

# FROM SUBSISTENCE PRODUCTION TO COMMERCIAL: SPARKING AGRICULTURAL REVOLUTION IN DHADING-1

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### **Abstract**

Nepalese agriculture has stagnated growth of agricultural productivity. Dominance of rain-fed agriculture, land fragmentation and degradation, increasing climate uncertainties and poor institutional responses are some of critical factors that are hindering Nepalese agriculture. Additionally, farmers' reluctance towards agriculture is a serious problem to be addressed immediately. Some of new consequences like feminization, and land abandonment can be observed in rural areas. The low productivity of traditional agriculture, limited opportunities for its commercialization, and limited opportunities for off-farm and non-farm employment opportunities have caused the absence of 1.9 million youths, mainly due to their migration for foreign employment (CBS 2011). This research seeks to explore the current agricultural policies aim to transform subsistence to commercial agriculture, prospects and challenges of Commercialization in Sattedevi VDC of Dhading.

**Acknowledgment:**

I would like to thank the **Daayitwa Team** for offering this Winter Fellowship 2015. I find the fellowship platform a unique and perfect opportunity, where I was able to share my past experience and got to learn directly from policy makers, and execute innovative ideas for the welfare of rural poor people.

As a graduate of agricultural science, I was interested to work on contemporary issues of/entailing agricultural transformation and policy bottlenecks. Also, I was confident enough to implement an agriculture project which could set an exemplary farm village for all. For this, I was assigned to work with Mr. Hon Parshuram Tamang. I chose Sattedevi VDC of Dhading and started my Daayitwa journey. After one level of consultation with district level stakeholders and farmers, I prepared basic planning of soil testing and provide agriculture cropping plan for farmers. I was really excited with (the?) engagement of farmers.

But, unfortunately, Sattedevi was badly hit by the mega-earthquake; none of the houses (could resist/stood) the earthquake. I have deep condolence to departed soul and pray for that family. I am really indebted to the support from the farmers of Sattedevi VDC. After the earthquake, I suddenly changed my priority plan and asked farmers for their need on telephone talk. Mr. Kumar Sunar told that they were still suffering to get tents. Then, with help of **Nepal Rising** and some support from Binod Shah of USA, I was able to distribute tents to 125 households. Currently I am planning to continue my SIAS fellowship in same VDC, and so that I can support them in long run agricultural planning.

Finally, this was really motivating journey over period of five months at Daayitwa. Actually, I wanted to involve myself and get connected with energetic youth group. In, Nepal Ko Yuwa team, I saw ray of hope within them. After having direct interaction with Pukar, Busan and Suvechya, I felt like, I find my friends whom I can work with. I knew that I was not alone. I was able to take inspiration and motivation from them all and my beloved fellows. I will continue this energy to revive my passion to work for betterment of our society and walk with our colleagues in our shared journey.

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## **1. Introduction**

The research aims to identify key policy bottlenecks inhibiting commercialization of agriculture in Nepal, and further analyzes implementation of/how different policies have been implemented, and hence, provides some strategic suggestion in achieving goal of agriculture development of Dhading district. Additionally, the report attempts to identify some adaptive challenges created by crisis of Earthquake, with especial reference to agriculture and food security. Some relief interventions are also discussed in latter section of paper.

In the first section of the research paper, different policy goals, its achievement and institutional support is evaluated. In the second, the current agricultural institutional setup and its performance is analyzed with respect to enhanced production and productivity. Moreover, this section critically examines current agriculture programs and project and dissects various intervention approaches in place like the public private partnership, OVOP, private entrepreneurships and public partnership.

Finally the paper discusses the empirical case of Sattedevi VDC of Dhading and analyzes with critical policy an aspect which hinders the commercialization in Sattedevi VDC.

### **1.1 Concepts of Agriculture Commercialization**

It is imperative to conceptualize what commercialization of agriculture entails, prior to exploring its prospects and challenges in the Nepalese context. Pinagali and Roes grant (1995) suggest that commercialization of agriculture is long transformation process from subsistence to semi-commercial and then to a fully commercialized agriculture. In a fully commercialized agriculture, however, inputs are predominantly obtained from markets and profit maximization becomes the farm household's driving objective. Usually, commercialization is generally understood as sale of surplus product in a market, however Pingali (1997) argued agricultural commercialization is marked by the choice of input and products and decisions based solely on the principles of profit maximization.

Further, it has to consider both the input and output sides of production, and the decision-making behavior of farm households in production and marketing simultaneously. Therefore farmers have to consider both the commodity and the market to target, selection crops and risk evaluation. Considering the argument of Pingali and Rose grant (1995), commercialization leads to more specialization both at a regional and household level, and at the same time to more diversification at national level.

In this research, definition of the commercialization was taken from the perspective of Pingali and Rose grant's policy paper on Agricultural commercialization and diversification: Commercialization of Nepalese agriculture was goal from first five year plan. Different service and support agencies were established by government to facilitate farmers. Nonetheless, the process of agricultural commercialization has been highly debated, particularly Nepalese policy makers on process of commercialization. During early phase of agricultural development, government-led service agencies were actively engaged, while in current years, private, cooperatives and other non-state actors are involved agricultural development. It is evident that Nepal has failed to commercialize its large sections of farm area.

