

# Coordinating Horticulture Programs in Federal Nepal

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## Abstract

Extension of horticulture sector has undergone restructuring together with the state restructuring that was started after Nepal adopted federal system of governance. Horticultural research is under federal government; the research centers are in each of the seven provinces, and they have the mandate to prioritize their research as per the needs of provinces. Horticultural farm centers that existed before the state restructuring were placed under provincial and federal governments. Gandaki and Lumbini Provinces that had no share of a resource centers are establishing new provincial horticulture development centres, thus further highlighting their importance. Nine horticulture development centers that have nation-wide scope are kept under Federal structure and others are handed over to provinces. The National Centre for Fruit Development and its allied farms, National Centre for Potato, Vegetables and Spice Crops Development and its allied farms, provincial horticultural farms, district level and local level offices, and Prime Minister's Agriculture Modernization Project (PMAMP) are responsible for extension programs. The PMAMP programs are also restructured so that pockets are operated by local level, blocks by district or province government and zones and super zones by the federal government. Few new horticultural farms are established and few of them have been restructured with additional mandates in the provinces. Provinces have developed horticultural programs and have launched through the farm centers and district level offices. Farm centers function as the resource centers of planting materials, demonstration sites, training and service delivery hubs. The major programs of the district offices are the establishment of resource centers (saplings and seed production) and technical support to them. Area expansion is another important function which is mainly covered by the local level through conditional grants from the federal government and the PMAMP. The coordination among research, education, and extension; and within three tiers of governments need strengthening and streamlining for the overall development of horticulture sector.

**Keywords:** Conditional grants, PMAMP, policies, resource materials, technology

## Introduction

In Nepal, horticultural crops are high-value commodities compared to the cereal crops. Diverse agro-ecological zones of Nepal provide opportunities to grow tropical to temperate horticultural crops. Although, there is an increasing trend of area coverage and production over the recent years, the rate of increase in production is not able to meet the increasing demand of fruits and vegetables in the country which require development of improved technologies and genetic materials as well as efficient extension services.

Systematic horticulture sector development programs started in Nepal after 1950. Horticulture section was established in 1955 within the Department of Agriculture (Acharya, 2018) that marked the formal beginning of horticulture sector related organization in the government sector followed by the establishment of several horticulture research stations and development centers in different parts of the country (Kaini et al., 2020 and Shrestha et al., 2021) for promotion of horticultural research and development activities.

### **A. Changing trend and issues in current horticulture sector**

The horticulture sector is now evolving with the emergence of new technologies and new fruit crops. The consumption behavior of the consumers is also changing. The consumption of the horticulture commodities has increased substantially. The consumers are demanding the safer food from reliable producers.

The technology development and extension lag the demand of the sector; even the tested technologies are not adopted by the farmers. The source of technology is also changing, now farmers are relying more on the digital platforms and internet. The demand of good quality fruit saplings is being fulfilled from the export because of the deficit in the country. The capacity of the extension agents is always a question because of fast changing technologies in the world and the diverse sources of technologies available

to the farmers. The system support for the new technology generation and adoption is lagging. The targeting of the government support to specific areas and the co-ordination with all stakeholders should be very important for this sector. The capacity of the research institution is weak in terms of the manpower and allocated research budget.

Due to lack of the co-ordination among different institutions, the duplication of the programs is often experienced in the field level. The infrastructure support is weak. The marketing, product certification and trade facilitation support is not that strong. Thus, the horticulture sector needs vital support from governmental and nongovernmental organization for its development.

