

# Education, Research and Policy Issues in Indian Himalayan Mountain Farming System: Priorities for Sustainable Development

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**Abstract:** The Indian Himalayan Mountain farming system has been undergoing certain transformations under the influence of market forces, climatic variability, as well as changes in lifestyles and food habits. Present agricultural policies have largely ignored the vital resource base of mountain farming system such as traditional agro-biodiversity and it has serious implications for agricultural sustainability and food security. Agricultural education, extension and scientific experimental paradigms in the region have often ignored local and indigenous agricultural knowledge and focused on a massive push towards technologies with ever-increasing dependence on external resources. Breaking this vicious cycle requires robust institutions, fair policies and adequate incentives to upgrade the quality of livelihoods, and appropriate research-based technology and innovations to revive traditional farming systems in the region. This paper highlight the status, major problems/issues/challenges, role and contribution of agricultural educational universities and R&D institutions located in the region and also suggest appropriate measures to bring desirable changes in the agricultural education imparted in universities/colleges, policy, research and development, land use and breeding approaches for achieving food security and agricultural sustainability

**Keywords:** Mountain farming system, Agricultural sustainability, Food security, Policy, Indian Himalayan Mountain

## 1. Introduction

Poor scientific and educational understanding of mountain agriculture, policy ignorance, socio-economic and environmental changes seriously impedes the identification of sustainable agricultural development solutions for the Indian Himalayan Region. The importance of mountain agriculture as a key component of natural resource management has been well recognized and holds the key to food security and sustainable development. The traditional farming system thus contributes significantly to the food and nutrition security, livelihoods, social security and well-being of the farming communities. Recently, mountain farming has been undergoing certain transformations under the influence of market forces, climatic variability, as well as changes in lifestyles and food habits. The Village institutions in the mountain are also deteriorating, which is in turn adversely affecting economic and ecological security as well as the region's traditional agro-biodiversity. But, so far, no emphasis has been given at all to improve the yield potential of the mountain crops along with other integrated components of mountain farming system i.e. pastureland, agro-forestry, horticulture and animal husbandry. Present agricultural policies have largely ignored the vital resource base of mountain agricultural crops. And, agricultural education, research and extension has largely concentrated on few major crops such as wheat, rice, maize, sugarcane, potatoes, etc. for increasing their production through technology input particularly in irrigated conditions have often ignored local and indigenous agricultural knowledge. Some of the changing conditions that farmers are facing include the challenges of declining crop yields, weed infestation, crop damage by wild life, climate change impact, loss of crop diversity, soil erosion, hydrological imbalances, and social disintegration. These drivers of change have raised questions about the sustainability of the agriculture, limiting the options available to the farming communities and driving farmers-particularly male household members-to migrate to urban centers to seek off-farm jobs. Breaking this vicious cycle requires robust institutions, fair policies and adequate incentives to upgrade the quality of livelihoods, and appropriate research-based technology and innovations to revive traditional farming systems. There is a strong need to bring desirable changes in the agricultural education imparted in universities/colleges, policy, research and development, land use and breeding approaches. The present paper describe general characteristics of mountain Himalayan agriculture, current state of ecological, social and policy impacts and implications on agriculture and priorities for sustainable development, conservation and management of mountain agro-ecosystems which is rich in agro-biodiversity.

## 2. Brief overview of Indian Himalayan region

The Indian Himalayan region (IHR), with a width of 250-300 km (21°57' N to 37°5' N), stretches for over 2,500 km (72°40' to 97°25' E) from Jammu & Kashmir in the west to Arunachal Pradesh in the east. This region is not only the youngest mountain system in the world but is also one of the most prominent among them. Almost the entire Himalayan belt largely influence the climate of the sub-continent, but also as a provider of life giving water to the Indo-Gangetic plain, the food bowl of India. They also

harbour a rich variety of flora and fauna, interspersed with human communities and their accompanying cultural diversity. In India, the Himalayas spread over 12 states. The region constitutes about 12.7% of India's total geographical area (0.42 million km<sup>2</sup>) and is home to almost 4 % of its human population (48.5 million). Because of the vast variation in latitude, longitude and elevation, the Himalaya is home to a huge diversity of climatic conditions, flora and fauna. The NE Himalayan region is one of the 12 biodiversity hot spots in the world, with extremely high plant biodiversity. As opposed to the plain areas of the country, where Agriculture is the major land use (55.8%), followed by Forests (20.6%) and Wastelands (20.2%), The Indian Himalaya supports more area under forest cover (52%), followed by Wastelands (23.2%) and Agriculture (12.4%). However, the ever increasing population and the accompanying demand for land for agriculture and developmental purposes are placing tremendous pressure on the natural resources.

