bureau of Statistics. Kathmandu, Nepal

Ostrom, E. (1990). *Governing the commons: the evolution of institute for collective action*. Cambridge University Press. Cambridge.

Ostrom, E. (1996). *Crossing the great divide: co-production, synergy and development*. J. World Development. 6(24): 1073-1087.

Pomeroy, R.S. & F. Berkes. (1997). *Two to tango: the role of government in fisheries co-management*. J. Marine Policy. 21(5): 465-480.

Rai, J.K. & N.S. Paudel. (2011). *Discourses of local governance in Nepal: an analysis of legislation, constitutional processes and civil society demands*. Discussion Paper Series 11:1. Website: <http://www.forestaction.org.html> (Retrieved on April 13, 2017).

Romeo, L.G. & L. Spyckerelle. (2003). *Decentralization reforms and commune-level service delivery in Comodia*. Comodia.

SAC. (2014). *National agricultural extension systems in SAARC countries: An analysis of the system diversity*. Dhaka: SAARC Agriculture Centre. Available at: <http://www.sac.org.bd/archives/publications/National%20Agricultural%20Extension%20Systems.pdf>

Smith, B.C. (1985). *Decentralization: the territorial dimension of the state*. George Allen and Unwin. London, UK.

Stigler, G. (1957). *The Tenable Range of Functions of Local Government*. In *Federal Expenditure Policy for Economic Growth and Stability*, ed. Joint Economic Committee, Subcommittee on Fiscal Policy, U.S. Congress, 213–19. Washington, DC: U.S. Government Printing Office.

Subedi, S. L. (2016). *Fiscal decentralization in Nepal, a municipal perspective*. Adarsh Books. Tulsidas Street, New Delhi, India.

TCON. (2015). *The constitution of Nepal*. *Nepal Gazette*. (Published on September 20<sup>th</sup> 2015).

TIN (Transparency International Nepal). (2017). *Annual progress report 2015/16*. Website:  
<http://www.tinepal.org/events/tin-asks-political-parties-for-a-clean-election.html>  
(Retrieved on April 10<sup>th</sup> 2017).

USAID. (2009), *Democratic decentralization programming handbook*. Washington DC. USA.

World Bank. (2000). *World development report 2000/1: attacking poverty*. Oxford University Press. Oxford, UK.

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# LIVELIHOOD DIVERSIFICATION OF REGISTERED TENANTS: A CASE STUDY OF BHAKTAPUR MUNICIPALITY

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## Abstract

*Livelihood diversification is an important strategy by which people may work in different sectors other than primary production activities to achieve sustainable livelihood. It provides flexibility among sources of income, in case primary activities fail. Livelihood diversification of registered tenants from farming to non-farming is rapidly happening, though their primary activity is farming, due to reduced land holding size from land allotment, attainment of full ownership right including transfer right, increased urbanization and co-operatives development. Registered tenants have been provided with use right and control right over the land whereas owners have been empowered with transfer right by land act 1964. Fourth amendment (1997) of the act announced end of dual ownership on land through equal land allotment between owner and registered tenant. This study is about changes in livelihood of registered tenants dwelling in Bhaktapur municipality, cultural city of indigenous newar community. It studies tenants' livelihood diversification focusing on land entitlement through land allotment under tenancy right between owner and the registered tenant. The research work has reflected that changes in land use pattern occurred after land allotment. Tenant family's one of main expenditure item became food. Completely shared tenant household were found ahead in key assets of sustainable livelihood framework (SLF) in comparison to that of partially shared household and not shared at all household.*

## Key words:

Land allotment, livelihood, livelihood diversification, tenancy system

## 1. Introduction:

United Nations' Department for International Development (DFID 1999) has

defined the term livelihood strategies as "the range and combination of activities and

choices that people make in order to achieve their livelihood goals. Livelihood strategies include: how people combine their income generating activities; the way in which they use their assets; which assets they chose to invest in; and how they manage to preserve existing assets and income.” Thus, livelihood comprises the assets, activities, and access to these assets. The typical farm household income can be composed of three components: farm income, off-farm income, and non-farm income. Non-farm income denotes to income generated from non-agricultural sources such as non-farm salary employment, urban-to-rural remittances, rental income, non-farm rural-wage, and international remittances to a household (Ellis, 1999). Livelihood diversification is the process by which household build a miscellaneous portfolio of activities and social support capabilities in their struggle for survival and in order to improve their standards of living (Ellis, 1997). It is important to maintain sustainable livelihoods by providing flexibility among sources of income, in case primary activities fail. It may also satisfy the need to acquire some cash income to purchase essential goods and services like soap, dairy products, organic or chemical fertilizer and to pay school fees, medical/health clinic costs and

government taxes (Berry, 1989a). Land Act 1964 has defined tenants as peasants who till others' land under tenancy conditions. The act was a positive initiative towards the security of tenants and tenancy rights. It protected the tenants against eviction, entitled them to one quarter of the land they cultivated (or the monetary equivalent), granted the legal registration of tenancy and provided for tenants to take their grievances to the law courts. The tenancy right could not be sold but could be transferred to one of the tenant's sons based upon recommendation of the land lord (Clause 26). The fourth amendment of the act in 1997 increased the tenants' entitlement to 50% (Clause 1, Sub-clause 5) and would provide a land entitlement certificate within two years (Clauses 26-c to 26-c3). This formally terminated the situation of dual ownership of land but, in reality the problem of dual ownership of land still exists (Basnet, 2009). More than 163000 registered tenants are not still able to entitle fifty percent of their cultivated land on their name (NES, 2012). So registered tenants have legal recognition of fifty percent land entitlement of tilled land but s/he cannot mortgage or sell or transfer among his sons. In this situation, the registered tenants' property of fifty percent of till land is dead capital. S/he is not

able to convert their “dead capital” into live, functioning “capital” because of a legal complexities created by the government. The registered tenant cannot use the tilled land as collateral for receiving loans from financial institutions. De Soto (2000) has argued that main cause of prevalent poverty in developing world is the inability of the poor people in these countries to convert their “dead capital” into live, functioning “capital” because of a “legal apartheid” created by their governments. The conversion of dead capital into live capital designates the rise of capitalism, resulting economic development. Granting of formal titles to properties owned by the poor people is the way for diagnosis of the cause of underdevelopment. Titling previously untitled assets is an extremely effective way to promote economic development of society as a whole. Much of the population in developing countries (third world) lacks access to credit, not because they lack assets, but because ownership of their property is secured informally or poorly, which prevents the use of property as collateral. The inability to convert dead capital into live capital keeps the developing countries far from benefiting from entrepreneurship development. They are compelled to remain

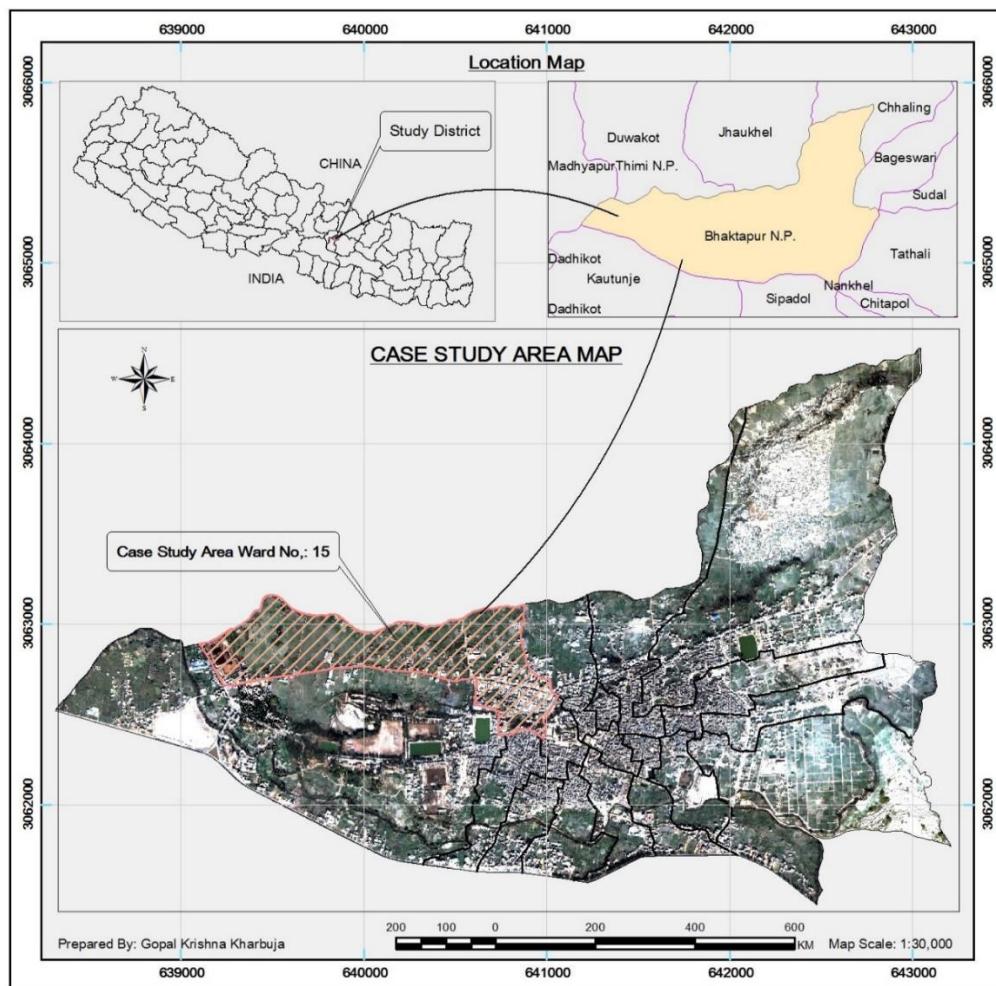
poor (De Soto 2000).

In last 15 years, from 1995/96 to 2010/11, the percentage of agricultural households operating land has decreased as well as average size of agriculture land and number of the parcels per holding has decreased. The number of households that operate less than 0.5 hectares of land has increased by some 13 percentage points. On the other hand, number of households with 2 ha or more cultivated land has decreased from 12 percent to 4 percent within the same period. So, land fragmentation has been increased. The share of farm income in total income has declined from 61 percent to 28 percent while that of non-farm income increased from 22 to 37 percent and that of other sources including remittances have increased from 16 to 35 percent. In the stated period, significant change in the composition of income sources are found. (CBS, 2011).

This study attempts to deal the changes in livelihood strategies focusing on land entitlement through land allotment under tenancy right. It also deals with comparison and related changes brought by their land entitlement as natural capital to household’s other assets and its related income activities before and after land entitlement.

## 2. Methods and methodology

This study has conceptualized livelihood, its diversification, land entitlement and land allotment through literatures, official reports and contextualized it with ongoing Nepalese land allotment process taking Bhaktapur municipality as case study area. The Municipality has been selected as case study site, as it has been well known city with majority of tenants as citizen. The effects of the land reform act 1964 implementation were immensely positive for the livelihood conditions of the local people. A great number of Newar farmers obtained the tenancy right as well as land and more than 95 % farming household of the municipal area are tenants and succeeded to secure their tenancy right [Watchi Yasaku 1980 as cited in (Hachhethu, 2004)]. Com. *Bijukchhe* has claimed that the construction of this new identity ‘*Safasahar instead of fo horsahar*’ of Bhaktapur was possible mainly because of the changes in the livelihood of poor farmers after the land reform movement in 1960s and 70s (Dhakal & Pokharel, 2006).



### Figure: Case study area

Among the wards in the municipality, 15 number ward is selected as case study site because, the ward is extended covering both core city portion as well as farm lands with adjoining *Khasyan Khusun Khola* in north of the ward and *Sallaghari* to *Nagarkot* main road in the south. Major fact is that the ward boundary is still not changed. It is still as same as in that of 1960's. So, it made researcher easy to find the tenants' address of residence as well as farm land from the *Mohilagat* [Tenant Register] prepared around 1960's by District land reform office; Bhaktapur. *Mohilagat* [kept at DLRO] of the study ward shows that there were altogether 283 *mohi* household having residence in the ward. Out of 283 household, only 42 *mohi* household have residence as well as at least a piece of farm land within the ward. So, those 42 household were selected as sampled household for questionnaire by purposive non-random sampling method. Both approaches namely: qualitative and quantitative techniques were adopted to collect and analyze the ground data representing tenants' perception on land allotment, its impacts on livelihood diversification. The similar data collected from the questionnaire was also collected

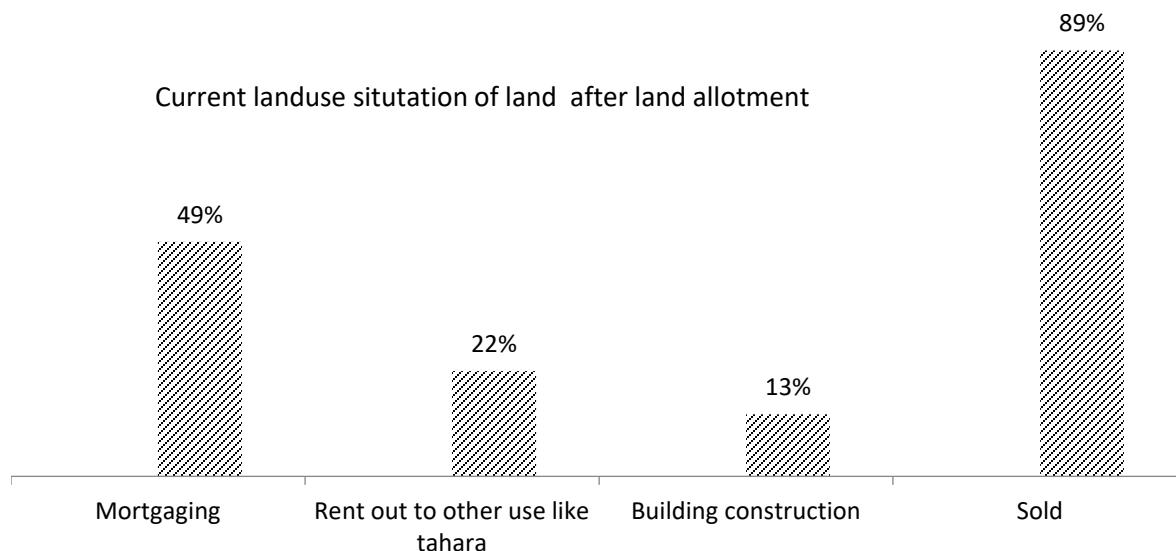
through interview and focus group discussion. The result obtained from the questionnaire was validated using the data obtained from the key informant interview of local peasant leader, government's officials, focus group discussion and field observation of the tenants' livelihood.

### **3. Results and discussion:**

In the study area, it was found that, by obtaining full ownership right over own portion of cultivated land; changes were surrounded in use of obtained land from land allotment and their livelihood strategies. This section presents diversification found in livelihood of tenants focusing land allotment under tenancy right in field study area during study.

#### **Current land use situation of land obtained from land allotment:**

Before land allotment, tenants have no choice other than to till and cultivate the land. But after getting full ownership right over own portion of land through land allotment between owner and tenant, use of such land has been found to be changed than previous one.



Source: Field Survey 2016

Figure 1: Current land use situation of land from land allotment

[Note; generally tenants have more than one parcel shared from cultivated land located in different locations.]

Figure 1 represents that more than three quarter HH (89%) have used some of parcels entitled from land allotment to sell in order to fulfill needs. Similarly, about fifty percent HH (49%) have used few of the land parcels for collateral purpose in order to get loans from financial institutions. Others kept the few of land parcel in agricultural use as before and some used parcel to construct house and residential building.

#### **Investment sector of money resource from sold land**

Through the investment of money obtained from the land selling, tenant HH has diversified its livelihood strategies from farming to non-farming like business, education, building construction etc. Being case study area within Kathmandu Valley and just 13 KM east of capital city, there are numerous fields of investment. In study area too, more than one third HH (38%) have invested the money in house construction and about quarter HH (27%) have invested the money to buy land on another site as shown in Figure. Likewise, 11% HH have chosen higher education sector for investment.

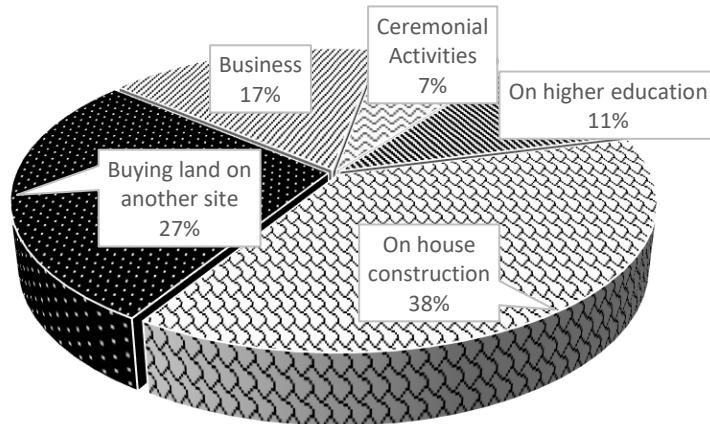
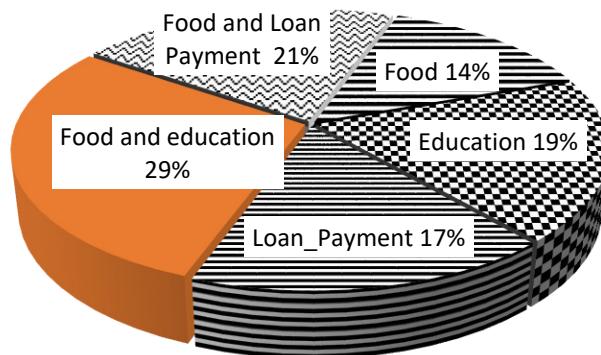


Figure 2: Investment sector

### **Major expenditure items of tenants' HH**

In the study area, tenants' HH expend their income mainly in food, loan payment, education sector.



Source: Field Survey 2016

Figure 3: Major expenditure items

Figure 3 show that more than two third HH (70% HH) expend major portion of their income in food items. In the context of reduced land holding size, the food obtained from their field became insufficient for a

year. So, food related item became one of their major expenditure item.. Similarly, 19% and 17% HH have responded that major part of their income was expended in education and loan payment respectively.

Average monthly expenditure amount in tenant HH is about NRs 36000 for HH of 6 people. Figure 4 shows the average monthly expenditure amount in tenant HH in major

item like food/fuel, education, loan payment and health sector. More than fifty percent of total expenditure is in food and fuel.

