

# FINAL REPORT

## Inter Provincial Dependency for Agricultural Development

Submitted to

Ministry of Agriculture, Land Management and Cooperative

**Department of Agriculture**

Harihar Bhawan,  
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Submitted by

Development Vision Nepal P. Ltd. (DVN),  
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## Executive Summary

### 1. Background

Agriculture is still the largest economic sector that solely contributes more than 30% of National GDP. The restructuring of the state provided opportunities to improve agriculture governance as well. Nepalese agriculture is characterized by higher level of diversification in terms of climatic and geographic variations. Due to the high range of altitudes and temperature throughout the country, agriculture in Nepal has peculiar characteristics. Within almost 200 Km in north-south, we find all kinds of temperature and crop types as well. This provides both opportunities and challenges for agriculture development in Nepal. After introduction of the new constitution, the unitary country has been restructured into 7 provinces. These provinces have been divided mostly on the geographic basis. With perspective of agriculture development, all provinces have particular strengths and some weaknesses.

Provinces 1, 3, 5 and 7 have both temperate and tropical climates and more diverse in terms of agriculture crop production potentialities. While province 2 has mostly tropical climate, province 4 and 6 have largely temperate climate and are less diverse. These provinces will be interdependent to each other in terms of economic production. Further, some provinces will be surplus in certain commodities and deficit in other commodities. Not only production, there will be an interdependency for inputs and product markets.

Against this backdrop, this study was designed to support Department of Agriculture in identifying provincial strengths and weaknesses to further plan its future development strategies. The study will also support in identifying proper institution for carrying out such agriculture activities at province level.

### 2. Methodology and Approaches

A combination of desk review and field studies were adopted to accomplish the task. The study team in consultation with the client finalized the methodology, tools and time schedule as well as the outputs delivery plan. The study team collected and reviewed the relevant data/information on sectoral institutional arrangement that is being worked out and finalized. The team met with relevant officials and gathered information on the ongoing work being done on the structural reform. The study team also visited the website of major actors of the state reforms including the Office of the Prime Minister and Council of Ministries (OPMCM), Ministry of Federal Affairs and General Administration (MoFAGD), Ministry of Agriculture, Land Management and Cooperatives (MoALMC), Ministry of Finance (MoF), National Planning Commission (NPC), Department of Agriculture (DoA), Department of Livestock Services (DoLS) and other related institutions like Trade & Export Promotion Center (TEPC) and FNCCI for gathering materials to support the study.

### 3. Study findings - Desk Review

#### 3.1. Constitutional provision for Agriculture sector

Constitutionally agriculture is more state matters although it has also been the concurrent function of all central, state and local government. The authority of agriculture extension lies with local and state while regulatory and policy are the central matters. The constitutional provisions for agriculture sector are as presented in the table below.

The government expedited the restructuring process immediately after endorsement of constitution. Ministry of General Affairs accomplished the functional analysis of major 5 sectors. The functional analysis was made on the basis of 5 principles; subsidiarity principle, economies of scale, social inclusion and national priority, equity and economic stability and unbundling for achieving clear assignment. Based on the constitutional provisions, international practices and ongoing activities, the experts' team recommended agriculture functions in three tiers of government.

### 3.1. Agriculture sector performance in recent years

Agriculture is the oldest industry since civilization. More prominently the first periodic plan 1956-1961, identified agriculture as one of the promising sectors for poverty reduction. Since the formulation of fifth five year plan (1975-1980) to tenth five year plan (2000-2005), the priority for poverty reduction was given to agriculture through increasing productivity of the existing crops and diversified production of horticultural crops. However, the growth of agriculture sector remained short of population growth requiring rapid transformation of subsistence farming to more commercialized and diversified. Agriculture Perspective Plan (1995-2015), arguably the first comprehensive sectoral plan; identified agriculture sector as engine of growth. It envisaged a multiplier growth effect of agriculture sector to other sectors of economy and envisioned input-output model of agriculture growth and identified fertilizer, technology, rural infrastructures and irrigation as major factor inputs for achieving broad based agriculture growth. APP forecasted the per capita AGDP growth to 4% from existing base of 0.5% in 1995. With implementation of the APP the incidence of poverty was expected to come down from 42% in 1991/92 to 14% in 2014/15, whereas the latter figure without the APP would have been 29%. However the APP experienced a mixed results in terms of target output. The cereal crops target achievements were far below while some subsectors performed very well even exceeding the targets which included horticultural and high value crops, fisheries and forests.

The diminishing contribution of agriculture sector also reflects the lower productivity of sector as well. As GDP growth still relying on AGDP growth, the two digits of GDP growth can only be achieved with minimum 6% of AGDP growth which seems unlikely with current trends of relying production growth mainly on monsoon. This year's agriculture growth is expected only at 2.8% due to the shrinkage of main crops rice by 1.5%. Rice which contributes to 20.8% to AGDP was heavily affected by unlikely climate and floods in Terai region. The growth of agriculture sector was limited only to 2.9% during last decade. However other sectors are expected to grow by large percentage due to regular availability of energy and petroleum. Industry sector whose growth was stagnated to 3% during last decade is expected to grow by 8% this year, which is good indication despite lower growth of agriculture.

Prime Minister Agriculture Modernization Project (PMAMP) was launched in 2016, with the objective of specialized production. The four categories of programs were initiated based on the specific products area. Twenty-seven point of commitments of then Minister laid the foundation for development of PMAMP project.

#### a. Crop Production

**Cereal crops** - Nepalese agriculture is dominated by cereal crops. Rice, maize and wheat constitute more than 80% of cereal area and production. Rice solely contributes to 20.8% of AGDP and is the major cereal crop. The production of rice largely depends on monsoon and timely availability of fertilizer and improved seeds. As most of the agriculture research is based on rice, yet the productivity of this crop is below 3.5 mt/ha.

**Pulses** - The production of pulse crops has been at constant rate during last five years without significant growth. However, the total production of pulse crop is expected to grow by 4.4% during current fiscal year 2017/18. The production is expected to reach 369,000 metric tons in the current year which is far below than the annual demand. Lentil constitutes more than 50% of total pulse crop

production and it is also the sole export item of the country. The low productivity of pulse crop is major issue for agriculture research.

**Cash crops** - The productivity of oilseed is similar to pulse crops. However, the remarkable increments in the production of oilseed have been achieved in current fiscal year with the growth accounted 16.1% compared to last season. Potato, one of major cash crops has performed well during recent years. The potato for fresh consumption is near to self-sufficiency and import mostly account for chips and other industrial purposes. Similarly production of vegetables is also expected to grow by few margins, the production are almost at self-sufficiency level, however that of fruits are expected to decrease in the current fiscal year. The ginger one of the major export item is increasing in area as well production.

**Industrial crops** - Orthodox tea, cardamom and coffee are some of few commodities that have competitive advantage due to favorable geography and climate. Production of these commodities has been increased during recent years. However, trade dependency mostly to India has restricted the potential of these crops.

**Livestock based commodities** - Dairy, meat and eggs are the most important livestock products that not only enhance food security but also are the major source of nutrition requirements. The growth in livestock sector is noteworthy. The per capita supply of milk, meat and eggs are 71.7 litres, 12.4 kg and 50 against their requirements of 91 liters, 14 kg and 48. In this aspect, country has gained self-sufficiency in eggs and requires substantial efforts in getting sufficiency in milk and meat.

### 3.2 Study Findings (Field work)

The field research findings largely depend on the views from the provincial ministry officials, existing DADO officers' opinion and elected and staffs of the local bodies (Metropolis, Municipalities and Rural Municipalities, etc.). The field findings are summarized into followings for each province, namely

- General introduction of province
- Proposed structure at province
- Provincial sectoral policies
- Food security situation of the province and its dependency with other provinces.

#### 3.2.1 Policy, Programs and future direction of the provinces

Analysis of policy, programs, future directions and interdependency in provincial levels has been carried out and presented.

**Province 1** - The economy of this province is mainly based on agriculture and tourism. It covers three terai districts, one inner terai and 10 hills and high hills. Terai and inner terai districts are fertile and produce large quantity of food grains for their population. Rice, maize, jute, sugarcane are major crops in terai region while tea, cardamom, ginger and citrus grown in the hills and high hills are the major source of earnings. Milk production, piggery, poultry and goat are the important livestock business in this province. The province prioritized the followings:

- a. Ensuring food and nutritional security of the population,
- b. Develop value chains of tea, cardamom, ginger, dairy in collaboration with Central projects and programs like UNNATI, PACT and PMAMP,

- c. Strengthen the capacity of Tea Development Board and collaborate with board for linking tea value chain to international markets
- d. Establish cardamom development board for export promotion and overall production. Explore possibilities of cardamom in international markets other than India and supply with better prices,
- e. Support agriculture mechanization especially in terai area for paddy, wheat and sugarcane production,
- f. Utilize the potentials of agro tourism through organic production, tea estate recreation and home stay management.
- g. Formalize the vegetable exports to India through bilateral negotiation with the support from central government,
- h. Minimum support price in major cereals and cardamom,
- i. Utilize the potentials of agriculture research stations. Develop the government farm as resource centers and center of excellence,
- j. Focus on climate smart agriculture; work in developing resilient agriculture system,
- k. Ensure the supply of major inputs like fertilizer and seeds for increased productivity.
- l. The AKC will work as facilitator between farmers and suppliers to prepare balance sheet of seed and fertilizer demand and providing it to major supplier like AICL, NARC, community seed banks, cooperatives, groups and seed companies,

**Province 2** – It includes 8 core terai districts of Nepal. Previously known as grain basket, this province is behind in nutrition security and HDI. It is surprising that this province also falls in food insecure province as suggested by Province Secretary for Ministry of land Management Agriculture and Cooperative. Although there exists high potentialities, poor irrigation and flooding during monsoon affect the food production potentials. The policy and priorities for agriculture sector have been summarized as below;

- a. Achieving the constitutional targets of food sovereignty and food and nutritional security
- b. Emphasis on major cereal grains like rice, maize and wheat
- c. Ensuring all year round irrigation in all agricultural land for increased production and productivity
- d. Use of both surface and ground water for irrigation. Maintenance of major irrigation canals with ensured irrigation and extending the program of deep and shallow tube well
- e. Achieve self-sufficiency in major crops like rice, wheat and maize and export to other provinces like 1,3 and 4
- f. Increase production of fish for export specially to Kathmandu valley of province 3
- g. Special package of support for development of commercial farms of agriculture and livestock
- h. Special incentives for two season rice and support to reduce rice import in the nation as a whole. The extra incentives for rice growers that produce for sale
- i. Coordinate with national projects like Prime Ministers Agriculture Modernization Project, Livestock Innovation Project and upcoming Agriculture Food Security Project and provide synergies with prioritized program of provincial government. Implement the block and pockets development of prioritized commodity in close coordination with local level

Although the province has committed well for development in all sectors, it lacked both resources and manpower to achieve the targets. The creation of Agriculture Knowledge Centers and Livestock Experts Centers to work as wings of province have certainly encourage the provincial ministry; yet coordination amongst the local level and central government is crucial for achieving the targets.

**Province 3** - This province is largest in terms of population. Almost 90% of area falls in the hills and high hills. It does not contain core terai but have some agricultural flat lands in Chitwan, Makwanpur and Sindhuli. This region is high food deficit region not because small production but highly populated metropolitan like Kathmandu, Lalitpur and Bharatpur lie in this province and other major cities like Hetauda Sub metropolis, Bhaktapur municipalities, Dhulikhel and Banepa also situated in the region. Thus the Land Management Agriculture and Cooperative ministry of the province has huge responsibilities of feeding its population.

With the vision of achieving sustainable development, food sovereignty, self-sufficiency and prosperous province, the provincial ministry has forwarded following action plan and commitments;

- a. The unified action of agriculture, livestock, forestry and tourism for climate smart, organic and sustainable agriculture. Developing agriculture as commercialized and competitive; the multidimensional works of agriculture production will be enhanced. The pockets for specialized commodities will be developed and encouraged to grow according to specialized crop areas.
- b. Achieving self-sufficiency in fruits, vegetables, flowers, and meat and milk products within 3 years; and cereals within 5 years. At the same time, the crops having export potentials will be emphasized highly.
- c. Minimum of 3 areas will be declared as agro-industrial capital; the agro based industries will be established in such areas in public private cooperative collaboration and cooperation.
- d. Continuation of specialist services provided by DADO and DLSO through Agriculture knowledge center and Livestock specialist service center. Such centers will be used as technical backstopping to the local level.
- e. The agriculture research centers, government farms, agriculture and livestock related fisheries, soil, sericulture, pesticides, veterinary and food laboratories under province will be modernized and scaled up in terms of physical facilities, equipment, human resources and coverage.
- f. Promotion of *Chaite* and winter season rice to reduce rice import
- g. One house one kitchen garden will be promoted

**Province 4** - the Province with capital city Pokhara-Lekhnath Metropolis consist 10 districts and eastern part of the then Nawalparasi district. It is also agriculture based province. It is estimated that 64% of population are engaged in agriculture. Tourism and hydropower are the major economic sectors that are expected to flourish in this area. The famous Annapurna trekking route lies in this province with major tourist destinations like Pokhara, Mustang and Manang. As almost all kinds of climate is available in this province, it is rich in diversity as well. The province is deficit in fruits and vegetables and is self-sufficient in cereals except for rice. It is highly deficient in onion, garlic, oilseed and pulses.

The discussion with Ministry officials and other stakeholders reveal following policies adopted for future.

- a. Declaration of agriculture land with appropriate land use planning
- b. Incentives for youths working in agriculture and attracting other youths
- c. Updating agriculture statistics; improving land leasing practices with enforcement of acts
- d. Developing Private Farm Model Scheme rather than only promoting cooperatives and groups
- e. Promoting the organic farming and regulating the pesticides and heavy chemicals
- f. Improving service delivery of all stakeholders including government agency, NGOs/INGOs, CBOs through creating alliance group to minimize duplication and implementing through one door system
- g. Enactment of agriculture product marketing act and facilitating agriculture product marketing



- h. Exempting tax and other facilities to the agro based industries based on the production and contribution to economy.
- i. Promoting agro tourism through organic farming, home stay and other programs
- j. Enhancing functional cooperation between public private and cooperative; improving the cooperative laws and bylaws for correcting mismanagement of cooperative. Encouraging large portion of population to join the cooperative and leveraging the resources for coordinated and efficient management.

**Province 5** – the Province with five core terai districts, one inner terai and 6 other hill districts is highly potential province for agriculture production. It is self-sufficient province in cereal crops and pulses. Having Sunauli, Krishnanagar, Nepalgunj and Gaddachauki major custom points, this province have potentialities for greater economic prosperity in coming days. Like other provinces, the functionaries have not been installed; the province Ministry for Land Management Agriculture and Cooperative has started to develop its policies and ways to achieve not only sufficient for province but also supplying to other provinces as well. The discussion with the Secretary and other officials of this province reveal following strategies of the ministry for achieving prosperity through agriculture development.

- a. Develop commercial agriculture farms at private level and supporting them through monetary and non-monetary measures like exempting taxes, support in establishment of farms and technical backstopping through other government farms, Agriculture Knowledge Center (Krishi Gyan Kendra), livestock experts center and veterinary hospitals
- b. Establishment and upgrading of agriculture market infrastructure in major cities like Butwal, Bhairahawa, Tulsipur, Ghorahi, Nepalgunj, Dhangadhi and Mahendranagar
- c. Support for irrigation through small irrigation schemes, ground water irrigation schemes with shallow tube wells and deep tube wells.
- d. Coordination with PMAMP project, National project like KUBK, HVAP, RISMFP and other projects for resource sharing and synergies the cooperation.
- e. Policy reform to support land consolidation. Enactment of agribusiness promotion bill and enhance contract farming
- f. Developing agriculture and livestock related farms as center of excellence and resource centers
- g. Ensure food safety through developing standards for food safety measures and implemented strictly

Although the written commitments of the province ministry yet to develop, the points above were summarized based on the discussion with province officials, DADO officials and local body representatives.

**Karnali Province** - This is the only province to have its name and capital finalized. Taking its name from famous Karnali with capital city Surkhet, this province is least developed in terms of physical facilities developed and Human Development Index. The entire province lack good connectivity and the large potentialities untapped. Largely known as the home of Himalayan Ayurvedic Plants, the high value medicinal plants can be the source for prosperity in the region. This is region falls under highly food insecurity region, which is mainly because of rice eating behavior. The large potential areas remain virgin, still depend on the cereal grain supplied from Terai region through Nepal Food Corporation and World Food Programme. Because of the difficulty in road transportation, this region remain by default organic zone. Promotion of organic farming but increasing the productivity, this region can achieve income security if not food security. With the vision of achieving food sovereignty and

sustainable agriculture development for food and nutrition security, the provincial government has conceptualized following policies in agriculture sector;

- a. The organic agriculture production will be highly emphasized by the development of competent manpower, organic agriculture focused research, education and skills. Agriculture knowledge center developed under provincial agriculture directorate will promote the agriculture development. Agriculture colleges, soil laboratories, pesticide and seed laboratories will be established. Organic fertilizer agro mechanization and organic pesticides factories will be established in public private cooperative partnership.
- b. “Increased organic farming increased prosperous Karnali” slogan will be used as main motto for agriculture development. “One local level one model farm” and “one cooperative one model agriculture, livestock and fisheries farm” principal will be adopted. Gene bank will be established to promote conservation, increased productivity and extension of local crop, breed and water animal landraces.
- c. Food and nutrition security in the province will be ensured by increasing productivity, proper distribution and storage. Transportation subsidy in close collaboration with government of Nepal for food will be provided to the rural districts like Humla and Dolpa who lack road connectivity.
- d. Modern and high tech nursery will be established to ensure regular supply of saplings of demanded fruits, flowers, ornamental crops and vegetables.
- e. The functional coordination mechanism will be developed to work with Prime Ministers Agriculture Modernization Project, High Value Agriculture Project, other central projects and NGOs/IMGOs working at national and local level
- f. Policy formulation for land use maximization. A powerful provincial land commission will be formed to find solution to all kinds of land issues.
- g. Agro tourism will be promoted through organic food and home stay

**Province 7** - it was formed with all nine districts of past Far-western Development Region. Known as Sudur Paschim; the hill districts of this province are poor and lack proper connectivity. The Kailali and Kanchanpur districts produce large agriculture production required in the province. However, the other hill districts have potentialities to grow high value crops, MAPs and NTFPs for foreign income source. Like other province, this province has also provided greater emphasis on agriculture. Based on the discussions with provincial ministry for land management agriculture and cooperatives, existing DADO officials and local bodies; the agriculture policy of the province has been summarized as under;

- a. Ensure food and nutrition security of its population; move towards food sovereignty
- b. Balance between organic production and modern production technologies, emphasis on organic production in the hilly districts while high input production in terai districts
- c. Scaling up government farms of vegetables, fisheries, fruits
- d. Establishment of research and development center of MAPs and Yarchagumba
- e. Scale up of Olive farm and promote Olive production
- f. Implementation of PMAMP project for specialized production, coordinate with center and local bodies for its implementation
- g. Value chain development of major crops, support implementation of central projects like RISMFP. Promote development of infrastructures like cold storage, seed processing plants.
- h. Implementation of small irrigation schemes in the hills
- i. Tax incentives for mechanization, agro based industries; output based incentives based on the employment and income generated by the agro based industries

- j. Promote bee-keeping, mushroom production for nutrition security
- k. Coordinate with bilateral programs like USAID's KISAN and other INGOs to get synergy in agricultural development
- l. Emphasis on dairy, poultry and fisheries for improvement in nutritional status and improve food security as well

### **3.2.2. Key commodities and provincial interdependency**

This study tried to analyze the agriculture production with the eyes of provincial autonomy; yet province lacked proper functionaries, it does not have its updated data, human resources and capacity. The data were analyzed with centrally published data and only streamlining them with provincial geographical boundaries. With the available data and discussions made during study period the interdependency among key agriculture production has been summarized in the chapter concerned.

It shows province 5 is the strongest and has good potential to grow as agriculture surplus province and can supply to other provinces. Likewise as expected, province 3 has though potentiality and good production but the huge population in it as national capital and other highly populated cities like Chitwan and Hetauda; obviously is the highly deficit province compared with others.

Rice the major staple food of Nepalese people remains slightly deficit as shown by trade figure. It seems province 1, 2 and 7 sufficient in rice; province 5 has surplus but province 3, 4 and 6 have deficit. So province 3, 4 and 6 depend on province 1, 2, 5 and 7 for rice supply. Likewise province 3, 4 and 6 are deficit in wheat production; while rest of the province can supply to those deficit provinces. The details SWOT analysis of the provinces has been carried out presented in the chapter follow.

### **3.2.3. Key Service Delivery Institutions and Their Roles**

Following the endorsement of constitution by largest majority and holding the election of all three levels, the government has expedited the works of administrative restructuring. Agriculture, one of 11 central services of government of Nepal include around 10000 government employee at all levels. As Agriculture is diverse and so are the groups in the services. The groups have been categorized based on the disciplines within agriculture. Agriculture extension was largest group based on the cadres in the group followed by plant protection, horticulture, agro-economics marketing and statistics, crop, fisheries, soil and agro engineering; likewise Livestock and veterinary are other groups for livestock development. In the perspective of specialization of jobs such groups have well functioned while at the same time it has created some hurdles for placement of human resources as well.

The Nepal Agriculture Research Council has been serving the research in different disciplines within agriculture sector. As extension is the main agenda of department of agriculture and its allied offices, it is the right time for correcting the short falls in this aspect. Putting appropriate structure to function as mandated by constitution is challenging in one hand while correcting the past course of group formation in the agriculture service is another. Thus, based on the discussion in different forums, the need for restructuring of the agriculture sector in all levels and formation of groups within services are summarized hereunder;

#### **3.2.3.1 Proposed key institutions at different levels**

The working team formed by the Ministry of Agriculture Land Management and Cooperative for Agriculture sector has already proposed structures at different levels. The structure of Ministry and Departments for federal government has been endorsed by the cabinet; while structure of provincial Ministries have also been endorsed. While other proposed structures are in the final stage of approval. Thus we are not proposing the structures but the nature of institution that should be placed at different levels:

#### A. Central government

The major functions of central government have been already listed by the functional analysis and unbundling of the functions which are already discussed in introduction chapter. As policy formation, management and implementation of central projects covering many provinces, regulation and standards formation, federal sectoral vision and planning, International relations and receiving international funds for projects and program are some of central functions; the Key institutions and their major functions are discussed hereunder:

- a. Ministry of Agriculture Land Management and Cooperative  
Major institution for agriculture policy formation, international cooperation in agriculture sector and administrating its central projects and institutions for achieving national targets of food security and food sovereignty.
- b. Department of Agriculture  
Major implementation body of central agriculture related functions.
- c. Plant Quarantine and Pesticide Management Center – a number of quarantine centers and check-posts,
- d. Agriculture Information and Training Center  
For capacity development of the federal human resources in agriculture sector. Also to function as spokesperson office and providing major information on agriculture development.

#### Central Offices under Department of Agriculture

- e. Central Agriculture Laboratories - Central internationally accredited laboratories in seed, soil, pesticides, seed subsectors,
- f. Central Fruits Development Office - 5 farm centers; The commodity specific farm centers leading thee fruits sub sectors
- g. Central Potato, Vegetables and Spices Offices - 4 farm centers; The commodity specific farm centers based on vegetables sub sector.
- h. Crop Development and Biodiversity Conservation Office - 2 Farm centers
- i. Infrastructure Development and Agri-Mechanization Office- 1 farm (JADP)
- j. Industrial Entomology Development Center - 2 farm centers

#### B. Provincial Government

The provincial government and its institutions should be mandated for development activities of related sectors. Thus the provincial Ministry for Land Management Agriculture Development and Cooperative should prepare program, budget for all development activities related to agriculture, land and cooperative sector in their provinces. All subsidies and incentives for the farmers should be provided by the Provincial Government. The institutions related to Provincial Government in agriculture sector are listed as;

- a. Provincial Ministry for Land Management Agriculture Development and Cooperatives
- b. Provincial Agriculture Development Directorate
- c. Agribusiness Promotion and Training Center
- d. Agriculture Knowledge Centers (51)
- e. Horticulture related Farm Centers -13
- f. Industrial Entomology related Farm Centers - 9
- g. Plant Protection Laboratories - 8
- h. Seed Quality Testing Laboratories – 8
- i. Soil and fertilizer Testing Laboratories – 8

### C. Local Level

The local government should target on providing most essential services in agriculture sector. Based on the functions finalized for local level, following institutions have been proposed and are in line with the MoALMC proposal as well.

