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Analysing the diversity of horticulture crops

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Abstract
The Himalayan region is unique in its wide range and provides a unique combination of life, habitats and ecosystems. When talking solely about plant variation, two regions of the country are regarded as hot zones. It is the western Ghats and the north-eastern hills. The species is the sole unit of diversity assessment among all living things. The richness and relative abundance of different species are another measurement criteria for the degree of variation. Another indication of the diversity of variations is the number of indigenous species. As mentioned before, horticulture science addresses needs and horticultural issues. The many horticultural crops in this area have mostly been managed by indigenous farmers, usually women. Regional horticultural species provide a diversity, including varying plant types, morphological and physiological characteristics, sensitivity to disease and pesticides, adaptability and distribution. It does, however, include many more. We frequently use terms like the environment or urban gardening as a second area which deals more specifically with environmental improvements.

Keywords: horticultural science, horticultural crops, fruits and vegetables, temperature, environmental horticulture

Introduction
The United Nations General Assembly declared 2010 as the International Year of Biodiversity (IYB 2010). People worldwide are striving to protect this unique natural resource which is vital to human well-being today and in the future. IYB 2010 focuses on the protection, preservation and sustainable use of biodiversity in order to fight biodiversity loss. This special issue is dedicated to bio-diversity horticulture in Food Composition and Analysis Journal (JFCA). A comprehensive charact-out of accession, as do existing crop biodiversity and PGRFA practices to manage the role of crop biodiversity in developing agro ecosystems and improve its usefulness in the development of superior crop types which contribute to better human nutrition and health must be included. A comprehensive accession characterization must be included.

We use often words such as environmental horticulture or urban horticulture to describe a second realm that tackles environmental improvements more explicitly. In this area, we educate our graduates more frequently to provide a service than to offer a consumable product, but the assumption that these activities have less economic value is not true. Environmental or urban horticultural projects support activities such as home gardening, landscaping (in this sense the lawn is considered a horticultural activity), arboriculture and plant decoration.

Today, horticultural systems need constantly to supply new crops and better varieties from the existing gene pool in order to improve food security and to provide rural and urban poor people with a balanced nutrition system, adapt to the radical climate change and maintain production systems on marginal soils. Plant development and nurturing are a part of horticulture to boost plants' growth, outputs, quality, nutritional value, and pesticide resistance. It also includes the protection of plants, the rehabilitation of soils, land and garden design and the construction and care of trees. Horticulture derives from the Latin words Hortus and culture, which mean "garden" and "culture," respectively. Horticulture does not include large-scale cultivation or livestock breeding as opposed to agriculture. Furthermore, little components with a large number of mixed crops are used for horticulture while one large primary crop is the focus of agriculture.

Horticulture is an intensely developed science and art of development, sustainable production, commercialization and usage of valuable foods and beautiful plants.

The plants include, among other things, annual and perennial plants, fruits and vegetables, interior decorative plants and landscape plants. Plants, crops and green areas support and enhance our lives by providing healthy food, improving the aesthetics and carbon footprint of our houses and communities. They are an important source of human dietary carbs, proteins, organic acids, vitamins and minerals. They are important. When people use seedlings for food or aesthetic purposes, there is always a post-harvest component which causes to loss. Their losses in quantities and qualities affect the harvesting and consumption of horticultural plants. In order to minimize losses, producers and managers need to understand the biological and environmental factors involved in the deterioration.

Horticultural crops are an essential component of the various agro-ecological conditions in the agricultural economy of the Himalayan area. The horticulture crops production per hectare is extremely high compared to other field crops. More than 100 species and 1000 cultivars in vegetables, fruits and decorative plants are covered. Asian nations (China, Japan, Taiwan, the Philippines and Malaysia) along with the greatest range of horticultural crops, constitute more than a half of the world's total output, for example citrus fruit, bananas, etc.

It is found at most latitudes of the globe with depictions from the temperate and Mediterranean areas (30–40o), subtropical regions (20–30o) and tropical regions (0–20o). Due to the nature of horticulture goods, long-distance shipping may need cooling and become costly. Consequently, most horticultural output is carried out close to population centres, and therefore urban development is also at danger. Horticultural production may vary in its own gardens from large companies, family farms, to individual plants. These plants are a key ingredient in a healthy diet. The human body gets from fruit and vegetables, amongst other things, water, carbohydrates, fibre, minerals, lipids, protein, organic acids, antioxidants pigments, and vitamins. Fiber and selected antioxidants, minerals, and vitamins are a rich source of particularly fruit and vegetables. Most fruits and vegetables are almost all year round available and taste well, as well as favorably textured, colored, tastefully and easily applied. You may be baked, fried or dried, fresh, hot or cold.