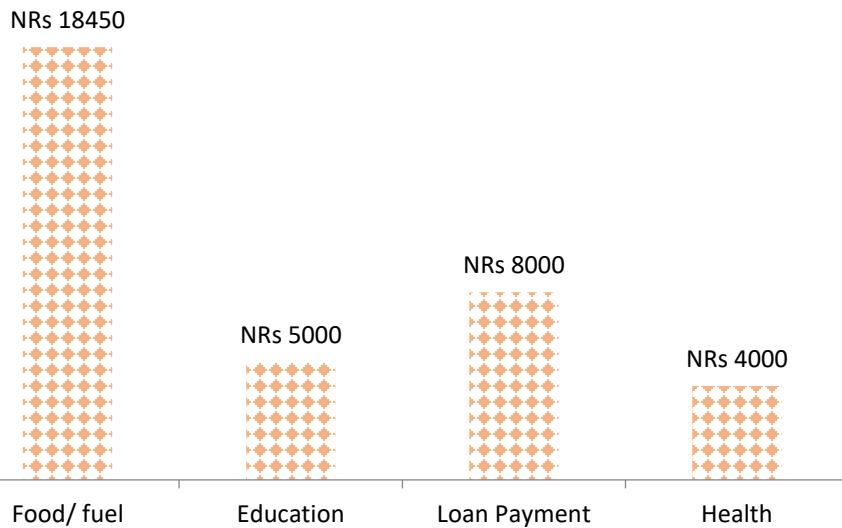
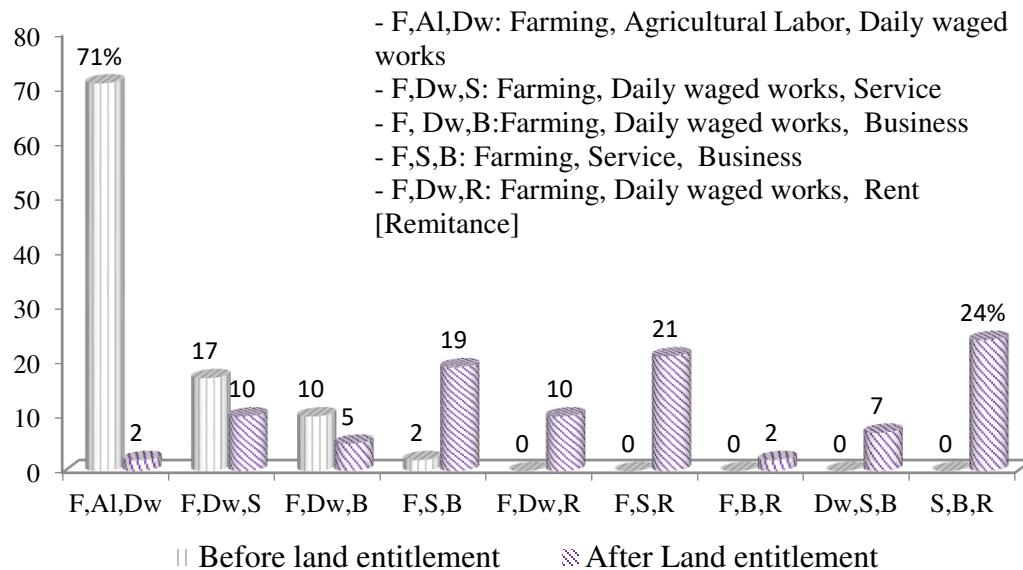


Figure 4: Average monthly expenditure amount in tenant HH

#### **Livelihood strategies of tenant before and after land entitlement:**

As land allotment between owner and tenant reduces land holding size on one hand and increases ownership right at maximum level on another hand, changes in livelihood strategies are found with respect to land entitlement through land allotment. Figure represents the changes in three major livelihood strategies of registered tenant with respect to land entitlement through land allotment in the case study area. Before land

entitlement, near to three quarter HH (71%) had farming, Agricultural labor and Daily waged non- agriculture labor as three major livelihood strategies. But, after, land entitlement through land allotment between owner and tenant, major livelihood strategies has been found as service, business and remittance. About quarter HH (24%) have made service, business and remittance as three major livelihood strategies as shown in figure 5.



Source: Field Survey 2016

Figure 5: Three major livelihood strategies before and after land entitlement

### **Changes in major mechanism of HH income generation source:**

Land entitlement through land allotment between owner and tenant has brought changes in major mechanism of HH income source. Before land entitlement, more than three quarter HH (76%) have farming as major income source for the household. But with the land allotment resulting reduction in land holding size and increased ownership right, near about to fifty percent HH (45%) have made skilled human service as major income source.

Table about quarter HH (21%) has made business as major livelihood income source after land entitlement whereas it was only 7% before land entitlement.

Table 1: Mechanism of HH income Source

<b>Major mechanisms of HH income Source</b>	<b>Before Land Entitlement</b>	<b>After Land Entitlement</b>
	<b>Percentage (%)</b>	<b>Percentage (%)</b>
Agricultural Farming	76%	5%
Skilled human Service	5%	45%
House rent	0	14%
Land rent	0	2%
Business	7%	21%
Waged agricultural labor	12%	0
Car/bus/Tractor	0	12%
Total	100%	100%

Source: Field Survey; 2016

So, their income generations mechanisms have more broaden after land entitlement due to number of increased mechanisms from four fields to six fields and increased regularity in income source.

#### **Differences between land entitled and not entitled tenant's livelihood:**

Land entitled tenants are those tenants having full ownership right over own portion of land through land allotment between owner and tenant using the opportunities provided by fourth amendment in 1997 of land act 1964. In study area, all registered tenants had more than one parcel under tenancy right and about one third HH have completely shared all the

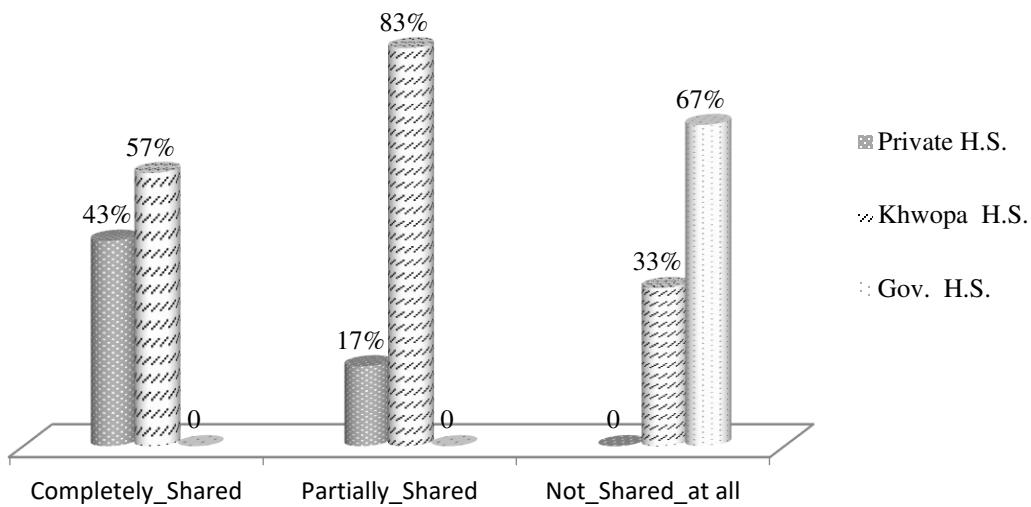
parcels while near to two third HH are partially shared tenants having few parcels still under tenancy situation and few parcels already shared. Likewise, 7% HH in the study area were found to be not entitled at all through the land allotment between owner and tenants. All parcels in such HH were still in under tenancy condition. Thus, livelihood differences based upon the degree of land entitlement have been presented and discussed in terms of sustainable livelihood's key assets.

#### **Human capital:**

Investment in schooling of children directly relates to development of human capital. The

schooling of children in tenants' HH in the study area has been presented in Figure . From the Figure shows that tenant HH have three options choosing government school or Khwopa high school run by municipality or private school for high level schooling of their children. Near to half HH (43% HH) of

completely shared tenant HH have sent their children in private school for high level schooling. But it was found that less than quarter HH (17%HH) of partially shared HH and no HH of not shared tenant HH and household not sharing tenant HH at all have sent in private higher school.



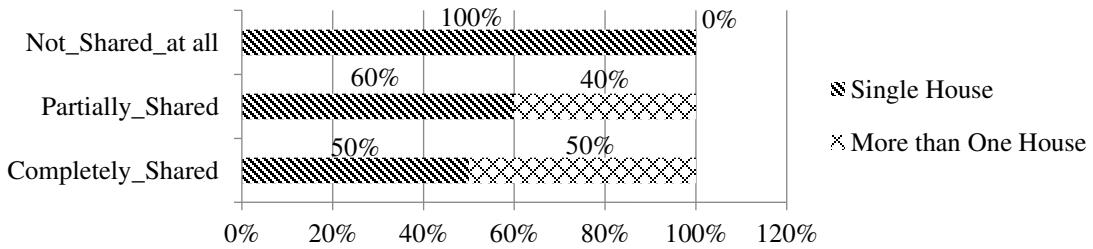
Source: field Survey 2016

Figure 6: High level schooling of children in tenants' HH

Two third HH of not shared at all tenants have chosen government high schools for high school education of their children. No HH of completely shared HH have selected government high schools for high school education of their children. Thus land entitlement by tenant HH increases the investment in human capital development.

### **Physical capital**

In the study area, fifty percent HH of completely shared tenants have more than one residential house whereas all HH from not shared at all tenant have only one residential house. Figure show that more than half HH (60% HH) of partially shared HH have single house for residence.

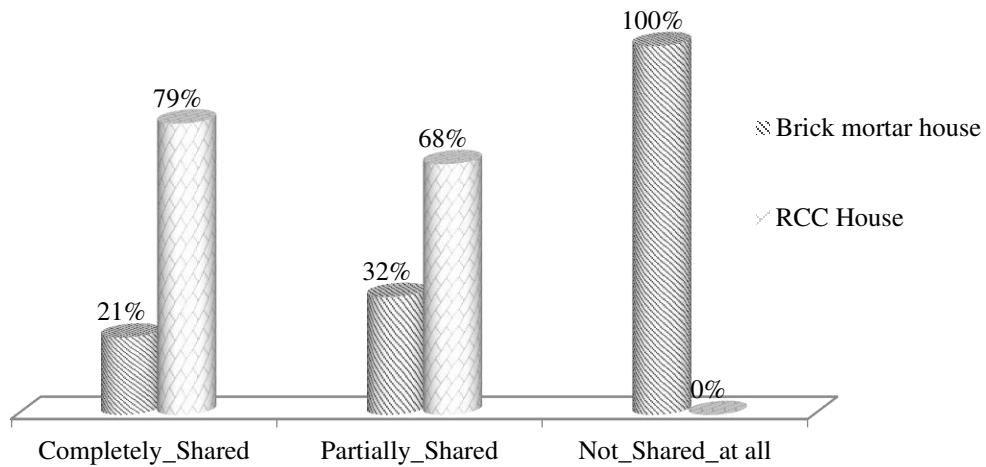


Source: field Survey 2016

Figure 7: Tenant HH with residential status

By building type also, as shown in Figure 7, more than three quarter HH (79%HH) possess reinforced concrete cemented (RCC) house but no HH from not shared at all tenant

possess such RCC house whereas two third HH from partially shared tenants have RCC house for residence.



Source: Field Survey 2016

Figure 8: Tenant HH with residential building types

Thus, degree of land entitlement by tenant HH through land allotment has positive

changed in the improvements of their residence.

Table shows that in the study area, number of major income source for HH of completely shared HH were more than that for partially

shared tenants and not shared at all tenants. One third HH of not shared at all tenant still have farming as major source of income for

livelihood whereas skilled human service, house rent and business are made major source of income for livelihood by majority

Table 2: Major mechanism of HH income sources

Income Source	Completely Shared HH Percentage (%)	Partially Shared HH Percentage (%)	Not-Shared at all HH Percentage (%)
farming	0	4%	33%
skilled human service	36%	48%	67%
house rent	21%	12%	0
Land Rent	7%	0	0
business	14%	28%	0
car/bus/tractor	22%	8%	0
Total	100%	100%	100%

Source: Field survey, 2016

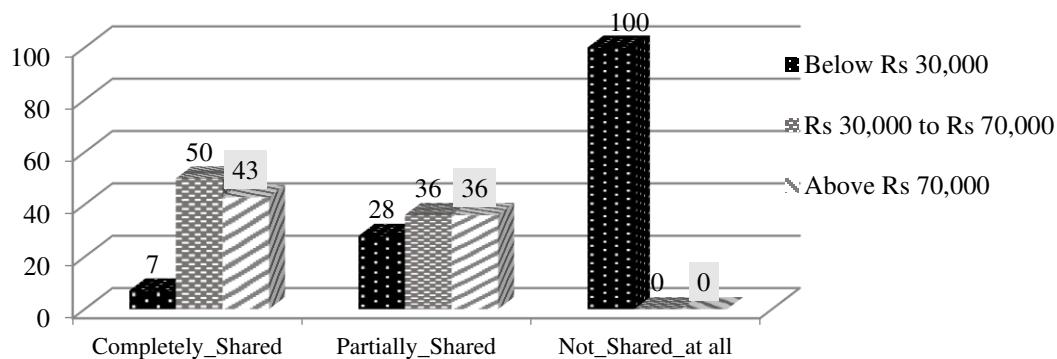
The increased ownership right over own portion of the cultivated land through land allotment between owner and tenant have made the tenants to involve in various types of livelihood strategies in the context of reduced land holding size and rapidly growing urbanization the study area. The final outcomes of the land allotment between

of completely shared and partially shared tenant HH.

owner and tenant have diversified the livelihood from farming to non-farming resulting improvements in their residential status too.

### Financial capital

The monthly income of tenant HH in the study area as shown in Figure is not uniform.

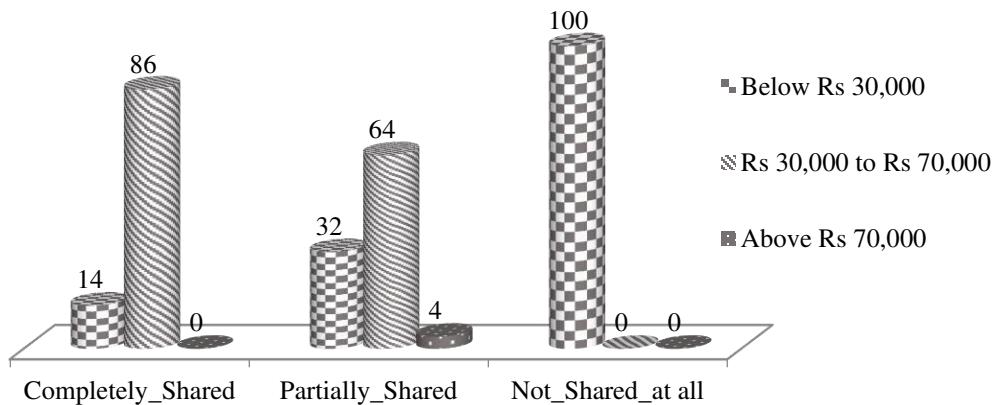


Source: Field Survey 2016

Figure 9: Monthly income of tenants

It varies upon degree of land entitlement. In the study area, half HH (50%) of completely shared tenant HH's monthly income lies in the range of NRs. 30,000 to NRs. 70,000 whereas all tenant HH from not shared at all have monthly income below NRs. 30,000. Likewise, more than one third tenants HH (43% and 36% respectively) from completely shared and partially shared earn more than NRs. 70,000 in a month. Attainment of Full right ownership over own portion of land had increased income level in household.

With the improvement in the income level, expenditure in household is found increased In Figure , more than three quarter of completely shared tenant HH have monthly expenditure of the range between NRs. 30,000 to NRs. 70,000. Similarly, near to two third HH (64% HH) of partially shared tenants spend in the range between NRs. 30,000 to NRs. 70,000 in a month. Likewise, near to one third HH (32%) tenant HH have monthly expenditure of below NRs. 30,000.

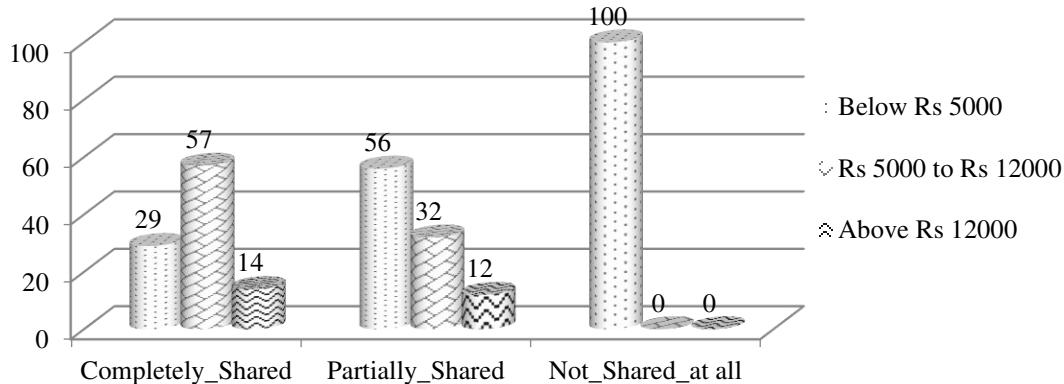


Source: Field Survey 2016

Figure 10: Monthly expenditure of tenants HH

The difference between income amount and expenditure amount generates saving in household. In the study area, all tenants HH do have some saving. The amount of saving was found to be increased on the degree of land entitlement. Figure shows that more than half HH (57%) of completely shared

tenant save amount of range between NRs. 5,000 to NRs. 12,000 in a month whereas 57% HH of partially shared tenant save below NRs. 5000 in a month. Likewise, all HH of not shared at all tenant were abled only to save below NRs. 5,000 in a month.



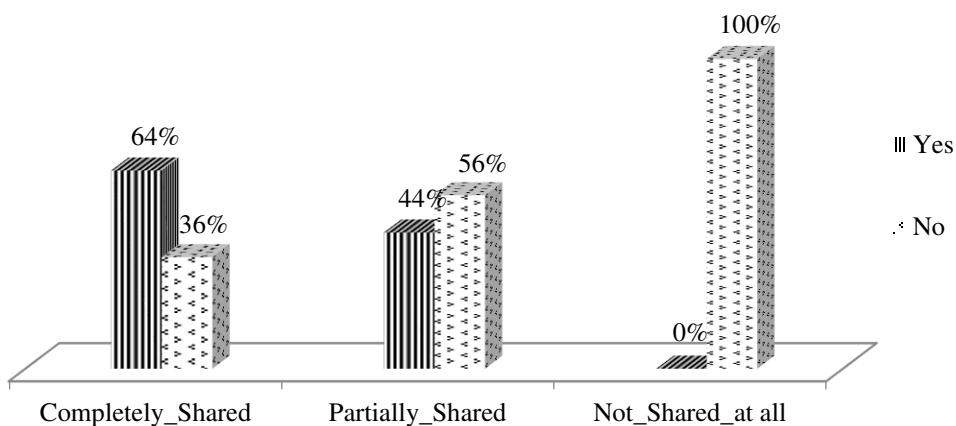
Source: Field Survey 2016

Figure 11: Monthly saving of tenants' HH

### Social capital

Involvement in formal organization by members of tenants' HH in the study area is found to be different on the basis of land entitlement. Figure show that in the study

area, two third HH of completely shared tenant HH have members formally involved in organizations such as school management committee, saving and credit cooperatives development committee.