The hills/mountains areas of IHR neglected by regional disparities by policy-planners and scientific community particularly those were assigned the responsibility for the development of this region in the past. It has negatively impacted per capita income and social imbalance. There are several reasons for the relative neglect of the IHR and these have greatly hampered the understanding of the dynamics of changes in agriculture, socio-ecological, economic, cultural environment and natural resources management in developing sound scientific data base for sustainable development.

### 3. Brief account of Indian Himalayan agriculture

Settled agriculture on terraced slopes is practiced in western Himalaya where as shifting agriculture (slash and burn) agriculture locally known as jhum is the feature of north-eastern Himalaya and both are predominantly rainfed. Despite limited agricultural land in the IHR, which is less than 14% of the total geographical area of the region, agriculture still remains the core economic activity for nearly 70 % of the rural people of the Himalaya. The huge diversity is maintained through variety of crop composition, crop rotation and sequential sowing and harvesting methods which is the traditional method of maximizing use of limited land resources, escaping absolute crop failure during insect-pest attack and in uncertain environmental condition, and ensuring nutritional security at household level. As has already been debated lot in the past, traditional agriculture in the Himalaya losing sustainability due to degradation of natural resources and changed socio-economic and policy environment (Maikhuri et al., 2001, Palni et al., 1998, Sundriyal et al., 2014 and Maikhuri, et al., 2016). Land abandonment and erosion of agrobiodiversity and abandonment of agricultural lands are the main concern of agriculture in western Himalaya () while shortening of jhum cycle and consequent degradation of land is the key concern in eastern Himalaya (). Green revolution technologies generally failed to make impacts on mountain agriculture partly because of topographical constraints and partly due to traditional socio-cultural systems to accept change immediately. Drudgery and low yield in the absence of technological intervention render mountain agriculture less attractive for local people under changing socio-economic scenario in present times. Though, of late, recognition of the immense conservation and economic value traditional food crops of Himalaya, various efforts are being made to redevelop jhum in north-east (Ramakrishnan, 1992) and terraced agriculture in western Himalaya (Maikhuri, et al., 1996).

### 4. Current scenario of higher education in Indian Himalayan agricultural universities/R&D institutions

Though, till today we still lack the detail review highlighting the role, status, problems/issues and contribution of agricultural educational universities and R&D institutions those are located in the IHR. All the agricultural universities and institutions have different organizational set-up, curricula, linkages with other components of the agricultural sector, and outreach programmes/activities supported by state and central governments. Besides the general problem of shortage of funds and trained manpower, most of these institutions suffer from the various other problems in IHR states (Box. 1). Despite the fact that the agricultural economies with fair share of population still dependent on agriculture, agricultural education has not received the priority it deserves. The most of the agricultural teaching faculties in most of the Himalayan agriculture university are relatively new, having little field and experimental experience started only within the past one decade or so, and are still learning ways to integrate teaching, research, and extension activities together. In spite of the increasing number of agricultural teaching institutions/colleges and diversification and inclusion of new subjects, agricultural education is not a much preferred subject particularly in mountains /Himalayan region if other alternatives/ opportunities are made available. In Himalaya region, where opportunities for economic expansion are even more limited, it is difficult to strongly support that Himalayan agriculture universities should focus on mountain relevant subjects only, as the opportunities to absorb the candidates having skills in mountain agriculture may be very poor. As a result of the institutional problems and shortcomings, and especially as a result of their isolation from field based practical farming, the faculty and students feel quite demoralized since their academic and research activities are not entirely relevant to local conditions, and they do not have the deep understanding and confidence of the agricultural systems and socio-cultural set up of the farming community. There is also a strong choice for agriculture where irrigation facilities available rather than working in rainfed areas. These are some general comments useful to agricultural education in situation like mountain areas. This grim situation needs to be rectified urgently, revise curricula drastically to bring them in line with the prevalent farming systems and entrusting responsibility for participatory action research and outreach activities. Above all, the agricultural educational institutions need to develop close linkages with the farmers and devote maximum efforts for improving the net incomes and livelihood of farmer's along with conservation of natural resources of the region. In Himachal Pradesh (western Himalaya), the Y.S. Parmar University of Forestry and Horticulture is the only one its kind that focuses significantly on mountain agriculture and its integrated components. There are a few other universities in the other Himalayan states of India those partly run relevant courses as per the needs of the region as well as other general courses related to agriculture and other subjects. While there is some research focused on diverse agricultural systems, the extent to which the overall curriculum addresses the needs of IHR is not very apparent. This is most probably less of an issue for the universities and more for general policy-planners, as the gap-between available jobs and the number of university graduates/post graduates in all the major subject area is increasing rapidly. The Indian Himalayan states have agricultural research institutes/stations to solve the emerging problems and develop improved regional/location specific production technologies. There is considerable diversity in the organizational patterns of Indian Council of Agricultural Research (ICAR) institutions in different states, but they do have some common characteristics. Most of the research institutions working