### **B. Horticultural Sector Organizations and horticultural programs**

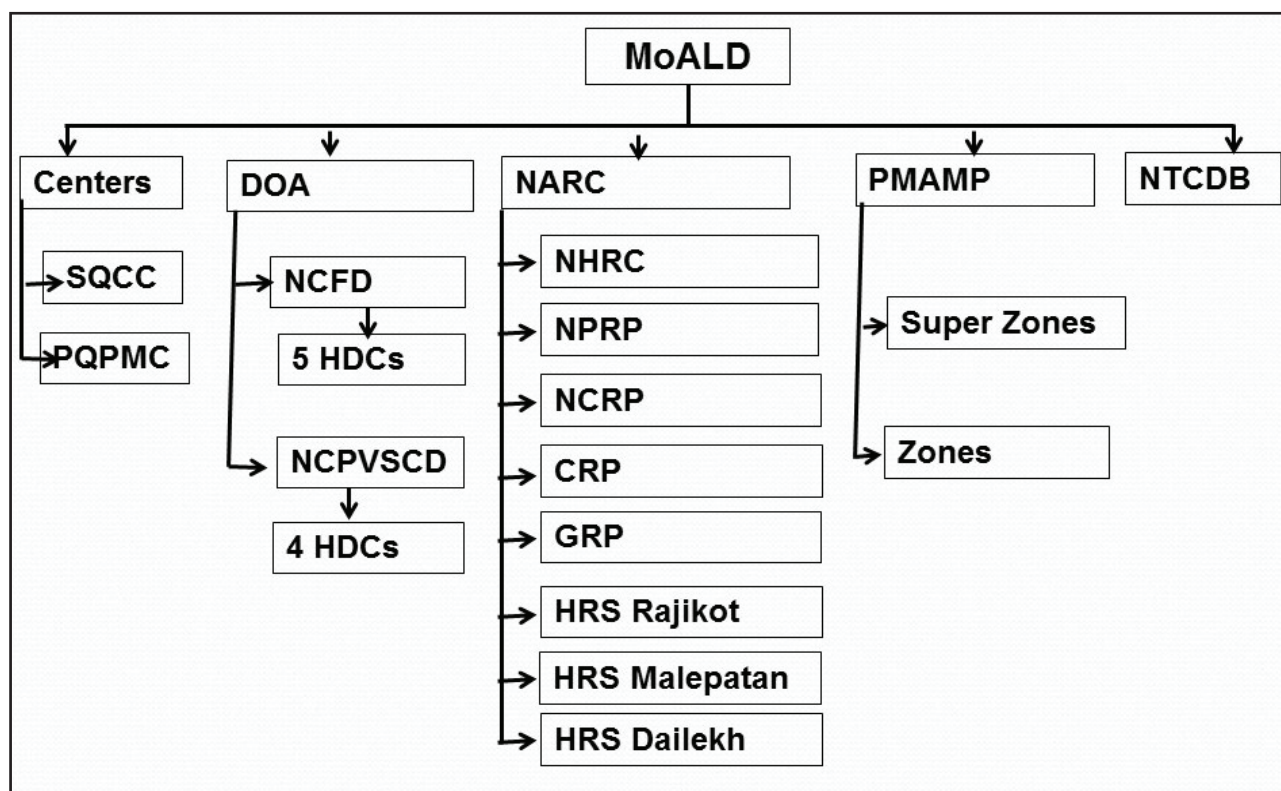
#### *1. Major institutions in the central level*

At the national (central) level, the sectoral ministry named as the Ministry of Agriculture and Livestock Development (MoALD) formulates policies and programs to implement decisions and directives of the central government. Horticultural education and academic research are carried out by the Institute of Agriculture and Animal Science (IAAS) under Tribhuvan University (TU), Agriculture and Forestry University (AFU) and some private agriculture colleges such as Himalayan College of Agricultural Sciences & Technology (HICAST), whereas, the National Horticulture Research Centre (NHRC) under Nepal Agricultural Research Council (NARC) is mandated for the core horticultural research. Similarly, the Department of Agriculture (DoA) is mainly involved in development and extension of the technologies generated by the research institutions and regulatory functions. The horticulture development centers under DoA are responsible for conservation of germplasms, producing and selling of planting materials as well as providing training to frontline technicians and farmers. The central ministry has been implementing the Prime Minister Agriculture Modernization Project (PMAMP) since 2017 for

development and commercialization of specific commodities such as citrus, coffee, apple, potato, vegetables, walnut by developing super zones, zones, blocks and pockets.

The National Centre for Fruit Development (NCFD) under the Department of Agriculture (DoA) is the central institution responsible for the overall development of fruits (Pomology) and flowers (Floriculture). There are five horticultural development centers (HDCs) under NCFD. They produce, maintain, and conserve quality fruit saplings of different fruit crops. Similarly, the National Centre for Potato, Vegetable and Spice Crops Development (NCPVSCD) under DoA is the central level institution responsible for the overall development of the vegetable sector in the country. Four horticultural farms under

NCPVSCD are dedicated to the development and extension of spices, vegetable seed, potato and urban vegetable cultivation technologies. Seed Quality Control Center (SQCC) regulates seeds and varietal registration process. It is recommended that the quality control of saplings, seedlings, and other planting materials of all the horticultural crops should also be done by the SQCC. Plant Quarantine and Pesticide Management Center (PQPMC) regulates the import of planting materials. There is a National Tea and Coffee Development Board (NTCDB) under MoALD which helps to promote and strengthen the tea and coffee sector through policy formulation, technical and managerial support for trade promotion of these commodities (Figure 1).