Source: Field Survey 2016

Figure 12: Involvement in formal organization by tenants' family member

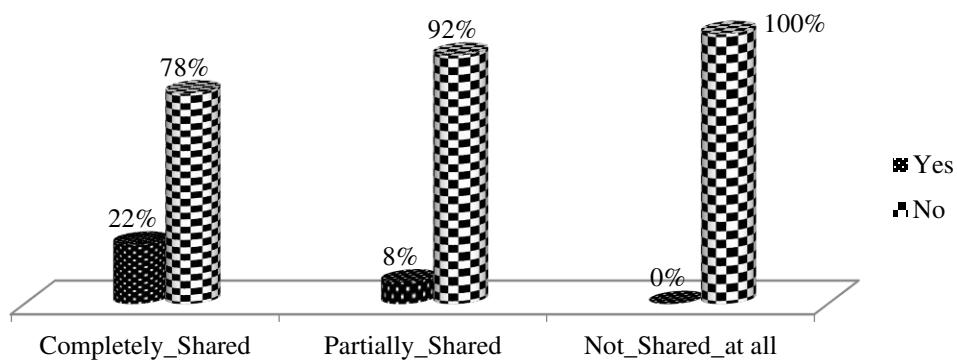
About half HH (44%HH) of partially shared tenants' HH member have formal involvement in such organization whereas

there was found no formal involvement from HH member of not shared at all tenant HH. So, land entitlement by tenant improved

tenants' social involvement resulting their high social capital in the society.

HH keeping dog as livestock was assumed to be of high social status in some extent. Near to a quarter HH (22% HH) of completely

shared tenant HH was found having dog as livestock and only 8% HH from partially shared HH have dog in their house whereas no HH from not shared at all tenant have reared dog as shown in Figure .



Source: Field Survey 2016

Figure 13: Tenants' HH having Dog as livestock

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## References

- Basnet, J. (2009). *Land and Land Tenure Security in Nepal*: CSRC, Land Watch Asia, ANGOC.
- Berry, S. (1989). *Coping with Confusion: African Farmers' Responses to Economic Instability in the 1970s and 1980s*, . Boston: African Studies Centre, Boston University.
- CBS. (2011). Nepal living standards survey.
- De Soto, H. (2000). *The Mystery of Capital: why capitalism triumphs in the west and fails everywhere else*. New York.
- Dhakal, S., & Pokharel, S. (2006). Local Movements, Political Process and Transformation: A Case Study of Bhaktapur Municipality. Occasional Paper, 11.
- Ellis. (1997). *Household Strategies and Rural Livelihood Diversification*. Journal of Development Studies.
- Hachhethu, K. (2004). Municipality Leadership and Governance: A Case Study of Bhaktapur. Land Act 1964. Nepal Government
- NES. 2012. Nepal National Engagement Strategy Paper.

## IMPACT OF LABOUR MIGRATION ON LAND USE CHANGE, A CASE OF NEPAL

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### Abstract

*Labour migration is common phenomena in the developing and under developed countries. The active labour forces are migrating from Nepal for employment. Nepal is one of the top five countries in the world that contribute in the national economy with remittance. This paper focusses on how labour migration and remittance plays role to change the land use decision at unit (parcel) level. The case study was carried out in the Waling Municipality of Syangja district, mid-hill area of Nepal. Questionnaire survey, interview, focus group discussion and observation technique were applied for identifying the role of labour migration and remittance on land use decision. Land Use and Land Cover (LULC) change in the study area was discovered with land use map of 1998 and land use map of 2014. The change was also conformed to the orthophoto of 1996 and remote sensing imagery of 2014 (worldview-2) using the visual image interpretation technique supported by field observation. The change in land use was also verified based on the parcel fragmentation data and building approval data by respective survey office and municipality. The result indicates that the relation between land use change and labour migration is positively correlated. Labour shortage and remittances plays major roles over the land use decision at household level. Bar land is getting changed to barren bushes and ultimately to forest, forest and built-up area is expanding and cropping pattern and crops are also changing. It is concluded that the decision on land use at the individual land unit (parcel) level changes due to the significant amount of labour migration in the mid hill area of Nepal.*

### Keywords

*Land use change, labour migration, land use decision, remittance*

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## 1. Introduction

Labour migration is generally defined as a cross-border movement for the purpose of employment in a foreign country (Migration, 2010). It can also be defined as the movement of persons from their home state to another state for the purpose of employment (Karubi, 2012). People move for migration to improve their lives and the lives of their family to learn skills and to gain new experiences, to find better jobs, and to reduce insecurity and disaster (Kollmair & Hoermann, 2012). More than 15 million people or about 3 percent of total population live outside of their birth place or country (Ratha, Mohapatra, & Silwal, 2011). According to report published by World Bank in 2011, top remittance recipient country is India followed by China, Mexico, Philippines and France. Countries like Tajikistan (35 percent), Tonga (28 percent), Lesotho (25 percent), Moldova (31 percent) and Nepal (23 percent) are even contributing to their national economy (Ratha et al., 2011). At the international level, migration is not seen only as a risk factor (e.g. against national security and human right) but also recognized as a factor that enhances the potential benefits in the countries involved in sending and receiving populations (Kollmair & Hoermann, 2012).

Remittance is the important sources of income of the household, particularly for the developing countries. Remittance is defined as the sum of selected balance of payments flows (Alfieri & Havinga, 2006). Remittances improve living conditions, education and health in the communities of origin. It helps to provide protection against difficulties. It also contributes to reduce the poverty of the home country (Alfieri & Havinga, 2006; Kollmair & Hoermann, 2012).

Assessment of the impact includes the process of analyzing, monitoring and managing the planned and unplanned policies, programs, projects and any change processes raised by those interventions (Wehrmann, 2011). Land use change occurs with different causes such as local condition, social factor, site specific factor, family condition etc. (Briassoulis, 2010; Davis & Carr, 2010; Dijk et al., 2013). Due to labour migration at family level: income, education, employment, attitudes etc are changed, whereas at societal level: population structure and population dynamics, income, technology are changed which consequently effect on the land use (Alfieri & Havinga, 2006; Davis & Carr, 2010).

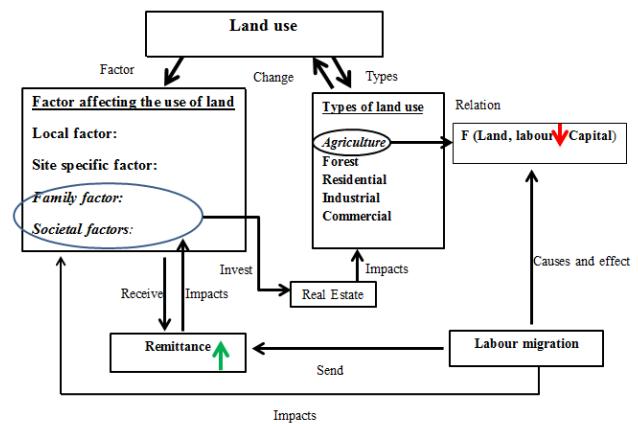
Labour migration in developing countries has been increasing globally from the past few years(Alfieri & Havinga, 2006). Due to lack of the opportunity and employment at home and at the same time availability of the opportunity at abroad, people are migrating (Jha, 2010; K. Paudel, S. Tamang, & K. K. Shrestha, 2014). Migration of labour helps to enhance the economic status of the family (Alfieri & Havinga, 2006).

## **Conceptual Framework**

The conceptual framework of the research is shown in the figure -1. The land can be used for different purposes such as agriculture, forest, residential, industrial, commercial etc (Land use Policy 2012). However the use of land is influenced by many factors such as local factor, site specific factor, family factor and social factor (Briassoulis, 2010). Out migrated labour gains the skill and knowledge, so the education level and attitude at family level is improved as well as influences (Briassoulis, 2010). So, these factors supports to change the existing land use decision.

The agriculture land and its productivity is the function of land, labour, capital, and skills (Colin Thirtle, Linb, & Piessec, 2003). With the migration of the labour the amount of labour forces decreases, at the same time

there is increase in the capital with remittances. When society gets money then they invest in different sector like real estate, home accessories, education, health etc these also directly or indirectly improve the family and societal factors. Consequently, helps to change the land use decision at individual land unit level.



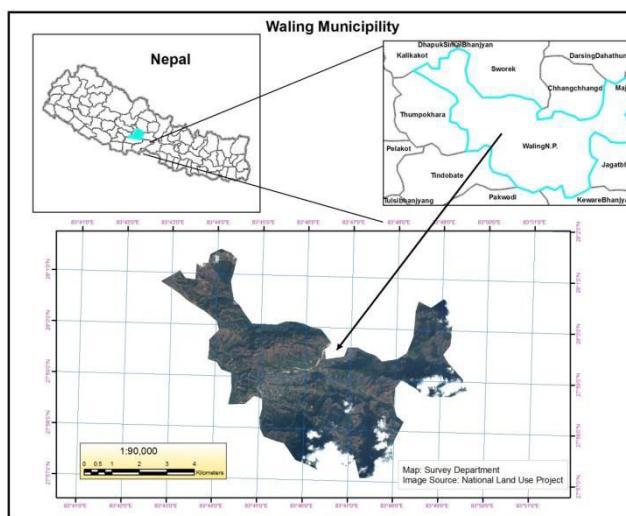
**Figure -1: Conceptual framework**

## 2. Methods

The case study was carried out in *Waling* municipality of *Syangja* district. This district lies in the Western Development Region of Nepal. This is one of the hilly district, the region has the highest number of absent population(Kollmair & Hoermann, 2012). Due to this reason, *Syangja* was selected for the study. In this district among 68881 household 34207 household have at least one member in foreign employment, the data shows that 49.66 percent household have

their member in foreign employment this data justify for the case study site (S. office, 2014).

Among Syangja district, Waling Municipality was selected because this municipality is productive among other VDC/Municipality in Syangja District (D. A. office, 2014). Both urban, semi urban and village area are available so the phenomena of land use with labour migration can be observed on all types of land use in this area. The map of study area is shown in the figure -2.



**Figure-2: Location Map of Study area**

### 3. Methods adopted

Methodology adopted for this study is shown in the figure-3. The figure is divided into two parts, upper and lower bounded by dotted line. The upper part above the dotted line

shows the LULC change detection and lower part, below the dotted line show the cause behind LULC change specially focusing on labour migration, remittances and land use decision.

The land use change between 1998 and 2015 was distinguished with land use map. The LULC between 1996 and 2014 was also identified using visual image interpretation technique by orthophoto 1996 of 0.5m resolution and remote sensing image of 2014 of 2m resolution based on the field observation during the study period. The parcel fragmentation data of the major area of the municipality (i.e. ward 1, 2 and 3) was collected from the Survey office *Waling* in five years interval. The building approval data of one year interval was also collected from the *Waling* municipality. Based on these data the land use, land cover change was noticed. From the questionnaire the data related with *socioeconomic status of the household, level of labour migration, land use change, livelihood strategy, land use decision after labour migration, availability of labour, remittances and investment, awareness about government policy* was collected and analyzed. The similar data collected from the questionnaire was also collected through interview and focus group discussion. The result obtained from the

questionnaire was validated using the data obtained from the interview, focus group discussion and observation.

Finally, the impact of labour migration on land use decisions and the cause behind such change was identified using the both types of data and assessment was done whether the land use was changed with labour migration and remittance.

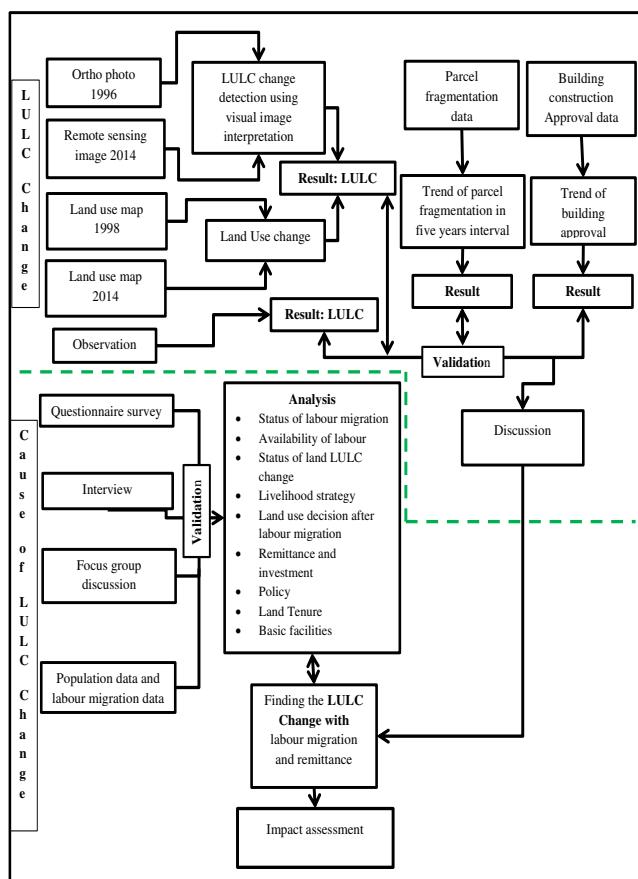


Figure-0: Data analysis and validation methodology

#### 4. Results and discussion

In the study area majority of the house are made with the mud, stone and RCC. All most all household having the child used private school for schooling. All household have the land ownership hence the security of the tenure can be considered as high. Irrigation facilities is available to all *Khet* land in the study area. The irrigation system is not modern but they are using irrigation from past many years. All basic facilities road, telephone, drinking water etc are available in their house.

The population is increasing in study area where as the population of the district is decreasing. The cause behind such change in the population is the migration of the people from the nearby VDC of same district and adjoining VDC of surrounding district.

The foreign employment is high and increasing. Majority of the household had at least a member in foreign employment and receiving remittances. Among the migrated labour maximum are unskilled. Agriculture and foreign employment are the major livelihood strategy of the household and the satisfaction over the livelihood strategy is high. But who are not satisfied with their livelihood want to go for foreign employment.

The land in the low altitude (*Khet*) of the study area is productive and three crops are possible in this area. Most of the household produce sufficient food for themselves. Amount of production per unit area, where they are still harvesting is increasing due to the new technology, hybrid seed and fertilizer but overall production is decreasing because of the labour unavailability and the land left barren. This area is converting to urban area due to the migration of the people from the high altitude. But land in the upper part (particularly *Bari*) is less productive comparatively and specifically converting to barren. Plantation of *Kimbu* is integrated with livestock farming in *Bari* land.

The Gulf countries are the major destination area of labour. Maximum households are changing the land use decision at household level. The major cause behind such change is the unavailability of labour and changing the agriculture based livelihood strategy to the foreign employment based livelihood strategy. The cause behind labour unavailability is the foreign employment and construction labour. They are facing labour shortage from past 5 to 10 years. The strategy they adopt after the labour shortage is to leave land as barren or change in cropping pattern.

The respondents are not assured to run their agriculture up to twenty years and most of them agree that land use change in the future is obvious. With remittance most households wanted to build new house and buy land in urban area. Most of them want to buy land in *Waling* Municipality; furthermore, they want to buy land in the *Butwal*, *Pokhara* and *Kathmandu* city. The remittance is also invested in the home accessory, education and health etc which shows that overall life status is increasing.

Remittance plays major role on parcel fragmentation and due to unplanned fragmentation productive agriculture land is converting to urban. The price of the land in the urban area is high and still increasing. Government does not have clear policy to stop the barrenization of the land. Existing Land Use Policy has not been implemented yet.

Young and educated people/youths do not want to involve in agriculture sector. They want to go in the foreign employment. Society is also encouraging for the foreign employment than doing agriculture. Most of them do not have information on the soft loan and subsidies in the agriculture sector. These programme are still not attracting young people to do agriculture in better way. Some

people are doing better work in agriculture after returning from foreign employment. They are involving in livestock farming.

The visual interpretation of the orthophoto of 1996 and Remote Sensing Image 2014, studying the present land use map 2014 and *Biraha* of field book 1979 and field observation, show the significant change in land use. The urban area is significantly increased; *Bari* land is converting to barren and barren is changing to bushes and forest. Parcel fragmentation in the urban area is increasing every year and building the new home is also increasing.

## **5. Conclusion**

The trend of labour migration and land use change is increasing. Labour are not easily available to agriculture farm. Migration is the main caused behind the labour insufficiency. Foreign employment is observed as the important livelihood strategy in addition to agriculture due to which agriculture practices have been found going down. Remittances is playing vital role to enhance the overall living standard of migrated household. This impact to the land use decision at parcel level.

Received remittance invested to build new house, to buy land, home accessory, for education and health. Remittance invested in housing is consuming extra labour in local market; also the wage of labour cost in construction is more than agriculture. As a result agriculture is facing the extra labour shortage and production cost is going to be high. In result, people are changing the land use decision.

Cultivable area in high slope with high altitude i.e. *Bari* land is getting changed to barren, forest area is increasing. Low sloppy area with low altitude i.e. *Khet* land is converting to built-up area hence built up area is expanding and cropping pattern and crops are also changing. This concludes that the cultivation area is mainly affected.

Some positive works was also observed in agriculture after returned from foreign employment; this shows the optimistic step in agriculture after migration. These conclude the labour migration is impacting on land use. The result indicates the positive correlation between land use change and labour migration

## References

- Agarwal, C., Green, G. L., Grove, M., Evans, T., & Schweik, C. (2000). *A Review and Assessment of Land-Use Change Models Dynamics of Space, Time, and Human Choice*
- Alfieri, A., & Havinga, I. (2006). Definition of remittances.
- Aryal, J. P. (2008). *Assessing the impact of remittance income on household welfare and land conservation investment in Mardi Watershed of Nepal: A village general equilibrium model.*
- Bhattarai, P. (2005). *Migration of Nepalese Youth for Foreign Employment: Problems and Prospects*. Kathmandu, Nepal: Youth Action Nepal (YOAC).
- Briassoulis, H. (2010). Factors Influencing Land-Use and Land-Cover Change. *Land Use, Land Cover and Soil Sciences*, 1, 1-9.
- Brown, D. G., Walker, R., Manson, S., & Seto, K. (2005). *Modeling Land-Use and Land-Cover Change*.
- CBS. (2009). Report on the Nepal Labour Force Survey 2008. Kathamndu: United Nations Development Programme, International Labour Organization.
- CEDAW. (2005). Claim & Celebrate Women Migrants' Human Rights through CEDAW.
- Colin Thirtle, Linb, L., & Piessec, J. (2003). *The Impact of Research Led Agricultural Productivity Growth on Poverty Reduction In Africa, Asia And Latin America*. Paper presented at the International Association of Agricultural Economists, Durban.
- Consulting, H. E. (2010). Land Use Change: Science and Policy Review. *Land Use Change: Science and Policy Review • Hart Energy Consulting • CABI*.
- Davis, J., & Carr, D. L. (2010). *The Effects of Migrant Remittances on Consumption in Highland Guatemala*. Paper presented at the The European Association for Population Studies, Vienna.
- Devi, P. I. (2012). Dynamics of Farm Labour Use -An Empirical Analysis. *Agricultural Economics Research Review*, Vol. 25(No.2), pp 317-326.
- Dijk, M. v., Hilderink, H., Rooij, W. v., Rutten, M., Ashton, R., Kartikasari, K., & Lan, V. C. (2013). *Land-use change, food security and climate change in Vietnam*
- Employment, D. o. F. (2013/2014). *Labour Migration for Employment,A Status Report for Nepal: 2013/2014*. Kathmandu: Department of Foreign Employment/ Government of Nepal.
- Finance, M. o. (2014). *Budget Speech of Fiscal Year 2014/15*. Kathmandu: Ministry of Finance.