Horticultural crops remain alive after harvest and perform all the typical activities of living creatures. A respiratory metabolism is one of the most essential processes. Respiration indicates a complex catena of highly controlled and interacting metabolic activities spread across several cell compartments. Respiration not only results in oxidative decarboxylation of ATP but also supplies organic and amino acids for a number of synthetic cellular processes. These chemicals are important in green tissue for the maintenance of photosynthetic carbon assimilation. If fat or lipids are not utilized as substrates, different breathing stages often involve the transformation of carbohydrates into glucose and begin with the glycolytic disintegration into pyruvate in the cytoplasm. The second, catalyzed-enzyme route retains the internal high energy of carbohydrates in the biochemical energy-mediating molecule ATP (adenosine triphosphate) and NADH2 (reduced nicotinamide adenine dinucleotide). Mitochondria, a second cell compartment, houses two additional essential breathing processes, notably the tricarboxylic acid (TCA) cycle (also called cancer or citric acid cycle) and breathing electron transfer system. The TCA cycle is the location of synthesis and oxidation of citric acid, and involves malic acid production and degradation. The TCA cycle is, in general, an essential transition of different organic acids but also releases the metabolites NADH2 and FADH2 that are electron mediators. Moreover, CO2 is emitted in many stages of the TCA cycle.

Types of horticulture

In horticultural science, there are several main areas of emphasis:

Oleric farming: vegetable production.

Pomology, also called fruticulture: fruit and nut production.

Viticulture: raisin production (largely intended for winemaking).

Floriculture: flora and decorative plant production.

Turf management: the sport, leisure and convenience production and upkeep of turf grass.

Arboriculture: cultivation and maintenance, mainly for landscapes and amenities, of individual trees, shrubs, vines and other perennial woody plants.

Horticultural landscapes: selection, manufacturing and maintenance of plants used in landscape.

Physiology of post-harvesting: control of agricultural harvests to delay deterioration while being stored or transported.

Literature review

Mao A. A. and Hynniewta T. M. (2007) [11] Commercial crops such as rose, Anthurium, Lilium and gerbera are introduced in open and protected crops and grown on a commercial basis. Orchids are very popular and the northeast is famous for their variety. Of 17,000 orchid species worldwide, about 1,250 take place in India, with over 700 occurring in the north-eastern area, approximately 324 in the Meghalaya region alone. Aerides, Anachnantha, Arundina, Cymbidium, Dendrobium, Paphiopedilum, Phaius, Renanthera, Phycostyllus, and Vanda are often the native species of orchids with an ornamental values and commercial potential.

Asati B. S. and Yadav D. S. (2014) [12] One of the largest cultivated plant categories are vegetables composed of solanaceous, cucurbid, leguminous, leafy, cole, racine, rhizome and bulbous. Around 16,000 germs were gathered in the course of various crop specific and multicultural excursions, carried out by NBPGR alone or with other institutions, from 1986 until 1994-1995, from diverse crops, tuber, spices and condiments.

Mabberley D. J. (2012) [13] several solanaceous plants are located in the north-east area. At least 35 species of family solanaceae are predicted to exist in the area. Of these, 15-16 species are consumed as vegetables, especially in the tribal people. The tree tomatoes (*Cyphomandra betacea* (cav.), Solanum torvum Sw.), Solanum indicum, *Solanum macrocarpun* L., Solanum xanthocarpum, Solanum straminifolium Jacq. And S. gilo Raddi among these are

significant but lesser known edible species, among which there are a highly prized Khasi and Mizo tribe S. gilo vegetables. Malik S. K. Chaudhury R., Dhariwal O. P. and Kalia R. K. (2015) [14] In Manipur, Mizoram, Meghalaya, Nagaland, Tripura, and Arunachal Pradesh, Chilli (*Capsicum spp*.) is often cultivated in warm to humid climates. The chillies are accessible in this area such as *C. annum* L. var. avicular, *C. annum* L. var. grossum, *C. annum* L. var longum, *C. chinense*, *C. eximium*, *C. frutescens*, *C. minimum*, and *C. pubescens*. King Chilli is the world's most sumptuous chilli, originating from North-East India, especially in Nagaland (Guinness world record in September 2006), and is grown in the whole area. Cucurbits, one of the biggest crop groupings in all states in the area, is extensively planted. This area has 15 genera of this vegetable group, several of which are poorly recognized. Pandey G. (2006) [15] Northeastern India has a wide range of green indigenous vegetables, including Amaranth spp. Amananthus viridis, A. lividus, A. retroflexus and A. spinosus, puroi sag, sorrel, jilmil saag, and Kalmou sag (*IPOMEA reptans*).