under ICAR, Ministry of Agriculture, Govt. of India devote much of their efforts on field crops, especially cereals- wheat, maize, rice, and, in some cases, potatoes and other vegetables, etc. (Box 1).

The research is still limited mainly to develop higher yielding varieties and to insect- pest management problems. In case of Uttarakhand state little efforts have been made by the government R&D intuitions and Universities to undertake research on mountain crops particularly traditional crops. Besides, research on animal husbandry, rangeland management, horticulture and agro-forestry, those are considered to be a strong components for integrated farming systems of the Himalayan mountains, is not given much attention in the research programme by these institutions working on agriculture and related subjects. Most of the agricultural education, extension and research efforts are limited to yield production of few crops mainly grown in irrigated land, while research on farm tools, sustainable use of the natural resources, soil fertility maintenance programme, understanding of traditional ecological knowledge and socio-economic aspects is almost lacking or neglected. One of the main problems in the Himalayan region is total ignorance or neglect in post-harvest, semi-processing and processing and marketing of the agro-produce. As a result of this, the net income of the farmers is quite low even if the crop yield is high as a result of using external inputs and improved production technology. On the other hand, in Himalayan mountain women play an important role in the household economy, especially in livestock management, harvest and post-harvest management of most of the field crops, production and processing of agro-horticultural crops, fuel, fodder collection from forests and several other aspects of agricultural production. In spite of this, very little attention is given to empower and develop their skill in different aspects of agriculture and research so as to solve the gender-specific problems. The structures of agronomic practices and forestry research and development in G.B. Pant Agriculture University, Pantnagar (Uttarakhand) are well developed for the plains/Terai region but very little orientation for the hills, despite the fact that the majority of the geographical area of Uttarakhand, Central Himalaya (88-90%) is mountainous.

However, one can find regional research institutions/stations established in IHR, and majority of their work under the ICAR systems but still their outreach impact to the remotest hilly/mountainous regions are limited. On the other hand, G.B. Pant National Institute of Himalayan Ecology (GBPNIHE) is one among the few organizations in the IHR involved in testing, developing, upgrading, validating and demonstrating appropriate rural technologies through action and participatory research. The top-down approach of pushing new technologies, often drawn from their success in lowlands, without transfer of adequate knowledge and building capacities of local communities has, by and large failed to achieve the desired objectives in the past. Learning lessons from the past experiences, mountains specificities, such as diversity in livelihood strategies, economic marginalization, isolation, difficult topography, cultural diversity and ecological fragility, were taken into account in identifying appropriate technologies. In addition, a technology was considered simple and appropriate when there were no socio-cultural-economic-policy barriers to its adoption. Institutionalized R&D in Himalayan region particularly in Uttarakhand and many other Himalayan states are still in better stage. Structurally, it has been designed to meet the great diversity of hill areas, but its problems lie in limited resource allocation, lack of manpower and infrastructure, and the lack of priorities for the agricultural development needs of the hill region. In general, the educational systems and facilities for developing human resources, which are especially designed for hill/mountain agriculture, do not exist at present.

### **5. Priority areas for future: Need improvement in higher education and research in mountain agricultural universities/R&D Institutions**

The suffering of mountain farming communities is gradually increasing and their standard of living is declining because they have been neglected at both policy and practice levels by government. Despite the fact that IHR is a predominantly mountainous region, it has no clear cut mountain specific development plan and policies. However, it is not that there have not been initiatives for mountain development but largely either it was not implemented properly or overlooked/ignored by the implementers ( ).

