

TEEBAGRIFOOD INDIA UTTARAKHAND

Background of the State

Most of the area of the state Uttarakhand is under forests and wastelands, leaving only a small amount of land *i.e.* 0.741 M ha (about 14%)¹ for cultivation out of the total reported area of 5.672 M ha.

Out of the total cultivable land, a large area, about 89% , are small and sub marginal farms. The total number of land holdings are 0.9 million out of which 71.0% are marginal farmers (land holdings below 1.00 hectare), 18% small farmers (land holdings between 1.00-2.00 hectare) 11 farmers hold land above 2 hectare. The average size of land holding in the state is 0.95 hectares as against the National Average of 1.57 hectares.

The state is combination of hilly and plain area. The soil of *plain area* can support number of crops. However over the years, indiscriminate use of chemicals and overexploitation of groundwater has made the soil of this region less fertile and raises sustainability concerns. The hill region is prone to constant soil erosion due to steep slopes making it less and less fertile. The agriculture scenario in the state presents a mixed picture. Productivity of district Udham Singh Nagar, Haridwar, Nainital (plain) and Dehradun (plain) is very high, on the other hand; productivity of the hilly area is low, although the valleys are fertile. While productivity in plains can be compared with agriculturally developed regions of the country, productivity in hill lags far behind².

Uttarakhand- Key Facts

1. **Population:** Population of Uttarakhand about 10 million. 0.7% of the total population of the country.
2. **Terrain:** Out of a total geographical area of 5.35 million ha in the state, 4.6 million ha (86%) is hilly area, and 0.74 million ha (14%) is plain area.
3. **Major Crops of the state:**
Wheat: 0.33 million hectares, Sugarcane: 0.10 million hectares

Source: Agricultural Statistics At A Glance 2019³

¹ https://agriculture.uk.gov.in/files/Land_Use_2009-10.pdf

² https://agriculture.uk.gov.in/files/Districtwise_Final_Estimate_of_Area,_Production_and_Avg.pdf

³ <https://eands.dacnet.nic.in/PDF/At%20a%20Glance%202019%20Eng.pdf>

STAKEHOLDER MAPPING

The following document identifies 24 stakeholders from the government, research, government affiliated, not for profit and private sector as important stakeholders who could be involved in the project implementation and dissemination, as the project evolves. These stakeholders were identified using a combination of methods, discussion with state nodal officer as well as online desk review of literature at government websites and state reports. The list of stakeholders presented here however is not exclusive. In particular in the context of the scope of work of the TEEB AgriFood project which is organic farming and agroforestry, the list identifies some key players who are involved in this area in the state of Uttarakhand. With some of these players, connections have already been established and with some the connections can be developed over the course of the project implementation.

Government Stakeholders

1. Directorate of Agriculture, UTTARAKHAND

At the state level, the Department of Agriculture, Cooperation & Farmers Welfare, Government of Uttarakhand is the nodal agency for management of agrifood sector in the state. It implements state level schemes as well as central government schemes in close coordination with the central ministry.

The department is headed by the Secretary. The TEEB AgriFood project has organized at least 2 meetings with representatives from this division. In addition, the TEEB office has also connected with Joint Director who is the nodal officer from the Government for the project.

Nodal Person:

- Mr. Harbaans Singh Chug, Secretary, Department Agriculture & Farmer's Welfare, Government Of Uttarakhand
- Mr. A.K. Upadhayay, Joint Director, Organic, Uttarakhand

The Directorate is also responsible for maps and release of state level policies in the agriculture sector. Some relevant publications on the website are as follows:

- [Soil Fertility Maps](#) : Last published for 2014-16
- [Uttarakhand Agriculture policy](#) -Published 2018 (Proposed Draft)
- [Sub mission on Agriculture Mechanization](#) - Published 2018 (Proposed Draft)

2. Department of Forest

The forest Department in Uttarakhand is responsible for managing forests and biodiversity in the state. The administration of the division is managed by the Principal Chief Conservator of Forest & HoFF, Uttarakhand They maintain :

1. FMIS: Forest Management Information System⁴
2. Bhuvan: Indian Geo-Platform of ISRO⁵

They also maintain an online retail website which serves as a marketing platform for organic products from Uttarakhand⁶. It is a forest centric livelihood linked project funded by the Government of Japan. The project is implemented in 850 villages across 8 hill districts of the state.

Key Research Stakeholder

3. Govind Ballabh Pant University Of Agriculture And Technology, Uttarakhand

This University is the first agricultural university of the country and has its root in India- US collaboration. This university has been selected as the implementing partner in the state on nomination by the Directorate of Agriculture.