Yadev R. K., Deka B. C. and Sanwal S. K. (2009) [16] as intended and/or related diversity, biodiversity in agroecosystems may be represented. Firstly, the variety that the farmer decides (e.g. crops) is integrated into the system and is based on management methods. All living creatures colonizing the agroecosystem based on its management and structure are part of the related diversity. Plant diversity is the basis of general diversity within these components. Spontaneous plant species are the main producer for creatures of various trophic levels, and part of the related variety is seen in agroecosystems. In recent years, the quest for greater profit in the short term has led to specialist agroecosystems that lead to a small number of farmed species and variations and to a reduction of time and space in the variety of farm environments. This is one of the major challenges to biodiversity conservation in the field of contemporary agriculture.

Research Methodology

Fruits

Banana and mango: Musa acuminata and *M. balbisiana* have maximum genetic diversity in the Himalayan area. *M. flaviflora* is located in Meghalaya and Manipur. Sikkim and Khasi Hills include additional species that require systematic collecting and protection. In Tripura, Manipur, Mizoram and South Assam several native Mangifera spp. are discovered. M. indica and related *M. sylvetica* are present in Arunachal Pradesh.

Temperate fruits: In Pyrus, Prunus, Rubus, and Ribes there are rich diversities. There are numerous species of Prunus on the Shillong plateau in Meghalaya's Khasi hills, such as *P. napalensis*, *P. Cerasoides* and *P. undulata*. *Pyrus pyrifolia* var. cubha makai (*P. serotina* red) is semi-tradeably grown in Meghalaya, Manipur and elsewhere. Wild kiwi (*Actinidia callosa* and *A. stragosa*) are seen flowering in the natural forest of Arunachal Pradesh and Sikkim.

Tropical and sub-tropical fruits: A lot of other tropical and subtropical fruits of the Garcinia, Artocarpus, Phyllanthus, Annona, Averrhoa, Persia, Aegle, *Passiflora* etc are found in the wilderness region. Jackfruit is an indigenous fruit that requires attention and that is cultivated extensively in Trypura, Assam and Meghalaya and has many types.

Analysis

Underutilized fruits: Some of the 300 edible plant species found in the Himalayan area are worth eating by different ethnic tribal groups. Two species of Elaegnus are known to be cultivated in the Himalayan area, E. latifolia and E. pyriformis. There are extremely common ones, such as Sibsagar Valley (Dikho), Naga Hills, Hills Khasi and Hills Jaintia. The region is extensive for Docynia indica and D. *hookeriana*. *Pyrus pashia* is also a tree found in the Himalayas (Table 1).

Table 1: Diversity of major crops in Himalayan region.

Crops	Estimated diversities	Diversities collected till 2000
Taros	300	272
Yams	230	200
Citrus	17 spp.+52 vars.	80
Banana	16 species	120
Orchids	700 species	15

Table 2: List of major fruit diversities in Himalayan region

Common Name	Species	No of cultivars in the region	No. of wild relatives (approx.)	Distribution
Tropical				
Mango	*Mangifera indica* L.	25	2	Tropical areas of Assam, Meghalaya, Mizoram, Tripura
Pineapple	*Ananas comosus* L.	7	-	Introduced and naturalized in the region. Jaldhup and Lakhat type pineapple found in Assam
Guava	*Psidium guajava* L.	7	1	Tropical and (upto subtropical 1000m) zone of Himalayan region
Banana	*Musa acuminata* Colla. *Musa balbisiana* Colla.	50 1	14 3	Throughout the tropical and subtropical zones of the country
Subtropical				
Lime, lemon & oranges	*Citrus spp.*	17 plus their 52 vars.	-	Lime and lemon in both tropical & subtropical while oranges in subtropical zone.
Strawberry	*Fragaria vesca* L.	3		Hills of Himalayan region
Apple	*Malas sylvestris* (L)	4	1	Arunachal and Pradesh introduced in Nagaland

Table 3: Large diversities in vegetable crops in Himalayan region.