Farming in Indian Himalayan Mountains is definitely in transition and therefore new research methods for farmer-participatory systems research and extension need to be developed and adopted (Maikhuri et.al,2016,). The quality of both extension and research systems has deteriorated over a period of time in which older roles are being replaced by new, researcher- farmer-responsive initiatives has decline to the large extent. Now mountain universities can make a significant contribution in this area through the development of action research programmes which may initiate study on a broader range of institutional options for the development of technology, farmer to farmer education/research and development, research- farm field-extension policies and farmer-researcher/scientist collaborations. Such initiatives will have much relevance to bring positive changes in mountain farming systems and farming communities (Box-2). The past experiences revealed that recently we have lost some of the important linkages in scientific research and education and between science and practice which were very much present in older systems.

Now there is a need to produce graduates/masters and researchers with high scientific knowledge and skills. The education programme we intend to develop will emerge out of on-going research and institutional linkages which will focus firmly on problems and issues related to mountain farming in Indian Himalayan region. There is a need to contribute to the training of a new generation of agricultural graduates/masters and researchers, who will have competence in natural science and social science perspectives, interdisciplinary ability to analyze and synthesize, a grasp of learning processes and communication, negotiation and facilitation skills.

In order to do this, we shall seek to create an environment which utilizes our existing human resources to the full, fosters practical learning methods in hill/mountains farming in relevant contexts, and involves farmers and other mountain resource users in the process. The approaches and methods for harnessing the potential of natural resources which have been popularized recently in some Indian mountain states have direct application in strengthening the learning environment in several mountain agricultural universities. These approaches and methods include: participatory methodologies, management of risk and uncertainty, systems analysis, gender analysis, political and historical analysis and stakeholder analysis. The educational links and exchanges in mountain universities/institutions need to be wide and varied. Not only universities, but also the private sector, non-government agencies and rural community-based groups may be more appropriate partners in many circumstances than the more traditional links with research stations and government agencies. There is a strong need to support and pursue the structuring of education as a learning



system by a) working with course teams in which individuals from different disciplines work together on developing course concepts and the teaching and learning materials to be used and (b) student work groups that involve not only working together to solve a problem but also learning about the group process itself. In the structuring of education as a means of developing the variety of competencies and interest necessary to solve problems related to mountain farming, there is a need for i) practitioners, that include farmers, development professionals and members of village communities, need to be invited into the university setting to act as educators and co-researchers, ii) discipline scientists and students study and learn about mountain farming together with members of farming/village communities, iii) Scientists and educators from other institutions/departments are invited to join in learning networks focused on shared problems and interests (Box 2).

## 6. Major policy issues responsible for weakening Himalayan Mountain farming system

Despite numerous plans and policies, the performance of the mountain/hill agricultural sector is still dwindling. Excessive focus on plain-lands of more 'viable' farmland sizes and a lack of research, technological development and policy planning on mountain agriculture has further marginalized mountain farmers. For example, the promotion of high-yielding crop varieties requires irrigation and fertilizer inputs, which has an extremely limited scope in mountain farming. On the other hand, technological and market links have remained poor and insufficient for agriculture to modernize. The major focus has been on a limited number of crops that are responsive to a high level of external inputs. The policies that predominate support large-scale farming; they are neither ecologically suited nor economically viable for the subsistence farming systems practiced in the mountains. This has resulted in slow growth in the production of food grains, leading to the weakening of marginal hill farmers' food security and economic base. Due to these policies, traditional agriculture, with its diverse crops and cropping patterns, is under great threat in this region. Therefore, to place hill agriculture on a sustainable path in the future, agricultural policies and planning institutions need to be more responsive to the specific needs of the Himalayan environment and its natural resources. There is a need to adopt a holistic approach to improve the livelihoods of smallholders. It should comprise the simultaneous development of the agricultural and horticultural sectors along with forest, pasture and rangeland management, as well as the cultivation and preservation of medicinal plants, as all these sectors form an integral part of smallholders' livelihoods in the Himalayan region. With regards to smallholders' farming systems, some areas of immediate concern in this sector are as follows:

**6.1. Low investment in research and extension on traditional mountain crops: *Research bias:*** Despite the importance of mountain agro-biodiversity in the 'biodiversity-rich' Himalayan region, mountain food crops have been historically neglected in both agricultural policies and research and development. Agricultural development research and policy has instead largely concentrated on only a handful of crops, such as wheat, rice, maize or sugarcane (Maikhuri, et al.). As a result, traditional crops have been deprived of the development of improved varieties and increases in productivity, leaving them economically less competitive, and farmers increasingly replace such crops with hybrid rice, wheat, and maize, eroding agro-biodiversity. The potential of traditional crop varieties to adapt to climate variability/change cannot be ignored and requires further research, so as to benefit the Himalayan smallholders who have been traditionally using them in some remote and isolated pockets(). Furthermore, traditional crop varieties are also well adapted to the mountain environment and can provide optimum yields with low inputs.

**6.2. Land use policies:** Large holdings, especially those devoted to the production of hybrid and fruit crops, have been promoted through incentives and subsidies. The much-required emphasis on the promotion of traditional crops in the marginal farmlands has largely been ignored, leading to a reduction in crop diversity and food security levels. Concerns regarding the Himalayan region's huge agro-biodiversity, historically maintained by family farmers, need to be addressed through land use policies which priorities the ubiquitous hilly areas over the scarce plains.

**6.3. Subsidies on food import and credit policies:** The government has developed a mechanism to import food and subsidize it at low prices through a public distribution system (PDF) to household below poverty line (BPL), which has not only led to change in the dietary habits of hill people but also led them to abandon agriculture and traditional crop varieties which are nutritionally better and more diverse.

**6.4. Forest and wildlife conservation policies:** Recently, many parts of the Himalayan region have been facing a prevalence of wild animals (such as monkeys, wild boars, bears, elephants, porcupines etc.) which can damage crops to a great extent. The Wildlife (Protection) Act (1972), the Forest (Conservation) Act (1986) and local beliefs restrict farmers from killing such animals that are directly harming their crop yields. Although there are policies to provide compensation for damage to livestock and human life by leopards and elephants, there is only minimal provision for compensating damage to crops by monkeys, wild boars, nilgai and other animals (Watershed Management Directorate 2010). Moreover, the procedure for obtaining compensation is very cumbersome. This leads farmers to reduce cropping intensity or abandon crop fields altogether. Therefore, crop insurance and proper compensation packages for crops damaged by wildlife should be ensured in agricultural policy for the region. Crop insurance should also cover damage due to adverse weather conditions such as drought, hailstorms and pest attacks, among others.

**6.5. Subsidies on agricultural inputs:** The cost of inputs such as chemical fertilizers, water, pesticides and seeds has been reduced to a large extent to promote exotic and high-yielding varieties of crops—particularly in irrigated lands—at the expense of traditional hill agriculture, which boasts a huge variety of local crops that could have benefited instead from such subsidies (Box 3).

## 7. Way forward

The agricultural educational institutions in the Himalayan region need to have diversified mandates, strong inter-sectoral, inter-disciplinary linkages and mechanism for multidisciplinary team of scientists and extension workers to work on the issues with regular feedback from the farmers. Therefore, emphasis on agricultural development calls for capable manpower with broader training, skill and good knowledge. In most of the IHR universities, agricultural education is dominated by classroom teaching/concepts and lack of field experimentation to large extent. The curriculum needs to be developed keeping the mountain perspectives in view and should not be duplicated from the syllabus of agriculture training institutions/universities in plain areas rather it should be mountain specific and need based. The agriculture -learning process must reflect a concern for, and commitment to the pursuit of agricultural development. Learner-centered approaches based on collective learning; need to focus on critical

assessment of problems, options and responses. Such action-oriented approaches are more challenging than traditional chalk-and-talk methods, and for this adequate training and capacity-building support are required. In other words, this implies much higher levels of investment in quality training, as well as restructuring of agricultural educational approaches and improvement in quality. There is need to revise the goals and scope of the agriculture education, and reorient them in the perspective of the sustainable future: this calls for a 'paradigm shift'. The agricultural development/programme to be designed in accordance with the state/national policy while keeping in view the changing regional/local priorities so as to **achieve the UN Sustainable Development Goals-2 (SDGs-2) – End hunger, achieve food security, improved nutrition and promote sustainable agriculture.**