## **1.2 Problem Context of Nepalese Agriculture**

It's been more than 60 years of systemic agriculture planning in Nepal which focused in technology extension and delivery of services to farmers; still farmers are suffering –for right information and resources, particularly during the time of farming. Despite having sufficient land for self-consumption, 60 % farmers are still unable to produce sufficient food for a year. Most people argue that large sections of population have small land holding of farming households with an average of 0.62 ha and (CBS, 2011).

Agriculture is burdened to feed the growing population. The stagnated growth in agricultural outputs and more than 24 % of population below poverty line further exacerbated the above situation. Altogether, more than 3.8 million household are involved in agriculture, hence, sporadic distribution of agriculture land to the large sections of population downsizes the land holding of farming households to a miniscule average of 0.62 ha. Small-holdings in

agriculture in Nepal pose considerable challenges for the transformation of agriculture and addressing food security and nutritional challenges. Of the country's total 75 districts, 32 districts are characterized as chronically food insecure districts (WFP, 2015). National food balance sheet of the past ten years shows continuous fluctuation in the status of national food production (MOAD, 2015).

Table 1: Production Status of food grains

Items/year	Metric tons (in thousands)							
	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
<b>Total Production</b>	7329	8069.1	8114.1	8615.4	9457.6	8738		9266.2
<b>Edible Production</b>	5195.2	5170.4	4967.5	5512.9	6037.7	5648.3		5500.5
<b>Requirement</b>	5172.8	5303.3	5297.4	5069.8	5151.4	5239.8		5345
<b>Balance</b>	22.4	-132.9	-322.9	443.1	886.3	408.4	789.8	155.5
<b>Balance % of Requirement</b>	0.4	-2.5	-6.2	8.7	17.2	7.8		

*Total Cereal production requirement (Source: MOAD)*

National Agriculture Policy 2061 envisioned enhancing production and productivity to meet food demand and transform agricultural economy with growth of sectors of economy of Nepal. However productivity of major crops such as rice and wheat is a comparatively very less/low compared to other South Asian neighbors (Pandey et al., 2009). Different yearly statistical data published by Ministry of Agriculture and Development show that major growing crops like rice and wheat, which determines 75 % to total crops production, have a stagnated growth rate and have declined in production in recent years. Some of potential sub-sector like vegetable production has shown some ray of hope in growth of agriculture. In recent years, vegetable farming households have increased from 0.98 million mt to 1.93 million mt. However, this is not sufficient enough to transform Nepal's agrarian economy.

Table 2: Agriculture at Glance

Total Population	26,494,504
Poverty Level	24 %
Total Agricultural Households (No.)	3831093
Total Arable Land (ha)	2,162,751.10
Average Size of land holding	0.659
Cropping Intensity	1.85
Irrigated Land	53 %

Summary Findings of Agricultural Census 2011; CBS, 2011

Although agriculture land has gradually increased from 1961 to 2001, in the last 10 years, more than 5% of land has been degraded. The farming households increased to by 0.47 million and reached to 3.83 million, there is decreasing trend of land use. Currently farming land decreased by 0.13 million ha from its earlier use of 2.65 million ha land.

Table 3: Trend of Landholding and Agriculture Land Area Change

	Census Year					
	1961/62	1971/72	1981/82	1991/92	2001/02	2011/12
Landholding (in Million)	1.54	1.721	2.194	2.7361	3.3641	3.831
Land area( million Ha)	1.685	1.654	2.464	2.597	2.654	2.525

CBS, 2001(Summary Findings); CBS, 2011

### 1.3 Import and Export of Food Grains

As compared to export of food grains, import is higher and increasing every year. Rice import trend indicates deepening food insufficiency.

Table 4: Import and Export Scenario of Major Food Grains.

Item /year	Mt(000)					
	2009/10	2010/11	2011/12	2012/13	2013/14	2104/2015
<b>Rice Import</b>	102846	133489	382108	393370		
<b>Rice Export</b>	363.8	305.2	338	447		
<b>Wheat Export</b>	3045	1232	2315	1378		
<b>Wheat Import</b>	2545	2163	3548	7072		

Based on Government of Nepal, Ministry of Commerce and Supplies (Trade and Export Promotion Centre).

### **1.4 Research Problem**

Above facts and figures show that Nepalese agriculture has a stagnated growth in agricultural productivity. Dominance of rain-fed agriculture, land fragmentation and degradation, increasing climate uncertainties and poor institutional responses are some of critical factors that is hindering Nepal's agriculture. In this context, farmers' reluctance towards agriculture is serious problem to be addressed immediately. Some of new consequences like feminization, and land abandonment can be observed in rural areas. The low productivity of traditional agriculture, limited opportunities for its commercialization, and limited opportunities for off -farm and non-farm employment opportunities has largely compelled 1.9 million youths (population census 2011) to abandon their ancestral occupation. They have instead opted to migrate abroad for employment (CBS 2011). Hence, this action-oriented research is conducted to explore different policy bottlenecks hindering agricultural commercialization in Nepal and to address the problems mentioned above.