Indigenous	Eggplant, lablab bean, cucumber, smooth gourd, ridge gourd, snake gourd, sweet gourd
Introduced	
Ancient	Garden pea, onion, bottle gourd, cowpea, okra etc.
Recent	Tomato, gtta, cauliflower, cabbage, French bean etc.

Vegetables

Tomato and chili: Around the 18th century tomatoes were introduced and the bulk of the introductions were elevated to suit the Himalayans. The Himalayan region has found germplasm of the wild tomato species of L. *pimpinellifolium*. Chiles are frequently grown in the warm to hot and humid environments of Manipur, Mizoram, Meghalaya, Nagaland, Tripura and Arunachal Pradesh (Table4). Due to the long history of agriculture, natural crossing and crop popularity, the vast genetic diversity, including the local races, has evolved. In hot chillies (fruit shape, height, colour and habitude, half-perennial, permanent and tender) the whole Himalayan region has a range of distinct features.

Table 4: Important species of chili and their characteristics.

Scientific Name	Common Name	Comments
C. annum L.	Sweet PSIIIM Aillia Hot pepper	Principal source of commercial dry gam
C. annum L. var. Ada.	Bird pepper	Wild type, said to be progenitor of bell pepper.
C. annum var. *gamma*	Sweet pepper	Fruit contains less capsaicin,
C. *frutescens frutescens* L.	Tobacco, pepper, Bird gala	Widely cultivated in dry regions of Himalayan region, highly pungent fruits used for sauce preparation.
C. minimum & Qat. Syn. *C. faarigiatlan* Nam=	Bird-eye-chili	Cultivated all across Himalayan region but at very limited scale, closely resembles *C. annum.*
C. pubeggig, Ruiz. And Psir.9,[1]4	Pepper	Introduced in Himalayan region for breeding purposes

Cucurbitaceous vegetables: These veggies consist of more than 15 types and are produced and eaten in the area (Table 5). Many of Cucurbit species, such as Cucurbit, Momordica, Luffa and many lesser-known cucurbitaceous plants, may be found in the Himalayan area.

Table 5: Diversities of cucurbits in Himalayan region Himalayan region.

Cultivates species	Area of concentration for diversities	Range of diversities
Cucurbita maxima	Throughout the country	Extensive
Cucurbita moschata	Hilly areas	Moderate
Cucumis sativus	Throughout the country	Wide
Cucumis callous	Foothill areas of Assam	Confined to limited pockets
Luffa cylindrica	Tropical and subtropical areas of Assam, Meghalaya, Manipur, West Bengal	Moderate
Momordica charantia.	Throughout the country	Moderate
Trichosanthus dioca.	Tropical areas of Assam, Tripura	Limited
Cylanthera pedata	Hills of Meghalaya, Manipur, Nagaland and Arunachal Pradesh	Moderate
Benincasa hispida	Assam, Nagaland, Meghalaya	Wide
Lagenaria siceraria	Throughout the country	Wide
Sechium edule	High hills of Meghalaya, Manipur, Mizoram, Nagaland, Sikkim and Darjeeling of West Bengal	Moderate

The differences in kitchen are numerous, with variances in fruit sizes, fruit skin, flesh colour thickness, sweetness etc. In natural environments, particularly in Meghalaya, at the foot of the Himalays and in the Himalayas, the wild species Cucumis hardwickii, the likely progenitor of cropped cucumbers. In tropical and sub-tropical conditions, C. sativus var. sativus is cultivated across the Himalayas. Among gourds, greatest diversity was observed in the Himalayan area for fruit gourds in form and size. The area of the Himalayas offers a great variety of genetic supplies of ridge gourds and sponge gourds (*L. cylindrica*). There are both little and big kinds of bitter gourds.

Crucifers: These are basically cruciferous plants, notably cauliflower, cold cakes, knolkhol, etc. brought by European merchants in this area from the days of the East Himalayan Region Company in the 14th-15th centuries. In the Himalayans, coli-flower is often found in Assam and Meghalaya.

Leguminous vegetables: In different areas of the region a broad diversity of French bean, cowpea and Himalayan is discovered (Table 6). In French beans, climbers or poles are popular among tribals, because they are utilised for mixing with maize, whose stem serves as support for the beans. V. vexillata is one of the most fascinating species of Vigna cultivated by the tribes of Tripura. It is a leguminous crop of cum tuber with a lot of culinary diversity. The Himalayas are also growing Sword Beans on a lesser scale from the Papilionaceae family (Canavalia ensiformis (L) DC) (CSIR, 1950). Winged beans are restricted to moist Himalayan subtropical regions.

Table 6: Diversities of vegetable legumes in Himalayan region.