- j. At least one agriculture technician per local bodies
- k. Sub Metropolitan city led by Class ii officer - 13
- l. Metropolitan City led by Class II officer - 4
- m. Municipalities led by officer
- n. Rural Municipalities led by JT
- o. Provision of OVOT
- p. Provision of Agriculture Service Centers

## 4. Conclusions

- a. Nepal is already a federal country as Government of Nepal decided to transform Nepal into federal, democratic and republic country through a new constitution 2072. Following the election of all three levels, the Government has initiated the implementation of federalism through administrative restructuring and fiscal budgeting.
- b. Agriculture sector known as engine of economic growth in Nepal needs to be aligned with the mandates of constitution. Thus more than 70 years old unitary structures and functionaries are being restructured to implement federalism. As restructuring process is under progress, it has set the transition for agriculture development because of deployment of human resources, budget allocation in all levels and coordination mechanism needed
- c. Provinces have their own strengths and weaknesses. The state restructuring should not undermine the peculiar capacities of each province. The constitutional provision for three levels of government regarding their functions should be reflected by the administrative restructuring. However, due to ambiguity in defining the functions, there is danger of slowing the pace of development in each sectors of economy.
- d. Realizing the economic contribution of agriculture sector, the agriculture re-structuring should critically be analyzed. As agriculture development is very slow process, the institutional memories and knowledge are crucial to augment the further development; it should not be perceived as only service delivery matter.
- e. Realizing the importance of our international commitments; free trade between countries and agriculture trade as most critical in global arena, the country cannot afford the price of mistakes made during restructuring. As we were practicing unitary development system, the province

formed should complement each other to fight against hunger, malnutrition and food insecurity in a collective way.

- f. Provinces are interdependent to each other, because we are just trying to disaggregate the existing system with the eyes of provinces; it seems the interdependency will grow more in future while practicing development based on provincial strengths and competitive advantages within provinces.
- g. As agriculture sector contributes to largest portion to GDP, still productivity of the sector is around 0.5. Involvement of more than 60% of population returning to 27% to GDP reflects poor productivity of the sector. However many industry in Nepal are based on agriculture for raw materials; its development is crucial for overall economic growth of the country. It needs at least 6.7% of agriculture growth for achieving country's milestone for double digit growth rate.
- h. Major issues in agriculture sector have been the same since a decade. Timely availability of major inputs like fertilizer, seed and irrigation; land management for higher productivity and having scale of returns; increasing connectivity and market information; crop and food diversification; strategic production scheme for import substitution and export promotion; and value chain development and linked to the regional and global value chain are critical issues in agriculture development.
- i. Government support in agriculture sector is very less in one hand and the transparency and farmers' selection might have another problem. The mechanism for supporting each and every farmers on the basis of their scale of production and employment generation will be the sustainable model to promote farmers
- j. Following the successful election of all three levels; the political institutions have been set in all levels but the administrative restructuring have not been accomplished so far.
- k. The provincial governments have forwarded their policies and commitments but they are not backed by the fiscal budgets and implementation machineries. Each provinces have the common target of ensuring food and nutrition security of their people; which is also the main target of government of Nepal.

## 5. Recommendations

Major recommendations of the study are summarized below:

- Nepal's restructuring process should be perceived as a unique opportunity to address existing weaknesses in order to improve the enabling environment for agricultural policy planning and implementation. In addition, the restructuring process enhances service delivery for Nepali citizens, who depend on the agricultural sector for their livelihoods.
- The restructuring process has followed a systematic approach through series of actions like preparing functional analysis of the key sectors; Unbundling of the constitutional functions within three tiers of governance; finalizing the functions of all three tiers; preparing and finalizing the proper structure to carry the functions; deployment of human resources and budgeting.
- The steps of restructuring have been mixed and have taken a long time. Government has finalized the functions of all levels; the structures have not been finalized and approved.
- Since finalization of structures took a long time the fiscal budget has urged for rapid actions because the budgetary provision does not support ongoing structures; yet very difficult task of deployment of central civil servants has to be accomplished within the current fiscal year. It

seems many development activities including that of agriculture affected and have consequences in long term.

- The government should not impose a uniform organizational structure under provincial ministry but it should be based on the potentiality of the commodity to have research and extension.
- Referring to some international practices, the authority and workload for provinces have to be released step wise step. There could be confusion on the use of rights; it might affect the development works heavily. Once the authority given to lower levels it's difficult to bring back. So provinces and local bodies need to be strengthened highly.
- As provinces now onwards try to practice development activities based on their strengths and opportunities, the interdependency will grow much wider; the central ministry should lead to achieve national targets; and should be authorized to coordinate and direct for national agendas.
- The complete organizational structure in agriculture sector has not been finalized yet, the critical judgements are required to finalize the structure so that needful functions do not get disturbed. The seed sector channel developed by existing DADO offices need to be carried out by similar structures which can link farmers to seed companies.
- As Agriculture is diverse sector, it requires specialists services from different disciplines like crop/horticulture/ livestock extension, business plan and market oriented production schemes; disease and pest management, soil and seed testing; a special units to link local bodies to provincial and central government are essentially required.
- The Agriculture Knowledge Center could be developed as coordinating bodies and representatives of both central and provincial governments to lead and backstop the agriculture functions for achieving national priority.
- The structures should be developed in such a way that highly essential services will be provided by local bodies, development functions by the provincial government and policy and regulatory functions by the central. In such direction; Ministry, Department and other central offices will prepare, analyze and approve policies while province government try to implement national policies aligning to their own policies; the AKC and farm centers under provinces implement the central and provincial policies through appropriate budgeting and program; while local bodies should be engaged in extension education services and implement their prioritized program.
- The provinces are interdependent to each other for agriculture products requirements; the surplus province in one commodity is exported to others according to their needs; while they also depend each other for marketing of the products and input supply.
- As the practice of federalism takes pace, the interdependency will grow deeper and deeper. The central government should coordinate between all provinces for uniformity in taxation and incentives to harmonize the fair trade amongst the provinces.

## CHAPTER I: BACKGROUND

### 1.1 Introduction

Government of Nepal decided to transform Nepal into federal, democratic and republic country through a new constitution 2072. It was possible through a lengthy consultation process and took more than 9 years to replace the interim constitution, 2063. The constitution has clearly divided the role and responsibilities at all three tiers of government. The constitutional functions are divided into absolute and concurrent functions. The absolute functions of central, province and local level are listed in annex 5, 6 and 7 respectively. Accordingly, annex 7 is about the concurrent function of central and province and annex 9 is about the concurrent functions of central, province and local level. Although constitutionally Nepal became federal country again it took around 2 years to politically endorse the constitutional rights through election. After the successful election of all three levels, political institutions have been installed, yet administrative institution have not been fully operationalized. It requires a detailed study on the different functions of all sectors to avoid conflicts within different authorities and but to fully implement development programs as well as public services. As state restructuring task was difficult, it is more difficult in implementation process. The state demarcation might have been based on geographical and population dynamics but it has little considered on the efficiency and economic parameters. Thus, each states have to rely on others for economic prosperity. Agriculture remains highly important in Nepal as this sector contributes to more than one third of GDP and two third of export earnings. Implications of federalism in agriculture have to be studied quite rigorously as it is considered one out of three sectors to drive economic engine of future Nepal. This study focuses on analyzing the province strengths for self-sustaining their economy with due importance on agriculture.

Agriculture is still the largest economic sector that solely contributes more than 30% of National GDP. The restructuring of the state provided opportunities to improve agriculture governance as well. With the initiation of planned development, agriculture got high priorities in every periodic plans. However, such priorities were not much reflected by the annual budget. Starting with KrishiAdda back in 2008 B.S, agriculture governance was highly wide with structures varying from ministry to service centers. Agriculture sector has privileged to have arguably first detailed sectorial plan- Agriculture Perspective Plan which emphasized input driven production strategies that emphasized on factor productivity for broad based poverty reduction. As Agriculture Development Strategy replaces the APP, it has to align its priorities on now with federal system which is its biggest challenge for achieving the targets. This study has also analyzed the importance of agriculture strategy in new federal context.

Nepalese agriculture is characterized by higher level of diversification in terms of climatic and geographic variations. Due to the high range of altitudes and temperature throughout the country, agriculture in Nepal has peculiar characteristics. Within almost 200 Km in north-south, we find all kinds of temperature and crop types as well. This provides both opportunities and challenges for agriculture development in Nepal. After constitution, the unitary country has been restructured into 7 provinces. These provinces have been divided mostly on the geographic basis. With perspective of agriculture development, all provinces have particular strengths and some weaknesses. Provinces 1, 3, 5 and 7 have both temperate and tropical climates and more diverse in terms of agriculture crop production potentialities. While province 2 has mostly tropical climate, province 4 and 6 have largely temperate climate and are less diverse. The provinces will be interdependent to each other in terms of economic production. As such province 2 and 5 will be producing cereal and pulse crops more than other crops, while province 1 has more potentiality for tea, cardamom, and vegetables. Likewise province 3 has



strengths for citrus, vegetables, maize, coffee; while province 4 is capable of producing higher quality of apple, citrus, coffee, ginger, corn and vegetables. Province 6 is clearly dominant in apple, walnut, medicinal and aromatic plants. Province 7 has good strengths for wheat and vegetables. Some provinces will be surplus in certain commodities and deficit in other commodities. Not only production, there will be interdependency for inputs and product market.

Against this backdrop, this study was designed to support department of agriculture in identifying provincial strengths and weaknesses to further plan its future development strategies. The study will also support in identifying proper institution for carrying out such agriculture activities at province level.

This report has been divided into several sections. Section 1 include background part which briefly presents the introduction, objectives and scope of the study. Chapter II presents the study methodology; Chapter III presents study findings and Chapter IV covers the recommendations.

## 1.2 Objective of the Assignment

The main objective of the assignment was to analyze the scope of agricultural development in the context of new government structure. However, the specific objective of the study was to;

- Identify the issues and opportunities of agriculture at provincial level
- Identify and suggest appropriate structure at provincial level to carry out provincial agriculture function
- Assess the commodity wise production potentials and gap.
- Identify key actors and their roles for agriculture development in new context of structural reform
- Suggest a way forward for smoothening economic interdependency amongst provinces

## 1.3 Scope of the assignment

The Consulting firm has worked closely with the Department of Agriculture and DSTEP flagship manager. The scope of assignment according to the terms of reference provided was;

Task 1: Propose institutional arrangement for agriculture development in the context of new government structure

- Study on constitutional arrangements for agriculture functions
- Review on past works on restructuring from MoAD, MoFALD, MOGA and OPMCM
- Review on current institutional arrangement of MOAD
- Brief overview of new/proposed structure of government at federal, provincial and local level
- Suggest an institutional arrangement of agriculture sector in line with the new/proposed structure of government; and
- Specify the objective, role and responsibility of the institutions proposed at all levels

Task 2: Identify issues, opportunities and need for agriculture development

- Identify key issues in agriculture development in Nepal including the issues emerging in the context of federal structure of governance
- Identify key opportunities of agriculture development. The consultant shall also look into the opportunities evolving due to new government structure
- Assess the agriculture development perspective in the proposed provinces
- Collect and analyze province wise information on area, production and productivity of key agriculture produce

- Perform the gap analysis
- Identify key areas of support needed in the changed context
- Develop province wise agriculture development need
- Analyze linkage and coordination among provinces for agriculture development
- Review the role of agriculture development in interprovincial dependency

Task 3: Organize stakeholder consultation and interaction

- Collect and analyze information from the field
- Organize stakeholder meetings in each of the proposed provinces
- Hold interview and interaction with key stakeholders including farmers' organization, service providers, input suppliers, agribusiness operators and so

Task 4: Produce a report on agriculture development perspective in the changing context of government structure

- The firm shall produce a comprehensive report on the proposed subject and submit for review
- Submit final report

## CHAPTER II: APPROACH AND METHODOLOGY

Given the nature, scope, timeframe and resource allocated for the study, a combination of desk review and field studies were adopted to accomplish the task. Based on the thorough understanding of the TOR provided, following approaches and methodologies were used to undertake the assignment.

### 2.1 Inception report preparation and approval

The study team in consultation with the client finalized the methodology, tools and time schedule as well as the outputs delivery plan. Inception Report was prepared and submitted to the Department to cover the approach to be followed for the study and was approved which provided the guidance for detail study accomplishments plan.

### 2.2 Collection and review of secondary information

The study team collected and reviewed the relevant data/information on sectoral institutional arrangement that is being worked out and finalized till report generation. The team met with relevant officials and gathered information on the ongoing work been done on the structural reform. The study team also visited the website of major actors of the state reforms including the Office of the Prime Ministers' and Council of Ministries, Ministry of federal affairs and general administration, Ministry of Agriculture Land Management and Cooperatives, Ministry of Finance, National Planning Commission, Department of Agriculture, Department of Livestock services and other related institutions like Trade Export Promotion Center and FNCCI and gather important documents to support the study findings.

### 2.3 Source of data

Given the nature, scope, timeframe and resource allocated for the study, a combination of desk review and field studies were conducted to accomplish the task. Based on the thorough understanding of the TOR provided, following approaches and methodologies were used to undertake the assignment.

### 2.4 Desk review

Desk review was conducted to collect relevant information regarding past and ongoing works in the state restructuring process and provisions in the constitutions. The reports published by MoALMC, MoFAGD, and OPMCM were reviewed and analyzed and conclusions were incorporated in the report wherever deemed necessary. Likewise international experience and study reports were also be reviewed to extract the conclusions. Other necessary information on provincial strengths and weaknesses were collected and analyzed for the preparation of report.

### 2.5 Field work

The qualitative techniques were applied in the field to gather necessary information. The study team visited all 7 province headquarters and other centers. The interaction meeting were conducted with relevant officials of newly formed Ministry of Land, Agriculture and Cooperatives in the provinces. Further wider level of stakeholder consultations were carried out in the field. The DADO and DLSO Offices were visited and information were collected through discussions with existing DADO and DLSO officials. At least one local body from each provinces were visited to understand the current and future working strategies of the institutions. The data from field work were cross validated with the published documents to draw the conclusions.

The provincial ministries, DADO and DLSO offices and Local bodies consulted have been listed below;

1. Provincial Ministries in
  - Province 7 – Dhangadhi, Kailali
  - Province 6 – Birendranagar, Surkhet
  - Province 5 – Butwal, Rupandehi
  - Province 4 – Pokhara-Lekhnath, Kaski
  - Province 3 – Hetauda, Makwanpur
  - Province 2 – Janakpur, Dhanusha
  - Province 1 – Biratnagar, Morang
2. District Agricultural Development Offices (DADOs)
  - Province 7 – Kanchanpur (Mahendranagar)
  - Province 6 – Banke (Nepalgunj)
  - Province 5 – Kapilbastu (Krishna nagar)
  - Province 4 – Kaski (Pokhara-Lekhnath)
  - Province 3 – Chitwan (Bharatpur)
  - Province 2 – Dhanusha (Janakpur)
  - Province 1 – Sunsari (Inaruwa)
3. Local / Rural Municipalities
  - Province 7 – Tikapur Municipality
  - Province 6 – Birendranagar Municipality
  - Province 5 – Banganga Municipality
  - Province 4 – Pokhara-Lekhnath Metropolitan
  - Province 3 – Sindhuli/Manthali Municipality
  - Province 2 – Bardibas Municipality
  - Province 1 – Itahari Municipality

## 2.6 Design of data collection instruments

During the inception phase the consultant prepared the data collection instruments / checklists (See Annex). As the inception report was approved, same checklists were applied for soliciting information from the officials at central, provincial and local level.

## 2.7 Data analysis and reporting:

Data collected from both primary and secondary sources were analyzed. The findings have been interpreted in line with the scope of the work. This draft report will be circulated to relevant officials of DoA and Flagship manager to seek comments and suggestions. The validation meeting will be organized before final report. The comments and suggestions obtained will be incorporated to produce final report.

## 2.8 Report Preparation

### Preparation of the Draft Report

Based on the analysis of collected information, this draft report has been prepared by applying standard analytical tools and techniques to arrive at plausible interpretations. The Draft report will be shared with **the client** for comments.

### Debriefing Meeting

The study team conducted the validation meeting in Department of Agriculture. Where Director General, Deputy Director General, Flagship manager and other senior officials from Ministry of

Agriculture Land Management and Cooperatives and Department of Agriculture participated in the meeting and provided valuable comments and suggestion. The comments and suggestions of the meeting were incorporated in the final report.

### **Final Report**

Comments obtained on the Draft Report and feedback gathered from the debriefing meeting will form the basis for preparation of the Final Report. It will be a tailor made report following the requirements specified in the ToR.

## CHAPTER III: STUDY FINDINGS

### 3.1 DESK REVIEW

#### 3.1.1 Constitutional provision for Agriculture sector

Nepal's choice for federal system aims for drastic change in governance system. The government's local self-government Act (LSGA), 1999 tried to provide decentralization authority to local elected government and civil servants working under VDCs and municipalities were directed to function locally. Provisionally, three sectors agriculture extension, education and health were devolved with the objective of prioritizing local needs through local planning and budgeting. The government's inability to hold local election mainly due to maoist insurgency led to non-functioning of LSGA and thus local development officer appointed by MoFALD started acting as elected body, which practically violated the decentralization. The selected civil servants were responsible to central ministry and development offices including District Agriculture Development Office, District Livestock Development Offices, District Education Offices and District Health Offices practiced their development functions with central budget and central priorities. Following the endorsement of new constitution and election of three government, the existing set up will have to be changed completely.

Although unitary system, the structure of agriculture sector was much decentralized. Ministry of Agricultural Development was divided into Ministry of Agricultural Development and Ministry of Livestock Development in later stages. Despite Ministry of Agriculture Land Management and Cooperative was formed by merging then Ministry of Agricultural Development, Ministry of Livestock Development, Ministry of Land Management and Ministry of Cooperative and Poverty alleviation; the temporary adjustments have been set up with three secretaries leading the sectors. Under the secretary for agriculture development, it has two departments namely Department of Agriculture (DoA) and Department of Food Technology and Quality Control (DFTQC); three other central offices namely Nepal Agriculture Research and Development Fund (NARDF), Agriculture Information and Communication Center (AICC) and Seed Quality Control Center (SQCC); Nepal Agriculture Research Council, one board, two companies and four committees. The department of agriculture has a deep rooted structure which includes 12 technical program directorates, 9 national programs, 5 regional directorates, 5 regional training centers, 1 agriculture development plan (JADP), 75 district agriculture development offices, 378 service centers, 15 regional laboratories, 40 farm centers and 15 quarantine offices. The farm centers comprise of vegetables, fruits, fisheries, sericulture, and honeybee development farms. Similarly, Department of Food Technology and Quality Control 11 regional laboratories and inspection offices, one central lab attached with department. The NARC has research stations throughout the country with national and regional research centers. Now these all structures have to align with the constitutional provision.

The Government of Nepal has already endorsed the structure of all ministries. Likewise, the process of approval of department level structures and central level structures is on the way, the budgetary allocations have been provisioned according to new proposed structure.

Constitutionally agriculture is more state matters although it has also been the concurrent function of all central, state and local government. The authority of agriculture extension lies with local and state while regulatory and policy are the central matters. The constitutional provisions for agriculture sector are listed in table 1

**Table 1: Constitutional provisions for agriculture sector**

Article	Constitutional provision
25.4 right to property	State has right to use public property for land productivity, agriculture modernization and commercialization, environment protection under the provision of law
36 Food related rights	<ul style="list-style-type: none"> <li>-Each citizen have right to food</li> <li>-Each citizen have right against food deficiency</li> <li>-Each citizen have right to food sovereignty under law</li> </ul>
42. right to social justice	- each farmers have right to access to land for farming and have right to use indigenous and local seed and variety and their protection
51.e land and land management policy	<ul style="list-style-type: none"> <li>- scientific land management for the benefits of farmers and to avoid dual ownership</li> <li>- Discourage absentee landlordism and fragmentation to increase production and productivity</li> <li>- Implement land use policy to protect peasants rights and for land management, and agriculture commercialization, industrialization, diversification and modernization</li> <li>- Regulation, management and judicious use of land to achieve land productivity, through balance in nature and environment</li> <li>- Management of agriculture inputs, ensure appropriate product pricing and increase farmers' access to market</li> </ul>
51.j civil fundamental needs related policy	- Encourage production based on suitable climatic and soil condition and enhance investment in agriculture sector in accordance with food sovereignty to ensure sustainable production, supply, storage, secured and effective distribution system
57. Distribution of state power in three level of governments	<p><a href="#">Annex 5. Absolute central function</a></p> <ol style="list-style-type: none"> <li>1. Central Projects related to agriculture (Appendix 5, S.N. 5)</li> <li>2. International treaty and agreement related to agriculture (Appendix 5, S.N 7)</li> <li>3. Central Statistics related to agriculture (National and international indicators and quality) Appendix 5, S.N. 13</li> <li>4. Quality control and monitoring (Appendix 5, S.N 16 and 13)</li> <li>5. International Trade related to Agriculture (Appendix 5, S.N. 18)</li> <li>6. Quarantine (Appendix 5, S.N 18)</li> <li>7. Intellectual Property Rights, Patent (Appendix 5, S.N 24)</li> <li>8. International Climate Management (Appendix 5, S.N 27)</li> <li>9. Insurance Policy (Appendix 5, S.N. 28)</li> <li>10. Land use policy, climate resilience (Appendix 5, S.N 29)</li> <li>11. National commission, Farmers commission being formulated (Appendix 5, S.N. 33)</li> <li>12. Social Security and Poverty alleviation (Appendix 5, S.N. 32)</li> <li>13. Those issues not listed in exclusive functions of central, state and local government or concurrent functions.</li> </ol> <p><a href="#">Annex 6: Absolute province function</a></p> <ol style="list-style-type: none"> <li>1. State statistics (Appendix 6, S.N. 6)</li> <li>2. State trade (Appendix 6, S.N 11)</li> <li>3. State Research (Appendix 6, S.N 13)</li> <li>4. Land Management (Appendix 6, S.N. 16)</li> <li>5. State level environment management (Appendix 6, S.N. 19)</li> </ol>

	6. Agriculture and Livestock Development (Appendix 6, S.N. 20) 7. Agriculture income tax (Appendix 6, S.N.4) <a href="#">Annex 7: Concurrent functions of central and province</a> 1. Quality control and monitoring (Appendix 7, S.N. 2) 2. Contract, Cooperatives, partnerships (Appendix 7, S.N. 7) 3. Environment protection and biodiversity (Appendix 7, S.N. 13) 4. Veterinary service and other services (Appendix 7, S.N. 12) 5. Insurance service operation and management (Appendix 7, S.N. 20) 6. Poverty alleviation (Appendix 7, S.N. 21) 7. Scientific Research and Human Resource Development (Appendix 7, S.N. 22) 8. Land policy and act (Appendix 7, S.N. 24) Annex 8: Absolute functions of local 1. Local level statistics (Appendix 8, S.N.6) 2. Local level development projects
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Source: Constitution of Nepal, 2072

The government expedited the restructuring process immediately after passing the constitution. Ministry of General Affairs accomplished the functional analysis of major 5 sectors with the UNDP supported PREPARE (Project to prepare public administration for state reform) project. The functional analysis was made on the basis of 5 principles; subsidiarity principle, economies of scale, social inclusion and national priority, equity and economic stability and unbundling for achieving clear assignment.