### **1.5 Research Questions:**

How do the current agricultural polices aim to transform subsistence to commercial agriculture?

What are the prospects and challenges of Commercialization in Sattedevi VDC of Dhading 1?

What were technical and adaptive challenges in implementation of Agriculture Development Project?

## **2. Review of Agricultural Policies**

### **2.1 Agriculture Policies and Institutions in Nepal**

Agriculture polices can be divided in three genre of development. Prior development of Agricultural Perspective Plan, Period of Agriculture Perspective

Plan and Post APP Phase. Basically policies and institutions are reframed and readjusted with changing global and local context.

## 2.2 Early Agricultural Polices

The first generation of polices were visible after the formulation of the First Five-Year Plan. Till the Eighth Five Year Plan, agriculture was set as a top priority of the government. During this time, the government pronounced new policy measures to increase the productivity of agriculture and to promote agro-based industrialization

Agencies like Agricultural Development Bank. National Food Corporation (NFC), Agricultural Input Cooperation (AIC) Agricultural Tools Factory, National Tea Development Cooperation and Nepal Jute Cooperation were established. However, the direct control of state, on different factors of production like seeds, fertilizers and agricultural commodities prevented both private sectors and small farmers to flourish. Supplies of these products were limited to urban areas due to limited road facilities. And, a few elites with political ties had control over the supply of these products. As a consequence, the following trends were witnessed in the country (APP, 1994):

- Decreasing trend in per capita food grain production (*per capita food grain production decreased from 376kg in 1974/75 to 277kg in 1991/92*)
- Increasing trend of Poverty incidence (*poverty incidence increased from 40 percent to in 1976/77 to 49 percent 1991/92*)
- Increasing trend in ratio of agricultural import to export. (*Ratio of Agro-import to export ratio increased from one half in 1975-79 to two and half during the period of 1990-93*).

## 2.3 Agricultural Perspective Plan

Then after second generation of agriculture policy development initiated after structural adjustment program in 1986 with wide range of reforms in trade, investment and agriculture. But the pace of reform was accelerated only after establishment of multiparty democratic system which adopted liberal policies. Agriculture Perspective Plan (APP) was formulated with objective of initiating private sector to contribute in agricultural growth and its multiplier effect in overall economy of Nepal. The Ninth Five Year Plan (1997-2001) and Tenth Five

Year Plan were designed largely on the basis of APP (1997-2017). APP has four broad areas of public policy priorities.

- Resource allocation
- Private sector
- Price policy
- Land tenure policy

APP encouraged public investment and foreign assistance towards APP priorities. Though APP was a well sophisticated plan, the overall impact was below expectations. It is been considered that Maoist conflict, poor investment and rigidity in its priority inputs and output were primary factors to its poor performance (APP-ISR, 2006). APP had identified the followings as the priority inputs:

- Fertilizer
- Irrigation
- Agricultural road
- Rural electrification
- Technology
- Agricultural credit

Pant (2013) argues that improvement in living standards have occurred and that the agricultural sector overall is performing better today than in the past. Productivity, infrastructure, food security, and poverty have improved. However, some indicators such as food and agricultural trade deficit and land per capita have shown regress. The annual per capita edible food grain production declined from 198 kg in 1990/91 to 186 kg in 2008/09 (APP).

The APP formulation was based on a narrow view of technology excessively focused on a green revolution perspective that is not appropriate for large parts of Nepali agro ecology.

#### **2.4 The National Agricultural Policy (NAP) 2004**

Despite of failure of APP, its several components have been have been considered while formulating National Agriculture Policy 2004. NAP aims to

increase food production in the country, with the primary goal of attaining food security and improving the livelihoods of the farmers. It seeks to achieve this, by in part, encouraging a transformation from subsistence agriculture, towards a commercialized and competitive system. Some of the sub-sector policies like National Seed Policy (2000) and National Fertilizer Policy (2002), were incorporated and on its basis Agribusiness Promotion Policy (2006), the Agriculture Bio-diversity Policy (2007), and the Poultry Policy (2012) were formulated. Similarly, Nepal Agricultural Extension Strategy 2007 focuses primarily on institutional privatization and decentralization of extension services with spirit of Local Self-Governance Act (LSGA) 1999, which nonetheless did not clearly define the roles of the central government and the District Development Committee (DDC).

A shift in policy to promote private sectors and bring foreign investment was pre-requisite for anticipated growth of agriculture sector. Lack of investment in priority inputs failed to bring change in anticipated output growth. Some of the prominent concepts of land bank, food security of landless households and subsidy to farmers were not addressed properly. However with failure of APP, National agriculture Policy 2004 was somewhat dead document earlier. Also, it was not effectively implemented as Agriculture Business Policy 2007 envisages of zoning Commercial crop/Commodity Production Area, Organic /Pesticide-free Production Area / Agro Product Export Area.