Cultivates species	Diversities in cultivars	Wild related species
San- *Dolichos lablab*	12	42(21 idtathicatk 4, *D. kikag.*
French bean- *Phaseolus vulgcrris*	14	-
Sword *bean-cogyakgensitinnk*	02	Caravalia *iladiora*

Leafy vegetables: The main vegetables are lay vegetables (Brassica juncea), lafa (Malva *verticillata*) (Spinacea oleracea). A broad range of indigenous green vegetables are accessible as well. The puroi sag (*Basella rubra* and *B. alba*), the sorrel (*Rumex vesicarius*) etc. Jilmilsag (*Chenopodium album*) and Kalmou sag are also sometimes used indigenous leafy vegetables (*Ipomea reptans*). The major leaf kinds cultivated in the Himalayan area are *Amaranthus viridis*, *A. lividus*, *A. retroflexus* and *A. spinosus*.

Spices: The most significant vegetables are lay (Brassica juncea), lafa (Malva verticillata), palak (Spinacea oleracea).

A broad range of indigenous green vegetables are also accessible. The puroi sag (*Basella rubra*, *B. alba*), sorrele (*Rumex vesicarius*), and so forth. Jilmilsag (Chenopodium album) and Kalmou sag are also sometimes utilised indigenous leaf vegetables (*Ipomea reptans*). In the Himalayan area, prominent leafy kinds include *Amaranthus viridis*, *A. lividus*, *A. retroflexus* and *A. espinosus*.

Ornamental plants

The NEH area has attractive plants like Mannolian species, Rhododendron species, Cassia, Erythrina, Callistemon, Dacasenda, Myrica, Bauhinia, etc. About 600 kinds of orchids in this area are naturalised to a large extent. In Sikkim, Arunachal Pradesh, Meghalaya and Manipur a wide range of variability has been observed.

Medicinal and aromatic plants

The area is extensively accessible for medicinal plants known to use like *Rauvolfia serpentina*, Solanum khasianum, Dioscorea proceri, Coptis teeta. Tribals in NE states like as Arunachal Pradesh, Nagaland, Meghalaya and Mizoram have utilised orchids as medicinal agents.

Germplasm evaluation

It is essential for plant genetic resources to be assessed for productivity, including components, crop length, resilience to biotic and abiotic stress and quality of products, in order to enable efficient use of plant genetic resources.

Moresh, a delicious fruit of high pulp content, is planted in 2 years from the time of its ripening, and is free of stone weevil. Locally accessible plants such as Malus baccata are frequently utilized as an apple rootstock while *Pyrus pashia* is a popular pear rootstock. Elaegnus, E. latifolia and E. pyriformis are mixed fruits that are edible and used to make pleasant drinks. Docynia indica and D. *hookeriana* fruits are consumed fresh and greenish with red tinging in pickles as well as jelly.

Some of the kinds of brinjal have outstanding quality with big, tender flesh and fewer seeds. S. khasianum is a significant species of medicinal significance (solasodine content). Another S. torvum species is widely utilised in the Ayurvedic School of treatment. Three tomato varieties, Manileima, Manikhamnu and Manithoibi, were released and deemed appropriate for the rice-based agricultural system by the State Variety Release Committee, Manipur. L. *pimpinellifolium* is also an excellent source of late blight and tomato leaf curl virus resistance. In Chilli, the greatest capsaicin concentration in the world has been discovered in samples from Tezpur (Assam).

Aerides, Anachnantha, Arundina, Cymbidium, Dendrobium, Paphiopedillium, Phaius, Renanthera, *Psycho Stylus* and Vanda etc. generally belong to indigenous orchid species with aesthetic value or a commercial potential (Borthakur, 1992). The juice from Cymbidium giganteum cut leaves is utilised by Khasis for blood coating, while the Vanda flower juice is used for glaycoma treatment. There are wide-ranging medicinal and aromatic plants available for potential use of local germplasm to enhance plants for use in the horticulture sector.

Conservation of diversity

Constraints

- **Land tenure issues:** Land tenure regimes varies significantly across various states in the North-East and the rest of the Himalayan area. It is difficult to survey, demarcate and consolidate land due to the intricacy in property ownership and tenure rights. Cadastral survey and land delineation are thus totally missing in the north-eastern hills.
- **Gender and equity issues in natural resources and diversity management:** Unfair allocation of land resources leads to increased reliance on forests in some sectors of society that contribute to deterioration of variety. Resolving problems of gender and equality. The management of natural resources in Himalayan regions in other areas of the nation is similarly essential.
- **Inter-departmental coordination:** Interdepartmental cooperation is important for sustainable horticulture resources management in the area.
- **International border timber smuggling:** Illegal cross-border cutting of trees and wood was the main source of horticulture and forestry damage at borders.
- **Shifting cultivation:** The unregulated change of culture of the indigenous tribals was a significant danger to the sustainable management of variety, especially in unclassified and communal forests of the area.