- Ghimire, S. (2011). *Assessing the Role of Land Tenure in Hydropower Development for Social and Environmental Effects.* (Msc Land administration), The University of Twente, Enschede, The Netherlands.
- Government, N. (2015). <http://www.dofe.gov.np/new/pages/details/19>. Retrieved 2015/03/26, 2015
- Hostettler, S. (2007). *Land Use Changes and Transnational Migration: The Impact of Remittances in Western Mexico.* (Bachelor of Science), University of Aberdeen, RoyaumeUnidenationalitésuisse et originaire de Albligen, Aberdeen,.
- ILC. (May 2012). National Engangment Strategy Framework.Kathmandu.
- Jha, H. B. (2010). A Rapid Situation Assessment on Agriculture and Migration in Nepal (pp. 1- 61). Kathamndu: International Organization for Migration Baluwatar, Kathmandu, Nepal.
- Kabba, V. T. S., & Li, J. (2011).Analysis of Land Use and Land Cover Changes, and Their Ecological Implications in Wuhan, China.*Journal of Geography and Geology*, Vol. 3(1), 104-118.
- Kansakar, V. B. S. (2005). International Migration and Citizenship in Nepal (pp. 86-119). Kathmandu.
- Karubi, E. (2012). *Immigration Headquarters, Ministry of Home Affairs.* Tanzania: Ministry of Labour and Employment.
- Khadka, S. B. (June 2010). Assessment of Food Security and Nutrition Situation in Nepal
- Khanal, N. R., & Watanabe, T. (2006). Abandonment of Agricultural Land and Its Consequences; A Case Study in the Sikles Area, Gandaki Basin, Nepal Himalaya. *Mountain Research and Development*, 26(1), 32.40.
- Khatri, S. K. (2007). *Labour Migration, Employment and Poverty Alleviation in South Asia.* Paper presented at the the Regional Seminar jointly organized by South Asia Centre for Policy Studies (SACEPS) and Friedrich Ebert Stiftung (FES),, Kathmandu.
- Kollmair, M., &Hoermann, B. (2012). Labour Migration in the Himalayas Opportunities and challenges. 1-6.
- Kothari, C. R., &Garg, G. (2014).*Research Methodology methods and Technique.* New Delhi: New age international (p) limited.
- Labour and Social traind in Nepal.(2010). Kathmandu.
- Lambin, E. F., B.L. Turner, H. J. G., Agbola, S. D., Angelsen, A., Bruce, J. W., Coomes, O. T., . .

- . Xu, J. (2000). The causes of land-use and land-cover change: Moving beyond the myths. *Global Environmental Change, 11* (2001) 261–269, 262-269.
- Lambin, E., & Geist, H. J. (2007). Causes of land-use and land-cover change.
- Maharjan, A., Bauer, S., & Knerr, B. (2013). *Migration of Labour and Its Impact on Farm Production in Nepal*. Paper presented at the Working Paper 4, Kathmandu.
- Migration and changing land uses, human settlements and water*. (2009). Paper presented at the 5 th world water forum, Istanbul, Turkey.
- Migration, I. o. o. (2010). *Migration and Labour*. K. office, D. A. (2014). *Annual agriculture development programme and Statistical book*. Syangja: District Agriculture office.
- office, S. (2014). *District profile*. Syangja: Statistical office, Syangja.
- Pandit, S. (2011). *Forest Cover and Land Use Changes: A Study of Laljhadi Forest (Corridor), Far-Western Development Region, Nepal*. (Master's Degree in Environmental Science), Tribhuvan University, Kirtipur, Kathamndu.
- Paudel, K. P., Tamang, S., & Shrestha, K. K. (2014). Transforming Land and Livelihood: Analysis of Agricultural Land Abandonment in the Mid Hills of Nepal. *Journal of Forest and Livelihood, 12*(1), 11-19.
- Paudel, K., Tamang, S., & Shrestha, K. K. (2014). Transforming Land and Livelihood: Analysis of Agricultural Land Abandonment in the Mid Hills of Nepal. *Journal of Forest and Livelihood, 12*(1).
- project, N. l. u. (2012). *National Land Use policy*. Kathmandu: Ministry of Land Reform and Management.
- Pyakuryal, B. (2010). Labour and social trend in Nepal: National Planning Commission Government of Nepal, International Labour Office ILO Country Office for Nepal.
- Rajasekar, S., Philominathan, P., & Chinnathambi, V. (2013). *Research Methodology*. Tamilnadu, India.
- Ratha, D., Mohapatra, S., & Silwal, A. (2011). Migration and Remittance factbook (2 ed.). Washington DC.
- Sharma, M. (2014). Theories of Agriculture: Locational Theories of Agriculture. Retrieved 2015-7-2, 2015
- Shrestha, P. B. (2009). Contribution of Foreign Employment and Remittances to Nepalese

Economy.

- Upreti, B. R., Sharma, S. R., & Paudel, S. B. (2014). *Food security in the post conflict Nepal: Opportunity and challenges* (B. R. Upreti, S. R. Sharma & S. B. Paudel Eds. fristed.). Kathmandu: Nepal Centre for Contemporary Research (NCCR) and Department of Development Studies, School of Arts, Kathmandu University.
- Wangui, E. E. (2003). *LUCID's Land Use Change Analysis as an Approach for Investigating Biodiversity; Loss and Land Degradation Project(Links between Gendered Division of Labour and Land Use)*. San Francisco State University.
- Wehrmann, B. (2011). Land Use Planning Concept, Tools and Applications. Eschborn/Germany: GIZ land policy and management.
- Wu, J. (2008). Land Use Changes: Economic, Social, and Environmental Impacts. *Agricultural & Applied Economics Association (AAEA)*.
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# MODERNIZATION AND INCLUSIVE RURAL TRANSFORMATION: STRATEGIES FOR RURAL DEVELOPMENT

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## Abstract

*Rural development is a complex process aiming to improve economic, social, cultural and political aspects of rural people. In Nepal 83% of population are living in rural areas. So, for overall development of country rural development is essential. Different strategies have been applied for rural development in Nepal. This paper has tried to answer the questions of; what is the concept of modernization and inclusive transformation? How these strategies could help in Nepalese rural development? this paper discussed about modernization and inclusive transformation along with their conceptual framework. Review of secondary information was done to find their relevancy to Nepal. This paper concluded that modernization and inclusive rural transformation are not new to Nepal; both can contribute to rural development but some reformation is required to make relevant to Nepal. Combination of multiple strategies is best for rural development of Nepal.*

**Key words:** Inclusive rural transformation, modernization theory, rural development, theory of justice

## 1. INTRODUCTION

Rural area is a sparsely populated area, outside of the limits of a city or town or a designated commercial, industrial, or residential centre. Rural areas are characterized by farms, vegetation and open spaces. Rural people are closely related to nature. Development is a process of continues rise

in the capability of the people to control their present and future well-being (Cuyno, et al., 1982). But rural development is a complex multidimensional process to improve the quality of life of rural people. It deals, not only with economic but also social, political, cultural and environmental aspects of rural people which govern their life. It focuses on poorest of the poor. According to Robert Chamber (1983)

“Rural Development is a strategy to enable a specific group of people, poor rural women and men, to gain for themselves and their children more of what they want and need. It involves helping the poorest among those who seek a livelihood in the rural areas to demand and control more of the benefits of rural development. The group includes small scale farmers, tenants, and the landless.” So, from above definition it is clear that rural development aims to improve capacity of rural people to understand their problem, find solution and implement it for their sustainability. It is not working for people but working with people.

Rural development is multidimensional in nature. Rural development focuses on infrastructure, technology, health, education and economic activities to change rural life into progressive way of living. Rural development aims to diversify rural livelihood opportunity to increase their self-reliance.

Different trends and changes have been occurring in rural development since 1950s. Simply we can characterize 1960s as modernization, 1970s as state-led intervention, 1980s as market liberalisation; 1990s as participation and empowerment and 2000s as poverty reduction strategy papers.

However popular ideas and practical impacts on rural development policies did not follow the same pattern. Ideas that first appear in one decade often gain strength in following decade and may have impacts in policies 10-15 years later.

Nepal is under developed country. Nepal has 460 rural municipality out of 753 local units representing large portion of country is rural and development progress of those rural areas very slow in comparison to municipal areas. So, for overall development of the country rural development is very essential. In Nepal rural development started in 1953 as village development programme before the first five-year plan. After that it has been given emphasis in every periodic plan. Different programmes like block development, basic need, regional development, integrated rural development, area development etc. have been launched, but they remain ineffective to develop rural areas.

In the context, this paper will discuss about two strategies modernization and inclusive rural transformation and their relevancy in Nepal. Both of these strategies are not new to Nepal. Typically, the paper has discussed to answer the questions of; what is the overall concept of modernization and inclusive rural

transformation as strategies of rural development? How these strategies are suitable and relevant to Nepalese scenario? As described, the paper is useful for development actors, readers, students, and others interested in rural studies.

## **2. METHODS AND METHODOLOGY**

Books and articles were reviewed with content analysis related to modernization, inclusive development and rural transformation. Internet surfing is done to access those materials.

## **3. THEORETICAL PERSPECTIVE**

### **3.1. Modernization theory**

Modernization theory is a theory used to explain the process of modernization from traditional society to modern one. The theme around the transformation of traditional agriculture is well illustrated by Rostow in his model of “Stages of Economic Growth” (Rostow, 1960). In his model he illustrates that for traditional society to become modern one has to pass through different stages: traditional to pre-condition to take off to maturity to mass consumption stage. The literature points out that the prerequisite for poor countries to modernize was that they should follow the development path of

developed countries (Graaff, 2001). In this respect, developing countries had to ensure that competitive industries were diffused into their economies, and had to encourage modern attitudes, values, norms and an entrepreneurial spirit (Pavlich, 1988). It was assumed that application of western science and technology in order to increase production was essential for development. It argues that the main cause of under development was internal and relation with developed country was very beneficial for development. Based on it, community development and green revolution are some of the approaches for rural development. These approaches are successful in some parts (green revolution was huge successful in Punjab, India) while unsuccessful in other parts (in Nepal green revolution was not successful because of its more emphasis to inputs).

Modernization theory provides useful insights like use of modern technology to increase agriculture production but there are many critiques to modernization theory. First, Nabudere (1997) points out that “development” as a strategy of modernization; has failed to meaningfully take place in the majority of the developing countries and is no longer in dispute. The majority of the populations in developing

countries still live in poverty (Graaff, 2001) and modernization did not solve all their problems. Modernization theory assumed that nations are homogenous as far as culture and styles of living are concerned. The theory ignored the fact that countries are different and may also have different cultures (Duncan, 1996; Graaff, 2001). In addition, Nabudere (1997) argues that modernization imposed the cultures of the European countries on poor countries without their consent, thus hindering the emergence of different development models that could have emerged from these different cultures. Baran (1996) avers that the technology that is being diffused into poor countries is considered inappropriate and thus causes them to be underdeveloped. There seems to be evidence that some technologies diffused by modernization agents, such as Multi-National Companies cause unemployment, and thus perpetuate poverty in developing countries (Lall and Streeten, 1977; Hood, and Young, 1979).

### **3.2. Theory of justice**

John Rawls (1971) through his theory of justice, attempts to establish a reasoned account of social justice through the social contract approach. Rawls begins his work with the idea of justice as fairness. He

identifies the basic structure of society as the primary subject of justice and identifies justice as the first virtue of social institutions. He considers justice as a matter of the organization and internal divisions of a society. The main idea of a theory of justice asks, what kind of organization of society would rational persons choose if they were in an initial position of independence and equality and were setting up a system of cooperation? This is what Rawls sees as a hypothetical original position: the state in which no one knows what place he or she would occupy in the society to be created.

Two principles of justice:

- each person should have equal rights to the most extensive liberties consistent with other people enjoying the same liberties
- inequalities should be arranged so that they would be to everyone's advantage and arranged so that no one person would be blocked from occupying any position

From these two principles, Rawls derives an equal conception of justice that would allow the inequality of conditions implied by

equality of opportunity but would also give more attention to those born with fewer assets and into less favourable social positions.

There are many critiques of this theory. Robert Nozick points out that resources are produced by people and that people have rights to the things they produce. Thus, attempts to improve the condition of the least advantaged through redistribution are unjust because they make some people work involuntarily for others and deprive people of the goods and opportunities they have created through time and effort. The reluctance of Rawls to identify any particular type of society as just, leaves Rawls open to the charge that he offers no guidance for the actual content of justice.

#### **4. Strategies for rural development**

Strategy is a plan of action designed to achieve a long-term or overall aim. There are different strategies for rural development. In this paper we will focus on modernization and inclusive development.

##### **4.1.1 Modernization**

Modernization means transition of traditional society to modern one. Modernization theory presents the idea that by introducing modern

methods in “technology, agricultural production for trade, and industrialization dependent on a mobile labor force,” the underdeveloped countries will experience a strengthening in their economies (Bonvillain, 2001).

Salient characteristics of modernity are

- Intellectual characteristics: emphasis on science and technology, reason and rationality, belief in progress and human development, control over environment and avoidance of superstition and orthodoxy.
- Political Characteristics: marginalization of religious influence from State/Political matters, and rise of secular democratic polity, universal adult suffrage, democratic values.
- Religious Characteristics: secularized society free from religious orthodoxy and decline of religiosity.
- Social Characteristics: decline of a traditional social order, decline of

- Joint family system, alienated kinship ties
- In relation of education, it involves literacy, emphasis on knowledge and trained skill
  - Economic Characteristics: changing over to commercial agriculture, use of machines and advanced technology in agriculture, growing industrialization and urbanization, improvement in commerce, industry and growth of Market etc.

Thus, modernity implies a bunch of new socio-economic, politico-religious and intellectual system, totally separated from the traditional one. It brings changes in people thought-process in beliefs and faith and in socio-cultural structure and ultimately modernizes the role-perception of the individuals. It aims at socio-economic and political transformation to achieve progress on development.

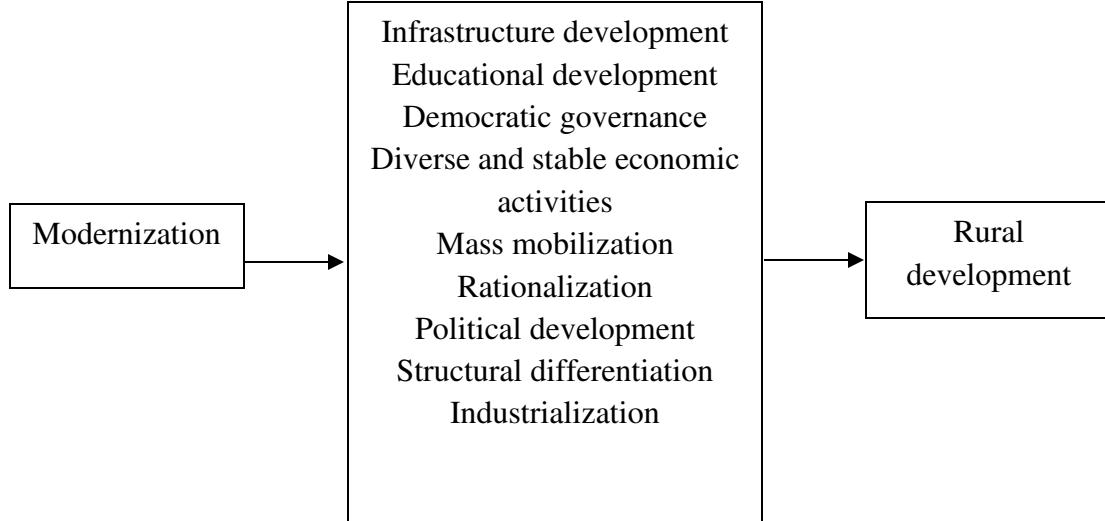


Fig 1: Conceptual framework of modernization

#### **4.1.2. Relevancy of modernization to Nepal**

Both concept and theory of modernization initiates among the

social scientist after the second world war to define ongoing changes in world. At the time, problems of political instability, economic crisis,

social and cultural deterioration is more prominent over the world (Tipps, 1973). Typically, it's not only about the structural and infrastructural transformation, but involves changes in human thoughts in each and every field (Huntington, 1968). At the similar condition, the constitution of Nepal (2015) has declared end of caste based, class based, region-based hierarchy, and untouchability. Further, it has aimed to initiate prosperous Nepal through political stability, economic development, and republic system. Similarly, industrialization, rationalization, social mobilization, political development, structural transformation is major dealing area of modernization (Inkeles, 1969). Moreover, Nepal wants change and it has accepted some of the characteristics of modernization. Today, our country is secular and democratic. It has given full emphasis on infrastructure development, health and education. Highest share of budget is for infrastructure development. There are heath facilities in each VDC and education is free up to class 10. Many students

are receiving higher studies abroad. Ministry of agriculture development has developed many policies for commercialization and mechanization of agriculture. Nepal has welcomed the overtures of several foreign countries competing for the opportunity to provide a wide variety of foreign assistance. Although, it has focused all social, political, economic dimension of modernization still our country is underdeveloped. We can't say that all these have not benefitted Nepal at all. They have but they are not able to bring expected impact or process of modernization is very slow. Poverty and inequality still exist in society.

Nepal is very rich in culture and some traditions are very important and appreciated by world. There is need to preserve these traditions. Only those orthodoxy elements which prevent progressive development, have to be abandoned to achieve modernity and socio-economic development quicker and in a planned manner.

#### **4.2.1 Inclusive rural transformation**

Inclusive rural transformation means everyone, without exception, can

exercise their economic, social and political rights, develop their abilities, and take advantage of the opportunities available in their environment. This leads to a marked improvement in the economic position and quality of life for small farmers, land poor and landless workers, women and youth, marginalized ethnic and racial groups, and victims of disaster and conflict (Rural development report, 2016). Inclusion of different disadvantage group in human development, access to opportunities and decision-making power can bring long term rural development. Inclusive transformation is key for sustainable development. There are different measures to bring inclusive transformation. Some the areas to focus to bring inclusive transformation are:

### **i. Collective action and empowerment**

Collective action organization of small farmers and disadvantage group has capacity to fight with difficulties. They are the entry point for multiple development intervention. But, traditional norms and institutions, based on local culture and authorities, may serve to

exclude women and other disadvantaged groups from participating on an equal basis in economic, social and political terms. New forms of inclusive collective organizations need to take their place and tackle both existing and new challenges. Government and the private sector have complementary roles for enabling them to deal with their many constraints. These roles must be identified, to provide incentives and enabling conditions for rural collectives to form, operate effectively and contribute to shaping rural transformation pathways in the interests of marginalized groups and individuals.

### **ii. Social protection**

When inclusion-fostering policies and programmes are not enough to remedy exclusion, social protection – general or targeted – becomes necessary. Social protection regimes featuring safety nets and direct interventions to address vulnerability can be key complements to growth strategies. Where well targeted and effectively implemented, they can ease access to investments and supply side interventions, enhance resilience, promote equitable distribution of economic and social benefits from growth, and draw vulnerable areas and groups into mainstream growth processes. When preventive, protective are

complemented by promotional measures, they form base for inclusive transformation.