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#### Box - 1

##### Current scenario of agricultural education, research and extension in Indian Himalayan Universities

- The curricula are copied almost entirely from the older agriculture universities, and are mainly designed/ modified based on the concept of irrigated agriculture in the plains. No sincere efforts have been made to orient these curricula for the specific needs of the IHR.
- Very little emphasis is given in the curricula to livestock, forestry, and range management, as these are important activities in the mountain farming systems. Most farmers operate integrated crop-livestock farming systems, including horticulture, but the curricula lack training in farming systems' aspects, especially in socio-economic aspects.
- Universities/Colleges established recently have no expertise in agriculture at the senior management level and have no land for experimentation/demonstration purposes etc.
- Mountain specificities & integrated natural resources management aspects are major concern for the growth of mountain agriculture but has not been given due emphasis in curricula.
- Educational institutions often confine themselves to on-campus teaching and report/thesis-oriented academic research. However, the linkages between universities, research institutes, extension organization, and the public sector development system are often quite weak.
- In most cases, there is very little interaction of the teaching institutions with the farmer, and this has serious adverse consequences for the quality, relevance, and usefulness of the knowledge imparted for agricultural development in the region.
- Majority of the educational institutions do not maintain their own outreach programmes – the farmers rarely visit the institutions and the faculty and students do not undertake research on farmers' problems, in-side the university or in farmers fields.
- Very little funds are provided to the agricultural colleges and universities for research and outreach. As a result, both these activities are virtually non-existent in the many institutions.
- Very little attention is given to training/skill development of women in different aspects of agricultural development and research on gender specific problems who are main nurtures, conservers and managers of mountain agriculture.
- Total neglect of post harvest processing and marketing of the products by most of the research institutions/universities.

#### Box-2

##### Priority areas for improvement in higher education and research in mountain agricultural universities/R&D institutions

Mountain agriculture is in transition phase across the IHR and is suffering from various problems. Strong commitment motivation and dedication is needed to overcome the problems.

- Redesign agricultural education curricula in universities/colleges and research institutions for sustainable mountain agriculture with agro-eco-regional focus.
- Need for better integration of field action research and participatory approaches into agricultural education and research.
- Need to establish cooperation/collaboration and coordination with R&D institutions, universities and private sectors.
- Capacity building and skill development of students including farming communities in simple agro-technology/climate resilient technologies.
- Develop interest and curiosity among the students towards agriculture right from primary and secondary level.
- Strengthen inter-disciplinary and multi-disciplinary approaches in mountain agricultural developmental programmes and make efforts to foster quality practical education/ research to improve crop yield production, etc.
- Develop mechanism for developing and promoting professional mountains specific agriculture courses, provide incentives such as fellowship/internships to graduate/ master students/researchers who develop their skills on participatory action research on diverse aspect of mountain agriculture.
- There is a need to bring in good faculty in universities/colleges for **teaching** and conducting quality research.
- Promote applied and stakeholders demand driven agricultural-education/research to ensure higher crop production and better job opportunities for the students/researchers.
- Inculcate action and participatory field research temperament/interest among graduate/ master students/towards mountain agriculture.
- Motivate and encourage students and q) organize short courses on mountain farming and detail historical perspectives of traditional crops and their use values etc., b) Promote local students who have an understanding of local agriculture and farming communities and c) strengthen on- going education/research in universities of the region and create forums for students in agricultural research.

#### Box - 3

##### Strategic action points for policy-planning for the sustainable development of mountain farming in the IHR

- Develop decentralized approaches for the mobilization and strengthening of formal and informal decision-making institutional mechanisms.
- Redefine research and development (R&D) priorities in agricultural universities/colleges and institutions with mountain perspectives.
- Develop strong linkages between R&D institutions, agricultural universities/NGOs and the private sector.
- Improve integration of cross-sectoral linkages and interdependences between different policies.
- Replicate success stories and identify lessons from failures.

- Transfer appropriate hill/mountain -specific agro-technology to user groups.
- Address human resource development issues in policies.
- Properly implement extension and support services systems.
- Ensure conservation of traditional agro-biodiversity and associated traditional knowledge.
- Improve effectiveness of existing agricultural institutions, their arrangements and capabilities.
- Promote organic cultivation, emphasizing traditional mountain crops and value addition.