After independence, development of the rural sector was considered the primary concern of the Government of India. In 1949, with the appointment of the Radhakrishnan University Education Commission, imparting of agricultural education through the setting up of rural universities became the focal point. Later, in 1954 an Indo-American team was constituted that arrived at the idea of establishing a Rural University on the land-grant pattern of USA. As a consequence a contract between the Government of India, the Technical Cooperation Mission and some land-grant universities of USA, was signed to promote agricultural education in the country. The task of assisting Uttar Pradesh in establishing an agricultural university was assigned to the University of Illinois which signed a contract in 1959 to establish an agricultural University in the State. Thus, in 1960, the first agricultural university of India, UP Agricultural University, came into being by an Act of legislation, UP Act XI-V of 1958. In 1972 University was rechristened as Govind Ballabh Pant University of Agriculture and Technology keeping in view the contributions of Pt. Govind Ballabh Pant, the then Chief Minister of UP.

⁴ <https://forest.uk.gov.in/fmis>

⁵ https://bhuvan-app1.nrsc.gov.in/uk_forest/

⁶ <https://havepure.in/?SID=cq13f0d7kd5setv07qbl4tdbk6>
<https://havepure.in/?SID=cq13f0d7kd5setv07qbl4tdbk6>

The university with eight faculties together with 14 research centers on campus that offer venues for technology generation besides eight off-campus research centers and nine Krishi Vigyan Kendras (science centres) is spread over nine districts.

TEEB has established connection with the following nodal person who was nominated by the Government of Uttarakhand.

Nodal Person:

Director Extension Education - Prof. Anil Kumar Sharma

Other important government and government affiliated stakeholders

4. Directorate of Economics and Statistics, Government of Uttarkhand

Directorate of Economics and Statistics functions as the Statistical Authority and as the Nodal agency for collection, compilation, analysis, interpretation and dissemination of statistical information relating to all sectors of the economy of the state. The main function of the Directorate is to build up a firm and broad database, which is essential for the formulation of sound policies and planning.

Department of Economics and Statistics in Uttarakhand has present strength of about 200 spread over 13 districts units, two divisional units and a head office. However, ADO Statistics are posted in various development blocks. District Statistics and Economics officer heads each of the district unit and divisional offices are headed by Deputy Directors while Directorate is headed by Director Economics and Statistics.

Nodal Person: Connection to be established as the TEEB Project progresses.

5. CAMPA Governing body of Uttarakhand

CAMPA Act or **Compensatory Afforestation Fund Act** is an Indian legislation that seeks to provide an appropriate institutional mechanism, both at the Centre and in each State and Union Territory, to ensure expeditious utilization in efficient and transparent manner of amounts released in lieu of forest land diverted for non-forest purpose which would mitigate impact of diversion of such forest land.

In 2002, the Supreme Court of India observed that collected funds for afforestation were underutilized by the states and it ordered for centrally pooling of funds under Compensatory Afforestation Fund. The court had set up the National Compensatory Afforestation Fund Management and Planning Authority (National CAMPA) to manage the Fund. In 2009, states also had set up State CAMPAs that receive 10% of funds form National CAMPA to use for afforestation and forest conservation.

It might be useful to involve some members of the state CAMPA advisory body during the dissemination workshop of the project. The UK CAMPA body involves the following:

- Chief Minister, Government of Uttarakhand Chairperson
- Minister of Forests and Environment, Government of Uttarakhand Member
- Chief Secretary, Government of Uttarakhand Member
- Principal Secretaries of the Departments dealing with Environment, Finance, Planning, Rural Development, Revenue, Agriculture, Tribal Development, Panchayati Raj, Science and Technology Member
- Principal Chief Conservator of Forests (HoFF)-Member
- Principal Secretary, Forest and Environment, Government of Uttarakhand Member
- Chief Wildlife Warden Member
- Principal Secretary, In-charge of the Forest Department-Member Secretary

Nodal Person:

Connection to be established as the TEEB Project progresses.

6. Uttarakhand Krishi Utpadan Mandi Parishad

Uttarakhand Krishi Utpadan Mandi Parishad (UKUMP) is the nodal agency responsible for agricultural marketing in the state. UKUMP has created state-wide network for marketing of agricultural produce with 25 Principal Market Yards, 31 Sub Market Yards and 27 Weekly Markets. To ensure marketing of horticulture produce, 18 separate marketing yards have been established in the state. Under RKVY, 3 Farmer Consumer Markets have been setup in Dehradun viz Majri Grant in Doiwala Block, Danda Lakhond and Nanurkhera in Raipur Block. Government of Uttarakhand has established a separate Uttarakhand Horticulture Marketing Board to assist farmers of the state in Marketing of horticulture produce.

Nodal Person: Connection to be established as the TEEB Project progresses⁷.

7. Uttarakhand Organic Commodity Board

Uttarakhand organic commodity board (UOCB) functions as the nodal agency for organics in the state. The board is a resource center for trained manpower in different aspects for organic agriculture. UOCB is presently working as a service provider for different departments for the promotion of organic agriculture.

Nodal person: Connection to be established as the TEEB Project progresses⁸

⁷ <http://www1.ukmandi.co.in/?tm=1&subid4=1626260799.0043536984>

⁸ <http://organic.uocb.org/team/>

8. Uttarakhand State Organic Certification Agency

The state set up the Uttarakhand state organic certification agency which is an initiative to provide quality control through certification locally thereby bringing down cost. Farmer's federations & producer groups: sizable efforts have been put to develop and strengthen the rural institutions of the organic farmers. It is visualized that in the future the rural institutions play a large role in market interface, brand visibility as well implementation of different regimes required for organics.