Based on the constitutional provisions, international practices and ongoing activities, the experts' team recommended agriculture functions in three tiers of government as following;

**Table 2: Recommended agriculture functions in three tiers of government**

S.N	Functions	Role of government at various level of services				
		Regulations	Financing	Staffing	Provision	Production
1	Agriculture regulatory services	F,P	F,P	F	F	F
	1.1 Inspection services	F,P	F,P	F,P,L	F,P,L	F,P,L
	1.2 Quarantine services	F	F	F	F	F
	1.3 Licensing services	F,P,L	F,P,L	F,P,L	F,P,L	F,P,L
	- Products standards development services	F	F	F	F	F
	1.4 Agriculture information regulatory services	F	F	F	F	F
	1.5 Risk Analysis and Biosecurity	F	F	F	F	F
2	Research and Development (by commodity and by discipline)	F,P,L	F,P,L	F,P,L	F,P,L	F,P,L
	2.1 Up-streams (Basic and Strategic research)	F	F	F	F	F
	2.2 Mid-streams (Technology development research)	P	P	P	P	P
	2.3 Down streams (Technology testing at farmers field) Research	P,L	P,L	P,L	P,L	P,L
	2.4 Collaborative or partnership	F	F	F	F	F



	research					
	2.5 Development of agriculture knowledge package for extension as regards new knowledge and technology	F	F	F	F	F
3	Information, communication and extension	F,P,L	F,P,L	F,P,L	F,P,L	F,P,L
4	Soil health care services	F,P,L	F,P,L	F,P,L	F,P,L	F,P,L
5	Land Reform and Management	F,P,L	F,P,L	F,P,L	F,P,L	F,P,L
6	Agriculture education	F,P,L	F,P,L	F,P,L	F,P,L	F,P,L
7	Agriculture credit	P,L	P,L	P,L	P,L	P,L
8	Irrigation	F,P,L	F,P,L	F,P,L	F,P,L	F,P,L
9	Rural Infrastructure	F,P,L	F,P,L	F,P,L	F,P,L	F,P,L
10	Agriculture statistics	F,P,L	F,P,L	F,P,L	F,P,L	F,P,L
<ol style="list-style-type: none"> <li>1. For specific national priorities, the corresponding federal government's policies shall override contradicting policies by the sub-national governments. Such overriding role shall be limited to functions having externalities such as Food Security and Nutrition for All; Development of Food Reserve Facilities; Conservation of Agro bio-diversity, Value Chain Development; Control of HPED11, TADs12 and Zoonotic Diseases; Climate Change and Poverty Alleviation.</li> <li>2. Agriculture standards of the federal government shall also apply to sub-national services especially those that pertain to International Commitment.</li> <li>3. During the transition, the federal government shall finance provincial and local programs for agriculture services with the concurrence of sub-national governments.</li> <li>4. There shall be three tiers of government services. F- Federal, P – Provincial, and L – Local</li> <li>5. Provision of services includes key result areas in public management such as planning, monitoring, and evaluation (PME) and Management information system (MIS), and human resource management (HRD)</li> <li>6. Production of services includes purchasing and combining factor inputs such as labor, raw materials, land, technology or management</li> </ol>						

Source: Functional analysis and Assignment of Government consolidated Report, 2015, PREPARE, MoGA

Government had formed a high powered federal administration restructuring committee in the chair of Honorable Kashi Raj Dahal of Administrative court to ease the state restructuring process. This high level committee recommended 15 ministries in the central which included Ministry of Agriculture and Land Management by merging existing Ministry of Agricultural Development, Ministry of Livestock Development, Ministry of Land Management and Ministry of cooperatives and poverty reduction. This committee worked quite independently and the recommendations are more practical.

After local election, government formed a high level mechanism to expedite the state restructuring process. This mechanism included 2 high level committee and 6 clusters. The composition of the committees is as following;

A. High Level Federalism implementation and state restructuring steering committee-

- |                                    |          |
|------------------------------------|----------|
| 1. Rt Honorable Primeminister      | Chairman |
| 2. Honorable Deputy Primeministers | Member   |
| 3. Honorable Minister, MoFALD      | Member   |
| 4. Honorable Minister, Defence     | Member   |
| 5. Honorable Minister, Home        | Member   |

- |                                |                   |
|--------------------------------|-------------------|
| 6. Honorable Minister, Finance | Member            |
| 7. Honorable Minister, MoGA    | Member            |
| 8. Honorable Minister, MoLJPA  | Member            |
| 9. Honorable VC, NPC           | Member            |
| 10. Chief Secretary, GoN       | Member- Secretary |

**B. Federalism Implementation and Administration Restructuring Coordination Committee**

- |                                       |                  |
|---------------------------------------|------------------|
| 1. Chief Secretary, GoN               | Chairman         |
| 2. Secretary, MoF                     | Member           |
| 3. Secretary, MoHA                    | Member           |
| 4. Secretary, MoD                     | Member           |
| 5. Secretary, MoLJPA                  | Member           |
| 6. Secretary, MoGA                    | Member           |
| 7. Secretary, MoFALD                  | Member           |
| 8. Secretary, OPMCM (Federal Affairs) | Member-secretary |

**C. Different Clusters and their working areas**

1. Social cluster- Education, Women children and social welfare, Health, Population and Environment, Forests and Soil Conservation, Peace and Reconstruction, Culture, Youth and Sports
2. Economic cluster- Finance, Commerce Supply and Industry, Agriculture and Livestock, Labor and Employment, National Planning Commission, Cooperative and Poverty Reduction, Tourism and civil aviation
3. Infrastructure cluster- Water resources, Physical Infrastructure and Transport, Urban Development, Drinking water and Sanitation, Information and Communication, Science and Technology
4. Security and Governance Cluster- Office of Primeministers and council of ministers' related area, Home, Defence, Foreign Affairs, Public Administration, Local Development and Federal Affairs, Land Management
5. Constitutional Agency, Parliament, Law and Others- Constitutional agencies, Parliament, Law and others

Each of the clusters was led by the Joint secretaries of the Office of the Prime minister and council of ministers and members were the other joint secretaries from relevant ministries and agencies. The cluster team prepared and finalized the unbundling of the functions provisioned by the constitution. The functions for agriculture sector is listed in table 3

**Table 3: Exclusive Powers of Federation on agriculture (Schedule 5 of the Constitution)**

1	National policy, law and standardization and regulation relating to agriculture
2	National policy and standardization and regulation relating to biological diversity and biological technology
3	Relation and coordination with multilateral and bilateral agencies and organizations relating to agriculture
4	Statistic system of national standard, study, research, resource protection, development and expansion relating to agriculture

5	Development and management of international accreditation relating to agriculture and food
6	International trade facilitation and regulation relating to agriculture and food
7	Coordination and regulation relating to imported fertilizer supply
8	International epidemic control of agriculture and livestock
9	National policy, standardization relating to veterinary
10	Registration, permission, renew, dismissal and regulation of veterinary doctor
11	Inter-state development and promotion of agriculture, industrialization, livestock industry business
12	Determination of national quality and regulation relating to seed and breeding
13	Policy, law, and regulation relating to inland pasture land and barren land
14	National food security, food rights and food sovereignty
15	Policy, law, standards, implementation and regulation relating to quality of food stuffs quarantine and hygienic food
16	Policy, law, standards, implementation and regulation relating to animal and botanical quarantine
17	Policy, laws, standards, planning and regulation relating to use of land
18	Food security, food rights and food sovereignty
19	Federal food nutrition policy formulation and monitoring
20	<b>Agriculture and livestock relating drugs and pesticides</b>
20.1	Policy, law, standards and regulation relating to agriculture and livestock relating drugs, utilization and management of micro nutritional and pesticides
20.2	Information collection and information delivery of permitted and restricted pesticides in international level
20.3	Relation, coordination and cooperation with international organizations relating to pesticide control and management
20.4	Import permission and regulation of drugs and pesticides

**Table 4: Exclusive Powers of province on agriculture**

1	Provincial policy, law, standards, planning, implementation and regulation relating to agriculture, livestock development and food nutrition
2	Agriculture and livestock related diseases, insects and epidemic control
3	Matters relating to agricultural industrialization, development of livestock related industry occupation and promotion
4	Matters relating to agriculture and livestock mechanization and development of developed equipment and expansion
5	Registration, permission, renewal, dismissal and regulation of para vet according to national policy and state
6	Management and regulation of curing laboratory for agriculture and livestock diseases
7	Quality determination and regulation of agriculture product, livestock, livestock related materials

	and animal product materials
8	Affiliation, standardization, determination of quality and certification of agricultural materials, services and technology
9	Quality control and regulation relating to seed and breeding
10	Provincial policy, law, and regulation relating to grazing land and barren field
11	Matters relating to provincial food security, food rights and food sovereignty
12	Matters relating to agriculture related provincial statistic system, study, research, source protection, development and expansion and common agriculture system
13	Study, research, development and promotion relating to agriculture, and livestock related and food technology
14	Matters relating to agriculture fertilizer, seeds and pesticides supply management and regulation
15	Development and management of provincial laboratory relating to agriculture livestock and food
16	Matters relating to agriculture extension, farmer training and capacity development and empowerment
17	Minimum price implementation of agricultural products
18	Planning and implementation relating to agriculture and livestock insurance
19	Matters relating to agriculture market and infrastructure development and operation
20	Development and management of agriculture firm Centre
21	Provincial policy, law, standards, implementation and regulation relating to use of drugs and pesticides
22	Permission and regulation relating of sale and distribution according to the pesticides standards
23	Standard implementation of agriculture related micro nutritional goods and pesticides
24	Production and regulation of livestock medicine
25	Monitoring and control of production, sale and use of pesticides

**Table 5: Rights and the Functions of the municipal government on agriculture**

1	Agriculture and animal husbandry, agro-product management and animal health
2	Local policy, law, standards, planning, implementation and regulation relating to agriculture and animal husbandry, agro-product management and animal health
3	Matters relating to agriculture and livestock market information, market and market day (Haat Bazaar), infrastructure construction, construction of small irrigation, trainings, technology expansion, technical support, supply of agriculture materials and farmer capacity, implementation and regulation of development programs
4	Control of agriculture and livestock related natural hazard and epidemic disease
5	Management of livestock medical services
6	Matters relating to agriculture environment protection, bio-diversity protection and promotion
7	Promotion, development and marketing of high value agriculture related materials
8	Development and management of animal breeding improvement system
9	Management of local pasture and barren land
10	Quality regulation and animal food/stuff
11	Data management and information system in local level
12	Management and regulation of slaughter house and cold storage
13	Insurance and loan facilitation relating to agriculture and livestock
14	Construction and improvement of small irrigation
15	Local policy, law, standards, planning, implementation and regulation relating to agriculture extension

16	Projection, management and mobilization of agriculture extension and manpower in local level
17	Capacity building, technical service, support, skill development and empowerment of farmers
18	Supply, use and regulation of seeds, breeding, fertilizer and chemical and medicines
19	Coordination, management and regulation of farmer groups, cooperatives and local organizations
20	Technology protection and handover relating to agriculture in local level
21	Information publicity relating to agriculture
22	Development and management of resource centers of local level

Source: *Federalism Implementation and Administration Restructuring Coordination Committee, Report, OPMCM*

### 3.1.2 Agriculture Development in Nepal

#### 3.1.2.1 Agriculture sector performance in recent years

Agriculture is the oldest industry since civilization. In Nepal, the agriculture practice is older than the country itself. It developed like the culture of people. The organized development of the sector began with the establishment of Krishi Adda since 1951. More prominently the first periodic plan 1956-1961, identified agriculture as one of the promising sector for poverty reduction. Since the formulation of fifth five year plan (1975-1980) to tenth five year plan (2000-2005), the priority for poverty reduction was given to agriculture through increasing productivity of the existing crops and diversified production of horticultural crops. However, the growth of agriculture sector remained short of population growth requiring rapid transformation of subsistence farming to more commercialized and diversified. Agriculture Perspective Plan (1995-2015), arguably the first comprehensive sectoral plan; identified agriculture sector as engine of growth. It envisaged a multiplier growth effect of agriculture sector to other sectors of economy and envisioned input-output model of agriculture growth and identified fertilizer, technology, rural infrastructures and irrigation as major factor inputs for achieving broad based agriculture growth. APP forecasted the per capita AGDP growth to 4% from existing base of 0.5% in 1995. With implementation of the APP the incidence of poverty was expected to come down from 42% in 1991/92 to 14% in 2014/15, whereas the latter figure without the APP would have been 29% (ADS vision paper, 2015). However the APP experienced a mixed results in terms of target output. The cereal crops target achievements were far below while some subsectors performed very well even exceeding the targets; which included horticultural and high value crops, fisheries and forests.

After a long stagnation the economy has shown progress. The growth was close to 7.5% last year after nearly recession due to massive earthquake and blockade. The average economic growth for last decade was almost 4.3%, and is expected to grow by 5.9% during current fiscal year 2074/75. The contribution of agriculture sector to GDP is decreasing gradually and expected to be around 27.6%. This shows gradual shift of traditional economy base towards service oriented economy, however lower contribution of industry sector suggest more relying on remittances and other sector which are just temporary and risks of falling anytime. In this regard, the diminishing contribution of agriculture sector also reflects the lower productivity of sector as well. As GDP growth still relying on AGDP growth, the two digits of GDP growth can only be achieved with minimum 6% of AGDP growth which seems unlikely with current trends of relying production growth mainly on monsoon. This year's agriculture growth is expected only at 2.8% due to the shrinkage of main crops rice, by 1.5%. Rice which contributes to 20.8% to AGDP was heavily affected by unlikely climate and floods in Terai region (Economic survey, 2018). The growth of agriculture sector was limited only to 2.9% during last decade. However, other sectors are expected to grow by large percentages due to regular availability of energy and petroleum. Industry sector whose growth was stagnated to 3% during last decade is expected to grow by 8% this year, which is good indication despite lower growth of agriculture.

Prime Minister Agriculture Modernization Project (PMAMP) was launched in 2016, with the objective of specialized production. The four categories of programs were initiated based on the specific products area. The pocket and blocks consisted of areas 10 to 100 hectares of area respectively and zone and super-zone were declared for the areas of 500 and 1000 hectares respectively. 27 points of commitments of then Minister laid the foundation for development of PMAMP project. As the country is moving rapidly to functional implementation of federalism, these initiatives need to be changed according to federal context. The policies, acts, laws, programs and projects are set for amendments to cater the objectives of federalism and meeting the subsidiary principles.

#### **a. Production of cereals**

Nepalese agriculture is dominated by cereal crops. Rice, maize and wheat constitute more than 80% of cereal area and production. Rice solely contributes to 20.8% of AGDP and is the major cereal crop. The production of rice largely depends on monsoon and timely availability of fertilizer and improved seeds. As most of the agriculture research is based on rice, yet the productivity of this crop is below 3.5. Lack of assured irrigation has hindered the rice productivity. The flood and landslide affect largely on rice production. For example the production of rice decreased by 1.5% in 2017 compared to 2016 totaling to 5.1 million metric tonnes (Economic Survey, 2018). The landslides and flood in the rice growing areas were major factors for such decrease in the production. The area of rice and wheat was decreased by 5% in current year but the area under maize increased by 3.2% and also the total production.

#### **b. Production of pulse crops**

The production of pulse crops has been at constant rate during last five years without significant growth. However, the total production of pulse crop is expected to grow by 4.4% during current fiscal year 2017/18. The production is expected to reach 369,000 metric tons in the current year which is far below than the annual demand. Lentil constitute more than 50% of total pulse crop production, which is also the sole export pulse crop item of Nepal. The low productivity of pulse crop is major issue for agriculture research. Low importance of pulse crops in agriculture research and thus unavailability of quality seeds are hindering the sub sector. Unavailability of irrigation in winter, the main growing season of pulse crop has fuelled on low productivity. Despite efforts, the productivity of pulse crop is only around 1 metric ton per hectare in Nepal. Mostly because of poor technology, irrigation facility and quality seeds; the production and productivity of pulse crops in Nepal are below the regional averages in SAARC regions.

#### **c. Production of cash crops**

The productivity of oilseed is similar to pulse crops. However, the remarkable increments in the production of oilseed have been achieved in current fiscal year the growth accounted 16.1% compared to last season. Although the area under oilseed has decreased by 4% the increased productivity by 21% ensured the production of oilseed to 246,000 metric tonnes. Still, the import of edible oil is increasing year after year. Potato, one of major cash crops has performed well during recent years. The potato for fresh consumption is near to self-sufficiency and import mostly account for chips and other industrial purposes. The production of potato is expected to exceed 3 million metric tonnes this year. Similarly production of vegetables is also expected to grow by few margins, the production are almost at self-sufficiency level, however that of fruits are expected to decrease in the current fiscal year. The ginger one of the major export item is increasing in area as well production. The persistent blockage of this commodity at Indian border for export is one the hot issues in trade with India. Such tendencies demotivate farmers for growing such exportable commodities and have justified the trade diversification in terms of export destination. The production of onion and garlic are at decreasing trend and are of major import agriculture items.

#### **d. Production of industrial crops**

Orthodox tea, cardamom and coffee are some of few commodities that have competitive advantage due to favorable geography and climate. Production of these commodities has been increased during recent years. However, trade dependency mostly to India has restricted the potential of these crops. As a result, the area and production of tea and coffee are expected to decrease by few percentages in the current fiscal year. The production of sugarcane and jute are expected to grow by some few percentages in recent years. Jute was nearly an extinct commodity but is getting revived. The price payment by the industrialists to the farmers is still the problem. Minimum support price is fixed by the government, yet farmers do not get their price in time. Farmers are discouraged to grow sugarcane because of payment problems. The production of fisheries has increased in high rate during past 5 years. The zone and super-zone program in fisheries have been effective for its growth.

#### e. Production of livestock based commodities

Dairy, meat and eggs are the most important livestock products that not only enhance food security but also are the major source of nutrition requirements. The growth in livestock sector is noteworthy. The per capita supply of milk, meat and eggs are 71.7 liter, 12.4 kg and 50 against their requirements of 91 liters, 14 kg and 48. In this aspect, country has gained self-sufficiency in eggs and requires substantial efforts in getting sufficiency in milk and meat.

#### f. Agriculture trade

The trade balance of the country is at alarming rate. The share of export in total trade is decreasing year after year. The total export figure has decreased in two subsequent years than 2071/72 while total import has increased at high rate. The total export decreased by 17.9% in FY 2072/73 compared to same period of previous year while it increased by slightly at 2.8% in 2073/74. However, the total import decreased by 0.4% in the year 2072/73 then increased by 26.2% in the year 2073/74. The blockade by India highly affected the total import and trade volume.

**Table 6: Foreign Trade Balance of Nepal (In NRs. Billion)**

	Total Exports	Total Imports	Total Trade	Trade Deficit	Export-import Ratio
F.Y. 2014/15 (2071/72)	86.64	784.58	871.22	697.94	1: 9.1
<i>Share % in Total Trade</i>	9.9	90.1			
F.Y. 2015/16 (2072/73)	71.14	781.15	852.29	710.01	1: 11.0
<i>Share % in Total Trade</i>	8.3	91.7			
F.Y. 2016/17 (2073/74) *	73.13	985.95	1,059.08	912.82	1: 13.5
<i>Share % in Total Trade</i>	6.9	93.1			
Percentage Change in F.Y. 2015/16 compared to same period of the previous year	-17.9	-0.4	-2.2	1.7	
Percentage Change in F.Y. 2016/17 *compared to same period of the previous year	2.8	26.2	24.3	28.6	

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Source: TEPC, 2018

The export of major agriculture produce has increased in the year 2073/74 slightly. Compared to first 9 months of current year 2074/75 with the same period of previous year the agriculture export has increased by 8.8%. The export of lentil, cardamom, tea, ginger and essential oils have increased in current year while that of medicinal herbs and juices have decreased.

**Table 7: Total agriculture exports in '000 NRs.**

Products	2072/73	2073/74	first 9 months of 2073/74	first 9 months of 2074/75
Lentils	1,290,528	1,031,929	647,599	732,011
Cardamom	4,614,612	3,875,750	3,084,173	3,879,972
Tea	2,400,120	2,502,765	1,879,465	2,351,185
Ginger	643,086	243,388	191,595	516,761
Medicinal Herbs	1,244,010	995,647	812,050	784,827
Essential Oils	259,845	395,215	319,198	338,262
Juices	3,181,850	5,094,500	4,034,557	3,327,220
Total	13,634,050	14,139,195	10,968,637	11,930,238

Source: TEPC, 2018

The imports of cereals are almost three times of total agriculture export. The rice and maize are major cereals that are imported in Nepal. Although ministry of Agriculture land reform and cooperatives claims the increase in income status of city dwellers has increased the demand of fine and aromatic rice and thus increased the import value of rice, yet this need to be justified by the research. Similarly maize import by the feed industry is another reason for increased cereal import figure. Except cereals the crude soybean oil and crude palm oil are also major imports in Nepal.

**Table 8: Major imports in Thousand Rupees ('000)**

Major products	2072/73	2073/74	2074/75 (first ninth months)	2074/75 (first ninth months)
Cereals	39,341,399	40,170,297	29,439,787	32,667,215
Crude palm Oil	2,852,795	5,469,693	3,560,812	3,468,088
Crude soybean oil	12,360,204	13,979,513	9,900,766	11,518,969



Total	54,554,398	59,619,502	42,901,365	47,654,272
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Source: TEPC, 2018

### 3.1.2.2 Agriculture production status in the provinces

The Provinces of Nepal were formed on according to Schedule 4 of the Constitution of Nepal. The Seven provinces were formed by grouping the existing districts; two districts, namely Nawalparasi and Rukum, were split between two provinces, so the total number of districts are now 77. Each district has local units. Nepal includes six metropolises, 11 sub-metropolises, 276 municipal councils and 460 village councils. The current system of seven provinces replaced an earlier system where the country was divided into 14 Administrative Zones which were grouped into five Development Regions and 75 districts.

Agriculture is the largest sector in Nepal in terms of employment; gross domestic products, export earnings and raw material supply to the existing manufacturing industries, and play a vital role in the national development. Notwithstanding the role of this sector in the national economy, the average product per year per worker engaged in agriculture is estimated as low as one-fourth of the per worker product of those engaged in the non-agricultural sector. It is evident that the low productivity in agriculture is mainly responsible for the low level per capita income, and the growth of Nepalese economy is intimately related to the growth in the agricultural sector. These factors underline the basic importance of agriculture in Nepalese economy. It is therefore essential that the inter-relationships of agricultural activity in between the provinces is crucial for the agriculture development for growth and prosperity of the nation must be treated as a subject of vital concern. It is undoubted that agriculture is a complex profession in the sense that it is an outcome of the efforts from different types of institutions including farmers. Technology developed by research institutions is transferred to the farm community through different extension approaches. Before an appropriate technology is evolved, a lot of efforts from different institutions need to be made by intensive research for many years. As soon as the technology reaches the field, the farmer requires integrated services from different technical units for its adoption, so interdependency between the provinces for transfer of technology, source seed, and the agriculture produces for trade balance between the provinces for identifying the intervention areas for the economic development is crucial. The details on production status of the provinces has been presented in the annex 2.

Nepal is indispensably an agrarian economy, providing subsistence livelihood for 65 percent of its population. This is a subsistence sector with conspicuously low investment from both government and private sector. The structural transition from agriculture towards knowledge and technology sectors has been sluggish. It is necessary to move towards commercialization of agriculture with increasing subsidy to boost production especially of high value crops ensuring competition with Indian and Chinese products in terms of quality and prices. The economy does not have the capacity to create employment for all those entering the labor market. The lack of economic opportunity and poverty has been forcing millions of Nepali youths to fly abroad in search of jobs.