### **2.5 Post Phase of Agriculture Perspective Plan**

National Agriculture Sector Development Plan (NASDP 2011-2015) gave priority to address food security of vulnerable groups. The NASDP provides some strategic guidelines to strengthened food distribution system, and a stronger emergency preparedness, response, and recovery support in order to minimize the extent of vulnerabilities (MOAC 2010a). Similarly, the Three Year Plan (2010/11-2012/13) developed on the basis of the NASDP, has the major objective of ensuring food and nutrition security with increased food production and productivity. It also aims to reduce poverty through agricultural production, and to minimize adverse effects of climate change on agriculture (NPC 2011b). It is evident that the public policies are mainly focused towards food production, rather than towards food access, utilization

and stability for food security. Though food production in the country has increased over the years, rising demand for food-grain due to the rise in population has worsened the problem of food insecurity, particularly among the rural poor in areas with poor transportation facilities.

The National Agriculture Policy (2004) and the Three Year Plan (2011-2014) both emphasized the need for high value commercial crops to replace at least some of the food crop areas. In terms of food security related output indicators, the plan has set target levels of increasing food crop production. The plan has emphasized the need for improved productivity, market linkage and development, rural employment promotion, improved food distribution arrangement, and targeted food assistance. The objectives for the agriculture sector as expressed in the TYIP (2010/11-12/13) and addressed by the National Agriculture Sector Development Priority plan (NASDP 2011-2015), and the associated According to the Three Year Interim Plan (TYIP) Approach Paper 2010/11-2012/13, the Agriculture Perspective Plan (APP), and the National Agriculture Policy 2004 (NAP) are the principle policies guiding food security. The measurable outcome indicators for the TYIP (2010/11-2012/13) were largely framed around production.

On technology generation and services, the Plan encompasses decentralized approach to establish sovereignty of farmers in the decision making process in areas of agricultural research planning, implementation and evaluation. The integrated role of research, extension and education is recognized for improved delivery and information service provision through internet and website networks development in accessible areas. The inter-agency coordination through partnership and complementary roles among government, NGOs, cooperatives, community organizations and local bodies is visualized.

## **2.6 Agriculture Development Strategy and Process of Agriculture Transformation**

Government of Nepal has prepared Agriculture Development Strategy (ADS), a 20-year strategy paper for agriculture sector development which is almost in the final stage and probably will be disclosed after approval from cabinet meeting. In this context, it is worth emphasizing that the ADS considers the agricultural sector in its complexity, and encompasses not only the production sectors (crops,

livestock, fisheries, forestry) but also the processing sector, trade and other services (storage, transportation and logistics, finance, marketing, research, extension).

The ADS is formulated taking into account the conceptual framework of agricultural transformation of Nepal from a society primarily based on agriculture to one that derives most of its income from services and industry. This process will have profound implications for the ways the Nepali population will shape their food production and distribution systems, the development of rural areas including the rural non-farm sector, labor and land productivity, trade balance, employment and outmigration of the youth, the role of women in agriculture, and management of natural resources in the context of increasingly more severe climate change events. The ADS will ensure that the process of agricultural transformation is accelerated and molded according to the aspirations and constraints of Nepali society.

Land issues were left unresolved. The lessons learned from the APP experience have been incorporated in the formulation of the ADS. Among these lessons are the need of ensuring governance, promoting effective participation of stakeholders, addressing land issues, effective support to decentralized research and extension, and promoting commercialization and competitiveness.

The ADS action plan and roadmap are formulated in order to move towards the ADS vision formulated by stakeholders as follows: “A self-reliant, sustainable, competitive, and inclusive agricultural sector that drives economic growth and contributes to improved livelihoods and food and nutrition security.”

### **3. Methodology**

This research was not purely science research, and was more focused on exploring problems of farmers and intervene possible options for rural and marginal farmers of Dhading district. Therefore, area was purposively selected the VDC and some PRA tools for generating information. Based on conversation with CA member Pashuram Tamang,, Sattedevi VDC, 40 km far away from Dhading headquarter was selected as a research site. Initially project planned to

was planning to sensitize local population about benefit of commercial cultivation and free services provided by government and private sectors and secondly, participatory action research. First I did desk review of existing literature, policy document and archives of available national newspaper.

Then I visited to Dhading district. I discussed the possible activity to be carried out in district. District level meeting with different Stakeholders and analyze gaps of services provided by center government and district offices. Provision of services provided by private sectors as per conversation with Hon. Mr. Parshuram Tamang, I try to meet different people of different organizations working for Dhading district. Also I talked with a farmer named Dil Bahadur Tamang of Sattedevi VDC; I met Kamal Shrestha, program coordinator of Focus Nepal. Basically they were working in high hills of Dhading area. We discussed about prospects and challenge about VDC while working in Agriculture Sector. Also it helped me to visualize the practical challenges we faced during the project implementation.