### **iii. Institution and governance**

They play important role for inclusive transformation by setting rules and providing opportunities for disadvantaged ones. There is no thumb rule like which type of institution or government setting is best for inclusive transformation as well as for economic growth. But, they must focus on policy to enhance inclusion and improve capacity.

### **iv. Gender equality**

Women face different constraints in our society. They are restricted by norms to access resources and decision-making power. As half of the population are women, they must have accessibility and power for overall development. Broader policy and institution reforms to address socio-economic

dimension of gender inequality must be developed.

### **v. Indigenous peoples**

They have rich and ancient cultures and regard their social, economic, environmental and spiritual systems as interdependent. They make valuable contributions to the world's heritage via their traditional knowledge and their understanding of ecosystem management. Indigenous peoples are facing discrimination based on their identities and disadvantages that limit (or even prevent) their access to social, economic and political opportunities and resources. Their socio-economic and human development conditions are significantly worse than those of other population groups. So, new intervention for improving their skill, access and power must be considered.

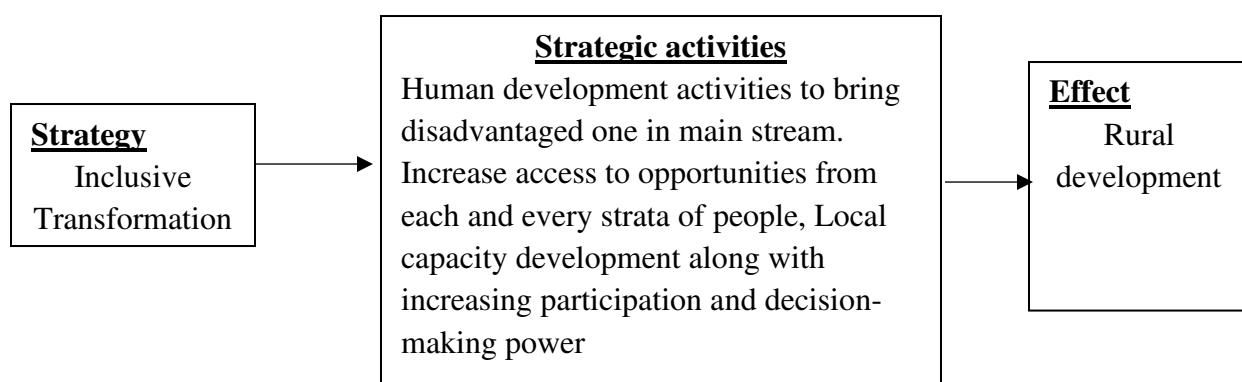


Fig 2: Conceptual framework of inclusive transformation

#### **4.2.2 Relevancy of inclusive transformation to Nepal**

Nepal is very rich in culture and traditions. In Nepal, there are many caste groups. Feudalistic, autocratic, centralized, unitary system of governance have created large number of disadvantage group (Constitution of Nepal, 2015) and recent earthquake has increased the number of victims. Such unjust condition is suggested to eradicate whether the system is functioning well or not. It is only acceptable, if its eradication leads to another greater injustice (Rawl, 1971). So, inclusive transformation seems with more relevancy with current Nepalese condition. Nepalese are still guided by traditional norms of caste system due to which Dalits, indigenous people and women are still lack accessibility and decision-making power. Underdevelopment of Nepal is also shown as an effect of regional disparity in resource distribution (Economic survey, 2016). For instance, Karnali region is with difficult geography and underutilized resources. It obviously demands more inputs to establish similar infrastructures in other region. On the contrary of Nepalese reservation seats (i.e. caste, gender, and region based), Rvals' has characterized low skilled persons as major focused beneficiaries of this system. Although, government have given more

emphasis on these groups by providing different social protection schemes and reserving seats in different political as well as other programmes like education, employment etc. But there is no desirable rural development. It has raised the question about its effectiveness. One of the reasons may be that, incentives may not have reached to the actual target group because of corruption in the whole system and disadvantage group are still lacking those opportunities. Another reason may be that preconditions to grab those opportunities may not be sufficient. For e.g. if one is still facing the problem to fulfil his basic needs, then how can he send his children to school for education. If they do not have proper skill, then they cannot have decent employment opportunities and lack skill to understand and fight for their rights. By this one type of vicious cycle is created and disadvantaged group always remain disadvantage. So, government must consider these reasons.

#### **5. CONCLUSION**

Rural development is not new to world. Different changes in trends of rural development are occurring since 1950. In Nepal rural development has been introduced with Tribhuvan village development programme and given emphasis in each

periodic plan. There are different strategies for rural development and in this paper, we discussed about two strategies; modernization and inclusive transformation. These two strategies were viewed with the perspective of modernization theory and theory of justice respectively. Both strategies have their own measures for achieving rural development. Modernization focused on science and technology, democracy, education, infrastructure and economic activities for development, while inclusive transformation focus on inclusion of different group in human development, accessibility and decision-making power for achieving rural development. Both have their advantage

and disadvantage. We can't say which one is better as best strategy is contextual.

Modernization and inclusive transformation are not new to Nepal but have not been able to bring rural development. So, there is need to bring certain reforms in both the strategies like modernization should conserve some progressive and applicable culture and tradition and only remove orthodox one. Inclusive transformation must focus on how to reach to the actual target group and how can they grab those opportunities. Single strategy is not enough and combination of multiple strategies can bring rural development which include all group and is sustainable.

## References

- Baran, P. (1996). On the political economic of backwardness. In: Jameson, K., and Wilber, C. *The political economy of development and underdevelopment*. McGraw-Hill, New York.
- Bonvillain, N. (2001). *Women and men: Cultural constructs of gender*. Prentice-Hall, Inc. Upper Saddle River, New Jersey.
- Chambers, R. (1983). *Rural development: Putting the last first*. Longmen, London. 147 p.
- GoN. 2015. *The constitution of Nepal*. Government of Nepal. Singha Darbar, Kathmandu.
- Graaff, J. (2001). *Introduction to sociology: Poverty and development*. Oxford University Press, Cape Town.
- Huntington, S. P. (1965) *Political Development and Political Decay*. World Politics, 17 (3), 386-430.

Inkeles, A. (1969) *Making Men Modern: On the Causes and Consequences of Individual Change in Six Developing Countries*. American Journal of Sociology, 75 (2), 208-55.

Nabudere, D. (1997). *Beyond modernisation and development, or why the poor reject development*. Geografiska Annaler, 79 (4): 203-215.

Nozick, R. (1974). *Anarchy, State, and Utopia*.

IFAD. (2016). *Rural development report: Fostering inclusive rural transformation*.

Pavlich, G. (1988). Re-evaluating modernisation and dependency in Lesotho. *The Journal of Modern African Studies*. 26 (4): 591– 605.

Rawls, J. (1971). *Theory of justice*.

Rantso, T.A. (2014). *The role of non-farm sector in rural development in Lesotho*. Philosophic doctor degree thesis. University of Free State, Bloemfontein. 18-51 p.

Rostow, W. (1960). *The stages of economic growth: A non-communist manifesto*. Cambridge University Press, Cambridge.

Tipps, C.D. (1973). *Modernization Theory and the Comparative Study of Societies: A Critical Perspectiv*. University of California. Berkeley, USA.

<https://www.enotes.com/topics/theory-justice>

<http://www.yourarticlelibrary.com/articles/modernisation-introduction-meaning-concept-and-other-details/47757/>

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# IMPACT OF MALE-OUT MIGRATION IN THE AGRICULTURAL ECONOMY OF NEPAL

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## **Abstract**

*A study was focused on knowing the impact of male-out migration in the agricultural economy of Nepal reviewing various literatures on context of male outmigration, the agriculture economy and the gender implications of migration. Study found that out-migration of labor from Nepal to other foreign countries, due to lack of non-farm employment, reduction in agricultural production and productivity, stagnating economy, least developed industrial sectors, etc., had become an effective livelihood strategy for securing the food and income security for many people of Nepal. One third of GDP is contributed by remittance of out migrants dominated by men thus, contributing in capital generation, overcoming credit constraints of market, alleviating poverty, improving the Balance of Payment (BOP) of the country, increased investment in the commercial agricultural sectors, etc. and its negative impacts are viewed on the shortage of male workers in labour market, change in gender roles compelling more work-loads on women, reduced agricultural production and land management, feminization of agriculture, loss of economically active population from the country, etc.*

**Key words:** Agriculture, Labour, Out-migration, Remittance.

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## **1. INTRODUCTION**

Nepal is a small landlocked sovereign nation sandwiched between two giant economies of the world: India and China. Despite of this geographical location between two most fast developing and industrialized nation of the world it is an agricultural country where two

third of population are engaged in agriculture as their primary occupation which serve nation's GDP by 32.5%. Agriculture is the major sector that is ensuring the economic prosperity with 32.5% contribution in the national GDP and food security of the population engaged in both farm and non-

farm sectors following remittances whose contribution was approximately 24% in the fiscal year 2013/14. Nepal is ranked in third position globally whose GDP is contributed by the remittance (World Bank, 2015). Despite of this large population involved in the agriculture the national production is insufficient to secure food security and employment of its people So, like in many Asian countries the trend of migration from rural to urban areas and out-migration of Nepalese labor to gulf countries and India seeking non-farm income security is increasing day by day. Seasonal migration in India in slack agricultural season for non-farm works and return back during the peak season of planting or sowing. So, it is being argued that Nepalese agriculture is also leading towards the phenomenon of feminization in agriculture reducing agricultural production and productivity and inadequate land improvements (Hyden et. al., 1993; Jha, 2010). Labor drain and brain drain is both harmful for the developing countries like Nepal. Government data shows that majority of the out-migrants have poor skill and are involved in the 3D works i.e difficult, dirty and dangerous works and poorly paid and this will lead to potential labor crisis in agriculture field, changes gender relationship and power position of the women in the

household and the society from the gender perspectives.

## **2. METHODS AND METHODOLOGY**

To extract the in depth information about the impact of out-migration in the agricultural economy of Nepal relevant literatures concerned with migration, agriculture and remittance were reviewed. It included the review of relevant secondary source of data including various reports, publications, thesis, web surfing, etc.

## **3. RESULTS AND DISCUSSION**

Important findings from the relevant literatures are discussed under the following sub-headings.

### **Reasons for male out-migration:**

Nepalese rural livelihood strategies can be categorized into three division such as subsistence agriculture, livelihood diversification through non-farm activities and seasonal or permanent migration. Study of change in the livelihood strategy is even more important from the socio-economic point of view as this would largely influence the nature and allocation of labor, their division and extent of working which is also interlinked with the religion, socio-economic, cultural and political condition of

the country. The economic relations of the developed and developing countries are largely affected by the international migration in the recent years (Adams et. al., 2003). In Nepal, reasons for migration can be summarized in following points.

- Absence of domestically available non-farm employment
- Subsistence oriented farming and declining farm size
- Low productivity constraint of credit, labor and insurance
- Stagnating industrial sector

Migration can be viewed as a means for improving living standards (Niehof, 2004). It may occur as a result of conflict, political and social instability, economic incentives, etc. (de Haan, 2000). Most of the study about migration is focused in the reasons for migration, about the migrants and the areas of destination in the migration (de Hass 2005; Shrestha 1998). Unfortunately, labor outmigration in Nepal has always been seen as a by product of a stagnant rural economy, to be eliminated by domestic economic development, particularly within the agricultural sector (Seddon et al. 2002).

Since 200 years ago, Nepalese workers are sending their earning to their families (Adhikari 2006: Seddon et al. 2002). Only

after late 1980s, Government officially opened opportunities for the citizens of the country to go abroad. Detailed and comprehensive information about the migration started only after the census of 2001 in Nepal though data collection about migration occurred since 1920. Data shows that Nepal is witnessing trend of out-migration since 1942 when the no. of migrants were 88 thousands. The migrating trend outside the country temporarily or permanently in search of better life is increasing (Bhadra, 2007). According to data suggested by CBS (2011), more than 50% Nepalese households have at least a member outside of household living in other district or abroad for various purposes. At present 56% households receive remittances from foreign employment (MOAD, 2014).

Outmigration from Nepal to the countries like India and gulf countries for employment had increased very rapidly since two decades. More than 3.8 million permits to work abroad (excluding India) were issued by the Government during the 1993/94–2014/15 fiscal years, which represents almost 14 per cent of the current population. As population of the working men had decreased due to the outmigration and the cultural restriction are set on the working women the male outmigration had changed the social, cultural

and economic dynamics of the country. The pressure of decision making related with the family activities, agricultural activities and other economic activities now rest in the women. Though voluminous flow of the people for employment opportunities leading to outmigration had brought the remittance and acted positive effect in the economy of the country it too had caused negative impacts in the many sectors including agriculture where the problem of labor shortage at the peak agricultural season and other labor intensive works are increasing day by day. The labor permits for the foreign employment has gradually increased from the 2008/2009 but has decreased in the year 2013/2014 due to the earthquake that hit the country in April, 2015. As a result, issuing of labor permits reduced by 48 percent in the last quarter of the year 2014/15 as compared to the year 2013/14. In the fiscal year 2014/15, there were 515000 projected outbound workers under migration compared to 527814 in the year 2013/14. The reduction can be attributed to the devastating earthquake that occurred in 2015. There is also lack of attention in gender sensitivity analysis during the implementation of the development program. This is also linked with other important arenas like food and nutrition security, employment program,

empowerment, social participation, etc. Most of the recent researches have focused only in the effect of remittances in the economy but the effect of remittances in the agricultural sector or agricultural economy is unexplored. The contribution of the remittance and the effect of increasing male-outmigration on the agricultural economy of the country have not been studied deeply so far though it is very important for the developing country like Nepal.

### **Gender roles and migration**

Along with the other inputs like improved seed, fertilizers, efficient technology, etc. human power is also one of the very important factors for increasing the agricultural production and boosting the household income. Combined use of human and other physical capitals in agriculture may also help to overcome the technological inefficiency in agricultural sector. But the loss of agricultural labor due to male outmigration is being challenging to both reducing agricultural production and loss of human resources from the country.

Nepalese society is a male dominated society so the contribution of men in any works is highly accounted compared to women. In agriculture, men are mostly involved in more power consuming activities like ploughing,

digging, spraying fertilizers, etc. and women accomplished out more activities during the entire crop period like planting, weeding, harvesting, threshing, storage, etc. but the wage rate for male workers is high or nearly double for the same works. It should be noted that the idea of gender role is very important in ascribing the responsibilities and opportunities to men and women of different abilities, attitudes, behavior, personality traits, etc. Gender role is crucial in addressing the decision making activities of household at pre, during and post migration period. The potential impact of out-migration in the changing economy and the gender roles change the structure of society in many ways. Migration is also linked with the poverty, food security, gender issues, etc. Study shows that remittances send by the migrating labor have contributed in solving the immediate financial and economic problems in the hilly areas along with the alleviation of poverty but very few studies in sociological research had focused in challenges and opportunities linked with harnessing the potential of labor migration and their consequences in the economy of the country.

### **Impacts of migration**

Migration can be defined as the temporary or permanent movement of people from one

place to another within the country or abroad (Skeldon 1997; Spaan 1999). It is one of the important measures of the macroeconomic stability, important components of demography and population change (Gartaula, 2010). The scale and patterns of migration changes the socio-economic, cultural and political configuration of the society and the labor out-migration has diverse impacts on the socio-economic and demographic aspects in the areas of origin and the areas of destination (Adger et al., 2002; Skeldon 1997; Spaan 1999). Poverty, unemployment, declining natural resources, and country's experience of over a decade long political instability are some of the main causes of the high rate of out-migration (Gartaula, 2010). Migration changes the relative productivity of the remaining household members; affects household preferences in terms of risk aversion and uncertainty; and provides new information-for example, on new technology, type of crops, and so on (Lokshin et al. 2007). Migration was seen as a product of ill-economy of the areas of origin (Massey et al. 1993; Shrestha 1988) but now it is seen more as the livelihood strategy (Adams and Page 2005; McDowell and de Haan 1997).

Out-migrants constitute 77% in Indian and 15% in the Gulf countries and currently about

three percent Nepalese live abroad (CBS, 2001). The positive aspects of migration can be viewed in-terms of potential benefits for livelihood strategies, alleviation of poverty, resource management, gender equity, addressing the issues like climate change mitigation, etc.

### **Impact of remittance in agricultural economy**

The increasing impact of the remittances obtained through the outmigration have an influential impact in the structural transformation of economy by the expansion of low multiplier import-dependent services sector activities, and consistent de-industrialization (ADB, 2013a). Seddon et al. (2002) estimate the actual remittance in Nepal is about 10 to 20 times greater than the amount shown by the official statistics, which is equivalent to almost 25 percent of national gross domestic product (GDP). Present total percentage of migrant population in Nepal is 36.9 percent (CBS, 2010/11) it includes both in and out migration.

Migration creates a shortage of worker affecting the agriculture in many ways but remittance send by the migrants to their agricultural household helps in creation of the productive capital which ultimately leads to higher yield (Stark, 1980). Hence,

remittances help in smoothening the household consumption and increase the potential to ease liquidity constraints (Amuedo et.al. 2011), and increase the capacity to boost the physical assets (Chodi et. al.,2012). According to the report of FAO, 2010 the contribution of the remittance had been accessed in reducing the poverty from 42% to 31% from 1995 to 2003 despite of a poor agricultural performance and decade long political conflict in Nepal.

Remittance could help to overcome credit market constraints and boost the yield in the agricultural commercialization and production through the increased investment (Stark, 1980). It also helps in overcoming credit and risk constraints due to the accumulation of the liquid assets in the rural households (Taylor and Watt, 1996). Remittances also benefit the households of migrant's workers by increasing the ability to acquire more capital goods required for enhancing farm management and production. In 2013, remittance was the source of 65% of total foreign exchange earnings. The migration of Nepalese people to the abroad countries for the employment dates back to 1815 when the agreement was made with the colonial British government. Remittances have helped reduce poverty, contributing between one-third and one-half of overall

poverty reduction between 1996 and 2004 (World Bank, 2006). Migration and remittances are endogenous to household income and yield (Rozelle et al., 1999; Quinn, 2009). As observed by Seddon et al.(1998) that remittance was now the most powerful driver in the changing rural landscape, followed by infrastructure and technology development, improved access to market and services, which had encouraged monetization, consumerism and urbanization.

One of the important implications of the remittances can be on generation of capital in the economy of the country which may lead to generation of demand for domestically produced goods but in Nepal only 2% of remittance is used for capital generation which is leading to consumption-led imports (CBS 2010/11). More than 40% nepali migrant are found in India and during the peak season of harvesting 44% of household across the country have at least one member are involved in out-migration depicting that migration is the culture of every household(WFP Nepal, 2008). Hads and Todaro model of 'pull and push' factors of migration is one of the influential contributions in the neoclassical theory (Massey et al. 1993; Taylor 1999). The surplus labor, scarce capital, population

pressure and unemployment situation in the sending area serves as push factor and scarce labor, surplus capital high income and social amenities in the receiving area serves as pull factor where the individual makes a rational decision for maximizing income (Massey et al. 1993; Spaan 1999).