#### Province 1

The Province 1 lies in the easternmost part of Nepal. Province No. 1 covers an area of 25,905 km<sup>2</sup>. The Province has three-fold geographical division: Himalayan in the north, Hilly in the middle and Terai in the southern part of Nepal, varying between an altitude of 60 m and 8,848 m. Terai, extended from east to west, is made up of alluvial soil. To the west of Koshi River, in between Mahabharat Range and Churia Range, there elongates a valley called Inner Terai. Churia

Range, Mahabharat Range and other hills of various heights, basins, tars and valleys form the hilly region. There are many river basins and gentle slopes as well. Chure, Mahabharat, many basins, tars and valleys form the Terai region. Between the Churia and Mahabharat a low land of inner Terai exists. The Koshi river flows through the region with its seven tributaries; Indrawati, Likhu, Tamur, Dudh Kosi, Arun, Tamakoshi and Bhote Koshi (Sunkoshi).

It contains the subtropical evergreen forest to the tundra vegetation. Sub-tropical, temperate, sub-temperate, and alpine and tundra types of climates are found here. The province can be prosperous if the natural resources are utilized to the fullest. Province No. 1 also includes the snowfall capped peaks including Mt. Everest, Kanchanjunga, Makalu with Solukhumbu, Sankhuwasabha and Taplejung districts towards the north, the jungle clad hill tracts of Okhaldhunga, Khotang, Bhojpur, Terhathum, Ilam and Panchthar in the middle and the alluvial fertile plains of Udayapur, Sunsari, Morang and Jhapa. Province 1 possesses the great potentiality of tourism as one of the best trekking route in the world; the Everest Base Camp and conquering Everest a only zeal for mountaineers in the world .

Most of people are involved in Tea, cardamom, paddy, maize, wheat, potato, and millet as their main crops. Jhapa, Morang and Sunsari district of Terai and Udayapur of Inner Terai has fertile land for farming paddy, wheat, sugarcane, maize, millet and jute . Farmers of terai region also produce fruits like mango, litchi and banana. Tea, cardamom and ginger are main crops in hilly region. Ilam and Jhapa are the main districts for the production of tea although Panchthar, Dhankuta, Bhojpur and Solukhumbu are the new regions being involved in tea farming. Different fruits like citrus, Kiwi; vegetables and spices like Cardamom and ginger are commercially grown in this region. Chhurpi, a type of cheese produced from yak in some hilly and mountainous region of Province No. 1 is important product and has high demand in the other parts of country.

## **Province 2**

Province 2 which lies in the southeastern region of Nepal, is the smallest province in terms of area coverage. The province is totally located on a flat plain land which is also called the Terai and thus have quite easy terrain. This province is surrounded by Chure (Churiya) or the Shiwalik Hills as the natural border from northern side and Koshi River on its eastern side acting as natural border with Province 1. The southern side has an international border with the Indian state of Bihar. The province 2 elongates only in the Terai region with the huge potentiality of agricultural production. The majority of the population is Madhesi with highest population density amongst all 7 provinces. The province is very important from the perspectives of agriculture, industry, and tourism with the least possibility of hydro-electricity development. The large section of southern part bordering with India, provides big business corridor and around 40% of tariffs collection is from the border points located in this province. The fertile and flat land of this province provides great opportunity for agriculture production where surface irrigation is the easiest; however the floods during rainy season poses dangers equally. The region produces a variety of crops including rice, wheat, maize, sugarcane, jute and vegetables and are highly commercialized. Likewise fish farming is also major source of income of the people of this province. Almost 50 % of total fish production in the country, comes under this province. Birgunj, Rajbiraj, Janakpur, Lahan, Jaleswor, Malangwa, Gaur, Chandranigahapur, Kalaiya, and Simara are some of the major trade centers of this province. The province has good opportunity to serve as food basket of the country; however the farmers are equally affected by the cheap Indian production and lack economic prosperity for poor farmers and ranked 6<sup>th</sup> out of 7 provinces in health related indicators.

## **Province 3**

The province 3 is located between Tibet (China) in the north and province 2 in the south. It is the third smallest province of Nepal. Kathmandu, the capital city of Nepal lies in this province and thus is the highest populated province. It has best the HDI and Per capita income mainly because of major cities like Kathmandu, Lalitpur, Bharatpur, Hetauda, Bhaktapur and Banepa. Most of the part of this province is hilly and mountainous. Deciduous forest, coniferous forest, alpine forests are available here due to the altitude. Rainfall takes place mainly during summer. Major source of income for the people are service, agriculture, industry, hydroelectricity and remittances. Some of the sub sectors like Poultry, Dairy and vegetables are highly commercialized in this province. Chitwan, Dhading, Kavre, Bhaktapur and Nuwakot are famous for commercial vegetable production; while more than 40% of total poultry and eggs production are from this province and mainly in chitwan. Large scale agro-based industries are situated in this province that consumes massive amount of raw materials for agricultural products. The major trade centers of this province are Kathmandu valley, Hetauda, Chitwan, Banepa, Sindhuli Gadi, Kerung and Tatopani. The Chitwan National Park, Sindhuli Gadi, Bhaktapur, Patan, Bashantapur, Dhulikhel, Nagarkot and Jiri are some of the major tourist destinations of this province.

#### **Province 4**

The province 4 lies between China in the north and province 5 in the south. The province has the huge potentiality of hydro-electricity generation with existing 29 hydro-electricity projects. The people of this province are involved in agriculture, tourism, industry, services as well as foreign employment. This province collects the highest remittances. The major food crops grown in this province are paddy, maize, millet and wheat. The cash crops include Potatoes, coffee, apple and oranges. Livestock rearing also accounts for a large part of this provinces agricultural activity. The province is very good for tourism industry with the sufficient attraction for mountaineering, trekking, rafting and paragliding centers. One of the greatest trekking routes in the world; the Annapurna Base camp provides great opportunity for tourism and allied businesses. There is great potentiality of promoting agro-tourism in this province that can be well incorporated for boosting economy of the provinces.

#### **Province 5**

Province 5 is formed with both the Hilly region and plain land of the Terai. It is bordered by India in the south and province 4, 7 and 6 in the east, west, and north respectively. In terms of terrain, the province is spread over the Himalayan, Hilly and Terai region of Nepal; 5,919 km<sup>2</sup> (26.8%) of the area falls under the Himalayan region, 14,604 km<sup>2</sup> (67.2%) of the area falls under the Hilly region and 1,310 km<sup>2</sup> (6%) of the area falls under the Terai region. Bardiya National Park and Banke National Parks cover a considerable part of the province. The rivers like Karnali, Bheri, Rapti, and Babai provides opportunity for enormous irrigation in the province. Sikta irrigation project and Babai Diversion and irrigation project have benefited the agricultural production. This province is best suited for agriculture production as the land is very fertile and good source of irrigation prevails. The major crops are paddy, mustard, wheat, maize, sugarcane, vegetables, potato, lentils and cotton. The great Lumbini; major pilgrimage place of Buddhist in the world due to birthplace of lord Buddha is the main attraction for tourists; Tilaurakot, Swargadwari, Bardiya National park, Resunga, Bageswori, Supa Deurali and Tansen among others. The major trade centers are Butwal, Bhairahawa, Nepalgunj, Kohalpur, Tulsipur, Krishnanagar and Gulariya.

#### **Province 6**

The province lies in the western part of Nepal. Initially known as Province No. 6, the newly elected Provincial Assembly adopted Karnali as the permanent name for the province. This is the biggest

province in size. The bordering provinces are province 7 in the west, province 5 in the south and east, a part of province 4 in the east and China in the north. The province does not cover any fertile land of the plain Terai. The province is the poorest among others and is developmentally challenged because of complex topography. Mt. Kanjirowa (6612 m), Mt. Kanti (6859 m), Mt. Gorakh (6088 m) and Mt. Changla (6563 m) are remarkable peaks of the province. Rara National Park and Shey- Foksundo National park have been delineated in the province. The biggest lake Rara falls here. Other main attractions of the province are Badimalika, Deuti Bajai and Chandannath temples, Bulbule and Shey-Foksundo lakes, etc.

The major trade centers of the province are Birendranagar, Gumgadhi, Khalanga, Dunai and Sinja valley. Besides Humla and Dolpa, all other districts have an access to roads but they are very narrow, just graveled and risky. Because of poor connectivity, the region has suffered from long back; the foods are highly expensive and more dependent on the rice supplied from National Food Corporation. Surkhet, Dunai, Simikot, Gamgadhi and Jumla are some of the airports of the province that connect Karnali people with rest of the Nepal. The province is fertile for fruits like apples, oranges, pomegranate and walnut which are traded all over the country. Maize, barley, wheat, millet, and paddy are the staple food crops. Similarly, mustard, soybean and hot chili are some of the noteworthy cash crops of this province. The special paddy crop known as 'Jumli Marsi' is the very popular breed of paddy which is produced in Jumla. Owing to weather conditions, cultivation activities are limited to one crop per year or in optimal conditions, three crops in two years in some of the district of this province. The medicinal and aromatic plants are major produce that sustain economy of many people of past Karnali zone. Because of big Karnali river and its tributaries; this province is capable earning much with hydroelectricity.

## **Province 7**

The province is located in the western-most part of Nepal. There are three geographical features in this province: the Himalayan in the north, the Hilly in the middle and the Terai in the south. The river Kamali flows in the east and river Mahakali drains the border in the west. It borders India in the west as well as south and Tibet (China) in the north. Thus, the region has the good potentiality of external trade. It is the second smallest province of Nepal. The major trade centers of this province are Dhangadhi, Dadeldhura, Mahendranagar, and Dipayal. The principal crops grown in this province are wheat, rice, mustard, maize, and cotton.

The province is remote and developmental challenged. Some 44% of people in the Far West Hills and 49% in the Himalayan districts live below the poverty line. The province has limited access to basic services. It has complex socio-economic structures and there are both widespread gender- and caste-based discriminations.

### **3.1.2.3 Issues, opportunities and current needs for Agricultural Development**

As agriculture sector contributes to largest portion to GDP, the engagement of the population in the sector has not resulted the growth as anticipated. Efficiency of the sector is around 0.5 as it contributes 27% to GDP with more than 60% of population engaged in this sector. It shows low level of productivity of the sector as a whole. But agriculture sector continues to be the most important sector not only because of its contribution to GDP but also reliance of other sector like Industry and service sectors on it heavily. Agriculture provides major raw materials to agro based industries; tourism and other agribusiness flourish with agriculture growth. APP had already assumed 1.5 multiplier effect of agriculture growth to other sectors of economy. The recent study shows to achieve 10% of GDP growth, Agriculture sector needs to grow by at least 6%. As simply input output relationship may not

exist in agriculture production, it requires skills, technology, Knowledge and other parameters like environment conducive for agriculture growth.

Major issues in agriculture sector have been the same since a decade. Agriculture Development Strategy identifies major factors needed to increase productivity as i) effective agricultural research and extension ii) efficient use of agriculture inputs iii) efficient and sustainable practices and use of natural resources (land, water, soils and forests) and iv) increased resilience to climate change and natural disaster. Timely availability of major inputs like fertilizer, seed and irrigation are important for improving productivity; which has not been at proper way. Likewise, management of land is another critical issue in overall agriculture productivity. Land and labor are principal factor inputs whose productivity are of major importance not only in classical economic theory but also in practical base. Average land size is decreasing in Nepal which affects on achieving economy of scale. While at the same time land size in India and China is increasing and they are having good productivity. There is positive correlation between land size and productivity and also with trade balance or export. Tenancy, fragmentation, land degradation and land use planning are critical land issues identified by ADS. Moreover our practice of land ownership transfer to the sons has exacerbated the fragmentation. Likewise use of agricultural land for other purposes like housing and plotting has worsen the case. The then Ministry of Agricultural Development tried to impose policy to distract fallowing of land but never been successful because of the different authorities on land governance. Fortunately, the ministry agricultural development and ministry of land reform has now been merged to form Ministry of Agriculture Land and Cooperative and is expected to impose a strict policy to correct land use planning for enhanced land productivity. The government has forced new policy to avoid fragmentation land by correcting frequent selling of land by plotting is expected to solve this issue temporarily. Moreover it requires economic parameters to avoid such problems. Like in South Korea, any individual wishing to use agricultural land for other purposes have to pay more than current market price of that land to the government as tax.

Prevalence of small landowners resulting subsistence farming is another major issue for agriculture development. The commercialization of subsistence growers is required to lift large mass of population out of poverty. As many of such farmers live in rural areas and existence of poverty in that area is directly correlated with lack of commercialization. However commercialization demands a lot on policy changes like conducive investment environment; enforcement of laws and acts that support contractual arrangements, leasing and land utilization; development of value chains, capacity development of all the actors in forward and backward linkages; availability of quality input in good price, technical backstopping and assured market. The production cost is high in one hand while market margin is huge in other hand and thus has indicated the need for radical improvements in supply chains and market management. The improved connectivity, market information and market intelligence support the commercialization.

Increased competitiveness of the farmers are prerequisite for the continuing engagements in agriculture sector. With the accession to WTO, the consumer's right is the first priority and consumers need the quality produce in competitive price regardless of the country of origin. The country need to subsidize the primary major inputs to be able to compete with Indian and Chinese productions. We find very few commodities with absolute competitive advantage with Chinese and Indian production; thus we need to focus on commodity with relative comparative advantage and encourage niche production. The two way strategy are required for import substitution and export promotion. The monetary incentives and subsidies are important to make farmers competitive. High subsidies are required for the crops with comparative advantages while suitable policy, trade facilitation and infrastructure support are required

for the crops with relatively competitive advantages and such commodities should be promoted for export.

Absentee landlordism and fallowing of land are increasing and needs to be solved with appropriate policy measures. Low competitive agriculture and increased unemployment has forced millions of youths out of country in search of better source of livelihood which on the other hand evacuating the major labor force required for agriculture works. Such chain effect will ruin the economy and make more dependent on remittances and external aids which are not sustainable. Thus retaining youth in agriculture sector by making it more profitable and competitive is burning issue in Nepal. Likewise addressing the climate issue are important as climate change is already a reality and it has affected the agriculture system heavily. Nepalese agriculture is highly vulnerable to natural disasters and climatic uncertainties.

As a matter of fact, agriculture is a private sector business. But, it has not been the attractive to private sector in Nepal. It needs to be profitable to attract private sector. Government policy should ease private sector investments. The land tenancy issues and unavailability of land contract or land leasing act, private sector find it more tedious business. The poultry, floriculture and seed sub sector has attracted private sectors in recent years, however there are equally other sub sectors that can flourish with suitable policy guide. Nepal has been implementing some donor funded projects like PACT, HVAP, RISMFP, KUBK which emphasize on developing small and medium agro enterprises. Such efforts have been beneficial in attracting private sector investment in agriculture sector.

#### **3.1.2.4 Federalization in Nepal and Interdependency**

Nepal is a democratic country remodeled from unitary to federal system after the promulgation of new constitution in 2015. The past one decade have witnessed complex and protracted political debates and negotiations across a range of issues, engaging citizens from all walks of life in the drafting process of the constitution. The successful holding of all three levels of elections had paved the path for development and prosperity as the country had entered an era of political stability with the implementation of the constitution following the elections. Nepal has seen political, social, environmental, economic and technological transformations in recent years, but the progress is still less than desirable. However, time has come for Nepal to accelerate things initiating from this political stability, as despite having great potential, we have not been able to exploit it to the fullest.

Federalization of the country, inclusion and representation of women, form of government, electoral system is among the key issues widely and substantially debated over the years. Although it has taken us longer than originally anticipated time frame, the Nepalese are confident that the new constitution will usher in new phase and institutionalize democratic gains achieved over the decades. The new Constitution has envisages three layers of government– federal, provincial, and local. Sub-national governments have been given constitutional status as autonomous sphere of government with their powers and responsibilities. This certainly brings opportunity for the country to improve governance and accountability, to empower people and to reform service delivery. It cannot be denied so easily that the new constitution has several flaws. The distribution of fiscal power between the center and provinces is vague.

In spite of all these efforts, the road ahead is not free of challenges particularly in terms of managing functions, funds and functionaries for addressing the expectations of the people from the federal constitution. The functional clarity of each tier of government complemented by sufficient financing mechanism with accountable means to be supported by efficient and capable organizational and

human resource provisions, and responsible central, provincial and local governments are prerequisites for successful federalization governance.

Transparent and predictable intergovernmental fiscal relations with trustworthy public financial and budgetary mechanisms always contribute towards establishing a robust system of fiscal federalism and economic growth. Proper design in the implementation arrangement of functions, funds and functionaries as per the federal constitution with necessary amendment wherever required can create an environment that can nurture accountability, transparency, inclusion and representation and improve in the services delivery.

High dependency syndrome, overlapping functions and political patronages are the critical factors to be solved for the rational development of provinces. Similarly, centralist mindset is particularly prevailed in the politics and bureaucracy which is the critical barrier for smooth functioning of the federal government.

#### **a. Interdependency of Provinces in Agriculture and its Allied Sector**

Nepal is principally an agricultural country. Agriculture, with its allied sectors, is unquestionably the largest livelihood provider in Nepal. Most of the industries also depend upon the sector for their raw materials. Steady investments on introduction, import and development of technology, irrigation infrastructure, emphasis on modern agricultural practices and provision of agricultural credit and subsidies are the major factors contributed to agriculture growth. Nepalese agriculture has undergone rapid transformation in the past one decade. The agriculture mechanization policy has opened up new avenues for agricultural modernization. This has not only led to commercialization and diversification, but also triggered various technological and institutional innovations owing to investments from companies and cooperatives.

In provincial interdependency, provinces are economically dependent upon each other which is a product of specialization or potentiality of certain sector in the provinces, so potentiality of any sector in one province makes jobs and investment more specialized and economic interdependence is bound to form. When this happens, Provinces would become part of a trading network, and they depend upon each other to supply products that they cannot produce themselves. One by-product of economic interdependence is globalization which is at the infant stage in Nepal.

Interdependency of provinces in agriculture and its allied sector agro-based industry both contribute towards economic development, however, the issue of choice of one sector over the other remains unresolved. Truly speaking, these two sectors are not to be viewed as competitive but are complementary to each other. In practice, the futures of agriculture and agro-based industry are closely linked with each other in the sense that expansion in agriculture depends on the supply of agriculture inputs and the expansion in agro-based industry is tied up with the development of the agricultural activity. So, agriculture is more important than agro-based industry as it depends on agriculture.

Interdependency between the provinces for the economic development will be highly contributed through the smooth transfer of agriculture commodity between the provinces for the agro- industry development. Industry which is, no doubt, important, will not progress unless agriculture is sound, stable, and progressive. Because of this interdependence these sectors are complementary, and not competitive. In the development of an underdeveloped economy, there is as such no conflict between agricultural and industrial development. For e.g. Province 2 has high potentiality of cereal production which can be supplied to any milling industry of any other provinces for value addition and marketing, that in turns generates revenue of the provinces as well as demand of the necessary commodity can be

fulfilled by the respective provinces with great potentiality i.e., Province no.4 can supply fresh fruits and vegetable in the off season to Province no.2

Interdependence between agriculture and agro-based industry between the adjoining provinces becomes strengthened through various linkages generated in these two sectors. The three most important linkages can be: production linkages, demand linkages, and saving-investment linkages.

Production linkages arise from the interdependence between agriculture and agro-industry through the use of productive inputs that can be produced in different provinces. Agriculture sector can draw some raw materials, like fertilizer and seeds, electric power, agricultural machinery and implements, etc., from the industry. Agriculture is also dependent on industry for the supply of materials for building up social and economic overheads in the agricultural sector. Further, many raw materials and inputs used in industrial production, e.g., cereals for rice and flour, fruits for juice and jams, cotton for clothes, jute for sacks and bags, sugarcane for sugar, tobacco, etc., is supplied by the agricultural sector.

Demand linkages between the two sectors suggest that demand for one sector's product pulls demand for another sector in an upward direction. Due to the impact of green revolution in neighboring countries, Nepal has also been experiencing rising rural incomes which has brought a change in the pattern of tastes and preferences of rural people that has demanded the industrial product at very close range of rural areas.

Finally, there is a savings-investment linkage between these two sectors. A self-reliant agriculture capable of exporting surplus food-grains helps in saving scarce foreign exchange resources of the country. Now these resources can be better utilized for importing capital goods and crucial raw materials needed for industrialization effort.

As agricultural production and productivity rises above the subsistence requirement, the volume of marketable surplus increases which provides resilient strength of industrialization, particularly in the rural sector. Again, the rising volume of savings and capital formation consequent upon rising farm incomes give strong stimulus to demand for manufactured goods. Investment in one sector pulls investment of other sectors up thereby accelerating overall growth rate of the economy between the provinces that ultimately helps for the economic development of the country. Similarly, the rise in non-farm incomes leads to an increase in the demand for various agricultural products. In the process, agricultural sector becomes diversified, modernized.

There is some sort of problem of inter-sectoral resource allocation as it is almost impossible to make an optimum balance between these two sectors because in many of the developing countries, agriculture no longer enjoys a pride of place, for some obvious reasons. That is why agricultural land is now being forcibly taken away for industrial development, infrastructural developments, and so on. Against this backdrop, farmers of these economies have been shifting their attention from the agricultural sector towards non-agricultural activities. How far these two sectors will complement each other, and to what degree, is an important issue. Indeed, the failure on the agriculture front is attributed to faulty agricultural policy in many developing countries, including Nepal which was attributed by land grabbing for the residence in the fertile land of Terai region as well as plain areas in hilly regions which has seriously threatened the sustainability of agriculture.

## **b. Interdependency of Nepalese Economy and Agriculture**

Nepalese economy is dominated by agriculture. In the late 1980s, it was the livelihood for more than 90 percent of the population, although only approximately 20 percent of the total land area was cultivable,



it accounted for, on average, about 60 percent of the GDP and approximately 75 percent of exports. Since the formulation of the Fifth Five-Year Plan (1975–80), agriculture has been the highest priority because economic growth was dependent on both increasing the productivity of existing crops and diversifying the agricultural base for use as industrial inputs. Till now, agriculture is the main source of food, income, and employment for the majority of the population which tends to be around 65% and it provides about 31% of the gross domestic product (GDP).

In trying to increase agricultural production and diversify the agricultural base, the government focused on irrigation, the use of fertilizers and insecticides, the introduction of new implements and new seeds of high-yield varieties, and the provision of credit. New agricultural technologies helped to increase food production; however, there is still room for further growth.

### **c. Sharing the natural resources for Agriculture Development**

Nepal should give greater consideration to the distribution of natural resources especially water resources used for irrigation in their provinces for successful implication of federalization in the fledgling democracy. The state restructuring has been planned, taking into account the distribution of Nepal's natural resources, so geographically diverse and resource-rich provinces should dig the dependency of the scope and opportunities for the parallel development of the provinces for the economic development of the country.

Everyone needs water - for irrigation, drinking, transportation, energy, and even to promote tourism. Especially for agriculture development in Nepal, river water should be used for irrigation through use of dams or barrage. In an underdeveloped setting like Nepal, federalization could lead to conflicting claims on the shares of water for irrigation which may create political disturbances as well on the balanced use of natural resources. The increasing production and productivity of hill agriculture is contingent on the expansion of year-round irrigation facilities. Sharing of water in the case of inter-provincial rivers could be a much contested issue. The distribution and protection of resources, as well as the economic and environmental impact on provinces - for example, how deforestation in the Terai would have an effect on mountain regions and use of river by making dam for irrigation and hydro power generation in the mountain areas would have effect on people of terai. Severe temporal problem arise in Nepal as there is surplus water for four months of the year resulting in destructive flooding, and during the other eight months suffered from effective droughts. The flooding in one of the provinces is due to uncontrolled water follow from the hilly regions during rainy season has as adverse impact one another that may be compensated through the rational use of water resources throughout the year. Most farmers rely on rainwater, but water shortages, more extreme temperatures and poor crop yields are pushing rural villagers closer to the brink as climate change has been gripping Nepal.