I met Dil Bahaur Tamang, who recently got funding from PACT, for fish farming. This was really milestone step from a farmer, to initiate and replicate business there. I had a meeting with Mrs. Shova Shrestha (Soil Scientist) of Nepal Agriculture Research Council about how to conduct a Soil testing program at Sattedevi VDC and possible support form NARC. Earlier I was planning to go field. However, with the busy schedule of Hon Parshuram Tamang, we proposed our visit for upcoming week. During this period, I tried to narrow down my research topic. I have purposively selected Sattedevi VDC for in-depth study and action research work. I had also talk with Chief of District Agriculture Development Office (DADO), and set a meeting with him on 2nd of March.

During this period, I visited Dhading district with objective to explore agricultural dynamics and stakeholders responses towards commercialization of agriculture. I stayed there for 3 days, and interact with people of public agencies, private agro-input suppliers, credit agencies, insurance companies, and NGOs. In my preliminary finding, there seems huge gap of interaction and collaboration among different agriculture stakeholders. Farmers are still suffering with right information at right time. Currently I am preparing brief field report and synthesizing field notes. After preparation of draft report of field visit, I am

planning to critically analyze the fund flow statistics our research site Sattedevi VDC. On basis of this, I am planning to interact with Hon Parshuram Tamang. Currently I am discussing chief of Soil division of NARC for some support on soil test activity and also planning to collect some visual material from Department of Agriculture Development and disseminate among local farmers.

The field studies helped to triangulate my findings. Basically from field, research brought framers' flaws/successful stories of enhanced commercialization of Agriculture sectors. I interviewed with concerned stakeholders and policy actors help to bring key policy challenges in effective implementation of agricultural development initiatives. *Discussion with key informants* like government officials from district agriculture office, International Agencies. VDC chairperson,-traders who are knowledgeable helped to gather valuable information and to clarify any doubts and to refine information collected from other sources.

## **4. A Case Study**

### **4.1 Short Introduction of Dhading District**

Dhading is a mid-hill district extended to Himalayan zone. It is popular for commercial agriculture.

The total area of arable land in Dhading District is 73,345 hectares, 48,136ha are suitable for farming, with 35,300ha actually farmed. Agriculture in Dhading is supplemented by dairy products, fishing, tourism, etc., with some commercial

orange in Charaundi Bazaar, and vegetables cultivated in the area bordering Kathmandu district. Despite being a target area for agricultural intensification, Dhading district suffers from food shortages (DDO, 2012). Most farming is subsistence in nature. The production is concentrated in accessible areas along the roads and at district headquarters; they are not available to the majority of the small and marginal farmers, particularly in the remote rural areas (Sedhai et.al, 2014).

Another major problem of Dhading is that soils generally acidic, probably due to the high level of precipitation which causes heavy leaching of water-soluble nutrients. Similarly, top-soil has only a medium level of organic matter. In general, soil nitrogen levels are low due to leaching or volatilization. In some areas, however, topsoil have medium nitrogen content due to the continuous application of



Fig 1. Rainfed Farm of Sattedevi VDC

Nitrogenous fertilizer aimed at increasing crop yields followed by decaying of vegetation (GEC, 2002). However, Dhading ranks fifth for vegetable production among 75 districts. Its road head areas and very popular for off-season vegetable production. There is zoning of commercial pocket in Dhading district Benighat and Charudi for off-season vegetable.

Table 5: Comparative Status of Vegetable Production

Vegetables	068/069		069/070		070/071	
	Area(ha)	Prodn(mt)	Area(ha)	Prodn(mt)	Area(ha)	Prodn(mt)
Rainy	1580	20442	1580	20420	1586	20520
Winter	2365	28621.6	2372	28701	2375	28737
Spring	1915	25873	1920	25862	1929	2583
Total	5860	74936.6	5872	75005	5890	75240

Source: DOAD

The field visit discussions and interviewing provided with an opportunity to understand the diversity of organizations/institutions related to agriculture development and commercialization in Dhading district. Agriculture organizations can be categorized according to their character and functions in the following ways:

The stakeholders at district level:

(Note: NGOs/INGOs and service providers who have localized presence are also listed in this category.)

- Government Offices (Agriculture, Livestock, District Development Committee.
- NGOs(Focus Nepal, Prayas Nepal, SACOAS,
- Private Companies (Dhading Dairy Center, Tiwari Goat Farm, District FNCCI.
- Credit Agencies(Civic Development Bank)
- Sagarmatha Insurance Company
- Famers Group (Smallholder Famers District Cooperative Association).
- Central based NGOs and Intervention (PACT, Yupavokta Hakhit Munch.
- VDC Secretary
- Agriculture Service Center
- Farmers.

As seen above there is a wide diversity of actors which are involved in agriculture promotion in Dhading district. In particular, many government organizations are active in the district, which operate in different organizational mandates that frequently overlap each other, have varying levels of responsiveness and accountability to local actors, and behave in unique ways in relation to each other, and with the farmers and market actors. Some operate under a devolution scheme, while others exist as central government projects. Problems emerge frequently with respect to whether and how they each complement other agency's role.