Though there are various thoughts and debates regarding the impacts caused by remittance in the economy of the country, it is sure that male-out migration lead to the shortage of labor in the market. Migrant remittance has been viewed as a measure for improving the BOP of the country and making it better and stable in-terms of foreign currency by many policy makers in Nepal (Pant et. al., 2011). Beside this, increasing male out-migration mostly from the rural areas can be vulnerable for the entire economy of the country.

#### **4. CONCLUSION**

Out-migration of Nepal to the India and Gulf countries are increasing every year resulting increase inremittance which support the national GDP of the country, with ill impacts of loss of economically active male labor which is increasing the problem of labor shortage in the peak agricultural season, reduction in agricultural production and productivity. On the other side, out-migrant

labor is poorly skilled and is not getting the proper wage rate even in the foreign country. Though positive impact has been seen in the increased investment in commercial agriculture through capital generation, improving the economic status of the rural

areas, technology use and development in agriculture, increase in women's social and economic empowerment, there are challenges that would be difficult to meet in the near future if the trend of out-migration is not addressed or managed in time.

## References

- Adams, R. J. and Page. (2005). *Do international migration and remittances reduce poverty in developing countries?* World Development 33 (October), pp1645–1669.
- Adger, W. N., P. M., Kelly, A. Winkels, Q. Huy & C. Locke .2002. Migration, remittances, livelihood trajectories, and social resilience. *AMBIO: A Journal of the Human Environment.* 31(4): pp358-366.
- Adhikari, J. (2006). *Poverty, globalization and gendered labour migration in Nepal.* In. S. Arya and A. Roy (ed.). *Women and migration in Asia: Poverty, gender and migration.* SAGE Publication, New-Delhi, India. Vol. 2: pp87-106.
- ADB. (2013). *Macroeconomic update Nepal.* Manila: Asian Development Bank.
- MOAD. (2014). *Agriculture Development Strategy.* Ministry of agriculture development. Singha Durbar, Kathmandu, Nepal.
- Amuedo-Dorantes, C., and S. Hyden, G. B. Turner and R. Kates. (1993). *Beyond intensification.* In: B. Turner, G. Hyden, & R. Kates, *Population growth and agricultural change in Africa.* Gainesville: University of Florida Press, pp. 320-260.
- Bhadra, C. (2007). *International labour migration of Nepalese women: Impact of their remittances on poverty reduction.* Working Paper Series No. 44. Asia-Pacific Research and Training Network on Trade, (ARTNet), Bangkok.

- CBS. (2001). National Census. Kathmandu: Central Bureau of Statistics, National Planning Commission, Government of Nepal.
- CBS. (2011). Nepal Living Standards Survey. 2010/11, vol2. Kathmandu: Central Bureau of Statistics.
- De Haan, A. (2000). *Migrants, livelihoods, and rights: the relevance of migration in development policies*. UK: Social Development Department.
- De Haas, H. (2005). *International migration, remittances: and development: myths and facts; Forthcoming* in Third World Quarterly, Vol. 26, No. 8, pp. 1243 – 1258.
- Gartaula, H.N., A. Niehof. & L. Visser. (2010). *Feminization of agriculture as an effect of male out migration: Unexpected outcomes from Jhapa District, Eastern Nepal*. The International Journal of Interdisciplinary Social Sciences, 5(2): 565-577.
- Jha, Hari Bansh. (2010). *Impact of migration and remittances on agriculture*. Kathmandu. Food and Agriculture Organization.
- Kaspar, H. (2005). “*I am the Household Head Now !*”. *Gender aspects of out-migration for labor in Nepal*. Kathmandu: Nepal Institute of Development Studies.
- Lokshin, M., M. Bontch-Osmolovski, and E. Glinskaya. (2007). *Work-related migration and poverty reduction in Nepal* (World Bank Policy research working paper 4231). Washington DC: The WorldBank.
- Low, A. (1998). *Agricultural development in Southern Africa*: Farm-household economics and the food rises. London: James Currey.
- Massey, D. S., Arango, J., Hugo, G., Kouaouci, A., Pellegrino, A., and Taylor, J. E. (1993). *Theories of international migration: A review and appraisal*. Population and Development Review, 19(3), 431–466.
- Niehof, A. (2004). *Conceptualising the household as an object of study*. International Journal of Consumer Studies (forthcoming).

- Pant, D.B Raut and K. Pandey. (2011). Effects of foreign employment on poverty, labour supply and agricultural growth in South Asia: A Case of Nepal, India and Bhutan. SANEI working paper series no.11-08.
- Pozo. (2011). *Remittances and income smoothing*. American Economic Review, 101(3), 582-87.
- Quinn, Micheal A. (2009). *Estimating the impact of migration and remittances on agricultural technology*. The Journal of Developing Areas 43(1):199-216.
- Rozelle Scott., E. Taylor and A. Brauw. (1999). *Migration, remittances and agricultural productivity in China*. The American Economic Review 89(2):287-29
- Seddon, D., Adhikari, J. and Gurung, G. (2002). *Foreign labour migration and the remittance economy of Nepal*. Critical Asian Studies, 34(1), 19–40. Shrestha, N. R. 1988. *A structural perspective on labour migration in underdeveloped countries*. Progressing Human Geography, 12(2), 179–207.
- Skeldon, R. (1997). *Migration and development. A global perspective*. Harlow; Longman.
- Spaan, E. (1999). *Labour circulation and socioeconomic transformation: The case of East Java. Indonesia*. Unpublished PhD Thesis, Groningen.
- Stark, O. (1980). *On the role of urban-to-rural remittances in rural development*. Journal of Development Studies, 16, 369-364.
- Taylor, J. Edward and T.J. Wyatt. (1996). *The shadow value of migrant remittances, income and inequality in a household-farm economy*. Journal of Development Studies 32(6):899-912.
- WFP Nepal. (2008). *Passage to India: Migration as a Coping Strategy in Times of Crisis in Nepal*.
- World Bank. (2006). *Resilience amidst conflict: An assessment of poverty in Nepal, 1995-96 and 2003-04*. Washington, DC: World Bank.
- World Bank. (2015). *Migration and remittances: Recent development and outlooks. Special topic: financing for development*. Migration and Development Brief 24. Washington, DC: World Bank.

**ROLE OF SPECIALIST IN EXTENSION PROGRAM PLANNING**

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[pdl.manoz@gmail.com](mailto:pdl.manoz@gmail.com)**Abstract**

*Changing paradigm of extension services and issues along with global forces are increasing and governing challenging role of extension/program specialist. So, what could be the roles of extension manager in program planning be a key question of this paper? This is where; the extension manager has to perform from plan to activities. The paper concluded that the extension managers must be well known about result based management along with situational and problem analysis to development of objectives, activity scheduling, resources planning and developing a monitoring stage. During implementation phase repeated review of work for real time information and optimum resource allocation comes as role. While during evaluation the experience and information works for ongoing and upcoming programs. So, extension programs demand for more innovative, alert, technically and functional experts program planner; who could able to connect the existing problems to research and carry out the suitable and specific programs with relation to specific societies.*

**Key words:** Extension Specialist, Problem analysis, result based management

**1. INTRODUCTION**

Extension paradigm is changing with change in objectives of extension programs. Previously, technology transfer, improving productivity and food sufficiency used to be the prime activities and one sight target of extension program. Later on, decentralized project-driven extension, participatory human resource development extension and demand driven, participatory and pluralistic extension services come as emerging programs in extension respectively (Subedi, 2016). This figures pictured the different and diverse roles of specialist in extension program planning being innovative and alert to the necessities of farmers and rural poor in program planning

(FAO, 2017). Davis (2015) has also advocates the needs for ‘New Extensionists’ who possess both technical and functional competencies. This criteria ultimately build up the smoothness in program execution being responsive towards program directors, subject matter specialist, and budgets for his/her reputation in the field (Clark, 1966). Besides this, extension specialist are first to maintain close association to researchers and research offices to update the agriculture knowledge and information system (AKIS).

If results of the researches are not applied then they become worthless (Onazi, 1980) creating unavoidable role of extension specialist in program planning to implementation. Today’s extension program is not only in close periphery of agriculture production. Rather it has to deal with different social, cultural, political, technical immersing issues. Such as: food and nutrition security, agribusiness and value chain, surplus production, land and labor productivity, resource utilization, gender mainstreaming, inclusion, and many more. Global forces as scientific discoveries, demographic change, socio-economic transformation, feeding pattern, and mutual reliance in global market is governing the world (Subedi and Kaplowitz, 2016). Biological entities in agriculture are mostly suffered from diverse problems such as: insect-pest invasion, natural disaster, disease outbreaks many more (FAO, 2017).

Onazi (1980) has estimated that, research knowledge and output are nearly twenty years ahead of the farmer’s practice. Whatever be the past, but we can see almost double yield gap in between research field and farmer’s field in crop cultivated in Nepal. Furthermore, an extension service has been reached to only 15 % people (Krishi Diary, 2016).

In general, this paper will discuss on the general role of extension specialist in different stages of program planning.

## **2. METHODS AND METHODOLOGY**

Data and information in this study was collected from secondary sources like journals, books and internet. Almost thirty-five national and international papers were reviewed whose study area were focused on program planning, strategy of program execution, working manual and guideline of different INGOs, role of extension workers, extension paradigms, were major viewed literature. Different reports and case study paper of different countries especially of developing countries were reviewed.

### **3. DISCUSSION**

#### **Role of extension specialist**

Program is gathering of institutional reserve to meet the targets (Carter, 2017). Carter (2017) has given six cornerstones for solid program planning as, “tie to the organization’s mission, tie with strategic planning, involve the board, conduct program planning as a team, involve potential internal/external customers as much as possible and, not to be worry about developing the perfect program plan.” Follow up of these points construct the solid base of the program. This helps to face several challenges during program execution. Program will be only apposite if it becomes able to reflect the idea, purpose, and target of an organization. Another point is whether the program will be able to meet the need of clientele groups or not. Programs not addressing the clientele problems and needs will be worthless. So, bringing relevant and related stakeholders in the process of program planning while, preparing strategic framework increases the good chance of success. Program planning through multistage team also helps to run in well-organized pattern (managementhelp.org). Similar type theme is also presented by Zakaria (2010) as, “extension officers are expected to serve two functions: 1) specialist and 2) coordinator function.” Specialist function means “extension activities to provide farmers with advanced techniques and related knowledge (including managerial knowledge and skills), according as appropriate to local environments.” On the other hand, coordinator function means to “help local farmers and related parties share future goals, clarify tasks they need to address, develop an approach to the tasks, and conduct it, under the cooperation with leading farmers as well as relevant organizations within and around local communities.”

FAO (2017) has summarized some common roles as:

- An extension agent tries to arouse people to recognize and take an interest in their problems, to overcome these problems, to teach them how to do so, to persuade them to act on his teaching, so that they ultimately achieve a sense of satisfaction and pride in their achievements.
- A change agent is a person whose primary role is to achieve a transformation of attitudes, behavior and social organization. Change agents are multi-purpose agents serving as links

between government and people. A change agent is a person who sets in motion a process of change after realizing that certain changes are necessary for the rural society.

- A change agent is an activist whose main role is to help people form their own organizations in order to be able to tackle their problems.
- A change agent is a professional who influences the innovation/decision-making process in a direction deemed desirable by the change agency.

### **3.2 Role of extension specialist in planning monitoring and implementation**

Extension specialist involves from plan to program, program to project and project to activities. It begins with the preliminary assessment of the program. In this stage, extensionist orients on present condition of the target area and issues. This phase decides the necessities of involvement of projects and programs. Preliminary assessment on proposal and analysis of the programs to be takeoff is done under the direct involvement of extension specialist (VCA, 2006; IFGAE, 2008).

In present situation, result based management (RBM) approach is mostly used in programs and projects management. It emphasizes more on attainable and measurable results, process of conduction, and instruments required attaining the results. It helps for better execution, higher transparency and accountability, with indefinite ideas. It is made fit to logical frameworks by extension specialist (UNDP, 2009; ICRC, 2010).

#### **3.1.1 Planning**

In this phase, extension specialist is mostly focused on strategic planning to operational planning and analysis stage to design stage; situation and problem analysis, development of objectives, selection of objectives to logical framework matrix, activity scheduling, resource planning, and developing a monitoring stage. They play chief role on documentation of vision, targets, and purpose of the program to be attained. UNDP (2009) has expressed the planning phase as ‘failing to plan is planning to fail’. Though it might be wrong that without good planning won’t lead to target and goals. But, good planning surely leads the programs with greater effectiveness and efficiency. It gives clear construct about methods, time, budget, and desire outcomes.

#### **3.1.3 Monitoring**

Extension specialist is in continuous process of checking initial strategy with the work implementing. They are seeking series of suggestions and feedbacks from related agencies and personnel towards ultimate goals and fulfillment of purposes. Repeated review of work execution for real time information necessary for management is done. They will explore the progress in attaining the goals. Optimum resource allocation and efficient combination of resources during program implementation is direct guided by extension specialist. If not program is in right direction, formulation and execution of some strategies and actions is unavoidable (UNDP, 2009).

### **3.1.2 Evaluation**

In this phase, extension specialist is more directed towards the rigorous and self-determining valuation of continuing or accomplished tasks. This phase is mostly governed by external agencies and provides information about programs to execution team; whether the program is in right track of goal attainment or not. ICRC (2010) has stated as, “The aim is to determine the relevance and fulfilment of objectives, developmental efficiency, effectiveness, impact and sustainability of the program”. Program/Extension specialist with these reports of evaluation reconsiders the further activities. She/he can take out ideas and information from past activities and use on implementing and upcoming programs for betterment (UNDP, 2010).

### **3.3 Extension specialist in operation of different tools and techniques during program planning**

For program to be successful extension specialist use various tools and techniques. Those tools and techniques functions in analysis of stakeholders, problems, and their causes, objectives, and alternatives, reflection of current status, provide guideline, posturize relation and roles between stakeholders, and ultimately contribute for success of the program. Different tools have different specificities and are operated in different situations. No any tools could be the best tools for every situation. Some tools frequently used in program planning and analysis are; Logical framework (log frame), Stakeholder analysis, SWOT analysis, Problem tree analysis, Activity schedule, Budgeting and resource planning, sustainability tools and so on.

## **4. CONCLUSION**

With changing paradigm of extension services and issues, extension/program specialist has to perform more advance and complex activities than before. They are the one who faces first hand

problems and provide ultimate solution to farmers. They have to involve from plan to activities in solving the issues. They must be well known about result based management along with situational and problem analysis to development of objectives, activity scheduling, resources planning and

developing a monitoring stage. During implementation phase repeated review of work for real time information and optimum resource allocation comes as role. While during evaluation the experience and information works for ongoing and upcoming programs. They must be well familiar with planning to analysis tools along with their limitation relevant to type of

programs conducting. They have to play vital role in fulfilment of objectives in effective way and for sustainability of program. So that, they could present themselves as a technically and functionally compatible main-power in different stages of program conduction and maintain themselves as innovative, alert who can carry-out different programs specifically.

## References

- Carter, M.N. (2017). Basic guidelines for program planning and management (in for profit organizations). Available at <http://www.managementhelp.org/programmanagement/business-programs.htm>.
- CLARK, R. C. (1966). *Organisation for the work*. In: H.C, Sanders (ed.) The Co-operative Extension Service. Prentice-Hall Inc. Englewood Cliff, NJ.
- Davis, K. (2015). *The new extensionist: core competencies for individuals*. GFRAS Brief #3. Lindau, Switzerland: Global Forum for Rural Advisory Services (GFRAS).
- Food and Agriculture Organization (FAO) (2017). *Guide to extension training*. Available at: <http://www.fao.org/docrep/t0060e/T0060E08.htm>. Retrieved on, 06/04/2017.
- International Federation of Red Cross and Red Crescent Societies (ICRC). (2010). *Project/program planning guidance manual*. Geneva, Switzerland.
- Ministry of Agriculture Development. (2016). *Krishi diary*. Agriculture Information and Communication Center. Harihar Bhawan, Kathmandu.

- Zakaria, S. & H., Nagata. (2010). *Knowledge creation and flow in agriculture: The experience and role of the Japanese extension advisors.* Libr Manag 31: 27–35.
- Onazi, O.C. (1980). *Role of the extension specialist in the transfer of agriculture technology: the northern Nigeria experience.* J. Agricultural Administration 9 (1982) 229-238.
- Subedi, M. and M. Kaplowitz. (2016). *What only extension worker should know – core competency handbook.* Michigan State University, USA. pp 4-13.
- United Nation Development Program (UNDP). (2009). *Handbook on planning monitoring and evaluating for development results.* United Nations Plaza, New York, NY 10017, USA.
- IFRC (2006) Vulnerability and Capacity Assessment (VCA). (2006). Available at <http://www.ifrc.org/what/disasters/resources/publications.asp>
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## REVIEW OF PROGRAMS ON FOOD SECURITY IN NEPAL

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### Abstract

*Poverty and food insecurity are recognized as major constraint to achieve a fairer, prosperous and peaceful society. Nepal being a developing country has been facing severe food insecurity further exaggerated by massive earthquake of 2015. The paper critically reviews the focus, strategy, and orientation of major food security programs implemented by different organizations along with current situation of food security, factors responsible for insecure condition and the major programs implemented to end hunger. The finding of the paper is almost based on the secondary review of published articles, annual report of development agencies, and web surfing. Before earthquake, most of the programs were focused on Karnali region, which, after earthquake is shared by western and central hills as priority because they are facing critical condition. Different programmes are launched for long-term recovery and resilience work. Improving livelihood, preventing post-harvest losses, production of crops and vegetables year round, and adding technologies for better productivity are major working areas of these programs. In this way, these programmes are regarded for uplifting living standard of people and to develop food secure nation.*

**Key words:** Food and nutrition security, Poverty, SDGs

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### 1. Introduction

Nepal is an agrarian country, agriculture contributing around one third of total national GDP and more than 60 percent of total employment. It is backbone of rural

livelihood. However, except few commercial farms Nepalese agriculture is characterized by land fragmentation, small and subsistence farming, traditional way of farming, underdeveloped market system, inadequate

technical manpower and improper research and extension system. Due to these reasons the growth rate of agricultural production of country is not sufficient national consumption.

Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (FAO, 2009). The 4 dimensions of food security are availability of food, access to food, utilization and stability. Thus, "Food and nutrition security exists when all people at all times have physical, social and economic access to food, which is consumed in sufficient quantity and quality to meet their dietary needs and food preferences, and is supported by an environment of adequate sanitation, health services and care, allowing for a healthy and active life."(UNSCN, 2013)

At present, Nepal is facing food and nutrition insecure condition due to low agricultural productivity, limited livelihood opportunities, inefficient food distribution system, weak market linkage, poor infrastructure, and lack of awareness among general public about healthy food habit. In Nepal, almost 41 percent of Nepalese children under 5 are stunted, while 29 percent

are underweight and 11 percent are suffering from wasting due to acute malnutrition. Micronutrient deficiencies are also widespread, and 48 percent of pregnant women are anemic (WFP, 2017). Food and nutrition insecurity is more severe in western region of country with 37% of the people living below the poverty line while national average is 25.16%. Frequent natural disasters such as landslide and drought, remote mountain areas, challenging geography and lack of markets and transport food are exaggerating food hunger in mid and far western hills of Nepal.