### **d. Growth Interdependence among provinces**

Variations in economic growth of provinces within national boundaries have been significant across different types of economies around the world. Natural endowments and constraints, initial stages of development, mobility of resources, scale economies leading to specialization and a host of other such factors influence development patterns of regions within national economies. The pattern of growth across the provinces within Nepal would be subject of interest both to academics as well as policymakers. Balanced provincial development becomes a 'touch-stone' for policy evaluation in Nepal in the future days during the successful implication of Federalization in the country.

During the context of 'balanced development', the trickle down of growth from one province to another will implicit. Conceptually, however, linkages between the economies of different provinces can be

wide-ranging. The input-output linkages, linkages between supply and demand centres for consumption, and linkages between sources of savings and investment would generally become obvious. During the balanced development phase, doubts about the existence of spillover or trickling down effects from one province to another could happen that may require further research and analysis during the impact period.

#### **e. Center- Provinces Relations for Economic Dependency**

The major policy shifts that will occur after the initiation of implementation of federalization through the budget and program of the fiscal year 2018/019, in the wake of stabilization and structural adjustment programs will have important implications on center-province economic relations in Nepal. These in turn have an impact on the nature of the inter-relationship of the economies of the provinces. First, the impact of policy changes will have effect on transfer of power and authority from central government controls in favour of provincial and local government. The capacity of provinces to sustain higher growth rates may partly be attributed to the factor, the province that dependent on agricultural growth will be unable to maintain the higher rate of growth, or, non-agricultural growth will not be enough to offset the slower growth in agriculture. Thus, although non-agricultural growth will be increased during this federalization period, the increase will be insufficient to raise the overall growth performance. The preliminary pattern of agricultural growth calculated based on the economic data of previous fiscal year across the provinces of Nepal shows that steady acceleration of growth could be seen in the provinces where the budget will be best utilized for the policy and institutional arrangement for the successful implication of the program.

#### **f. Economic Conditions for a stable Federal States**

In federalism, there is a relationship between the central government and the regional units. Federalism has made significant contribution in bridging the gap between the government and people and providing resilience to democracy in several countries. Since there is division of power in a federal system between the center and the regional units, each of the unit has independent jurisdictions to make decisions with regard to governance and other developmental activities. Since the purpose of federalism is to remove disparity in representation of different geographical units of a state, the chances for addressing the problems of weaker sections of the society become greater in this system. In cooperative federalism, the center, states and even the local bodies are expected to work in cooperation with each other to ensure the growth and stability of the nation for which intergovernmental relations are promoted. Under the federal structure, the different tiers of government not only ensure checks and balances, but they also ensure accountability and generate opportunities for greater competitiveness. This provides larger scope for the optimal and efficient use of the resources for the balanced growth of the economy. Prospects are often high in the federal system to meet the needs and aspirations of diverse groups of population.

#### **g. Economic Pre-Conditions of Stable Provinces**

Either in Nepal or in other countries, federalism in itself is not a panacea to resolve all problems. It does not guarantee peace, prosperity or stability of a nation. Nor does it guarantee automatic transformation of power to the deprived communities. Also, it does not provide any clue to the exploited and oppressed groups to establish their identity, protect their interests, and have self-rule in the states. However, this is not due to the fault of the federal constitution, but it is more due to the lack of feeling of ownership of the disadvantaged groups in the constitution.

Inadequate supply of financial resources both at the federal and provincial levels creates political discontent. Therefore, the provincial governments need to be encouraged to generate resources sufficient enough for the development of their regions and also to meet their constitutional obligations. In this context, they could be empowered to levy taxes, borrow funds through internal sources and also to enter into agreement with foreign countries and multilateral institutions to mobilize more of funds for development, if necessary.

The entire purpose of federalism gets defeated if the center controls the resources and all other provinces are made dependent units. Overdependence of the provinces on the center for financial resources at all time is against the spirit of federalism. This might also tend to take the provinces back to the unitary state. Stability of the federal system largely depends on financial autonomy given by the central government to the provinces and local units. Such autonomy provides an opportunity to the province to take self-decision and execute the projects as per the requirement for the development of the regions.

Sufficient care should be taken to see that fiscal discipline is maintained in the provinces. Budget of the provinces should be balanced. There should not be much gap in revenue and expenditure of the provinces. Sometimes in the absence of such discipline, the provinces often have a tendency to get heavily indebted and to address this problem intervention becomes unavoidable. So the provinces should be encouraged not to cross their limits and spend only to the extent their revenue allows them to do so. Hence apart from the performance based budget, the monitoring and evaluation system should be strengthened so that fiscal discipline is maintained at all levels.

#### **h. Competitiveness among the Provinces**

In competitive federalism, the provinces compete with each other to attract investment and for better delivery of services and public goods and also for the removal of disparities among the constituent units. Healthy feeling of competitiveness among the states is essential to reduce the level of disparities among them. It is also desirable to enable each provinces to catch up the economic growth rate of other provinces that are doing better or even exceed the other in this area. It would be necessary for the federal regimes to meet certain economic pre-conditions for the better delivery of service. Those countries that have met the economic pre-conditions have done better and achieved desirable result while the others who did not do so lagged behind.

#### **i. Implications for the Governance of the Agricultural Sector in Federalism**

Agriculture is the backbone of the Nepali economy, providing a livelihood for approximately two-thirds of the population, contributing one-third of the country's GDP, and constituting more than half of the country's exports. In transitioning from a unitary to a federal republic—with greater authority and autonomy granted to subnational units of government—it is of paramount importance to ensure that the agricultural sector is guided by coordinated planning, retains sufficient human capacity, and receives adequate fiscal resources.

These considerations are particularly important given that the governance of Nepal's agricultural sector already suffers from poor coordination, low human resources capacity, and inadequate financial resources. Addressing these issues may become more difficult under a federal structure.

The Government of Nepal has committed for agricultural development through its goals on its Program and Budget, which will now pursue within a federal structure. The country's current agricultural framework should be guided by the Agricultural Development Strategy (ADS), which is intended to

provide direction within the sector for the next two decades. The ADS is a 20-year vision that ultimately aims to achieve “a self-reliant, sustainable, competitive, and inclusive agricultural sector that drives economic growth and contributes to improved livelihoods and food and nutrition security leading to food sovereignty” (MoAD 2013). Along with ADS, there are also a number of cross-ministerial policies and strategies intended to achieve food security more broadly, including the Multi-Sector Nutritional Plan, the Food Security Action Plan, and the Zero Hunger Challenge Initiative 2025. These goals will carry over to the new administrative structure.

In accordance with the shift to federalism, the 2072 Constitution outlines significant changes for the governance of the agricultural sector. Currently, the agriculture sector is devolved in theory but not in practice, with appointed bodies rather than elected local government bodies exercising relatively little authority over many aspects of budgeting and employment. The 2072 Constitution, by contrast, stipulates that “agricultural and livestock development” will be a provincial roles and that “agriculture and animal husbandry, agro-products management, animal health, and cooperatives” will be local bodies roles. In addition, “agriculture” is included in the list of concurrent powers at the federal, provincial, and local levels. Moreover, the Constitution stipulates that executive power at the local level will be vested in either a Village Executive or a Municipal Executive, who will be overseen by either an elected village Chairperson or a Municipal Mayor, respectively.

Consequently, the constitution has two clear implications for the governance of the agricultural sector: (1) authority and autonomy for various agricultural and livestock activities will be devolved from the MoAD in Kathmandu to the seven anticipated provincial governments as well as newly constituted local bodies, and (2) those new local bodies will be overseen by elected rather than appointed executives, who will be able to determine their own policy priorities. However, exactly how and over which domains authority will be devolved remains unresolved, as “agriculture” is listed as a concurrent function across all tiers of government in the Constitution.

At the same time, the Part 3, section 36 of Constitution, 2015 has a strong rights-based discourse, and includes a provision noting that “every citizen shall have the right to food sovereignty in accordance with the law”.

**Table 9: Constitutional changes and implications for agriculture**

Characteristic	Prior to 2072 Constitution	After 2072 Constitution*	Potential challenges for agriculture
Units of government	<ul style="list-style-type: none"> <li>National, development regions (5), districts (75), VDCs (3,915), and municipalities (58)</li> </ul>	<ul style="list-style-type: none"> <li>National government, federal provinces (7), districts (75), local bodies (amalgam of current VDCs and municipalities)</li> </ul>	<ul style="list-style-type: none"> <li>Human resource and financial capacity at the local body level may be insufficient</li> </ul>
Administration of local bodies	<ul style="list-style-type: none"> <li>Appointments by MoFALD of officials to administer local bodies</li> </ul>	<ul style="list-style-type: none"> <li>Elections at the national, provincial, and local (VDC and municipality) levels</li> </ul>	<ul style="list-style-type: none"> <li>Potential disconnect between national agricultural priorities and those of locally</li> </ul>

		<ul style="list-style-type: none"> <li>• District boundaries will be retained for parliamentary constituencies</li> </ul>	elected governments
Responsibility for agricultural functions	<ul style="list-style-type: none"> <li>• Agricultural policy development at national level and implementation at subnational level</li> <li>• Agricultural and livestock extension de-concentrated to DDCs through DADOs and DLOs</li> </ul>	<ul style="list-style-type: none"> <li>• Agricultural policy development and implementation at both national and sub-national levels</li> <li>• Agricultural and livestock extension devolved to subnational government</li> </ul>	<ul style="list-style-type: none"> <li>• Different tiers of government have authority over different elements of agriculture, requiring high levels of horizontal and vertical coordination</li> </ul>
Agricultural expenditures	<ul style="list-style-type: none"> <li>• Line ministries transfer resources to district staff via the DDC</li> <li>• DDCs receive a block grant for agricultural spending</li> </ul>	<ul style="list-style-type: none"> <li>• Local government has greater autonomy over budgeting for, and spending on, agricultural priorities</li> </ul>	<ul style="list-style-type: none"> <li>• Agriculture may not be prioritized by local governments or communities, requiring attention to budgeting mechanisms</li> </ul>
Staffing	<ul style="list-style-type: none"> <li>• Civil service staff at the national, provincial, and district levels recruited through the National Public Service Commission</li> </ul>	<ul style="list-style-type: none"> <li>• Civil service staff at the provincial and local levels recruited through a Provincial Public Service Commission; federal civil servants continue to be recruited by the National Public Service Commission</li> </ul>	<ul style="list-style-type: none"> <li>• Difficult to find staff to move to remote rural areas without incentives</li> <li>• Extension staff are responsible to local government but hired through the Provincial Public Service Commission, creating a disconnect between authority and accountability</li> </ul>

#### j. Interdependency between three tiers of Government Driving Agriculture in Federalization

The new constitution accords limited roles to federal government in agriculture development including livestock. This rather falls under the ambit of provincial and local governments. The implementation of federalism has brought new challenges in institutional roles and responsibilities of federal, provincial and local agencies. New administrative layers have added to complexity. The current operational arrangements, where roles and responsibilities of federal, provincial and local governments are not well

defined, need revisions. Agriculture development under federal setup should be a shared responsibility of all three tiers of government. The federal government should work on policy-related issues and matters of national importance such as market development, river basin development, agriculture input subsidy management, establishment of buffer stock, quality control, certification and regulation of import and exports, international policy analysis that affects agriculture development.

Provincial government should be involved in agriculture to ensure sustainable development and prevent food scarcity in respective provinces. Agricultural support services should include land management, production input management, insurance, service delivery, location specific research, and disease/pest control.

Local governments should work as a vehicle to implement these programs. In order to strengthen the capacity of all actors involved in agriculture at provincial and local levels, the federal government should support provincial government and the provincial government should help local government. Local government capability in development planning, delivery and improvement of service should be enhanced. Empowerment and consolidation for progressive devolution of governance to local level should be supported through policy dialogue and improved knowledge management. Robust farmer associations should be developed as part of a strong local governance framework that can lead to empowerment of poor farmers.

Provincial and local governments should be given greater responsibility in matters related to agriculture development because they are closer to farmers and know their problems. Public sector as a facilitator should be more concerned about creating a suitable environment for agricultural production activities without being directly involved. The organization structure of federal government should be small and simple to provide needed supports to provincial and local governments. As suggested in Agriculture Development Strategy, community managed service centers should be established for service delivery at community level. Efficient institutional coordination arrangement should be in place at all levels to improve program implementation. Unnecessary overlapping of responsibilities should be avoided.

#### **k. Opportunities of New Government for Implementation of Federalization**

A new government which can serve for a full five-year term will mean political stability, lack of which has been a stumbling block in the past to development. In two years or so, Nepal will also graduate from the Least Development Countries. A stable government at the center as well as in provinces will help unlock Nepal's potential, putting the country in the race of modern-day development. Through local elections, local governments have reached the doorsteps of the people. The new government should prepare favorable environment for entrepreneurs to generate more employment opportunities, which will not just help to advance critical infrastructure but will also assist to retain young human resources of the country. A massive investment in agriculture will help to create large number of entrepreneurs in agriculture that ultimately helps to generate great employment in production, processing and marketing sector. Nepal may have got into the shell for years due to various reasons, but time has now come to open its wings and fly towards the path of prosperity. Political stability which was required the most to expedite development efforts is just knocking on our doors. We just need to pay heed to opportunities that are on our way.

### **3.2 FIELD RESEARCH FINDINGS**

The field research findings largely depend on the views from the provincial ministry officials, existing DADO officers opinion and elected and staffs of the local bodies. The field findings are summarized into mainly three parts for each provinces namely 1. General introduction of province 2. Proposed structure

at province 3. Provincial sectoral policies 4. SWOT analysis at provincial level 5. Food security situation of the province and its dependency with other provinces.

### 3.2.1 Policy, Programs and future direction of the provinces

#### Province 1

The economy of Province 1 is mainly based on agriculture and tourism. It covers 3 terai districts, one inner terai and 10 hills and high hills. Terai and inner terai districts are fertile and produce large quantity of food grains for their population. Rice, maize, wheat, jute, sugarcane are major crops in terai region while tea, cardamom, ginger and citrus grown in the hills and high hills are the major source of foreign earnings. Milk production, piggery farming, poultry and goat are the important livestock business in this province. The discussion with Provincial ministry, DADOs, DLSO and local level reveal the following priorities in agriculture sector.

1. Ensuring food and nutritional security of the population. Enable food sovereignty as provisioned by the constitution.
2. Develop value chains of tea, cardamom, ginger, dairy in collaboration with Central projects and programs like UNNATI, PACT and PMAMP
3. Strengthen the capacity of Tea Development Board and collaborate with board for linking tea value chain to international markets
4. Operate the auction of tea for International market. Branding the tea as Himalayan tea and facilitate for export
5. Establish cardamom development board for export promotion. Explore possibilities cardamom international markets than India and supply with better prices
6. Strengthen capacity of educational institution providing degree in agriculture education to develop need based human resources
7. Support agriculture mechanization specially in terai area for paddy, wheat and sugarcane production
8. Utilize the potentialities of agro tourism through organic production, tea estate recreation and home stay management. Target organic production for tourists arriving to Mount Everest and other high peaks
9. Ensure year round irrigation for increased production and productivity of major crops; explore potentialities of both surface irrigation through canal development and use of ground water
10. Formalize the vegetable exports to India through bilateral negotiation with the support from central government
11. Establish and operate ginger washing center for better ginger price; support for additional processing of ginger
12. Incentives for commercial farms development based on the output and employment generated from such farms
13. Implement the blocks and pockets program under PMAMP and provide synergies to the zone and super-zone operated in the province
14. Encourage the land consolidation through implementation of land bank in collaboration with central government. Policy to regulate agriculture land for other purposes through the enactment of land use act
15. Minimum support price in major cereals and cardamom
16. Utilize the potentialities of agriculture research stations. Develop the government farm as resource centers and center of excellence

17. Implementation of genetic improvement programs of livestock through AI, frozen semen; establishment of gene bank to preserve local landraces of crops
18. Doubling the rice production campaign for self-sufficiency and export to the other provinces
19. Development of market infrastructures, processing units and Dairy industry in public private partnership model
20. Encourage greater engagement of youth in agriculture. Provide business establishment funds for agriculture graduates and returnees from foreign countries
21. Focus on climate smart agriculture; work in developing resilient agriculture system.
22. Ensure the supply of major inputs like fertilizer and seeds for increased productivity. The AKC will work as facilitator between farmers and suppliers to prepare balance sheet of seed and fertilizer demand and providing it to major supplier like AICL, NARC, community seed banks, cooperatives, groups and seed companies.
23. Categorization of farmers and supporting them according to their needs and category

## Province 2

Province 2 includes 8 core terai districts of Nepal. Previously known as grain basket, this province is behind in nutrition security and HDI. It is surprising that this province also falls in food insecure province as suggested by Province secretary for Ministry of land Management Agriculture and Cooperative. Although there exists high potentialities, poor irrigation and flooding during monsoon affect the food production potentials. Based on the discussion with Provincial secretary, officials, and local level representatives; the policy and priorities for agriculture sector have been summarized as below;

1. Achieving the constitutional targets of food sovereignty and food and nutritional security
2. Emphasis on major cereal grains like rice, maize and wheat
3. Ensuring all year round irrigation in all agricultural land for increased production and productivity
4. Use of both surface and ground water for irrigation. Maintenance of major irrigation canals with ensured irrigation and extending the program of deep and shallow tube well
5. Support for cold storage, market infrastructure, processing units of vegetables, fruits, potato, onion, milk, meat and eggs
6. Achieve self-sufficiency in major crops like rice, wheat and maize and export to other provinces like 1,3 and 4
7. Increase production of fish for export specially to Kathmandu valley of province 3
8. Special package of support for development of commercial farms of agriculture and livestock
9. Tax incentives and other support for increased mechanization
10. Special package for leasing of land to achieve the economies of scale
11. Improvement in land use planning and discourage increasing use of agriculture land for real estate specially areas surrounding the east west highway
12. Incentives for farmers based on the output of the targeted commodities
13. Special incentives for two season rice and support to reduce rice import in the nation as a whole. The extra incentives for rice growers that produce for sale
14. Coordinate with national projects like Prime Ministers Agriculture Modernization Project, Livestock Innovation Project and upcoming Agriculture Food Security Project and provide synergies with prioritized program of provincial government. Implement the block and pockets development of prioritized commodity in close coordination with local level



15. Minimum support price implementation of rice, maize, wheat and sugarcane
16. Maintaining buffer stock of cereal grains to cope with national food crisis
17. Develop market infrastructures with pesticides control mechanism installed in every wholesale market to reduce pesticides use
18. Support to individual private farms, farmers group and cooperatives for developing model farm in crops and livestock commodities
19. Soil testing in campaign. Support in provincial soil improvement by reclamation
20. Conservation of local landraces of crops and maintaining gene bank for varietal improvement
21. Functional coordination between extension, research and education.
22. Developing vegetable mundi in the border points with India and facilitating formal vegetable marketing in both countries
23. Crop and Livestock insurance will be scaled up
24. Revive Birgunj Sugar Mills to support sugarcane farmers and produce sufficient sugar demanded in the province; import substitution of Indian sugar. Policy to stabilize sugar price and check the illegal trade in the border points
25. Revive Birgunj agriculture tools factory, encourage the agriculture mechanization with subsidy for tools and equipment. Additional subsidy for the tools produced by agriculture tools factory of Birgunj.

Although the province has committed well for development in all sectors, it lack both resources and manpower to achieve the targets. The creation of Agriculture Knowledge centers and Livestock experts centers to work as wings of province have certainly encouraged the provincial ministry; yet coordination amongst the local level and central government is crucial for achieving the targets.

### Province 3

This province is largest province in terms of population. Almost 90% of area falls in the hills and high hills. It does not contain core terai but have some agricultural flat lands in Chitwan, Makwanpur and Sindhuli. This region is high food deficit region not because small production but highly populated metropolitan like Kathmandu, Lalitpur and Bharatpur lie in this province and other major cities like Hetauda Sub metropolis, Bhaktapur municipalities, Dhulikhel and Banepa also situated in the region. Thus the Land Management Agriculture and Cooperative ministry of the province has huge responsibilities of feeding its population. The per capita income of this province is highest among all provinces and provides highest share of revenues as well. Thus the demand for food in this province is characterized by high quantity and better quality.

It is estimated that the cereal production in the province is 699,901 Mt per year while in case of milk it is 459,702 Mt. The availability of milk is around 83 liters against the requirement of 91 litres per capita. Likewise meat and eggs availability are 19 kg and 97 pcs respectively against the requirement of 24 kg and 104 pcs per capita per annum. So the provincial ministry has declared for self sufficiency in eggs milk and meat within 1 year, 2 years and 3 years respectively (MoLAC province 3, 2018).

With the vision of achieving sustainable development, food sovereignty, self-sufficiency and prosperous province, the provincial ministry has forwarded following action plan and commitments;

1. The unified action of agriculture, livestock, forestry and tourism for climate smart, organic and sustainable agriculture. Developing agriculture as commercialized and competitive; the multidimensional works of agriculture production will be enhanced. The pockets for specialized commodities will be developed and encouraged to grow according to specialized crop areas.

2. Achieving self-sufficiency in fruits, vegetables, flowers, and meat and milk products within 3 years; and cereals within 5 years. At the same time, the crops having export potentials will be emphasized highly.
3. Minimum of 3 areas will be declared as agro-industrial capital; the agro based industries will be established in such areas in public private cooperative collaboration and cooperation.
4. The OVOP and ODOP program will be scaled up for the agro and livestock commodities having comparative advantages, export potentialities. The value chains of such commodities will be developed enhancing the forward and backward linkages. The trade deficit will be reduced through such commodities where the principles of both import substitution and export promotion will be applied. Such value chains will also be linked to international markets and thus regional and global value chain will be focused.
5. The food commodity reserve will be maintained based on the requirements to address crisis caused by regional food deficit and other disasters.
6. The farmers' rights will be addressed through execution of farmers' identity card, farmers' pension and farmers' commission in close coordination with federal and local governments.
7. Continuation of specialist services provided by DADO and DLSO through Agriculture knowledge center and Livestock specialist service center. Such centers will be used as technical backstopping to the local level and implementing development activities of province level and also implementing central level project as well.
8. Distribution of farmers' identity card by categorizing them into commercialized, semi commercialized, subsistence, marginalized and landless farmers. The incentives and subsidies from province government will be provided based on the farmers' category level; the mechanism will be established to support each and every categories of farmers. The farmers group will be mandatorily registered into local level.
9. The crop and livestock insurance scheme will be continued. The additional support from provincial will be provided for insurance scheme of federal government.
10. The agriculture loan will be provided at 5% interest rate for commercial farmers. The project collateral scheme will be enforced into action.
11. Exemption of tax scheme for agriculture income of maximum five hundred thousand per annum. It will promote semi commercial farmers for commercialized production.
12. The climate smart agriculture will emphasized through early warning system and agriculture service information system
13. The Rapid Bioassay of Pesticides Residue (RBPR) service will be extended to each big agriculture markets of the province. The pesticide testing laboratories will be established in every border points to examine and control pesticides use in vegetables and fruits. Integrated Pest Management and other alternative practices will be applied in place of chemicals and pesticides in agriculture production system. Good agriculture practice standards will be followed for agriculture production.
14. The genetic improvement of the neglected and underutilized crop species will be carried out to improve the productivity and production. Food product diversification will be used as key to solve food and nutrition security problems.
15. Land fragmentation, dual land ownership and fallowing of land will be highly discouraged through enactment of land use related acts and regulations.
16. The agriculture research centers, government farms, agriculture and livestock related fisheries, soil, sericulture, pesticides, veterinary and food laboratories under province will be modernized and scaled up in terms of physical facilities, equipment, human resources and coverage.
17. The veterinary hospitals will be established in each districts.