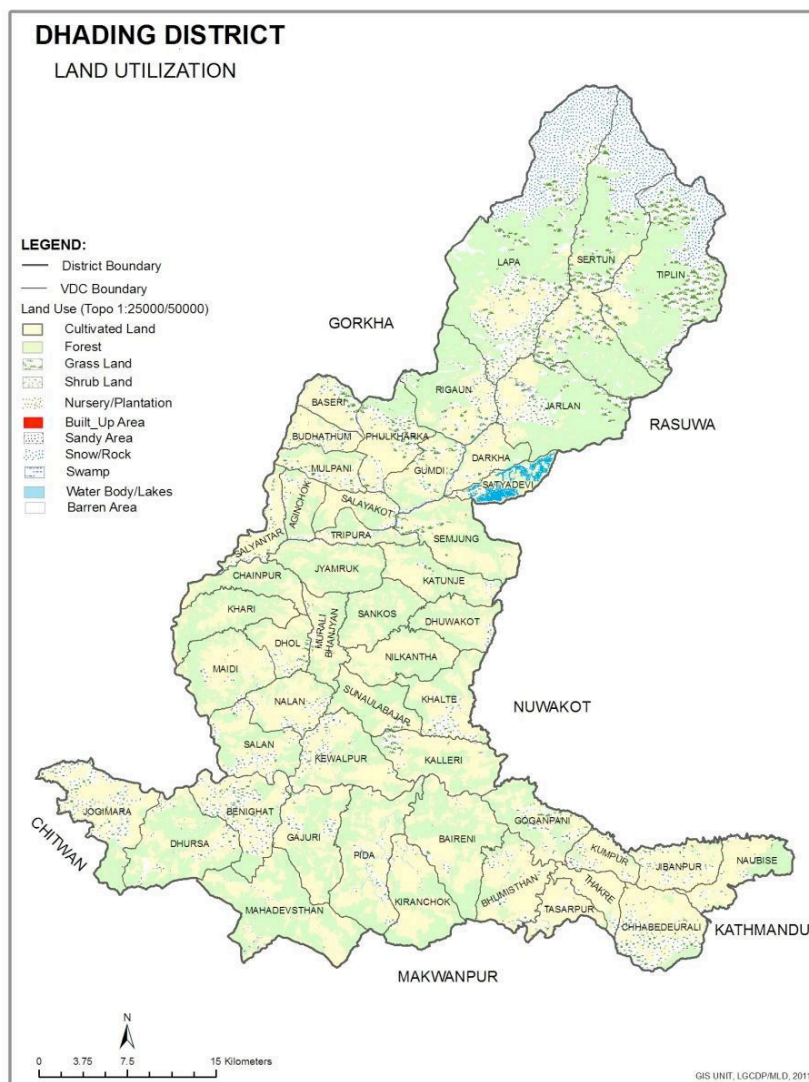


Fig. 3: Map of Dhading VDC

## 4.2 Sattedevi VDC

Sattedevi is a beautiful village that shares a border with the Nuwakot district. This village contains a lot of green forests and hills. One of the hill stations of this village is called *Thalgang* which means *dish* in the local language. This dish-shaped village around 37,000 is the inhabitant with Tamang majority. The Bachchhala is the main settlement of this village having a high school, health post, post office and a small market.



It has been consistently been portrayed as an agrarian society. Agriculture, being way of livelihood of population, its social relations are shaped by embedded culture of agriculture operations, labor exchange and credit services. Most of the agriculture practices are still localized within community and subsistence in nature. However,

*Fig 3: Women Farmers Weeding Maize Crops*

There is also trend of becoming a *lahure* (a term for someone who joins foreign army), from past, and recently youth migrating to different gulf countries for employment. There are around 838 households with populations of 4148. Farmers are involved in agriculture, dairy and fisheries with some commercial orange. Beside, Poverty Alleviation Fund, nor any other income generation activities/training are conducted in village.

According to DADO, Sattedevi is under privileged VDC and yet district office has not been able to reach there with services due to remoteness Farmers demand for Soil Testing Support Campaign. For appropriate crop planning Also research site was perceived as a cultural sensitive and remote area and not encouraged to give them services. One of the major causes was, farmers are uneducated, which hinders farmers to take servicesthey were not even aware and empowered to take services. According to DDC officer, Citizen Awareness Forum is established in each VDC, but the problem is that most of those people and government officials and service staffs mostly reside in district headquarters.

### **4.3 Extension and Agriculture Development Practices**

District Agriculture Development Office (DADO) is the key agency in the district that provides agriculture extension services. Its activities include regular extension program, training, demonstration, and tours. It also hosts annual agriculture exhibitions/show case for agricultural promotion in district. They

also have specific project to coordinate efforts in promotion of specific crops or with other specific objectives. For example, some of the projects are as follows

1. Orange development program. Its objective is to promote mandarin orchard development and farming.
2. Potato Development Program. Under this program, potato seed has been given in subsidy for cultivation.
3. Cardamom Development Program
4. Coffee has also been promoted in district. Some of the nurseries have been developed. Around 30 ha of land area is used for cultivation.
5. Silk Development Program is very old program initiated in district from 1988 onwards. Currently, around 16 ha land is used for *Kimbuplantation*. More 3 ton of Cocoon was produced. Some technical support from Darkha Service Center and demonstration kits are distributed to farmers of Sattedevi. However *significant* investment and support is still lacking in village. DADO has selected Nada Kumari Tamang as a Rural Agricultural Support Facilitator.