**Figure 1.** Central level organizations involved in research and development of horticulture sector

Note: MoALD: Ministry of Agriculture and Livestock Development; CRP: Coffee Research Program; DoA: Department of Agriculture; GRP: Ginger Research Program; HDC: Horticultural Development Centers; HRS: Horticultural Research Station; NARC: Nepal Agricultural

Research Council; NCFD: National Centre for Fruit Development; NCPVSCD: National Centre for Potato, Vegetable and Spice Crops Development; NCRP: National Citrus Research Program; NHRC: National Horticulture Research Center; NPRP: National Potato Research Program; NTCDB: National Tea and Coffee Development Board; PMAMP: Prime Minister

Agriculture Mechanization Program; PQPMC: Plant Quarantine and Pesticide Management Center; SQCC: Seed Quality Control Center.

2. Major institutions in provincial level

At the provincial level, one ministry in each province is responsible for agriculture sector which formulates policies, plans and provides guidelines for programs. The program implementation (such as resource centre development) and monitoring is done by respective Directorate of Agriculture Development (DoAD). The horticultural programs are implemented mostly by the district level agricultural offices and few programs by the horticulture development centres. There are 15 horticultural development centres (horticultural farms) in the provinces of which one in Kapilvastu is under development process. Gandaki province has converted one sericulture farm to Horticulture

Development Resource Centre. The vegetable seed production, nursery development and technical support, distribution of the saplings for orchard establishment, technical trainings, disease and pest management support, harvesting and primary processing support are the major programs at district level. Field level trainings are provided by the district level offices in coordination with central level and local level offices/technical staff. Provincial horticultural farms are responsible for seed and sapling production as well as field level demonstration. Tissue culture technology has been introduced for good quality sapling and tuber production. Provincial Agribusiness Promotion Support and Training Center also provide some technical trainings in coordination with commodity specific government resource/development centers and NARC as well as some commodity specific private firms (entrepreneurs).

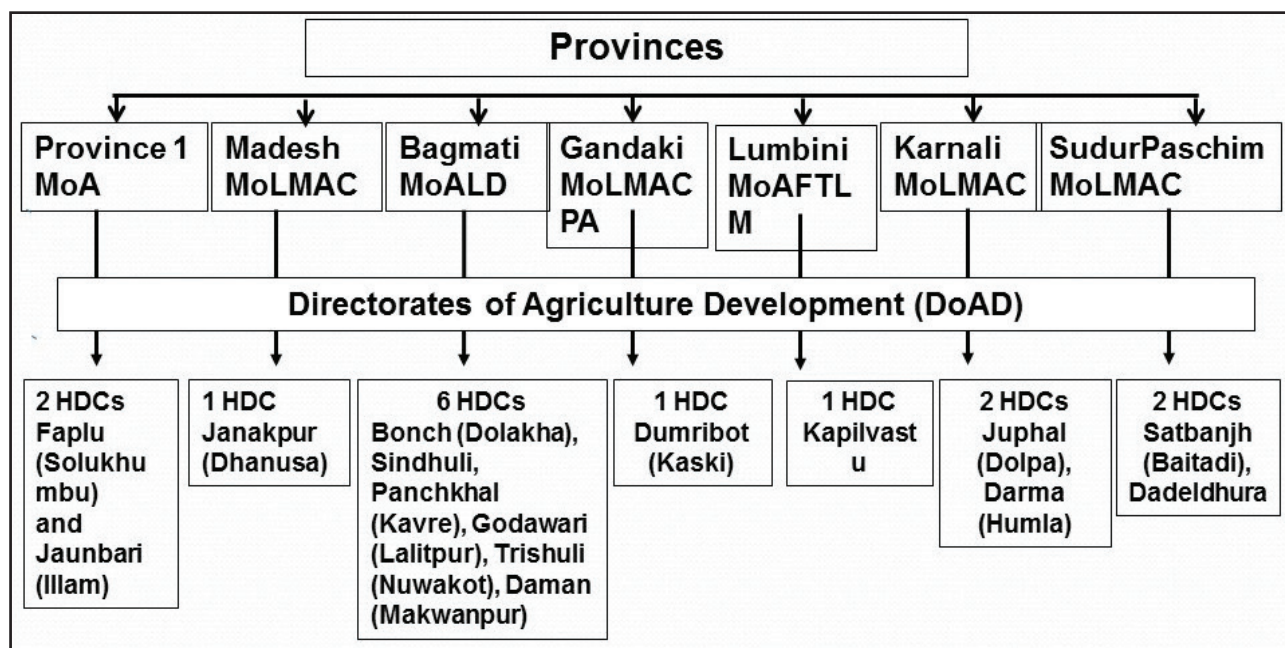


Figure 2. Provincial level organizations involved in development of horticulture sector.