This study will help to know the exact scenario of food security in the country. Detail study of national and international program working in food security area will indicate the problems and progress in achieving food secure condition. Further this paper will figure out the condition of food and nutrition security, poverty and hunger index of country at present situation. These all information will finally be important for further policy formulation and program generation.

## **2. Methods and Methodology**

This study was carried out by collecting information from secondary sources. Different books and journal were reviewed

and net surfing was done. The annual reports of food and agriculture based international organization were studied. Similarly, the progress reports of governmental and non-governmental organization working in food security sector were reviewed thoroughly. These materials are helpful to figure out the scenario of food security of the country.

### **3. Results and discussion**

#### **3.1. Review of Programs**

##### **3.1.1. United Nations Development Program (UNDP)**

In Nepal UNDP is a lead organization for implementation of SDGs with major priority on No Poverty and Zero Hunger. Thus, programs targeted to poverty reduction will ultimately improve the food insecure condition. The major UNDP's ongoing program for poverty reduction are Micro Enterprise Development Program (MEDEP), Community Infrastructure and Livelihood Recovery Program (CILRP), Effective Development Financing and Coordination Project (EDFC) and National Planning and Monitoring Capacity Project (SNPMC).

In 2016, MEDEP created over 19,000 new jobs through 13,000 micro-entrepreneurs, bringing the total number of micro-

entrepreneurs to over 81,600. The major strategies of this program are better access of loan and implementation of rapid revival projects in four earthquake-affected districts.

The 2015 earthquakes exposed the vulnerability and criticality of community infrastructure for both the livelihoods and the quality of life for many of Nepal's poorest people. In this context UNDP has taken initiative by Community Infrastructure and Livelihood Recovery Program(CILRP) in Dolakha, Kavrepalanchowk, Nuwakot, Rasuwa and Sindhupalchowk. This programme is supporting those people living in rural areas with limited access to service and had lost job and livelihood options in the disasters. The major strategies of this program are rehabilitation of community infrastructure, including irrigation canals, collection/market centers, drinking water schemes and roads, among others, in close coordination and partnership with district-level line agencies.

Similarly, Effective Development Financing and Coordination Project (EDFC) is running with funding support from DFID and UNDP. It's working in the sector of better use and track of funds. Throughout 2016, over 220 governments, donor and INGO officials were trained on

Nepal's Aid Management Platform and the various aid literacy requirements to better facilitate the spending of international aid. The final program related to poverty reduction is Strengthening National Planning and Monitoring Capacity (SNPMC) project, funded by UNDP and DFID. The project is tasked with supporting the National Planning Commission and the Central Bureau of Statistics to strengthen their capacity to promote pro-poor and evidence-based planning, establish a well-functioning national monitoring and evaluation system, and generate substantial knowledge products. Whatever be the focus and strategies of above programs, the central theme of all is to alleviate poverty that has direct and positive relation with food and nutrition secure situation. To this end, UNDP is supporting the government to align their national plans and Monitoring &Evaluation frameworks to that of the SDGs and their targets.

### **3.1.2 Food and Agriculture Organization (FAO)**

Food and Agriculture Organization (FAO), an intergovernmental organization with 194 member nations was established in 1948 October 16. Nepal became a member of FAO on 21 November 1951. Since that time Nepal and FAO have been cooperating to improve

the agricultural and rural development in the country. During last 64 years FAO is supporting agriculture and rural development by providing advice in policy formation and implementation along with budgetary support at the time of disaster and emergency. Almost 300 projects have been implemented by the organization, embracing a broad range of programmes related to crop, vegetables, forestry, livestock, fishery, food safety, nutrition, planning, policy, rural development and environment conservation. Currently FAO is supporting GON in formulation of Agriculture Development Strategy (ADS) and Food and Nutrition Security Plan of Action (FNSP).

At present situation FAO is working in earthquake affected central and western mill hill districts of Nepal. Since April 2015, FAO has reached close to 1.5 million people with agricultural inputs. In addition, FAO continues to support the Food Security Cluster as its co-lead. It is continuing its longer-term recovery and resilience work, which is critical to help vulnerable farmers rebuild their livelihoods. This has been possible by investing in the prevention of post-harvest losses, planting of spring vegetable and maize crops, emphasis on livestock support, improving nutrition and income generation, safeguarding livestock

health and productivity and rehabilitation of small-scale irrigation schemes has also supported the action of FAO on Food Security. Until June 2016 FAO completed its first phase program of distribution of rice, wheat, maize, cowpea, bean and vegetable seeds; distribution drip irrigation sets, mini tillers and grain storage bags; repair of community storage centers and distribution of animal supplement. Water for irrigation and grain/seed storage metal bins are ongoing programs of FAO. All programs are directed towards food and nutrition security of people living in earthquake affected areas.

FAO has technical assistance in Agriculture and Food Security Project (AFSP) a project running in 19 hill districts of mid and far western development region. Major focus is given to pregnant and nursing women and children upto 2 years of age. This project is working with strategies such as promotion of diversified diets and improved feeding and caring. The ultimate orientation is to increase food availability through increased agricultural production. Another project running with donation of FAO is “Strengthening pesticide management in agriculture to reduce risks to health and environment”. This program is focused on better health of crop producers, pesticide

handlers, consumer and environment whose priority area is food and nutrition safety. This project is running in Dhading, Kavre, Kapilvastu and Bara districts of Nepal to ensure food safety by reducing pesticide risk.

Similarly, FAO had conducted an emergency project “Emergency response to restore the rural livelihoods of earthquake-affected farmers” in Dolakha, Sindhupalchowk, Rasuwa, Dhading, Nuwakot and Gorkha . The victims of earthquake were major focus of this project. It was oriented to resume agriculture activities and to improve food security and livelihood residence from threat and emergencies from earthquake. There is another project running in Nepal with support of FAO named “Regional Initiative for Zero Hunger Challenge: Promoting an Integrated Home Garden and School Garden Approach for food and nutrition security in selected Southeast Asian Countries”. FAO is conducting this program in five countries of Southeast Asia along with Nepal. The focused communities are getting nutrition education that is integrated into their school curriculum. The project is oriented towards improved household diets and nutrition education. It is adopting an integrated, multi stakeholder and holistic ‘plot to pot’ food production system that combines the

production of a variety of nutritious vegetables and fruits and small scale livestock such as chickens, ducks and aquaculture toward a more self-reliant provision of school meals. Finally, a project under FAO is “Reduction of post-harvest losses in horticultural chains in SAARC Countries” which contributing SAARC countries to strengthen capacity within post-harvest sector to contribute to food security and nutrition, by improving produce quality and safety, and reducing post-harvest losses. FAO is being major concerned organization for food security and agriculture development, conducting many programs around the world. Different programs supported and assisted by FAO in Nepal are summarized above. The ultimate goal of all programs is to reduce malnutrition prevailing on different parts of Nepal. Far and mid-western hills are food insecure due to low production and insufficient food availability whereas central and western hills have become food insecure due to devastating earthquake of 2015. In this context FAO has launched many programs and working effectively to reduce poverty and food security in the country.

### **3.1.3. World Food Program (WFP)**

World Food Program (WFP) is the leading organization fighting with hunger worldwide, delivering food assistance in emergencies and working with communities to improve nutrition and build resilience. It was established in 1961. It is assisting 80 million people of 80 countries worldwide. In emergencies, WFP is often first on the scene, providing food assistance to the victims of war, civil conflict, drought, floods, earthquakes, hurricanes, crop failures and natural disasters. WFP’s efforts focus on emergency assistance, relief and rehabilitation, development aid and special operations. Two-thirds of our work is in conflict-affected countries where people are three times more likely to be undernourished than those living in countries without conflict.

WFP has two ongoing projects that serve Bhutanese refugees in Nepal: the country program (CP) and the protracted relief and recovery operation (PRRO). These projects aim to prevent under nutrition and enable year-round access to food for vulnerable groups, including pregnant and lactating women and young children. Through WFP’s country program (CP), short-term employment provided over the years in food-assistance-for-assets(FFA) projects, has helped vulnerable households to meet their

immediate food needs and gain additional income through food ration and country transfer(WFP, 2016). Similarly, through a longstanding partnership with the United State Department of Agriculture (USDA) “Food For Education Program”, WFP is providing mid-day meals in over 2,500 public schools across the country (WFP, 2016). Mid-day meals serve incentive for children to attend school and fight with under nutrition. Besides, WFP added complementary activities, such as early-grade literacy support, constructing school infrastructure such as kitchens and school water and sanitation facilities to the school meal program. Another program of WFP in Jumla, Mugu of mid-western region and Solukhumbu in the east is Nutrition Program. WFP has been providing Super cereal, a specialized nutritious food, in support of GON in prevention of stunting (WFP, 2016). Due to severe drought in the Karnali region of mid-western region in 2016, WFP extended the nutrition program in three more districts.

WFP is assisting the most vulnerable refugee families in Bhutanese refugee camps with full food ration. The overall goal of this protracted relief and recovery operation (PRRO) is to save lives and protect livelihoods of the refugee population by

providing secure access to food, improving the nutritional status of refugees and enabling them to acquire skills that will improve self-reliance (WFP, 2016). With the objective of giving beneficiaries access to a simple and safe means of seeking information and providing feedback or voicing complaints, WFP has introduced a toll-free telephone line “Namaste WFP”. WFP is principal organization committed to end hunger and achieve food and nutrition security in Nepal. It provides support to the GON through REACH (Renewed Efforts Against Child Hunger and Under nutrition) including partnership with the United Nations Children’s Fund (UNICEF), the Food and Agriculture Organization of the United Nations and the World Health Organization (WHO). It also co-facilitates the United Nations network for the Scaling Up Nutrition (SUN) movement, and works towards improved stakeholder and multi-sectorial coordination at national level for a harmonized nutrition information system, developing the capacity of relevant government institutions on nutrition-specific and sensitive interventions at national and local levels, also in supporting the governmental food and nutrition security.

### **3.1.4. Government of Nepal**

Government of Nepal has launched many programs in different regions of Nepal with technical and financial support of international organization. USAID has made substantial contributions to health and nutrition in partnership with the Government of Nepal (GON) and other external development partners. As part of its strategy to strengthen the country's health and nutrition programs, USAID, in consultation with the Ministry of Health and Population (MOHP) and relevant partners, designed the Integrated Nutrition Project--‘Suaahara’ (Good Nutrition). Suaahara is a five-year comprehensive community-focused project dedicated to improving the health and nutritional status of pregnant and lactating women and children under two years of age, thereby directly addressing the vulnerable points of development which result in chronic under nutrition or stunting. The project focuses on improving nutrition; maternal, newborn, and child health (MNCH) services; reproductive health/family planning services; water, sanitation and hygiene; and home-based gardening in 20 districts. It works through Female Community Health Volunteers (FCHVs) who disseminate health messages, services and commodities at the household level. These volunteers build the knowledge and develop demonstration farms

for poultry farming, productive sanitation, integrated pest control and nutritious vegetables. Suaahara integrates health, nutrition, agriculture and food security activities through nutrition and hygiene education, small-scale backyard farming, and greater access to and understanding of the need for a variety of healthy foods which are expected to improve the impact of agriculture production and economic development on nutritional status in the Mid- and Far-West regions (USAID, 2016).

Another project executed by Ministry of Federal Affairs and Local Development is Community Actions for Nutrition Project: Sunaula Hazar Din with financial support from World Bank. The implementation period is from October 2012 to March 2017 in hill and Terai districts of central and eastern development region. The Project is designed primarily to address the risk factors for chronic (stunting and micronutrient deficiencies) as well as acute malnutrition (wasting) aligning with the main focus of the Government of Nepal's Multi-Sectoral Nutrition Plan. The focused group of people are young girls and young women between 15 and 25 years of age; pregnant women and women who may want to become pregnant in the next 6 months; children 0-6 months of age and their caretakers; children 6-24 months of

age and their caretakers; and communities involved in community-wide nutrition related interventions (such as hygiene, safe drinking water, sanitation, etc). The initiative social mobilization approach is through community- driven “Rapid Results for Nutrition Initiative” (RRNI) where each ward in a selected VDC commits to a series for predefined nutrition relevant goals. These RRNI teams in VDC work in collaboration with the district Nutrition and Food Security Steering Committee (NFSSC). The working strategies of this projects are family planning practices of girls and young women aged 15-25 years; practices of pregnant women regarding iron and folic acid supplementation; breastfeeding practices of mothers with children 0-6 months of age; child feeding practices of households with children 6 to 24 months of age; attitude of community members towards the importance of keeping girls school until age 20; attitude of community members towards the importance of reducing indoor air pollution and attitudes of pregnant women towards their dietary needs. Besides these Sunaulo Hajar Din is also working with improved hygiene practices (hand-washing and use of latrines); reduced smoking during pregnancy; reduced indoor air pollution; improved safety of drinking water; continued schooling for

girls; delayed age of first pregnancy until at least the age of 20; improved dietary intake and diversity during pregnancy; increased consumption of micro- nutrient supplements during pregnancy; improved breastfeeding practices, improved feeding practices for children aged 6 to 24 months (frequency, micronutrient intake, continued feeding during illness etc.).

Similarly, another running project is Agriculture and Food security Project (AFSP) with financial support of Global Agriculture and Food Security Program (GAFSP). The AFSP is an innovative program designed to improve the livelihood of crop and livestock farmers by developing and facilitating the adoption of improved inputs and technologies. It also aims to improve the nutritional practices of mothers and young children. AFSP has been implemented in 19 districts of the Mid- and Far-Western development region of Nepal and adapted to three agro-climactic zones: hills, low mountains, and high mountains. The beneficiaries of the project are crop farmers (estimated direct beneficiaries 50,000), livestock farmers (32,500), women engaged in household/kitchen-garden production (35,000), and households with pregnant and nursing (with children 6-24 months) women (45,000) (AFSP, 2013). The

AFSP is involved in adaptation and release in specific agro-ecologies of relevant available technologies to boost productivity and climate resilience of agriculture, enhancing local availability of improved seed and livestock, supporting farmers to adopt improved management and husbandry practices, use of modern inputs and market access and improving household availability of nutritious foods through community grain banks, homestead production, promotion of diversified diets, increased nutrient intakes and improved feeding and caring practices for pregnant and nursing women and children up to 2 years of age

#### **4. Conclusion**

Nepal is a developing country which is facing food and nutrition insecurity condition due to low productivity, limited livelihood opportunities, inefficient food distribution system, weak market linkage, poor infrastructure, and lack of awareness among general public about healthy food habit. Rural and resource poor farmers have limited access to improved seeds, new technologies, and market opportunities leading to declining agricultural production that has depressed rural economies and increased widespread hunger and urban migration. In this scenario different policies and programs are

implemented to end hunger in the country and obtain one of the sustainable development goals. United Nations Development Program (UNDP), Food and Agriculture Organization (FAO), World Food Program (WFP) are major international organization aimed to reduce food insecurity in Nepal. Five districts of Karnali zone having undulated topography unsuitable for production and difficulty for transportation are facing food insecurity. Many of international and national programs are mainly targeted to the Karnali zone of Nepal. Similarly, after the massive earthquake of April 25, central and western hill districts are facing hunger condition. Different programs have been launched to these areas for long-term recovery and resilience work, which is critical to help vulnerable farmers rebuild their livelihoods, by investing in prevention of post-harvest losses, planting of spring vegetable and maize crops, livestock support, improving nutrition and income generation, safeguarding livestock health and productivity and rehabilitation of small-scale irrigation schemes. All these strategies adopted by national and international programs are uplifting living standard of people, which is obviously a step towards food secure nation.

## References

- ANGOC. (2012). *Food and nutrition security in Nepal: National status from the perspectives of civil society*
- FAO. (2015). *Regional Overview of Food Insecurity Asia and the Pacific*. Rome: Food and Agriculture Organization of the United Nations.
- FAO. (2016). *Food and Nutrition Security; A status report if Nepal*. Rome: Food and Agriculture Organization of the United Nations.
- FAO. (2016). Nepal earthquakes situation report. Rome: Food and Agriculture Organization of the United Nations.
- MOAD. (2013). Food and Nutrition Security Action Plan (FNSP).
- UNDP. (2016). UNDP in Nepal; A annual report.
- WFP. (2016). *Global analysis of food and nutrition security situation in food crisis hotspots*. Joint research center.
- WFP. (2016). *Restoring food and nutrition security and building resilient livelihood in earthquake affected areas*. Standard project report.
- WFP. (2016). *Emergency food assistance to populations affected by earthquake in Nepal*. Standard project report.
- WFP. (2016). *Food assistance to refugees from Bhutan in Nepal*. Standard project report.

## **Short communication**

### **A BRIEF INTRODUCTION ABOUT DEPARTMENT OF AGRICULTURAL EXTENSION AND RURAL SOCIOLOGY OF POSTGRADUATE PROGRAM OF INSTITUTE OF AGRICULTURE AND ANIMAL SCIENCE, TRIBHUVAN UNIVERSITY**

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## **INTRODUCTION**

Department of agricultural extension and rural sociology is one of the department of Postgraduate program of institute of agriculture and animal science (IAAS), Tribhuvan University. Under this department various postgraduate courses are being taught. Courses like Extension Education, Group dynamics and Leadership, Development Communication, Rural Development, Communication of Innovation, Research Methodology, Development Sociology, Cooperative and Marketing Extension etc. are offered regularly in this department. There are eight (8) students enrolled each year for the PG level. This department has lack of human resource as only one faculty is available on regular basis in Kirtipur. Other faculties contribute this department from the constituent campuses and different agriculture line agencies of Nepal. Vision of this department is to provide excellency and leadership in teaching and research towards cross-cutting areas of agricultural extension and rural sociology.

## **METHODOLOGY**

This article is based on different official records of IAAS/TU, web surfing. Author's own experience also added.

## **RESULTS AND DISCUSSION**

The department of agricultural extension and rural sociology focusses on research related to agricultural extension, agrarian and rural studies. The aim of the postgraduate program in

agricultural extension is to serve rural communities by facilitating agricultural and rural development through excellence in teaching, learning and research. Following faculties are contributing in this department.

Table 1: Faculties Contributing to Department of Agricultural Extension and Rural Sociology of PG program IAAS/TU

S.N.	Name	Position	Qualification	Related Subjects
1.	Rajesh Paudel PG Department Chair	Assistant Professor	M.Sc.	Group Dynamics leadership, Development Sociology, Cooperative
2.	Mahesh Jaishi Team leader IAAS/CRS project	Assistant Professor	M.Sc.	Research Methodology
3.	Milan Subedi Campus Chief	Assistant Professor	M.Sc.	Extension Education
4.	Tilak Karki Kisan Call Center	Assistant Professor	M.Sc.	Development Communication
5.	Dr. Purna B. Nepali	Associate Professor, Kathmandu University	Ph.D.	Approaches and Strategies of Rural Development
6.	Dr. Raju Ghimire	Senior Government Officer	Ph.D.	Communication of Innovation
7.	Dr. Ganga Acharya	Senior Government Officer	Ph.D.	Administration and Management of Agri-Extension Programs
8.	Dr. Rajendra Uperty	Senior Government Officer	Ph.D.	Administration and Management of Agri-Extension Programs
9.	Nilkantha Pokharel	Senior Government Officer	M.Sc.	Communication of Innovation

10	Bijaya Bijukche	Faculty White house Himalayan college	M Sc	Social psychology

(Source: Official records of IAAS/TU, 2019)

For agricultural development of Nepal, human resource development through university education, technology development through research, and technology transfer through extension are mandatory. Keeping view on this reality, Master of Science in Agriculture (M.Sc.Ag) majoring in Agricultural Extension course was started since 1999 and so far ninety nine (99) students have been enrolled. Out of them seventy nine (79) students have completed the degree requirements. Following table presents their names and research titles.