Recently PACT programs supported Lal Bahadur Tamang of Sattedevi-7 for pond construction for Rainbow Trout Production. Unfortunately, pond is completely damaged by the earthquake. Also, it was far from market, was not wise decision to construct pond. There is a very small market called Bacchala Devei Bajar, which supplies basics needs of village.

Youth Self Employment Program under DADO provided 2 lakheach to 75 youths with goal of encouraging engagement in agricultural entrepreneurial initiatives and discouraging out-migration for employment.

It was reported that DADO suffers from lack of human resources and limited number of agriculture service centers. Among 46 staffs in the office, 26 are technical staffs responsible for service deliveries to farmer. Each technical staff has to look after two or three VDCs, which amounts to more than 5000 households. Such limited allocation of technical expertise creates bottleneck in

providing effective agricultural extension service to the people. Similarly there is limited coordination, collaboration between DADO and NGOs. They have limited interaction – that even with a very few NGOs in regarding to conducting training courses.

In case of Sattedevi, there is one Krishi B.S. (cooperative), which is rarely supported by Government and NGOs. Basically, it supports farmers to distribute chemical fertilizers.

Some other problems on agriculture extension we found include the following: Farmers are continently using this variety.

1. Institutional capacity in DADO is very low.
2. DADO has weak/almost non-existent relationship with agribusiness organizations.
3. Fertilizer is not supplied on time. Government is very passive on distribution of fertilizer.

### **Private sector suppliers of agriculture inputs and financial services**

Amongst the private actors engaged in direct or indirect ways in agriculture promotion, two main areas of their involvement include the following:

1. Supply of agriculture inputs, such as fertilizers, seeds, pesticides etc
2. Provision of loans/financial services

Most of the private sector actors are engaged in agro-input distribution and sales of agro-products. Primarily, seeds and fertilizers are supplied by private sectors. The subsidy provided by DADO and other organizations on agricultural inputs are very limited and only demonstrative in purpose. This resulted in the emergence and growth of private agro-vets shops. Around 100 small agro vets buy such seeds, fertilizers and pesticides from them. There is, thus, an extensive network of agriculture input retailers in the district.

These retailers offer the seeds, pesticides, and sometimes technical advice to farmers. These retail agro-vet owners provide technical support regarding different insect pest problems, use of chemical pesticides, or new hybrid vegetable seeds directly to the farmers. They also provide chemical fertilizers in the period of off-season.

It was also reported that the farmers' dependency on agro-vet retailers have considerably increased in recent years. There has been growth of such retailers in villages and towns, where accessibility is better. On the other hand, the government has limited or no subsidy and its support are often limited to the provision of demonstration mini kits, and frequently beyond the access of smallholders. However, farmers of Sattedevi have rarely benefited from such resources.

A farmer put it this way:

“When I go to DADO office with some expectation and need of technical support, we either won't get the right person or he has no time to share his views. We are not equally treated there. So we find it more comfortable to go to agro-vet.”

In regard to loans, there are over dozen banks, whose branches are spread over Dhading district. A part of their investment goes into agriculture. Banks willingness to lend is dictated by uncertainties around insurance and a lack of clear policy on farm support. Hence agriculture in the remote areas continues in traditional practice and no extensive adoption is noticeable.

Overall, weak state support for farmers and incentives of private actors, Dhading District, farmers are increasingly turning to private actors for technical and input support. It became apparent that there has been increasing farmer reliance on private sector input suppliers, when it comes to seeds, pesticides and fertilizers. There however seems to be lack of safeguards on whether the inputs supplied by the wholesalers and retailers come from trusted sources. DADO of Dhading emphasizes that these suppliers should provide quality products, but they lack the mechanism to have oversight on quality assurance. DADO sometimes provide trainings and make provisions to take certificate to sell pesticides, but continuous monitoring, etc are clearly missing.

It is important to recognize the role of local NGOs and farmer/community groups. NGOs are primarily established by individuals seeking to offer services, while the farmer groups and cooperatives are mostly promoted by government agriculture offices and other service providers as vehicles for agriculture service delivery.

Number of NGOs in Sattedevi is working, like RIMS, Action Nepal, Prayas Nepal and COSOV. INGOs like Oxfam and UNMIN are working in Sattedevi VDC, However their focus are diversified in different agriculture crops rather than some specializations.