18. The programs such as genetic improvements of livestock, feed management, and livestock health services and livestock market development will be continued in unified manner.
19. Development of standards for dairy industry, dairy shops, slaughter house and meat shop and execution of such standards strictly for maintaining quality and standard of meat and milk related products.
20. The provincial milk policy will be developed and implemented for marketing of the milk production at rural areas. Price of milk and milk related products will be reviewed in each years and appropriate measures will be taken for fair price.
21. Livestock and agriculture related farms and centers, quarantine services will be treated as emergency services. The special package of insurance will be implemented for the civil servants working with hazardous chemicals; annual health checkup package for such employee will be executed.
22. Incentive package will be provided to the youths, returnee youths from foreign countries, agriculture graduates and pensioners retired from agriculture service for developing and operating agriculture commercial farms or model farms.
23. Management of agriculture and livestock related technicians in each wards of local bodies.
24. Cooperative and community commercial farming through land consolidation approach will be emphasized.
25. Establishment of provincial Dairy Development Board
26. Establishment and operation of at least one powder milk industry within 5 years
27. Farmers field school will be operated in each districts to promote organic farming
28. Provincial involvement in implementation of Prime Minister Agriculture Modernization Project will be ensured
29. Promotion of mechanization in agriculture and livestock to reduce cost and improve efficiency
30. Conservation, promotion and utilization of agro biodiversity
31. Implementation of small irrigation scheme as a mission program
32. Rainbow trout fish production promotion program
33. Fisheries cultivation program for nutrition security
34. Ensuring agriculture production input like fertilizer and seed. Infrastructure development in input management
35. Establishment of livestock breeding laboratories and emphasize the production of liquid nitrogen and semen
36. Promotion of chaite and winter season rice to reduce rice import
37. One house one kitchen garden will be promoted

Although many commitments were made within the provincial ministry, however the functionaries are not installed yet to implement such commitments. There is clear gap in the mandates of each level of government and strong coordination among three level of governments to achieve the milestones.

#### **Province 4**

Province 4 whose capital city is Pokhara-Lekhnath Metropolis consist 10 district and eastern part of the then Nawalparasi district. Just like Nepal is an agricultural country, province 4 is also agriculture based province. It is estimated that 64% of population are engaged in agriculture. Except from agriculture, tourism and hydropower are the major economic sectors that are expected to flourish under federalism in this area. This province cover all three geographical reguions; High hills, mid hills and terai. However, the terai region is very small and majority of area fall in the mid hills and then high hills. The famous Annapurna trekking route lies in this province with major tourist destinations like Pokhara, Mustang and

Manang. As almost all kinds of climate is available in this province, it is rich in diversity as well. The province is deficit in fruits and vegetables is self-sufficient in cereals except for rice. It is highly deficient in onion, garlic, oilseed and pulses. The general description of the province status is presented below;

**Table10: General description of the province**

Description	Statistics	Percentage	Reference
Total area (ha)	2150400	14.61	As of Nepal
Cultivable land (ha)	487578	22.67	As of province
Cultivated land (ha)	370503	75.99	Out of cultivable land
Fallow land (ha)	23557	6.36	Out of cultivated land
Area under real estate (ha)	2981	0.80	Out of cultivated land
Industrial area (ha)	1102	0.30	Out of cultivated land
Irrigated land (ha)	125054	33.75	Out of cultivated land
Year round irrigation	61848	49.46	Out of irrigated land
Seasonal irrigated area	71978	57.56	Out of irrigated land

*Source: Ministry of land management agriculture and cooperative, province 4*

The problem of agriculture development in this province is not different than the country as a whole. Most critical are the lack of irrigation for agriculture land; small land size with difficulty in capitalizing the returns to scale; poor access to quality seed and other inputs like fertilizer and technology. However, we found some forward thinking from the ministry. The discussion with Ministry officials and other stakeholders reveal following policies forwarded for future.

1. Declaration of agriculture land with appropriate land use planning
2. Defining farmers and categorizing farmers; programme planning based on farmers category
3. Incentives for youths working in agriculture and attracting other youths
4. Enabling access to finance. Subsidizing agriculture loan; policy reform for accepting project as agriculture loan collateral
5. Updating agriculture statistics; improving land leasing practices with enforcement of acts
6. Special package for land consolidation; incentivizing such commercial growers in improved land management
7. Enforcement of laws for land pooling and land development in accordance with land use planning
8. Discouraging the subsidy dependency on farmers
9. Developing Private Farm Model Scheme rather than only promoting cooperatives and groups
10. Policy reform for income based subsidy model to maximize the use of subsidy
11. Promoting the organic farming and regulating the pesticides and heavy chemicals
12. Improving service delivery of all stakeholders including government agency, NGOs/INGOs, CBOs through creating alliance group to minimize duplication and implementing through one door system
13. Enactment of agriculture product marketing act and facilitating agriculture product marketing
14. Establishment of appropriate provincial wings for carrying out agriculture specialist and laboratory services after dissolving existing structure at district level
15. Delegating authority also to agriculture related ministries for registration and monitoring of agro based industries. Facilitation of contractual arrangement between industrialists and producers for smooth supply of raw materials. Ensuring regular supply of electricity and power, increasing easy and soft loans access to industry; trade facilitation for international markets, accredited

laboratory services facility for quality and standardization; supporting for branding and trade mark.

16. Exempting tax and other facilities to the agro based industries based on the production and contribution to economy.
17. Promoting agro tourism through organic farming, home stay and other programs
18. Enhancing functional cooperation between public private and cooperative; improving the cooperative laws and bylaws for correcting mismanagement of cooperative. Encouraging large portion of population to join the cooperative and leveraging the resources for coordinated and efficient management.

## Province 5

Province 5 which covers 5 core terai districts, one inner terai and 6 other hill districts is highly potential province for agriculture production. It is self-sufficient province in cereal crops and pulses. Having Sunauli, Krishnanagar, Nepalgunj and Gaddachauki major custom points, this province have potentialities for greater economic prosperous in coming days. As like other provinces, the functionaries have not been installed; the province ministry for land management agriculture and cooperative has started to develop its policies and ways to achieve not only sufficient for province but also supplying to other provinces as well. The discussion with the Secretary, and other officials of this province reveal following strategies of the ministry for achieving prosperity through agriculture development.

1. Develop commercial agriculture farms at private level and supporting them through monetary and non-monetary measures like exempting taxes, support in establishment of farms and technical backstopping through other government farms, Agriculture Knowledge Center (Krishi Gyan Kendra), livestock experts center and veterinary hospitals
2. Development of cold storage facilities in public private cooperative partnerships
3. Encourage for organic production, reduce the chemicals and pesticides
4. Operation of RBPR laboratories in major agriculture product markets to discourage heavy pesticides use
5. Establishment and upgrading of agriculture market infrastructure in major cities like Butwal, Bhairahawa, Tulsipur, Ghorahi, Nepalgunj, Dhangadhi and Mahendranagar
6. Support for irrigation through small irrigation schemes, ground water irrigation schemes with shallow tube wells and deep tube wells.
7. Coordination with irrigation ministry of province for developing and operating medium and large irrigation schemes like Banganga irrigation scheme, Sikta Irrigation scheme, Veri diversion scheme, Rapti irrigation scheme, Rani Jamara irrigation, Mahakali irrigation scheme, Tinau irrigation scheme and Gandak irrigation scheme
8. Agriculture commercialization on the command areas of big irrigation schemes
9. Coordination with PMAMP project, National project like KUBK, HVAP, RISMFP and other projects for resource sharing and synergies the cooperation.
10. Implementation of PMAMP, KUBK and Rani Jamara project schemes delegated to provincial ministry
11. Implementation of One ward One technician concept
12. Revising ADS in line with Provincial strategy
13. Promotion of genetic improvement of livestock for achieving higher productivity in milk and meat yield
14. Establishment of veterinary hospitals in each districts
15. Continuation of AI program for genetic improvement of cows and buffaloes

16. Establishment of pesticide, soil, seed, livestock, fisheries laboratory services through capacity development, infrastructure with precise equipment in each districts
17. Continuation of export incentives for lentil exporter, ginger exporters and other commodities
18. Establishment support for model farms of vegetables, cereal crops, spice crops, pulse crops, livestock, fisheries and other potential commodities
19. Promotion of riverbed farming in potential areas of Banganga, rapti, tinau, veri, karnali, mahakali and other riverbeds
20. Tax incentives for agro based industries, tariff exemption for agriculture equipment and machineries for promoting commercialization
21. Special package for mechanization
22. Special program for attracting youths, the youths will be encouraged to operate model agriculture farms. Supporting them with cash and non-cash incentives
23. Policy reform to support land consolidation. Enactment of agribusiness promotion bill and enhance contract farming
24. Developing agriculture and livestock related farms as center of excellence and resource centers
25. Ensure food safety through developing standards for food safety measures and implemented strictly

Although the written commitments of the province ministry yet to develop, the points above were summarized based on the discussion with province officials, DADO officials and local body representatives.

### **Karnali Province (Province 6)**

This is the only province to have its name and capital finalized. Taking its name from famous Karnali with capital city Surkhet, this province is least developed in terms of physical facilities developed and Human Development Index. The entire province lack good connectivity and the large potentialities untapped. Largely known as the home of Himalayan Ayurvedic Plants, the high value medicinal plants can be the source for prosperity in the region. This is region falls under highly food insecurity region, which is mainly because of rice eating behavior. The large potential areas remain virgin, still depend on the cereal grain supplied from Terai region through Nepal Food Corporation and World Food Programme. Because of the difficulty in road transportation, this region remain by default organic zone. Promotion of organic farming but increasing the productivity, this region can achieve income security if not food security. With the vision of achieving food sovereignty and sustainable agriculture development for food and nutrition security, the provincial government has forwarded following policies in agriculture sector;

1. The commercial agriculture will be promoted through “One farm one commercial incentive” to the farmers group, cooperative and private agro business based on the income and employment generated by the farm
2. The organic agriculture production will be highly emphasized by the development of competent manpower, organic agriculture focused research, education and skills. Agriculture knowledge center developed under provincial agriculture directorate will promote the agriculture development. Agriculture colleges, soil laboratories, pesticide and seed laboratories will be established. Organic fertilizer agri mechanization and organic pesticides factories will be established in public private cooperative partnership.

3. "Increased organic farming increased prosperous karnali " slogan will be used as main motto for agriculture development. "One local level one model farm" and "one cooperative- one model agriculture, livestock and fisheries farm" principal will be adopted. Gene bank will be established to promote conservation, increased productivity and extension of local crop, breed and water animal landraces.
4. Food and nutrition security in the province will be ensured by increasing productivity, proper distribution and storage. Transportation subsidy in close collaboration with government of Nepal for food will be provided to the rural districts like Humla and Dolpa who lack road connectivity.
5. Improving the food habit of people by promoting the and consumption of local and indigenous food
6. Market oriented and environment friendly crops will be promoted for commercial production
7. Maximization of returns from subsidy and incentives for increased production and productivity. Misuse of such support will be controlled by compelling groups, cooperatives or private firm to return the cash. Additional any kinds of support will not be provided unless they return completely.
8. Modern and high tech nursery will be established to ensure regular supply of saplings of demanded fruits, flowers, ornamental crops and vegetables.
9. Private farm and cooperatives will be encouraged to invest on tissue culture laboratories in banana, potato, lime and mushroom; and other modern technologies like hydroponics. The subsidy and other support scheme will be provided to such farms.
10. One ward one technician of agriculture and veterinary campaign will be accomplished with the support from central and local government.
11. Contribution based farmers pension scheme based on farmers' categorization will be initiated from at least one local body of each districts.
12. The roster of commercial organic farmers will be developed and such farmers will be supported based on their production. Chief Minister's excellent farmers' award will be awarded to the best farmers to motivate them further.
13. The functional coordination mechanism will be developed to work with Prime Ministers Agriculture Modernization Project, High Value Agriculture Project, other central projects and NGOs/IMGOs working at national and local level
14. Production of organic fertilizers and organic pesticides will be promoted to reduce the use of chemicals and antibiotics used in fish farming, poultry and dairy industry; and virtually declare Karnali province as organic. Integrated community farm will be developed in support from province government.
15. Organic cooperative complex will be developed in Surkhet.
16. Policy formulation for land use maximization. A powerful provincial land commission will be formed to find solution to all kinds of land issues.
17. The fragmentation and fallowing of land will be highly discouraged. The record keeping of absentee landlordism and fallowing of land will be initiated with the support from local level. Land bank will be established and operated for facilitating the leasing of such lands to small and landless farmers.
18. A large scale processing center will be established in Surkhet for the processing of medicinal plants and other NTFPs. The model processing units will be established in the Himalayan districts like of Humla, Mugu and Dolpa. High priority will be given for the research, study, production, sale and marketing of Medicinal and Aromatic Plants.
19. Any factory or Industry supporting the organic Karnali will be supported highly

20. Large scale organic fertilizers, Agro machineries and pesticides factories will be established to supply the demand of Karnali province
21. Agro tourism will be promoted through organic food and home stay

## Province 7

This province was formed with all 9 districts of past Far-western development region. Known as Sudur Paschim; the hill districts of this province are poor and lack proper connectivity. The Kailali and Kanchanpur districts produce large agriculture production required in the province. However, the other hill district have potentialities to grow high value crops, MAPs and NTFPs for foreign income source. Like other province, this province has also provided greater emphasis on agriculture. Based on the discussions with provincial ministry for land management agriculture and cooperatives, existing DADO officials and local bodies; the agriculture policy of the province has been summarized as under;

1. Ensure food and nutrition security of its population; move towards food sovereignty
2. Balance between organic production and modern production technologies, emphasis on organic production in the hilly districts while high input production in terai districts
3. Scaling up government farms of vegetables, fisheries, fruits
4. Establishment of research and development center of MAPs and Yarchagumba
5. Scale up of Olive farm and promote Olive production
6. Implementation of PMAMP project for specialized production, coordinate with center and local bodies for its implementation
7. Value chain development of major crops, support implementation of central projects like RISMFP. Promote development of infrastructures like cold storage, seed processing plants.
8. Implementation of Rani Jamara Kulariya Project in coordination with local bodies
9. Rehabilitation of Mahakali Irrigation Scheme, construction and operation of Rani Jamara Irrigation Scheme and ground water irrigation schemes in the Terai region for increased production and productivity
10. Implementation of small irrigation schemes in the hills
11. Promote niche based production; facilitate marketing of such products for better income
12. Tax incentives for mechanization, agro based industries; output based incentives based on the employment and income generated by the agro based industries
13. Promote bee-keeping, mushroom production for nutrition security
14. Coordinate with bilateral programs like USAID's KISAN and other INGOs to get synergy in agricultural development
15. Improvement of Attariya agriculture market and construct other market infrastructure to facilitate value chain development
16. Emphasis on dairy, poultry and fisheries for improvement in nutritional status and improve food security as well
17. Ensure the major input supply in coordination with central level offices like AICL, SQCC, Crop related centers and local bodies. Explore the possibilities of direct cash transfer to farmers for subsidy
18. Implement community based farming system by engaging land less and marginal farmers

### 3.2.2 Key commodities and provincial interdependency



As Nepal is practicing federalism constitutionally since 12 years, politically since 3 years and administratively from one year yet practically not started yet; the early signs show the smooth implementation led by central government and provincial and local bodies acting as supporting institution. However, it can cause chaos in development activities because of the confusion in use of authority resulting poor understandings among three levels. Since we are trying to streamline unitary functions to federal functions; and provinces incapable of generating their own resources it seems like administrative restructuring of the states and delegating central authorities to province and locals.

This study have tried to analyze the agriculture production with the eyes of provincial autonomy; yet province lacked proper functionaries, their own data, human resources and capacity; the data were analyzed with centrally published data and only streamlining them with provincial geographical boundaries. With the available data and discussions made during study period the interdependency among key agriculture production has been summarized in the table below;

**Table 11: Provincial agriculture commodity supply status**

Major Agriculture Commodity	Province							Net balance in the country
	1	2	3	4	5	6	7	
Rice	Sufficient	Sufficient	Deficit	Deficit	Surplus	Highly deficit	Sufficient	Slightly deficit*
Wheat	Slightly deficit	Surplus	Highly deficit	Deficit	Surplus	Highly deficit	Sufficient	Sufficient
Maize	Surplus	Deficit	Sufficient	Sufficient	Sufficient	Deficit	Deficit	Slightly deficit*
Vegetables	Sufficient	Sufficient	Deficit	Sufficient	Sufficient	Deficit	Sufficient	sufficient
Potato	Surplus	Deficit	Sufficient	Deficit	Sufficient	Slightly deficit	Deficit	Sufficient
Pulse crops	Deficit	Surplus	Highly deficit	Slightly deficit	Surplus	Deficit	Sufficient	Deficit
Oilseed crops	Deficit	Deficit	Highly deficit	Deficit	Sufficient	Deficit	Deficit	Highly deficit
Mango	Deficit	Seasonal Surplus	Deficit	Deficit	Seasonal Sufficient	Deficit	Deficit	Deficit
Banana	Deficit	Deficit	Deficit	Deficit	Seasonal surplus	Deficit	Seasonal surplus	Deficit
Apple	Deficit	No production	Deficit	Deficit	Deficit	Seasonal surplus	Deficit	Deficit
Citrus	Deficit	Highly deficit	Deficit	Surplus	Deficit	Deficit	Deficit	Deficit
Onion	Deficit	Seasonal surplus	Deficit	Deficit	Seasonal surplus	Deficit	Deficit	Deficit
Tea	Highly Surplus	No production	Deficit	Deficit	No production	No production	No production	Deficit
Coffee	Deficit	No production	Surplus	Surplus	Deficit	Deficit	Deficit	Deficit
Cardamom	Highly surplus	No production	Deficit	Deficit	Deficit	Deficit	Deficit	Surplus
Ginger	Surplus	Deficit	sufficient	Deficit	Sufficient	Surplus	Deficit	Surplus

Goat meat	Sufficient	Deficit	Highly deficit	Sufficient	Sufficient	Deficit	Deficit	Deficit
Poultry meat	Surplus	Deficit	Highly surplus	Deficit	Sufficient	Deficit	Deficit	Sufficient
Pig meat	Surplus	Deficit	Deficit	Deficit	Surplus	Deficit	Deficit	Sufficient
Buff meat	Sufficient	Sufficient	Highly deficit	Sufficient	Sufficient	Deficit	Sufficient	Slightly deficit
Egg	Deficit	Deficit	Sufficient	Sufficient	Sufficient	Deficit	Sufficient	Sufficient
Milk	Surplus	Deficit	Sufficient	Sufficient	Deficit	Deficit	Sufficient	Slightly deficit
Fish	Deficit	Surplus	Deficit	Sufficient	Sufficient	Deficit	Deficit	Deficit

Source: Agriculture statistics book, MoAD, 2017

**Definition:**

*Sufficient: Need not to import and not enough for export,*

*Surplus: Enough production for export also,*

*Deficit: Need to import, not enough production*

\* Deficit by export import data but sufficient by production data

The table clearly shows province 5 is the strongest province and has good potential to grow as agriculture surplus province and can supply to other provinces. Likewise as expected province 3 has though potentiality and good production but the huge population in the province as national capital and other highly populated cities like Chitwan and Hetauda; obviously is the highly deficit province compared with others.

Rice the major staple food of Nepalese people remains slightly deficit as shown by trade figure seems sufficient by agriculture data published centrally. As trade figure does not support the data published; it seems fault either in data collection or there is illegal trade through porous border with India. It seems province 1, 2 and 7 sufficient in rice; province 5 has surplus but province 3, 4 and 6 have deficit. So province 3, 4 and 6 depend on province 1, 2, 5 and 7 for rice supply. Likewise province 3, 4 and 6 are deficit in wheat production as well; while rest of the province can supply to those deficit provinces.

Table 12: Provinces level Strengths, Weakness, Opportunities and Threats (SWOT)

Province	Strengths	Weakness	Opportunities	Threats
1	<ul style="list-style-type: none"> <li>High value commodities like tea, cardamom, ginger, milk, meat (pork), vegetables</li> <li>Good avenue for agro tourism e.g. tea tourism in Ilam, Jhapa</li> <li>Established market channel for key</li> </ul>	<ul style="list-style-type: none"> <li>Difficulty for irrigation in hills and mountains</li> <li>Rapid urbanization resulting poor engagement of people in agriculture</li> <li>Difficult for commercial</li> </ul>	<ul style="list-style-type: none"> <li>Higher foreign cash generation through auction in major export commodities</li> <li>Brand development for tea and cardamom and earn better cash income</li> <li>Opportunities for</li> </ul>	<ul style="list-style-type: none"> <li>Food insecurity</li> <li>Poor coordination between central, provincial and local level in new context</li> <li>Low competitiveness of farmers</li> </ul>

	<p>commodities and linked with regional and global value chains e.g. tea, cardamom, ginger</p> <ul style="list-style-type: none"> <li>• Connected to Indian market through two sides- Eastern and Southern thus easier for export and input market</li> <li>• Good rainfall in the province and have benefit in rain fed farming</li> <li>• Possibilities of good organic production and make benefit of tourists flowing to Everest and other places</li> <li>• Some niche based production like chhurpi and chilies (Akabare Khursani)</li> <li>• Good connectivity in terai and hills areas</li> <li>• Good numbers of agro entrepreneurs. Some good projects like CADP and UNNATI have been accomplished</li> </ul>	<p>farming in the high hills and fallowing of lands</p> <ul style="list-style-type: none"> <li>• Fewer number of government farms and lack the resource centers for major commodities</li> <li>• Relatively food insecure province and insufficient food grains production for its population</li> </ul>	<p>good value chain model</p>	<p>due to direct competition with Indian farmers (e.g. Darjeeling tea)</p>
2	<ul style="list-style-type: none"> <li>• All plain areas and have fertile land for major crops like rice, wheat, pulse crops, oilseed crops</li> <li>• Good productivity</li> </ul>	<ul style="list-style-type: none"> <li>• Poor price of major production resulting poor farmers income</li> <li>• Open border with India</li> </ul>	<ul style="list-style-type: none"> <li>• Opportunity for higher degree of commercialization in cereal grains, fish, pulse crops, oilseed crops and fruits like mango,</li> </ul>	<ul style="list-style-type: none"> <li>• Higher degree of nutrition insecurity if not food insecurity</li> <li>• Very low competitiveness as</li> </ul>

	<p>of fish and possibility of live fish export to Kathmandu valley and other major cities</p> <ul style="list-style-type: none"> <li>• Bigger scope for mechanization</li> <li>• Chances for obtaining economy of scale through land consolidation and better leasing arrangements</li> </ul>	<p>resulting dumping of agriculture production</p> <ul style="list-style-type: none"> <li>• Implementation and execution of the project on time</li> <li>• General assumption of higher corruption</li> <li>• Frequent strikes and agitation</li> <li>• Lack of irrigation resulting poor productivity</li> <li>• Prone to floods and heavy crop loss</li> </ul>	<p>banana, litchi, papaya, pineapple and many tropical fruits</p> <ul style="list-style-type: none"> <li>• Lowering the labor use through mechanization and generate higher degree of efficiency</li> </ul>	<p>compared to Indian farmers and pose threats of abandoning the farming</p> <ul style="list-style-type: none"> <li>• Demanding higher subsidy for competitiveness and pose the danger of misuse of such subsidy</li> </ul>
3	<ul style="list-style-type: none"> <li>• Suitable for commercial production of high value crops like Coffee, vegetables, potatoes, maize</li> <li>• Suitable for niche product like potato in mude and ramche; black lentil of rasuwa, orange in Sindhuli and Ramechhap</li> <li>• Suitable for cold water fish farming and commercial production of trout</li> <li>• No problem for marketing the product because of huge population of Kathmandu valley</li> <li>• Flourishing new products like Kiwi,</li> </ul>	<ul style="list-style-type: none"> <li>• Heavy pesticides use in the vegetables and other products</li> <li>• Major areas are hilly and difficulty for mechanization</li> <li>• Problem of huge market margin discourages the farmers</li> <li>• Lack year round irrigation</li> </ul>	<ul style="list-style-type: none"> <li>• Greater scope of developing commercial farms and make use of nearby market</li> <li>• Differential production for different consumers</li> <li>• Prioritize quality production for higher price payers</li> <li>• Opportunity for linking agro products with industry</li> </ul>	<ul style="list-style-type: none"> <li>• Food insufficiency might result vulnerable to food insecurity</li> <li>• Use of agricultural land for other purposes and pressure on unproductive lands</li> <li>•</li> </ul>