Table 2: Postgraduate students (Agricultural Extension) till date from the Department of Agricultural Extension and Rural Sociology of PG program IAAS/TU and respective research.

S. N.	Name and ID of researcher	Thesis Title
1	Bal Ram P Koirala R-1999-AERS-01-M	Training needs of front farm womens involved in a agricultural production programs of Dhanusha District Of Nepal
2	Gita Koirala R-1999-AERS-02-M	Gender analysis of agricultural extension delivery system of Nepal: A case of Nawalparasi District
3	Kishor Prasad Pant R- 1999-AERS-03-M	Gender perspective on characteristic, processes and performance of farmers groups organized by District Agricultural Development Office, Chitwan
4	Narayan Raj Joshi R-1999-AERS-04-M	Irrigation management transfer and adoption of agricultural technology in Khageri irrigation system Chitwan, Nepal
5	Raja Ram Adhikari R-1999-AERS-05-M	Organizational performance of farmers groups under two different agencies in Nawalparasi District of Nepal

6	Damodar Kandel R-2000-AERS-01-M	Differential impact of migration on agricultural: A comparative study of male headed and female headed household in western-mid hills of Nepal
7	Dinesh Prasad Ray R-2000-AERS-02-M	Effects of labor Migration on Agriculture production in Mohattari district
8	Govinda P. Sharma R-2000-AERS-03-M	Content analysis and effectiveness of video documentry and farm Telecast (with reference of Paddy crop)
9	Leela Ghale R-2000-AERS-04-M	Factors influencing the adoption of biogas plant in Mangalpur chitwan district of Nepal
10	Min P. Budhathoki R-2000-AERS-05-M	Performance of packet Package programme as a Vehicle for Agriculture development in Kaski District
11	Rajendra Uprety R-2000-AERS-06-M	Factors influencing participation of members in farmer group activities in the sunsari district of Nepal
12	Sharad C. Shrestha R-2000-AERS-07-M	Institutuional analysis of farmers' group (LO'S) formed by district Agricultural Development Office (Chitwan).
13	Shridhar Adhikari R-2000-AERS-08-M	Training needs of front line extension workers of mid-western development region of Nepal
14	Geeta Malla R-2001-AERS-01-M	Socio-Economic impact of Village development program: A survey of suda VDC Bhaktapur District, Nepal
15	Hari Krishna Poudel R-2001-AERS-02-M	Conflict management and community development initiative of participatory conservation programme in the Buffer Zone of Chitwan, Nepal
16	Hridaya Nath Ghimire R-2001-AERS-03-M	Effectiveness of farmers training on the Adoption of improved citrus technology in Lamjung district of Nepal
17	Ram Milam Prasad Bishwakarma R-2001-Aers-04-M	Comparative analysis of training needs of men and women farmers related to field crop production program in Rupandehi District, Nepal

18	Shyam P. Rijal R-2001-AERS-05-M	Effectiveness of farmers training for cereal crop production in Myagdi and Baglung districts of Nepal
19	Tapendra Bahadur Shah R-2001-AERS-06-M	Effectivveness of government and non-government organizational partnership for Agricultural extension in the Terai areas of Nepal
20	Mahesh Jaishi R-2002-AERS-01-M	Impact of rural-urban partnership program on human resource development : A Case From Rupandehi District, Nepal
21	Purna Bahadur Nepali R-2002-AERS-02-M	Gender assessment of the hill farming systems in Nepal: An analysis from Globalisation perspectives
22	Purna Nand Bhatt R-2002-AERS-03-M	Performance of farmers field school (FFS) approach in promoting integrated pest management (IPM) technology in Chitwan district, Nepal
23	Kul Prasad Adhikari R-2003-EXT-01-M	Effectiveness of integrated pest management technology through farmers field schools on vegetable production in Nawalparasi and Kavreplanchowk Districts of Nepal
24	Yagya Raj Adhikari R-2003-EXT-02-M	Effectiveness of technology intervention process in poverty reduction : A case of vegetable production in Phulkahakatti and Khirauna VDC, Siraha
25	Damodar Kandel R-2003-EXT-03-M	An assessment of village animal health worker training program under rural training center : A case study from Tanahun and Lamjung Districts of Nepal
26	Hikmat K. Shrestha R-2003-EXT-06-M	Communication pattern used by field level extension personal working in crop diversification project, Department of Agriculture
27	Rabindra B. Pradhan R-2003-EXT-07-M	TrainingnNeeds of front line extension workers in District Agriculture Development Offices of Nepal
28	Kamlesh Tiwari R-2004-EXT-01-M	Rural migration and labor influencing social system, agricultural productivity and alternative management practices in Dhanusha District

29	Dinanath Paudel R-2004-EXT-02-M	Contribution of non-govermental organizations for vegetable production in Two VDCs of Makwanpur District
30	Kanchan Joshi R-2004-EXT-03-M	Role of leasehold forestry in poverty alleviation : A Case of Hadikhola VDC, Makwanpur District.
31	Mahesh Joshi R-2004-EXT-04-M	Problems and issues related to technology diffusion in gender perspectives and poverty reduction in Makwanpur District.
32	Deepak K. Sharma R-2004-EXT-05-M	Evaluation of information sources utilized by Agricultural Extension subjet-matter specialists in Nepal.
33	Binod Kafle R-2005-EXT-01-M	Diffusion of organic vegetable production in Phoolbari VDC of Chitwan District, Nepal.
34	Ghana Shyam Bhandari R-2005-EXT-02-M	Assessement of different indigenous poison baits against cucurbit fruitFly (Bactrocera Cucurbitae Coquillett) in summer squash ( <i>Cucurbita Pepo L.</i> ) in Chitwan, Nepal.
35	Ram H. Timilsina R-2006-EXT-01-M	Assessment of documentation, promotion and dissemination of local innovation: a case of chitwan and dhading districts of Nepal
36	Hom Raj Bista R-2006-EXT-02-M	Adoption of improved farm practices on potato ( <i>Solanum Tuberosum L.</i> ) cultivation in Makwanpur District, Nepal.
37	Sophi D. Tamang R-2006-EXT-03-M	Comparative study of the farmers group formed by District Agricultural Development Office and Non-Governmental organization in Chitwan District.
38	Raju Kandel R-2006-EXT-04-M	Improving human resource by entrepreneurship training in Agriculture for poverty reduction - A Case from VDP of Chitwan, Nepal.
39	Nirmal Lama R-2006-EXT-05-M	Adoption of organic vegetable production practices in Kathmandu district, Nepal.
40	Dor B. Rayamajhi	Effectiveness of small scale irrigation program in incheasing agricultural production in Arghakhanchi District, Nepal.

	R-2006-EXT-06-M	
41	Santosh Adhikari R-2007-EXT-01-M	Genfer role in commercial vegetable farming in Dhading District, Nepal.
42	Nilkanth Pokharel R-2007-EXT-02-M	Information seeking and utilization behaviour of commercial vegetable farmers of Chitwan and Dhading districts.
43	Rajesh Paudel R-2007-EXT-03-M	Institutional development of farmer's field school : A case of Chitwan, Nepal.
44	Mina Kandel R-2007-EXT-04-M	Factors influencing members participation in farmer group activities in the Chitwan District of Nepal.
45	Rohini Raj Ghimire R-2007-EXT-05-M	Adoption of recommended practices of rice ( <i>Oryza sativa L.</i> ) cultivation by the farmers in Lamjung, Nepal.
46	Shyam P. Rijal R-2007-AERS-06-M	Effectiveness of farmers training for cereal crop production in Myagdi and Baglung districts of Nepal
47	Sunil Kafle R-2008-EXT-01-M	Performance of farmer's group on human resource development at grass root level in Chitwan, Nepal.
48	Pankaj Raj Dhital R-2008-EXT-02-M	Factors affecting adoption of recommended technology of cauliflower production in Kavre District of Nepal.
49	Narayan P. Timilsina R-2009-EXT-02-M	Effectiveness of farmer to farmers diffusion strategy in adoption of sustainable soil management practices in Baglung District, Nepal.
50	Dinesh Acharya R-2009-EXT-03-M	Effects of labor migration on agricultural production of Nawalparasi District.
51	Pradeep T Badhahi R-2009-EXT-04-M	Training need assessment on vegetable growers in Dhanusha District of Nepal.
52	Ram Prasad Pandey	Adoption of imporved maize production practices Western Hills of Nepal.

	R-2009-EXT-05-M	
53	Shiva Sundar Ghimire R-2009-EXT-06-M	Training needs of front line extension workers of District Agriculture Development offices of Nepal.
54	Durga Prasad Rijal R-2009-EXT-07-M	Effectiveness of farmer's training organized by Government of Nepal Nawalparasi District.
55	Udit Prakash Sigdel R-2009-EXT-08-M	Impact of result demonstration on System of Rice Intensification (SRI) adoption among participant and non-participant farmers in Chitwan, Nepal.
56	Bauwa Lal (Yadav) R-2009-EXT-09-M	Adoption of improved farm techniques on potato ( <i>Solanum tuberosum L.</i> ) cultivation in Terhathum District, Nepal.
57	Baikantha Adhikari R-2009-EXT-10-M	Adoption of improved practices of Qyster Mushroom ( <i>Pleurotus spp.</i> ) cultivation in Kathmandu District, Nepal.
58	Bharat Prasad Bidari R-2009-EXT-11-M	Gender assessment of Agricultural Extension Delivery System of Nepal : A study in Makawanpur District.
59	Birendra Prasad Sinha R-2009-EXT-12-M	Training needs assessment of potato growers in Bara District, Nepal.
60	Prakash Dangal R-2010-EXT-01-M	Adoption of maize seed production technology in Chitwan District, Nepal.
61	Govinda Bahadur K.C .R-2010-EXT-02-M	Status of Narayani lift irrigation project in agricultural production in Western Chitwan.
62	Shiv Ratna Sah R-2010-EXT-03-M	Effectiveness of farmers' training for agricultural production in Dhanusha District.
63	Milan Subedi R-2011-EXT-01-M	Usage and preference of extension communication channels by farmers of Kailali District, Nepal.

64	Sudeep Subedi R-2011-EXT-02-M	Effectiveness of farmer-to-farmer extension approach in adoption of sustainable management practices in Syangja Nepal.
65	Amarraj S. Ghimire R-2011-EXT-03-M	Assessment of need and information seeking behaviour of rubber ( <i>Hevea brasiliensis</i> ) growing farmers in Jhapa District, Nepal.
66	Rajesh Gurung R-2011-EXT-04-M	Organic waste management in agriculture : A case of Bharatpur Municipality, Chitwan District, Nepal.
67	Ram Sagar N Sah R-2011-EXT-05-M	Factors influencing group performance of commercial vegetable farmers of Dhanusha District.
68	Gopal Sharma Lamichhane R-2011-EXT-06-M	Effectiveness of farmers group welfare fund in Agricultural Development of Nawalparasi District, Nepal.
69	Jhalaknath Kandel R-2011-EXT-07-M	Effectiveness of agricultural program broadcasted by the local F.M. Radios in Chitwan District, Nepal.
70	Neel Kamal Singh R-2011-EXT-08-M	Effectiveness of farmer's training on cereal and vegetable crop production organized by Dado, Sunsari, Nepal.
71	Narendra K Mahaseth R-2011-EXT-09-M	Information seeking and utilization behaviour of commercial vegetable farmers of Dhanusha District.
72	Usha Kiran Bhatta R- 2012-EXT-01-M	Assessment of vermicompost technology adoption in chitwan, nepal
73	Niraj Prasad Koirala R-2012-EXT-03-M	Socio-economic attributes of commercial agriculture farmers in Dhankuta and Siraha Districts of Nepal.
74	Krishna Khadka R-2012-EXT-04-M	Contribution of agriculture cooperative in agriculture extension services for member farmers in Chitwan district, Nepal
75	Sudip Regmi R-2012-EXT-05-M	Assessment of community based agro-biodiversity management approach of Nawalparasi District, Nepal.

76	Benu Prasad Prasai R-2012-EXT-06-M	Home garden as a viable option for household food security and socio-economic empowerment of disadvantaged people : Evidence from Jhapa District, Nepal.
77	Santosh Khanal R-2015-EXT-02-M	Study on dimension of foreign migration: A case of Lamjung district, Nepal
78	Prakash Baral R-2015-EXT-03-M	Effectiveness of extension methods : A case of western midhills in Nepal
79	Binod Raj Timilsina R-2015-EXT-05-M	Attitude of farmers on flood relief service providers in Chitwan district, Nepal

(Source: Official records of IAAS/TU, 2019)

### **Research works under the department of Agricultural Extension and Rural Sociology**

In the past, different research works were done on different thematic areas of agricultural extension. At present some research projects Technical Advisory Service/CRS-IAAS, student focused faculty research project/ HELVETAS were carried out mostly on decentralization and adoption. Some faculties, postgraduate students and UPA students at undergraduate level are being engaged in research activities.

### **CONCLUSION**

Department of agricultural extension and rural sociology is the only department dealing solely with the agricultural extension in Tribhuvan University. Varieties of courses are offered based on different aspects of agricultural extension, agrarian and rural studies. The courses are taught by internal faculties and the subject matter specialist and experts out sourcing from other university and the private sector who have background of education and industry experiences in agriculture sector. Very recently farmers call center also operating from Paklihawa Campus under the socio-economic lab facilitated by Directorate of Extension ( DoE).

### **References**

Institute of Agriculture and Animal Science, Tribhuvan University. 2019. Official records.  
[www.iaas.edu.np](http://www.iaas.edu.np)

## INFORMATION COMMUNICATION TECHNOLOGY (ICT) IN AGRICULTURE DEVELOPMENT

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Agriculture extension is integral component for development of agriculture sector. Up to this period many extension systems and approaches were adopted, but bitter reality is that none could sustain the needed momentum in the long run. Dissemination of information along with new concepts and farming techniques can bring novel opportunities to the farmers. At present context, the issues of privatized and ICT based advisory services are gaining light in Nepal.

The implementation of ICT can play pivotal role in flourishing agriculture sector. In the developing world, ICT applications are crucial in reducing information and coordination costs. The spread of mobile phones in rural areas has already led to important changes in the agricultural sector. Reducing these costs in the context of developing countries characterized by poor infrastructure, promotes market access, facilitates financial inclusion and risk management, contributes significantly to

early warning, and can be central in revolutionizing agricultural extension.

Information is considered as one of the most vital resources for development. The main challenge of our age is not producing information or storing information, but getting people to use information. Timely availability of relevant information is vital for effective performance of managerial functions such as planning, organizing, leading, and controlling.

ICTs can promote learning, which in turn can facilitate technology adoption among farmers, but can also revolutionize early warning systems through better quality data and analysis. On the other hand, policymakers can also benefit from increased information sharing, which allows them to gather a more complete overview of the situation on the ground in their country. In this vein, ICTs also have enormous potential to reach the poorest of the poor—those without access to land or other assets—and also address gender issues by equalizing

access to information and services by women and men.

The manner or mode by which information is delivered is also a crucial determinant of effectiveness. ICTs encompass many different types of technologies, from computers and the Internet to radio and television to mobile phones. Their impact varies widely depending on which specific technology is used, but also on farmers' level of literacy. Short message services (SMS), voice messages, short video trainings, audio messages, social media interventions and virtual extension platforms that can improve peer networks (though online platforms/websites) can effectively enable farmer-to-farmer and farmer to experts information sharing. Audio or voice-based question and answers services may overcome the limitations of text-based platforms. SMS

messages can be effective for simple price or weather information, but to facilitate and revolutionize learning and make knowledge widely accessible, especially in the context of adapting agriculture to climate change, other methods and modes will be necessary.

In nutshell, ICT applications can make a significant contribution to increase crop productivity in Nepal. Information and Communication Technology can do so by collecting and sharing timely and accurate information on weather, inputs, markets, and prices; by feeding information into research and development initiatives; by disseminating knowledge to farmers; by connecting producers and consumers, and through many other avenues.

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The **Journal of Agricultural Extension, Agrarian and Rural Studies (JAEARS)** is seeking for research findings, review papers, action research, case study and personal experiences in the discipline of Agricultural Extension and agrarian rural studies. Journal publishes only the original research and review articles presenting theoretical/practical discussion related to discipline. Acknowledging the meagerness of journal till date, this JAEARS aims at gap fulfilling, advancement and dissemination of scientific knowledge concerning agricultural extension, agrarian and rural studies in Nepal.

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### **Format**

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Outline: As in APPENDIX

Language: English

Font: Time New Roman, 12 pt,  
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Spacing: 1.15

Margin: 1" at top, bottom, left, right

Submission format: .docx

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Abbreviation should be minimum and not allowed in title, running head, key words, and beginning of the sentences. Units of measurement should be in International System of Units (SI).

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The submitted articles should not cross the word limit of 5000 including abstracts, references and notes. Special attention should be given to the language for not making it sexist and racist along with the adherence to the basic ethical principle of no harm. The direct copying of ideas or findings from other references that promote plagiarism should be strictly avoided. Paper should not contain any illegal, unauthorized, and unethical content and all the responsibilities of whatsoever is written in their papers should be taken by author/s and thus they will have nothing to do with journal and the members of the Editorial Team.

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poor

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poor

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Style: Clear and concise,  
acceptable, low

Length: Appropriate, acceptable,  
too long, too short

Language: Appropriate, acceptable,  
poor

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The editors then make the first decision based on the reviewers' comments and evaluation category as follows: accept with or without editorial revisions; request the author/s to revise their manuscript to address specific concerns before final decision is made; reject.

## **APPENDIX**

### **General Outline of the submission paper**

#### **TITLE**

It should be concise and precise. It should get the attention of a potential reader while scanning a journal or a list of titles.

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Abstract of the submitted paper supposed to be between 150-200 words. It should clearly define the objectives, methodology, results and conclusion of the paper.

**Key words:** List of key words (i.e. not more than 5) must be mentioned below abstract.

#### **INTRODUCTION**

State the purpose, give only strictly pertinent references and do not review the subject extensively.

#### **METHODS AND METHODOLOGY**

These should be concise but allow confirmation of observations and repetition of the study.

#### **RESULT AND DISCUSSION**

Graphs and photographs mentioned in paper should be clearly understandable along with their headings.

Text, tables, and figures should be presented in logical sequences and in Arabic numerals. Figures and tables must be centred. Figure should be in high resolution.

Please check all figures in your paper both on screen and on a black-and-white hardcopy. When you check your paper on a black-and-white hardcopy, please ensure that:

- the colours used in each figure contrast well,

- the image used in each figure is clear,
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Discussion should be summarized and interpreted the findings in the result section. Observations should be related to important relevant studies.

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