Prospects

Although not many organizations operate specifically for diversity conservation in the Himalayas area alone, the actions of numerous organizations including NGOs, government ministries and scientific institutions have direct or indirect consequences for the preservation of variety. The Ministry of Agriculture and Cooperation is the nodal agency for the supervision of the country's horticultural development. The Horticulture Division was built out of the Crop Division in 1981 and a post was set up in 1985 as a Horticulture Commissioner. The Department of Horticulture is responsible for overviewing nationally the whole development of horticulture. Three boards, the National Horticulture Board, the Gurgaon Board, the Cocomb Board of Development, the National Bee Board, the Gurgaon Boards, the Cashew and Cocoa, the Kochi Board, the Arecanut and Spices boards, the Calicut Board, are sponsored. They are also supported by three boards. The division also comprises the national plastic culture application Committee, which has 17 plasticulture intervention facilities.

Coconut Development Board (CDB): It was formed in 1981 after the dissolution of the previous Coconut Development Directorate, which was founded in 1966, by the Himalayan government. Its goal is to promote cocoa-producing, processing, marketing and product diversity in the nationwide integrated cocoa sector growth. The purpose of the Board is to: adopt measures for the cocoon industry to grow; propose actions to enhance cocoon marketing and its products. The Board's function is to provide technical assistance to individuals engaged in cocoa production in cultivation and industry.

National Horticulture Board (NHB): In 1984, under the Societies Registration Act 1860, with its Headquarters in Gurgaon, Haryana, the Himalayan government set up the National Horticultural Board as an autonomous society with a mandate to promote an integrated horticultural development and help to coordinate, stimulate and promote the production and development of fruit, veg and other horticulture products.

Directorate of Arecanut and Spices Development (DASD): With effect from 1 April 1966 the Himalayan government established a Cocoa Development, Arecanut & Spices Directorate in the city of Kerala and became one of the subordinate departments of the Ministry of Agriculture (Department of Agriculture & Cooperation). The Board's purpose is to establish adequate national spice, medicinal and aromatic plants development strategies. These programmes are implemented by the Governments of state and regional research laboratories, Agricultural Universities, ICAR Institutes and CSIR, and are overseen by the Directorate. The Directorate also collects and publishes data on spices and arcanut fields, production, price trends, spice and imports, as well as the maintenance of ties with the government and central research and development organizations.

Directorate of Cashewnut and Cocoa Development (DCCD): The Cashewnut Development Directorate was established as the subsidiary agency for Cashewnut development in the country by the Union Minister of Agriculture on 1 April 1966. The development of cocoa was transferred to the Directorate in 1998. The Development Directorates for Cashewnut and Cocoa are responsible to design and coordinate the development plans and programmes for Cashewnut and Cacao. The Directorate maintains strong connections with government and other government institutions in the process of development.

National Bee Board (NBB): In 1993, the Ministry of Agriculture set up a BDB with the presidency of the A&C to speed up the growth of apiculture in the country. In July 2000, with the dissolution of the Beekeeping Development Board, the National Bee Board with its headquarters in Gurgaon was established. The Secretary (Agriculture & Cooperation) is the Chair of the Board and the Board Member is the Horticultural Commissioner.

Conclusion

The National Mission for Horticulture was just started in May 2005. During the XI plan era the scheme should be continued. At both central and state level, NHM must be technically stronger. A wide range of regional horticultural species is available, including plant type differences, morphological and physiological features, disease and pest responses, adaptation and distribution in the Himalayan area. In addition to the nutritional value, many regional horticulture crops are utilized in rural regions for medical reasons, revenue generation and poverty alleviation initiatives.

The conservation and development of the Himalayan horticulture challenges relate to land tenure difficulties, gender and equity problems, interdepartmental cooperation, international borders, shifting crops, cross-border intergovernmental boundaries, insurgency issues etc. NBPGR, ICAR, BSI and many universities have been established in the Himalayas and have had significant effects on collecting, evaluating, conserving and using regional germplasm for the creation of horticulture cultivars in the Himalayas.

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