	<ul style="list-style-type: none"> <li>flowers</li> <li>Good connectivity and scope higher level of commercialization</li> <li>Great source of water flowing in the rivers</li> </ul>			
4	<ul style="list-style-type: none"> <li>Feasible for vegetables, fruits, potatoes and maize production</li> <li>Suitable for good livestock farming with poultry, goat, cow and buffaloes suitable in the good climate</li> <li>Good connectivity throughout the province provide better chance of value chain integration</li> <li>Relatively better in per capita income and people have better purchasing capacity and thus farmers receiving better price</li> <li>Suitable for citrus, ginger, vegetables production</li> <li>Very good area for apple production; with storage facility and good connectivity it can minimize the apple import from India and China</li> </ul>	<ul style="list-style-type: none"> <li>Lack terai area and have deficit in rice and wheat as staple crops</li> <li>Lack good irrigation facility</li> <li>Lack good market infrastructure, processing units</li> <li>Relatively less intervention from project and lack entrepreneurship development</li> <li></li> </ul>	<ul style="list-style-type: none"> <li>Good opportunity for attracting tourists with quality food production</li> <li>Potential for organic production and fetch better price in the hotels in Pokhara and Annapurna trekking route</li> <li>Opportunities for value chain development in coffee, potato, citrus and link them to regional and global value chain for better income</li> </ul>	<ul style="list-style-type: none"> <li>Complete loss of agriculture activities because of people's engagement in other sector as most earning business</li> <li>Food insecurity in long run</li> <li></li> </ul>
5	<ul style="list-style-type: none"> <li>Availability of large fertile lands</li> </ul>	<ul style="list-style-type: none"> <li>Low year round irrigation facility</li> </ul>	<ul style="list-style-type: none"> <li>Possibilities of scale of production for</li> </ul>	<ul style="list-style-type: none"> <li>High shortage of labor resulting poor</li> </ul>

	<ul style="list-style-type: none"> <li>• Suitable for all kinds of cereal crops like rice, wheat, maize</li> <li>• High potentiality of sugarcane production</li> <li>• Suitable for pulses crops like lentil and others for export market</li> <li>• Good possibilities of lowering cost of production through mechanization</li> </ul>	<ul style="list-style-type: none"> <li>• Prevalence of single crops in many terai areas (mostly rice only)</li> <li>• Low level of processing units in key commodities e.g. fine rice making mills, and other agro based industries</li> <li>•</li> </ul>	<p>through land management</p> <ul style="list-style-type: none"> <li>• Two season rice for increased rice production and developing as export business</li> <li>• Already established value chains in lentil</li> <li>• Agro tourism involving Palpa-Lumbini-Swargadwari</li> </ul>	<p>production</p> <ul style="list-style-type: none"> <li>• Lack of functional Collaboration of three governments might disrupt the agriculture development</li> <li>• Less competitiveness amongst farmers due to Indian subsidy to their farmers</li> </ul>
6	<ul style="list-style-type: none"> <li>• Natural place for organic production</li> <li>• Good habitats of Medicinal and aromatic plants</li> <li>• Niche based production</li> <li>• Suitable for Apple, walnut, potatoes, beans</li> </ul>	<ul style="list-style-type: none"> <li>• Poorest connectivity amongst the provinces causing low level of market integration</li> <li>• Lack irrigation for better production</li> <li>• Lack suitable agricultural lands because of high hills with no connectivity</li> <li>• Poor infrastructures for post-harvest and processing</li> </ul>	<ul style="list-style-type: none"> <li>• Cash the famous Karnali product as default organic production</li> <li>• Opportunities to develop NUS crops as future smart crops</li> <li>• Cash the intervention of value chain projects like HVAP, RISMFP, KISAN and ASDP and develop value chains of other commodities</li> </ul>	<ul style="list-style-type: none"> <li>• Dependency on other provinces for rice might deepen unless behavior change and food diversification</li> <li>• Danger of quitting agriculture by many farmers because of low level of market integration and more dependency on Indian labor market</li> <li>• Chronic food insecurity due low level of resilience caused by nature induced disasters</li> </ul>
7	<ul style="list-style-type: none"> <li>• Presence of both Terai and Hills region</li> <li>• Established Sudur Paschim</li> </ul>	<ul style="list-style-type: none"> <li>• Still disconnected with country's capital and getting low</li> </ul>	<ul style="list-style-type: none"> <li>• Possibilities of organic and niche based production for better income</li> </ul>	<ul style="list-style-type: none"> <li>• Difficult for mechanization in hills and high hills increasing</li> </ul>

	market integration <ul style="list-style-type: none"> <li>• Presence of many donor funded projects</li> </ul>	priority in development works <ul style="list-style-type: none"> <li>• Poor connectivity in hills and high hills district</li> <li>• Lack market infrastructures for value chain development</li> </ul>	<ul style="list-style-type: none"> <li>• Have synergies of many development intervention</li> <li>• Produce vegetables, potatoes, MAPs and other local products for Export to India</li> </ul>	drudgery and risk of low level of agriculture works <ul style="list-style-type: none"> <li>• Chances for vicious circle of poverty</li> </ul>
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Source: Field study, 2018

### 3.2.3 Provincial interdependency for input supply

The table clearly shows the interdependency among the provinces for food. Yet constitutionally, every citizen has the right to trade throughout the country and society highly diverse; each province depend with each other in food production, trade and input supply. The table below describe on the interdependency for input supply among the provinces.

**Table 13: Provincial interdependency for input supply**

Major input	Provinces						
	1	2	3	4	5	6	7
Chemical fertilizer	Import	Import	Import	Import	Import	Import	Import
Organic Manures	Surplus	Deficit	Surplus	Sufficient	Deficit	Sufficient	Deficit
Vermi compost	Sufficient	Deficit	Surplus	Surplus	Deficit	Deficit	Deficit
Rice seed	Surplus	Surplus	Deficit	Deficit	Surplus	Deficit	Deficit
Wheat seed	Deficit	Surplus	Surplus	Deficit	Surplus	Deficit	Surplus
Maize seed	Sufficient	Deficit	Surplus	Surplus	Deficit	Deficit	Deficit
Irrigation canal	Sufficient	Deficit	Deficit	Deficit	Deficit	Deficit	Sufficient
Agriculture road	Poor connectivity	Good connectivity	Good connectivity	Good connectivity	Good Connectivity	Very poor connectivity	Poor connectivity
Electrification	Good	Good	Good	Very good	Poor	Poor	Poor
Market infrastructure	Poor	Good	Good	Good	Poor	Highly poor	Good

Source: Field study, 2018

### 3.2.4 Key Service Delivery Institution and Their Roles

Following the endorsement of constitution by largest majority and holding the election of all three levels, the government has expedited the works of administrative restructuring. Agriculture one of 11 central services of government of Nepal include around 10000 government employee at all levels. As Agriculture is diverse and so are the groups in the services. The groups have been categorized based on the disciplines within agriculture. Agriculture extension was largest group based on the cadres in the group followed by protection, horticulture, agro-economics marketing and statistics, crop, fisheries, soil

and agro engineering; likewise Livestock and veterinary are other groups for livestock development. In the perspective of specialization of jobs such groups have well functioned while at the same time it has created some hurdles for placement of human resources as well. The Nepal Agriculture Research council serving the research in different disciplines within agriculture sector; such many groups within services mean too narrowing of the scope. As extension services as main agenda of department of agriculture and its allied offices; now it is the right time for correcting the short fallings in this aspect as well. Putting appropriate structure to function as mandated by constitution is challenge in one hand while correcting the past course of group formation in the agriculture service is another challenge now if we think of driving agriculture sector smoothly in the future. Thus, based on the discussion in different forums, the need for restructuring of the agriculture sector in all levels and formation of groups within services are summarized hereunder;

### 3.2.4.1 Proposed key institutions at different levels

The working team formed by the Ministry of Agriculture Land Management and Cooperative for Agriculture sector has already proposed structures at different levels. The structure of Ministry and Departments for federal government has been endorsed by the cabinet; while structure of provincial ministry's have also been endorsed. While other proposed structures are in the final stage of approval. Thus we are not here proposing the structures but the nature of institution that should be placed at different levels.

#### C. Central government

The major functions of central government have been already listed by the functional analysis and unbundling of the functions which are already discussed in introduction chapter. As policy formation, management and implementation of central projects covering many provinces, regulation and standards formation, federal sectoral vision and planning, International relations and receiving international funds for projects and program are some of central functions; the Key institutions and their major functions are discussed hereunder

- k. Ministry of Agriculture Land Management and Cooperative  
Major institution for agriculture policy formation, international cooperation in agriculture sector and administrating its central projects and institutions for achieving national targets of food security and food sovereignty.
- l. Department of Agriculture  
Major implementation body of central agriculture related functions.
- m. Plant Quarantine and Pesticide Management Center- 15 Quarantine centers and check-posts  
Institution for functioning the quarantine function of the constitution
- n. Agriculture Information and Training Center  
For capacity development of the federal human resources in agriculture sector. Also to function as spokesperson office and providing major information on agriculture development.

#### Central Offices under Department of Agriculture

- o. Central Agriculture Laboratories  
Central internationally accredited laboratories in seed, soil, pesticides, seed subsectors
- p. Central Fruits Development Office- 5 farm centers  
The commodity specific farm centers leading thee fruits sub sector
- q. Central Potato, vegetables and Spices Offices- 4 farm centers  
The commodity specific farm centers based on vegetables sub sector.
- r. Crop Development and Biodiversity Conservation Office- 2 Farm centers



- s. Infrastructure development and Agri- Mechanization Office- 1 farm (JADP)
- t. Industrial Entomology Development Center- 2 farm centers

#### B. Provincial Government

The provincial government and its institutions should be mandated for development activities of related sectors. Thus the provincial ministry for land management agriculture development and cooperative should prepare program, budget for all development activities related to agriculture, land and cooperative sector in their provinces. All subsidies and incentives for the farmers should be provided by the provincial government. The institutions related to provincial government in agriculture sector are listed as;

- q. Provincial Ministry for Land Management Agriculture Development and Cooperatives
- r. Provincial Agriculture Development Directorate
- s. Agribusiness Promotion and Training Center
- t. Agriculture Knowledge Centers (51)
- u. Horticulture related farm centers -13
- v. Industrial Entomology related farm centers -9
- w. Plant Protection Laboratories- 8
- x. Seed Quality Testing Laboratories – 8
- y. Soil and fertilizer Testing Laboratories- 8

#### C. Local Level

The local government should target on providing most essential services in agriculture sector. Based on the functions finalized for local level; following institutions have been proposed and are in line with the MoALMC proposal as well.

- z. At least one agriculture technician per local bodies
- aa. Sub Metropolitan city led by Class ii officer- 13
- bb. Metropolitan City led by Class II officer- 4
- cc. Municipalities led by officer
- dd. Rural Municipalities led by JT
- ee. Provision of OVOT
- ff. Provision of Agriculture Service Centers

#### 3.2.4.2 Proposed regrouping in agriculture service

As agriculture service mandated for agriculture extension and development. It is not necessary to group its manpower at Joint secretary level. Like in Administrative service; the existing groups can be practiced at undersecretary and below onwards. However, the separate extension group may not be necessary in future but can be reformed as crop extension and horticulture extension. Some of the manpower of extension group can be merged in agri economics group, crops and horticulture groups. This should only be done ensuring the carrier path of each and every personnel. By keeping the open group Joint Secretary, the senior most undersecretary regardless of groups will be promoted first.

## CHAPTER IV: CONCLUSION AND RECOMMENDATIONS

### 4.1 CONCLUSION

Nepal is already a federal country as Government of Nepal decided to transform Nepal into federal, democratic and republic country through a new constitution 2072. Following the election of all three levels the Government has initiated the implementation of federalism through administrative restructuring and fiscal budgeting. Agriculture sector known as engine of economic growth in Nepal needs to be aligned with the mandates of constitution. Thus more than 70 years old unitary structures and functionaries are being restructured to implement federalism. As restructuring process is under progress, it has set the transition for agriculture development because of deployment of human resources, budget allocation in all levels; and coordination mechanism needed. This study was designed to support department of agriculture in identifying provincial strengths and weaknesses to further plan its future development strategies.

Provinces have their own strengths and weaknesses. The state restructuring should not undermine the peculiar capacities of each province. The constitutionally provision for three levels of government regarding their functions should be reflected by the administrative restructuring. However, due to ambiguity in defining the functions, there is danger of slowing the pace of development in each sectors of economy. Realizing the economic contribution of agriculture sector, the agriculture re-structuring should critically be analyzed. As agriculture development is very slow process, the institutional memories and knowledge are crucial to augment the further development; it should not be perceived as only service delivery matter. Realizing the importance of our international commitments; free trade between countries and agriculture trade as most critical in global arena, the country cannot afford the price of mistakes made during restructuring. As we were practicing unitary development system, the province formed should complement each other to fight against hunger, malnutrition and food insecurity in a collective way. Provinces are interdependent to each other highly because we are just trying to disaggregate the existing system with the eyes of provinces; it seems the interdependency will grow more in future while practicing development based on provincial strengths and competitive advantages within provinces.

As agriculture sector contributes to largest portion to GDP, still productivity of the sector is around 0.5. Involvement of more than 60% of population returning to 27% to GDP reflects poor productivity of the sector. However many industry in Nepal are based on agriculture for raw materials; its development is crucial for overall economic growth of the country. It needs at least 6.7% of agriculture growth for achieving country's milestone for double digit growth rate.

Major issues in agriculture sector have been the same since a decade. Timely availability of major inputs like fertilizer, seed and irrigation; land management for higher productivity and having scale of returns; increasing connectivity and market information; crop and food diversification; strategic production scheme for import substitution and export promotion; and value chain development and linked to the regional and global value chain are critical issues in agriculture development. Government support in agriculture sector is very less in one hand the transparency and farmers' selection might have another problem. The mechanism for supporting each and every farmers on the basis of their scale of production and employment generation will be the sustainable model to promote farmers.

Following the successful election of all three levels; the political institutions have been set in all levels but the administrative restructuring have not been accomplished so far. The provincial governments

have forwarded their policies and commitments but they are not backed by the fiscal budgets and implementation machineries. Each provinces have the common target of ensuring food and nutrition security of their people; which is also the main target of government of Nepal. The policies and strategies of each provinces are summarized below;

#### **Province 1:**

1. Develop value chains of tea, cardamom, ginger, dairy in collaboration with Central projects and programs like UNNATI, PACT and PMAMP
2. Strengthen the capacity of Tea Development Board and collaborate with board for linking tea value chain to international markets
3. Operate the auction of tea for International market. Branding the tea as Himalayan tea and facilitate for export
4. Establish cardamom development board for export promotion. Explore possibilities cardamom international markets than India and supply with better prices
5. Utilize the potentialities of agro tourism through organic production, tea estate recreation and home stay management. Target organic production for tourists arriving to Mount Everest and other high peaks
6. Doubling the rice production campaign for self-sufficiency and export to the other provinces

#### **Province 2**

1. Emphasis on major cereal grains like rice, maize and wheat
2. Ensuring all year round irrigation in all agricultural land for increased production and productivity
3. Use of both surface and ground water for irrigation. Maintenance of major irrigation canals with ensured irrigation and extending the program of deep and shallow tube well
4. Support for cold storage, market infrastructure, processing units of vegetables, fruits, potato, onion, milk, meat and eggs
5. Increase production of fish for export specially to Kathmandu valley of province 3
6. Tax incentives and other support for increased mechanization
7. Special package for leasing of land to achieve the economies of scale
8. Special incentives for two season rice and support to reduce rice import in the nation as a whole. The extra incentives for rice growers that produce for sale
9. Minimum support price implementation of rice, maize, wheat and sugarcane
10. Maintaining buffer stock of cereal grains to cope with national food crisis
11. Revive Birgunj Sugar Mills to support sugarcane farmers and produce sufficient sugar demanded in the province; import substitution of Indian sugar. Policy to stabilize sugar price and check the illegal trade in the border points
12. Revive Birgunj agriculture tools factory, encourage the agriculture mechanization with subsidy for tools and equipment. Additional subsidy for the tools produced by agriculture tools factory of Birgunj.

#### **Province 3**

1. The unified action of agriculture, livestock, forestry and tourism for climate smart, organic and sustainable agriculture. Developing agriculture as commercialized and competitive; the multidimensional works of agriculture production will be enhanced. The pockets for specialized commodities will be developed and encouraged to grow according to specialized crop areas.

2. Achieving self-sufficiency in fruits, vegetables, flowers, meat and milk products within 3 years; and cereals within 5 years. At the same time, the crops having export potentials will be emphasized highly.
3. The OVOP and ODOP program will be scaled up for the agro and livestock commodities having comparative advantages, export potentialities. The value chains of such commodities will be developed enhancing the forward and backward linkages. The trade deficit will be reduced through such commodities where the principles of both import substitution and export promotion will be applied. Such value chains will also be linked to international markets and thus regional and global value chain will be focused.
4. The food commodity reserve will be maintained based on the requirements to address crisis caused by regional food deficit and other disasters.
5. The farmers rights will be addressed through execution of farmers identity card, farmers pension and farmers commission in close coordination with federal and local governments.
6. The agriculture loan will be provided at 5% interest rate for commercial farmers. The project collateral scheme will be enforced into action.
7. Exemption of tax scheme for agriculture income of maximum five hundred thousand per annum. It will promote semi commercial farmers for commercialized production.
8. The genetic improvement of the neglected and underutilized crop species will be carried out to improve the productivity and production. Food product diversification will be used as key to solve food and nutrition security problems.
9. Land fragmentation, dual land ownership and fallowing of land will be highly discouraged through enactment of land use related acts and regulations.
10. Development of standards for dairy industry, dairy shops, slaughter house and meat shop and execution of such standards strictly for maintaining quality and standard of meat and milk related products.
11. Incentive package will be provided to the youths, returnee youths from foreign countries, agriculture graduates and pensioners retired from agriculture service for developing and operating agriculture commercial farms or model farms.
12. Establishment of provincial Dairy Development Board
13. Establishment and operation of at least one powder milk industry within 5 years
14. Establishment of livestock breeding laboratories and emphasize the production of liquid nitrogen and semen
15. One house one kitchen garden will be promoted

#### **Province 4**

1. Incentives for youths working in agriculture and attracting other youths
2. Enabling access to finance. Subsidizing agriculture loan; policy reform for accepting project as agriculture loan collateral
3. Special package for land consolidation; incentivizing such commercial growers in improved land management. Enforcement of laws for land pooling and land development in accordance with land use planning
4. Developing Private Farm Model Scheme rather than only promoting cooperatives and groups
5. Promoting the organic farming and regulating the pesticides and heavy chemicals
6. Improving service delivery of all stakeholders including government agency, NGOs/INGOs, CBOs through creating alliance group to minimize duplication and implementing through one door system

7. Exempting tax and other facilities to the agro based industries based on the production and contribution to economy.
8. Promoting agro tourism through organic farming, home stay and other programs

## **Province 5**

1. Develop commercial agriculture farms at private level and supporting them through monetary and non-monetary measures like exempting taxes, support in establishment of farms and technical backstopping through other government farms, Agriculture Knowledge Center (Krishi Gyan Kendra), livestock experts center and veterinary hospitals
2. Establishment and upgrading of agriculture market infrastructure in major cities like Butwal, Bhairahawa, Tulsipur, Ghorahi, Nepalgunj, Dhangadhi and Mahendranagar
3. Coordination with irrigation ministry of province for developing and operating medium and large irrigation schemes like Banganga irrigation scheme, Sikta Irrigation scheme, Veri diversion scheme, Rapti irrigation scheme, Rani Jamara irrigation, Mahakali irrigation scheme, Tinau irrigation scheme and Gandak irrigation scheme
4. Agriculture commercialization on the command areas of big irrigation schemes
5. Coordination with PMAMP project, National project like KUBK, HVAP, RISMFP and other projects for resource sharing and synergies the cooperation.
6. Implementation of PMAMP, KUBK and Rani Jamara project schemes delegated to provincial ministry
7. Implementation of One ward One technician concept
8. Establishment of veterinary hospitals in each districts
9. Continuation of export incentives for lentil exporter, ginger exporters and other commodities
10. Promotion of riverbed farming in potential areas of Banganga, rapti, tinau, veri, karnali, mahakali and other riverbeds
11. Tax incentives for agro based industries, tariff exemption for agriculture equipment and machineries for promoting commercialization
12. Special program for attracting youths, the youths will be encouraged to operate model agriculture farms. Supporting them with cash and non-cash incentives
13. Policy reform to support land consolidation. Enactment of agribusiness promotion bill and enhance contract farming

## **Karnali Province (Province 6)**

1. The commercial agriculture will be promoted through “One farm one commercial incentive” to the farmers group, cooperative and private agro business based on the income and employment generated by the farm
2. “Increased organic farming increased prosperous Karnali ” slogan will be used as main motto for agriculture development. “One local level one model farm” and “one cooperative- one model agriculture, livestock and fisheries farm” principal will be adopted. Gene bank will be established to promote conservation, increased productivity and extension of local crop, breed and water animal landraces.
3. Improving the food habit of people by promoting the and consumption of local and indigenous food
4. Modern and high tech nursery will be established to ensure regular supply of saplings of demanded fruits, flowers, ornamental crops and vegetables.

5. Private farm and cooperatives will be encouraged to invest on tissue culture laboratories in banana, potato, lime and mushroom; and other modern technologies like hydroponics. The subsidy and other support scheme will be provided to such farms.
6. One ward one technician of agriculture and veterinary campaign will be accomplished with the support from central and local government.
7. Contribution based farmers pension scheme based on farmers' categorization will be initiated from at least one local body of each districts.
8. Production of organic fertilizers and organic pesticides will be promoted to reduce the use of chemicals and antibiotics used in fish farming, poultry and dairy industry; and virtually declare Karnali province as organic. Integrated community farm will be developed in support from province government.
9. Organic cooperative complex will be developed in Surkhet.
10. A large scale processing center will be established in Surkhet for the processing of medicinal plants and other NTFPs. The model processing units will be established in the Himalayan districts like of Humla, Mugu and Dolpa. High priority will be given for the research, study, production, sale and marketing of Medicinal and Aromatic Plants.
11. Agro tourism will be promoted through organic food and home stay

## Province 7

1. Balance between organic production and modern production technologies, emphasis on organic production in the hilly districts while high input production in terai districts
2. Scaling up government farms of vegetables, fisheries, fruits
3. Establishment of research and development center of MAPs and Yarchagumba
4. Scale up of Olive farm and promote Olive production
5. Value chain development of major crops, support implementation of central projects like RISMFP. Promote development of infrastructures like cold storage, seed processing plants.
6. Implementation of Rani Jamara Kulariya Project in coordination with local bodies
7. Rehabilitation of Mahakali Irrigation Scheme, construction and operation of Rani Jamara Irrigation Scheme and ground water irrigation schemes in the Terai region for increased production and productivity
8. Tax incentives for mechanization, agro based industries; output based incentives based on the employment and income generated by the agro based industries
9. Improvement of Attariya agriculture market and construct other market infrastructure to facilitate value chain development
10. Implement community based farming system by engaging land less and marginal farmers

It seems all provinces are clear and serious on the development agenda. However, it requires time for establishment all functionaries to support achieving those targets. As we start practicing full scale of federalism; the interdependency among the provinces will be deepen much. The province 1 have strengths in high value crops like tea, ginger, cardamom, milk production, pork and rice and the surplus commodities will be supplied to other provinces. In the same way province 2 has strengths in rice, wheat, fisheries, pulse crops, oilseeds and mango; it supplies its surplus mostly to province 3 where huge demand for every commodity prevail due to robust population. In contrary province 2 will import vegetables, other fruits like citrus and apple from other provinces. Province 3 is biggest in terms of population and more 30% of total demand is covered in province 3. It has good strengths in vegetables, maize, citrus, coffee, milk and poultry where imports almost every commodity except poultry due to its huge population. Province 4 has strengths in citrus, apple, vegetables and maize it imports rice, wheat

and other tropical fruits like mango, litchi and banana. Province 5 is best province in terms of agriculture production. Having suitable land and climate for rice, wheat, maize, vegetables, lentil, oilseed, citrus and banana; it exports its surplus to province 3, 6 and 4. Province 6 is poorly connected province due to difficult terrain. It has great scope in medicinal herbs and aromatic plants; organic production, apple and walnut. It imports cereals, pulse crops and vegetables mostly from province 5 and 7. Province 7 has both good and difficult areas. Two terai districts are highly fertile and produce mostly cereal grains and pulse crops; the hills and high hills have suitability in vegetables, potato and MAPs. The interdependency is not only for agriculture product but also for market and inputs.