## **5. Discussion and Analysis**

### **5.1 Agricultural Input and Services**

In very remote areas, far from district headquarter, commercialization of agriculture as per expected as in road head is not possible. Also during rainfall, it is not possible to connect villages' agricultural commodities with market. Some agriculture interventions and input support in research site was planned earlier, but prior soil testing, it was wise decision for any recommendation. Currently soil sample is given to soil test lab. Currently supported by DADO is very limited within mini-kits. Agricultural Development Strategy (2015) speaks about distribution of farmers' Identity card. However, it is essential to categorize farmers and provides input and services with price-discrimination policy. Similarly, Nepal Agricultural Extension Strategy 2007 focuses primarily on institutional privatization and decentralization of extension services with spirit of Local Self-Governance Act (LSGA) 1999. However there is a lack of defined roles between the central government and the District Development Committee (DDC). In case of Dhading DDC, in absence of limited. In case of VDC level budget investment in Agriculture was clear VDC level budget guidelines, However, they invested it in road and others areas.

### **5.2 Intervention Approach**

When multiple projects, with different intervention designs, are implemented in same area, farmers often become the victim of such projectified development approach. For instance, a farmer, who was involved in coffee production as part of a coffee promotion project, might start vegetable farming when a project for vegetable promotion is implemented. Hence, rather than concentrating and scaling up on one commodity, s/he starts another business. The reason for such switch is often that the newer project provides better incentives, such as subsidy and market support, while earlier project will have discontinued any such support upon project termination. In addition, some of the cultural sensitivity of the area is negatively publicized, which detracts outsiders and other development interventions. Also development interventions are concentrated in areas with access to roads and sub-centers of district.

## **5.2 Technical and Adaptive Problems and Challenges**

Lack of technical human resources and absence of service center at Sattedevi was a primary hindering factor for piloting of new-interventions in agriculture; some of the projects like fish-farming were a failure project because of the absence of technical support and improper feasibility study.

Cultural sensitivity and security concerns were primarily raised by district level service providers. It was not explained in detail, but should be addressed in days to come. Negative attitude of district stakeholder towards VDC has de-motivated to visit those areas. Due to the lack of funding and resource-sharing by different organizations for our research project it was also not possible to intervene any support of farmers.

## 6. Conclusion and Recommendations

With a 'liberal' policy outlook on agriculture, which has been gradually introduced and expanded over the past two decades, Nepal faces the problem of effectively mobilizing pro-poor investments? Areas like Sattedevi are clearly excluded from mainstream agriculture development process because private sector are not able to reach there and provide services.

Nepal Agricultural Extension Strategy 2007 clearly emphasizes institutional pluralism, privatization and decentralization of extension services. This requires detailed outline of how institutions communicate and cooperate each other in agricultural commercialization. Moreover, there are still conflicting roles and responsibilities between DADO and the District Development Committee (DDC). In context of decentralization and enforcement of LSGA 1999, role between and DADO and DDC is not distinct and problem raised on accountability and sanction for their performance.

Some of adaptive challenges like governance of agro- resources and unanticipated consequences of disasters and technical challenges like lack of human resources, remoteness and illiteracy further exacerbate the enhancing commercialization in Sattedevi VDC.

### Recommendations

- It is critical to improve coordination between governmental (and within government agencies) and non-governmental, private sector and technology service providers. New policy approaches and ground context of multiple actors need to be fully appreciated by the government staff in particular. The government officials should try new and innovative ways to engage these actors towards achieving commercialization of agriculture.
- There is the need of resolving the tension between centrally managed agriculture projects and mandate of DADO and DLSO, which operate under formal oversight of local governments. The projects tend to evade considerations of local responsibility and accountability to local actors. Similarly, due to the lack of local body elections, farmers do not have an

effective means of voicing demands for greater responsiveness and accountability from research centers and agriculture officials.

- Pro-poor focused projects implemented by NGOs to large numbers of farmers aside from direct and effective technical support which led to conventional farming. Encouraging farmers towards non-perishable high value crops is necessary for sustainability of commercialization.
- Regulating and promoting private sectors: Without any regulating mechanism and weak approach of DADO and research institutions, farmers are prone to the risks of agriculture failure.
- Mass media should be used for information dissemination. Particularly, given the increasing penetration of mobile phones, access to information through mobile phones can be promoted. By introducing information and communication technologies (ICT), farmers can acquire information through toll-free phone call, voice recordings, and text-based inquires.

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**Annex:**

## Annex 1: Interviewees of Dhading district

<b>Name</b>	<b>Organization</b>	<b>Position</b>
1. Mahendra Kaudal	District Agriculture Development Office(DADO),	DADO Chief
2. Binod Aryal	District Development Committee	Planning Officer
3. Ganesh Prasadh Aryal	District Livestock Service Center	Technical Officer
4. Nabaraj Chattkuli	Nepal Patrakar Mahasang (District President)	Journalist
5. Ramjhi Bhandari	UNMIN	Livelihood Officer
6. Rohit Bhandari	FNCCI	Chief(Program)
7. Bhakta B Basnet	Jilla Kisan MahaSang	Representative
8. Arjun Khatiwada	Krishi Watawaran Patrakar Samuha	Treasurer
9. Bishnu Sapkota	Sagarmatha Insurance	Branch Manger
10. Amar Pakrin	Poverty Alleviation Fund	Staff(Station)
11. Kumar Sunar	Sattedevi	Farmers
12. Dhan Bhahadur Gaule	Sattedevi	Farmers