Note: HDC: Horticulture Development Center; MoA: Ministry of Agriculture; MoAFTLM: Ministry of Agriculture, Food Technology and Land Management; MoALD: Ministry of Agriculture and Livestock Development; MoLMAC: Ministry of Land Management, Agriculture and Cooperatives; MoLMACPA: Ministry of Land Management, Agriculture, Cooperatives and

Poverty Alleviation.

At the local levels, agriculture development division (Metropolitan and Sub-metropolitan city) and agriculture development section (Municipality and Rural Municipality) carry out the technical functions. Local levels mostly distribute seeds, seedlings or saplings for area expansion purposes and help in other input supplies as well as technical guidance to the farmers.

The private sector (Labs, resource centers, input suppliers, traders, etc) are working for the seed/sapling production (multiplication), input supply, marketing, collection and storage of products.

### **C. Roles and programs of horticulture development organizations in federal set-up**

The constitution of Nepal 2015 and its amendment 2020 have assigned some exclusive rights to each tier of government as well as provided concurrent responsibilities (Law Commission, 2020). The functions of agriculture and livestock have been allocated to all three levels of governments with broader roles of extension assigned to provincial and local governments. Agriculture has been listed as one of the concurrent powers to be shared among all three tiers due to which there is considerable duplication and overlaps in agricultural related programs in general and in horticultural sector as well. Some of the major responsibilities are mentioned below.

#### **1. Central**

- Research and technology generation
- Special projects
- Quality control and regulation
- Capacity development of technicians, researchers and private sectors
- Specialized technical service to the farms and farmers
- Good quality resource materials production
- Special mission programs across the country
- Policy formulation, regulation, monitoring and evaluation
- Trade facilitation
- Regional market and other infrastructure development
- Financial access to the farmers
- Conditional grants to province

#### **2. Provincial**

- Resource centre development
- Good quality resource materials production
- Capacity development of technicians, farmers and private sector
- Expert technical service to farms and farmers
- Special mission programs within province
- Policy formulation and regulation
- Market and other infrastructure development
- Marketing system development

#### **3. Local**

- Resource materials distribution
- Demonstrations/exhibitions
- Technology delivery/ Agri-extension services to the farmers
- Small market and other small infrastructure development
- Farmers registration and record keeping

### **C. Existing coordination mechanism in the federal context**

For effective functional coordination among research, extension, and education (REE), National Agriculture Technical Working Group (NATWG) is working at the national level, Executive Director-Director General meeting is also working to make co-ordination among extension and research organizations. In many provinces Provincial Agriculture Technical Working Group (PATWG) is also working. Gandaki province has initiated a District Level Technical Working Group (DATWG) too to be functional soon. Similarly, currently the PMAMP program employs student interns from AFU at different field sites for six months. DoA in the current fiscal year has employed fresh BSc Ag graduates from University in AKCs and HDCs.

At program level, every year the central ministry sends conditional grants to provincial farms to

strengthen their capacity to produce planting materials and local levels to support nursery establishment and produce quality planting materials, fruit plantation as well for rejuvenation of older orchards. In FY 2020/21, a conditional budget was allocated to 230 local levels for 230 new nurseries establishment and to 102 local levels to upgrade existing nurseries which is continued in the current fiscal year as well. Similarly, fresh vegetable production programs, potato and spice crops (onion, zinger) promotion programs also have been provided with conditional grants to several local levels.

## Recommendation

- For good co-ordination and technical linkages among three-tiers of government organizations including research, extension and education, a directive document should be prepared, approved and implemented.
- Regular meetings, sharing workshops, capacity development events and joint programs can bring the stakeholders closer.
- The NATWG, PATWG and DATWG should be made functional and result oriented.
- Different horticultural forums like national and international workshops, seminars can improve co-ordination among the horticulturists.
- Students and specialist exchange programs among the institutions will also be helpful to enhance knowledge and technical expertise.
- Formulation and approval of horticulture-related acts, policies and regulations at all government tiers for sustainable increase in production and marketing of the horticultural commodities.

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