## 4.2 RECOMMENDATIONS

The main objective of the assignment was to analyze the scope of agricultural development in the context of new government structure. Major recommendations of the study are summarized below;

- Nepal's restructuring process should be perceived as a unique opportunity to address existing weaknesses in order to improve the enabling environment for agricultural policy planning and implementation. In addition, the restructuring process enhances service delivery for Nepali citizens, who depend on the agricultural sector for their livelihoods.
- The restructuring process has followed a systematic approach through series of actions like preparing functional analysis of the key sectors; Unbundling of the constitutional functions within three tiers of governance; finalizing the functions of all three tiers; preparing and finalizing the proper structure to carry the functions; deployment of human resources and budgeting.
- The steps of restructuring have been mixed and have taken a long time. Government has finalized the functions of all levels; the structures have not been finalized and approved.
- Since finalization of structures took a long time the fiscal budget has urged for rapid actions because the budgetary provision does not support ongoing structures; yet very difficult task of deployment of central civil servants has to be accomplished within the current fiscal year. It seems many development activities including that of agriculture affected and have consequences in long term.
- The government should not impose a uniform organizational structure under provincial ministry but it should be based on the potentiality of the commodity to have research and extension.
- Referring to some international practices, the authority and workload for provinces have to be released step wise step. There could be confusion on the the use of rights; it might affect the development works heavily. Once the authority given to lower levels its difficult to bring back. So provinces and local bodies need to be strengthened highly.
- As provinces now onwards try to practice development activities based on their strengths and opportunities, the interdependency will grow much wider; the central ministry should lead to achieve national targets; and should be authorized to coordinate and direct for national agendas.
- The complete organizational structure in agriculture sector has not been finalized yet, the critical judgements are required to finalize the structure so that needful functions do not get disturbed. The seed sector channel developed by existing DADO offices need to be carried out by similar structures which can link farmers to seed companies.
- As Agriculture is diverse sector, it requires specialists services from different disciplines like crop/horticulture/ livestock extension, business plan and market oriented production schemes;

disease and pest management, soil and seed testing; a special units to link local bodies to provincial and central government are essentially required.

- The Agriculture Knowledge Center could be developed as coordinating bodies and representatives of both central and provincial governments to lead and backstop the agriculture functions for achieving national priority.
- The structures should be developed in such a way that highly essential services will be provided by local bodies, development functions by the provincial government and policy and regulatory functions by the central. In such direction; Ministry, Department and other central offices will prepare, analyze and approve policies while province government try to implement national policies aligning to their own policies; the AKC and farm centers under provinces implement the central and provincial policies through appropriate budgeting and program; while local bodies should be engaged in extension education services and implement their prioritized program.
- The provinces are interdependent to each other for agriculture products requirements; the surplus province in one commodity is exported to others according to their needs; while they also depend each other for marketing of the products and input supply.
- As the practice of federalism takes pace, the inter-dependency will grow deeper and deeper. The central government should coordinate between all provinces for uniformity in taxation and incentives to harmonize the fair trade amongst the provinces.
- It is recommended to regroup in agriculture services. The joint secretary level should be without any groups; and to follow the specialization similar groups can be applied from undersecretary level and below onwards. It is also recommended to revise the groups and merge extension group in other groups. In doing so the carrier path of each personnel should not be disturbed. The senior most officials regardless of group should be promoted first.



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# ***Annexes***

## **Annex 1: Checklist used for study at different levels**

### **1. Checklist for Meeting with DG, DDG, other DOA staffs and DSTEP Manager**

- Know on latest work on restructuring
- Know on plan for ADS implementation in federal context
- Know on deputization of DOA staffs at different levels
- Know on present context on agriculture development and future prospects
- Ask relevant documents that support the study works

### **2. Checklist for 7 Provincial ministries**

- Ask the agriculture functions at provinces- current and constitutional
- Status of agriculture development in the provinces
- Major crops, their current production status
- Commercial crops and their production status in the province
- Potential crops in future in the state
- Food security situation of the province
- Major imports in the province
- Major exports in the provinces
- Possible destination for exports crop wise within the country- volume and value
- Possible destination for exports commodity wise outside the country- volume and value
- Major imports commodity wise- from provinces (with name)
- Major imports commodity wise- from different countries
- Current structure of the provincial ministry
- Works and future strategy on restructuring
- Relation with other province- ministry and role of central ministry in the coordination
- Agriculture plan of the province
- Implementation of ADS by the province
- Functional coordination mechanism with local governments? Vision and strategy
- Any other?

### **3. Checklist for discussion with DADOs**

- DADOs current role and how its function fit in new federal tiers
- DADOs service functions
- DADOs regulatory functions
- Status of handover of the properties to different governments
- Is the state restructuring works are at right direction?
- Deputation of their staffs and responses
- Pros and cons in new structure??
- What could be good institution function that could perform current DADOs functions?
- Are you involved the Ministry's and DoA's initiatives on restructuring? Have you been informed or consulted about the fate of your office (DADO)?
- Are you informed on the date of closure of your office by your parental organization?
- What could be your role in next years program planning or budgetary implementation?
- Do you think the agriculture development is in right direction in your workplace?

- Suggest future plan and strategy for agriculture development in the country

4. Checklist for discussion with Local government (Municipality/ Rural Municipality)

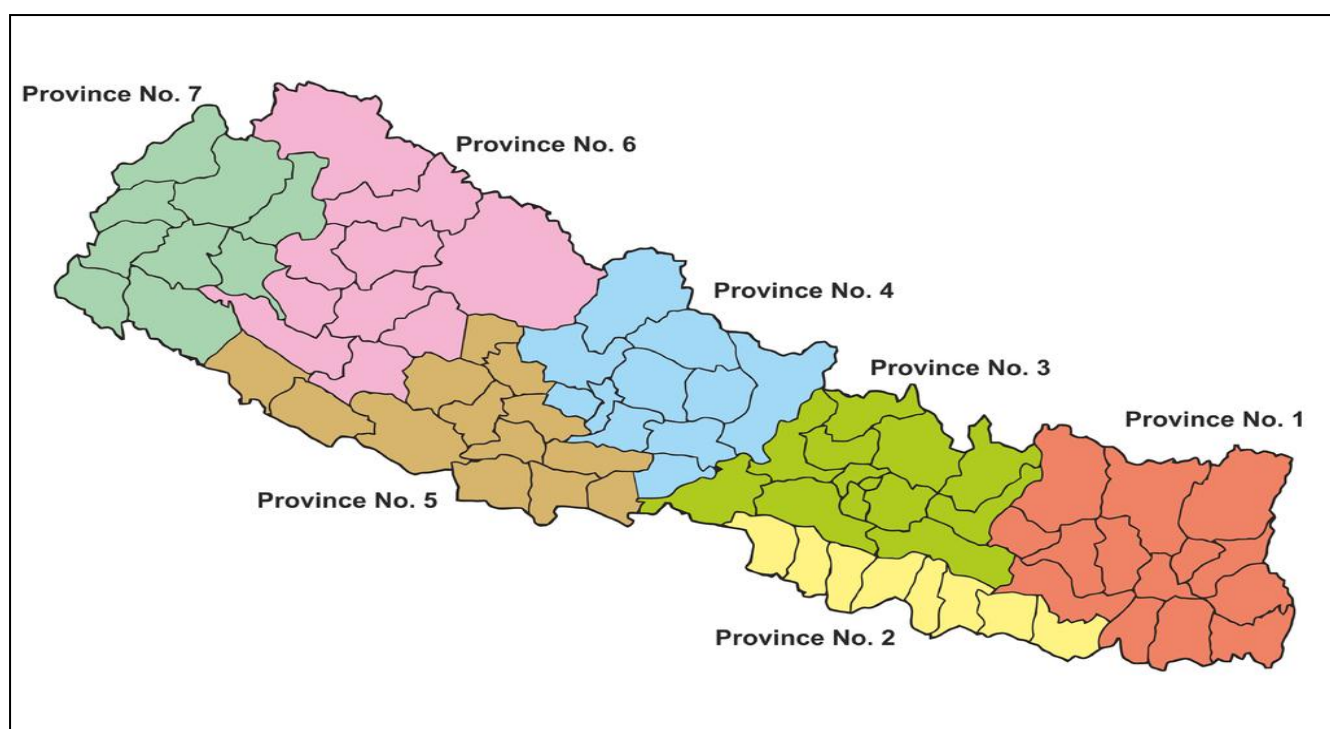
- Importance of agriculture in their local areas
- What are the agriculture functions that your rural municipality/municipality carrying out?
- What other functions will your organization have to carry out when DADO phases out?
- What agriculture structure you are proposing?
- Will this structure enough for agriculture development in your area?
- What regulatory functions you expect from province or central level?
- What is your development plans for future?
- Do you think agriculture is development function and require expert services?
- What proportion of your budget is directed towards agriculture development?
- List out the agriculture commodity that your area is sufficient of?
- List out the agriculture commodity that you are importing from?
- List out the agriculture commodity that you are exporting to other area and other countries

## Annex 2: Current Status of Agriculture Production Province wise

Table 1: List of Provinces with area and population

SN	Provinces	Capital	Districts	Area (km <sup>2</sup> )	Population (2011)	Density (people/km <sup>2</sup> )
1	Province No. 1	Biratnagar	14	25,905 km <sup>2</sup>	4,534,943	175
2	Province No. 2	Janakpur	8	9,661 km <sup>2</sup>	5,404,145	559
3	Province No. 3	Hetauda	13	20,300 km <sup>2</sup>	5,529,452	272
4	Province No. 4	Pokhara	11	21,504 km <sup>2</sup>	2,413,907	112
5	Province No. 5	Butwal	12	22,288 km <sup>2</sup>	4,891,025	219
6	Karnali Pradesh	Birendranagar	10	27,984 km <sup>2</sup>	1,168,515	41
7	Province No. 7	Dhangadhi	9	19,539 km <sup>2</sup>	2,552,517	130
<b>Total</b>	<b>Nepal</b>	<b>Kathmandu</b>	<b>77</b>	<b>147,181 km<sup>2</sup></b>	<b>26,494,504</b>	<b>180</b>

**Fig. 1: Map of Nepal with Provincial Boundary**



**Provincial Districts:**

**PROVINCE I**

Taplejung  
Sankhuwashava  
Solukhumbu  
Panchthar  
Ilam  
Terhathum  
Dhankuta  
Bhojpur  
Khotang  
Okhaldhunga  
Udayapur  
Jhapa  
Morang  
Sunsari

**PROVINCE II**

Saptari  
Siraha  
Dhanusha  
Mahottari  
Sarlahi  
Rautahat  
Bara  
Parsa

**PROVINCE III**

Dolakha  
Sindhupalchok  
Rasuwa  
Ramechhap  
Sindhuli  
Kavre  
Bhaktapur  
Lalitpur  
Kathmandu  
Nuwakot  
Dhading  
Makwanpur  
Chitwan

**PROVINCE IV**

Manang  
Mustang  
Gorkha  
Lamjung  
Tanahu  
Kaski  
Parbat  
Syangja  
Myagdi  
Baglung  
Nawalparasi

**PROVINCE V**

Nawalparasi  
Rupandehi  
Kapilbastu  
Palpa  
Gulmi

**PROVINCE VI**

Salyan  
Rukum  
Jajarkot  
Dailekh  
Surkhet

**PROVINCE VII**

Bajura  
Bajhang  
Darchula  
Achham  
Doti

Arghakhanchi  
Rolpa  
Pyuthan  
Dang  
Banke  
Bardiya  
Rukum

Dolpa  
Mugu  
Humla  
Jumla  
Kalikot

Baitadi  
Dadeldhura  
Kailali  
Kanchanpur

**Table 2: Area, Production and Yield of Cereal Crops by Provinces**

PROVINCES	Paddy			Maize			Millet		
	Area, ha	Prod., Mt.	Yield, Kg/ha	Area, ha	Prod., Mt.	Yield, Kg/ha	Area, ha	Prod., Mt.	Yield, Kg/ha
PROVINCE I	306272	987347	2648	261486	663053	2598	70182	83773	1232
PROVINCE II	294840	886350	3035	46535	159216	3280	2316	2424	1100
PROVINCE III	129000	438861	3529	188063	492435	2727	57412	61816	1104
PROVINCE IV	93595	288703	2993	132756	362451	2475	86811	100115	1151
PROVINCE V	325110	1066857	3236	131887	301700	2520	11851	12619	1071
PROVINCE VI	42785	124504	2282	88831	168359	1601	19345	21300	1152
PROVINCE VII	171306	506457	2674	42025	84303	2247	15282	16100	1033
Total	1362908	4299079		891583	2231517		263199	298147	

**Table3: Area, Production and Yield of Cereal Crops by Provinces**

PROVINCES	Buckwheat			Wheat			Barley		
	Area, ha	Prod., Mt.	Yield, Kg/ha	Area, ha	Prod., Mt.	Yield, Kg/ha	Area, ha	Prod., Mt.	Yield, Kg/ha
PROVINCE I	3247	3177	994	68240	176498	2361	1580	1799	1153
PROVINCE II	-	-	-	193967	508500	2611	202	223	1066
PROVINCE III	1606	1463	988	55038	138533	2568	2188	2234	1035
PROVINCE IV	1998	2549	1160	32080	66474	2129	2035	2534	1177
PROVINCE V	1335	1419	1036	163941	423490	2420	2241	3033	1301
PROVINCE VI	2130	2504	1186	86588	157082	1625	11628	15899	1244
PROVINCE VII	126	119	1199	141740	259293	1669	8315	6915	889
Total	10442	11231			1729870		28189	32636	

**Table 4: Area, Production and Yield of Cash Crops by Provinces**

PROVINCES	OILSEED			POTATO		
	Area, ha	Prod., Mt.	Yield, Kg/ha	Area, ha	Prod., Mt.	Yield, Kg/ha
PROVINCE I	38048	43069	906	64819	927401	13898
PROVINCE II	43663	35539	6547	25623	358957	108665
PROVINCE III	32007	29299	12556	46151	734509	212139
PROVINCE IV	5159	4265	8530	15131	172690	117012
PROVINCE V	63246	60103	10425	21784	288062	143965
PROVINCE VI	7592	7150	8145	12470	129148	101009
PROVINCE VII	28152	28866	6554	13993	194813	118559
NEPAL:	217867	208291	65438	199971	2805582	995923

**Table 5: Area, Production and Yield of Cash Crops by Provinces**

PROVINCES	SUGARCANE			TOBACCO		
	Area, ha	Prod., Mt.	Yield, Kg/ha	Area, ha	Prod., Mt.	Yield, Kg/ha
PROVINCE I	38048	403633	25870	35	1137	797
PROVINCE II	43663	2829290	418772	601	590	6726
PROVINCE III	32007	11933	321977			
PROVINCE IV	5159	5353	212456			
PROVINCE V	63246	811420	427533			
PROVINCE VI	7592	2700	163595			
PROVINCE VII	28152	282425	282919	3	2	667
NEPAL	217867	4346754	2163565	639	1729	9784

**Table 6: Area, Production, and Yield of Oilseed Crops**

PROVINCES	Mustard			Sarsoon		
	Area, ha	Prod., Mt.	Yield, Kg/ha	Area, ha	Prod., Mt.	Yield, Kg/ha
PROVINCE I	25764	31748	928	3292	2810	888
PROVINCE II	30651	27723	916	3007	2989	996
PROVINCE III	27013	25416	12840	1320	1201	6986
PROVINCE IV	4185	3343	853	197	146	801
PROVINCE V	50186	50168	977	5090	3521	941
PROVINCE VI	6539	6227	8060	180	147	1679
PROVINCE VII	25431	26874	6332	499	351	3155
<b>NEPAL :</b>	<b>169769</b>	<b>171499</b>	<b>30905</b>	<b>13585</b>	<b>11165</b>	<b>15445</b>

**Table 7: Area, Production, and Yield of Oilseed Crops**

PROVINCES	Rayo			Sunflower		
	Area, ha	Prod., Mt.	Yield, Kg/ha	Area, ha	Prod., Mt.	Yield, Kg/ha
PROVINCE I	1562	1659	955	1480	1711	1075
PROVINCE II	2476	2284	914	256	256	1095
PROVINCE III	528	353	5247	83	47	883
PROVINCE IV	132	116	941	14	13	917
PROVINCE V	1757	1262	789	646	702	1239
PROVINCE VI						
PROVINCE VII	470	341	4118	15	24	1600
<b>NEPAL :</b>	<b>6925</b>	<b>6015</b>	<b>12965</b>	<b>2494</b>	<b>2753</b>	

**Table 8: Area, Production, and Yield of Oilseed Crops**



PROVINCES	Groundnut			Sesame		
	Area, ha	Prod., Mt.	Yield, Kg/ha	Area, ha	Prod., Mt.	Yield, Kg/ha
PROVINCE I	172	224	1264	542	494	813
PROVINCE II	15	14	1000	870	532	763
PROVINCE III	789	1016	1378	1237	516	667
PROVINCE IV	298	369	1239	231	191	759
PROVINCE V	1139	1346	1415	572	396	700
PROVINCE VI	441	511	1389	206	113	551
PROVINCE VII	415	363	785	670	509	670
<b>N E P A L :</b>	<b>3269</b>	<b>3843</b>		<b>4328</b>	<b>2751</b>	

**Table 9: Area, Production, and Yield of Oilseed Crops**

PROVINCES	Linseed			Niger		
	Area, ha	Prod., Mt.	Yield, Kg/ha	Area, ha	Prod., Mt.	Yield, Kg/ha
PROVINCE I	3950	3502	891	1286	921	710
PROVINCE II	6320	1687	606	68	54	827
PROVINCE III	263	213	670	774	537	797
PROVINCE IV	24	37	1375	78	50	669
PROVINCE V	2983	1713	693	873	995	804
PROVINCE VI	167	116	1068	59	36	655
PROVINCE VII	652	404	601			74280
<b>N E P A L :</b>	<b>14359</b>	<b>7672</b>		<b>3138</b>	<b>2593</b>	

**Table 10: Area, Production, and Yield of Major Spice Crops**

PROVINCES	Cardamom				Ginger		
	Total Area, ha	Productive Area, ha	Prod., mt.	Yield, kg/ha	Area, ha	Prod., Mt.	Yield, Kg/ha
Province I	13904	11300	6064	559	7507	94480	11795
Province II		0	0		330	3708	8969
Province III	989	367	216	560	2842	42422	15074
Province IV	626	321	113	423	2408	25193	10668
Province V	87	76	11	507	4163	46566	11145
Province VI	83	54	34	614	2989	32688	7806
Province VII	12	2	1	573	1630	26806	16298
Total	15700	12120	6439		21869	271863	

**Table 11: Area, Production, and Yield of Major Spice Crops**

Provinces	Garlic			Turmeric			Chilli		
	Area, ha	Prod., Mt.	Yield, Kg/ha	Area, ha	Prod., Mt.	Yield, Kg/ha	Area, ha	Prod., Mt.	Yield, Kg/ha
Province I	1116	5247	7244	1390	7097	7410	2175	11210	4892
Province II	818	4920	5870	1030	15483	13070	1222	7456	6093
Province III	1471	10568	6274	991	10020	11577	1191	6247	5602
Province IV	570	3430	6634	756	5285	8254	362	1979	5260
Province V	1185	6840	6466	812	5702	7060	1062	5981	5618
Province VI	660	3811	3788	552	5115	5733	628	2489	3235
Province VII	1732	15611	7121	1370	15697	11124	1068	5706	4524
Total	7551	50426		6901	64400		7707	41068	

**Table 12: Area, Production, and Yield of Pulses**

Provinces	Lentil			Chick Pea		
	Area, ha	Prod., Mt.	Yield, Kg/ha	Area, ha	Prod., Mt.	Yield, Kg/ha
Province I	13048	15905	1073	684	830	1056
Province II	75463	89697	1189	2498	2868	1208
Province III	6832	7877	1111	757	773	858
Province IV	1462	1613	1043	286	299	1062
Province V	77684	98726	1197	3732	4095	1119
Province VI	3810	3477	761	1304	1292	830
Province VII	28129	36254	911	1076	1263	868
Total	206428	253549		10336	11420	

**Table 13: Area, Production, and Yield of Pulses**

Provinces	Pigeon pea			Black gram		
	Area, ha	Prod., Mt.	Yield, Kg/ha	Area, ha	Prod., Mt.	Yield, Kg/ha
Province I	1245	1173	931	7474	6931	896
Province II	10045	9734	1001	1272	986	769
Province III	145	170	964	4100	4045	923
Province IV	149	147	1002	7447	5604	968
Province V	5272	5013	1016	1681	1552	935
Province VI	58	74	1023	860	752	787
Province VII	103	113	986	2791	2206	722
Total	17016	16424		25625	22077	

**Table 14: Area, Production, and Yield of Pulses**

Provinces	Grass Pea			Soya bean		
	Area,	Prod.,	Yield,	Area,	Prod.,	Yield,

	ha	Mt.	Kg/ha	ha	Mt.	Kg/ha
Province I	633	844	1122	4276	5255	1206
Province II	2156	2405	1049	233	272	1166
Province III	17	14	900	6849	8319	1219
Province IV				3182	3353	1066
Province V	4974	5800	1273	1611	2184	1184
Province VI	180	178	989		2777	897
Province VII	115	113	998	6405	8586	1072
Total	8075	9354		22556	30746	

**Table 15: Milk Animals and Milk Production, Mt. (2015/16 )**

Province	Milking Cows No.	Milking Buffaloes No.	Cow Milk Mt.	Buff Milk Mt.	Total Milk Produced
Province I	288160	226783	171929	212347	384276
Province II	146119	204560	95516	161696	257212
Province III	161833	238576	107078	247640	354718
Province IV	71057	162191	51138	172461	223599
Province V	156301	309009	94578	241297	335875
Province VI	72070	82008	35631	62563	98194
Province VII	130595	132257	87936	112438	200374
Total	1026135	1355384	643806	1210441	1854247

**Table 16: Net Meat Production and Its Distribution (2015/16) unit. Mt.**

Province	Buff	Mutton	Chevon	Pork	Chicken	Duck Meat	Total Meat
Province I	34132	259	12243	9527	6701	70	62932
Province II	23991	21	10012	1813	5859	52	41748
Province III	33341	245	10367	3287	24979	34	72253
Province IV	20287	424	5688	2802	4609	36	33846
Province V	33443	434	14942	3880	8352	35	61086
Province VI	11657	966	5438	1215	1807	4	21087
Province VII	18154	335	6893	985	2734	6	29107
Total	175005	2684	65583	23509	55041	237	322059

**Consultative/interactive meetings with officials of Ministry of Land Management, Agriculture and Cooperatives and local levels in different provinces (1 to 7)**

## In Province 1, 2 and 3













## Interaction Workshop on Draft Report in DoA