USOCA is the First National Government Agency of India accredited by NAB (National Accreditation Body, Min. Of Commerce, Govt of India) as per National programme for organic production (NPOP) and issue certification for the National and international market based on council regulation and Swiss organic farming ordinance for unprocessed plant products originating in India). It aims to

- To provide affordable organic inspection and certification service
- Commitment for improving soil, plant, animal, human and environment health.
- To promote respect for local culture
- General awareness creation for organic certification

Nodal person: Connection to be established as the TEEB Project progresses⁹

9. Department of Woman Empowerment & Child Development, Uttarakhand

Given that most farmers in the state are women and women as guardians of household food security play an important role in food decisions. It will be very important to include this department in the dissemination workshops.

Nodal person: Connection to be established as the TEEB Project progresses¹⁰

10. Department of Medical Health and Family Welfare, Uttarakhand

The department is committed is committed to improve the health status and quality of life of its people, by focusing on health issues with the objective of reducing disease burden, creating an enabling environment, influencing direct and indirect health determinants such as nutrition, water, sanitation and other factors like education and employment in the state. The Government intends to reach the replacement level of fertility, population stability with due attention to disadvantaged sections, inaccessible and remote areas.

Given that the project has human capital in the socio- economic component of the project scope, it will be useful to connect with a suitable official from this division.

⁹ https://www.usoca.org/our_team.htm

¹⁰ <https://wecd.uk.gov.in/>

Nodal person: Connection to be established as the TEEB Project progresses¹¹

11. Uttarakhand Water Department

Locally called Uttarakhand Jal Sansthan was constituted under Section 18 of the Principal Act having jurisdiction throughout the state of Uttarakhand by amalgamation of "Garhwal Jal Sansthan" and "Kumaun Jal Sansthan" in 2002. It extends to the whole of Uttarakhand excluding cantonment areas.

Functions of Jal Sansthan :-

- To plan, promote and execute schemes and operate an efficient system of water supply.
- Where feasible, to plan, promote and execute schemes and operate, sewerage, sewage, treatment and disposal and treatment of trade effluents.
- To manage all its affairs so as to provide the people of the area within its jurisdiction with wholesome water where feasible, efficient sewerage service.
- To take such measure, as may be necessary, to ensure water supply in times of any emergency.

Nodal person: Connection to be established as the TEEB Project progresses¹²

12. Department of Twenty Points, Twenty Point Program

This department was set up for implementation of the twenty point programme in Uttarakhand. Famers, poverty and income are key aspects of the programme, therefore it will be useful to include research officers or joint director form this division during the dissemination workshop.

Under the point 3 on farmers, the point includes elements such "Watershed development", "Marketing and infrastructural support to farmers", "Irritation facilities (including minor and micro irrigation) for agriculture", "Credit to farmers", and "Distribution of Waste Land to the Landless". The theme here is that availability of water for agriculture through watershed development, minor and micro irrigation projects will improve living standard of farmers. They will also be supported through credit, marketing and infrastructural assistance. Distribution of wasteland to the landless will also be monitored.

Nodal person: Connection to be established as the TEEB Project progresses¹³

13. Department of Food & Civil Supplies, Uttarakhand

The mission of the department of Food & Civil Supplies is to ensure supply of food grains (Rice & Wheat) and other commodities (Sugar & Kerosene) to the consumer in a transparent

¹¹ <http://health.uk.gov.in>

¹² <https://ujs.uk.gov.in/>

¹³ Nodal person: Connection to be established as the TEEB Project progresses

manner under the Public Distribution System and other Government schemes at fair price. The Department implements:

- National Food Security Scheme-NFSA (AAY+ PHH)
- State Food Scheme (SFY)
- Mid day Mea

Nodal person: Connection to be established as the TEEB Project progresses¹⁴

14. ICAR-Indian Institute of Soil and Water Conservation (ICAR-IISWC), Dehradun , Uttarakhand

The center was established in 1974 with Headquarters at Dehradun by combining Soil and Water Conservation Research, Demonstration and Training Centres which were established in 1950's at Dehradun, Kota, Bellary, Udhagamandalam, Vasad, Agra and Chandigarh. These centres were initially established by the Govt. of India and transferred to the Indian Council of Agricultural Research (ICAR) in 1967. Subsequently two new Research Centres were added to the CSWCRTI, one at Datia in M.P. (18th September, 1986) to tackle soil and water conservation problems of Bundelkhand region and another at Koraput in Orissa (31st January, 1992) to address the problems of shifting cultivation areas.

From 1974 onward, the Institute pioneered in operationalizing the watershed concept through four Operational Research Projects at Sukhomajri (Haryana), Nada (Chandigarh), Fakot (Tehri-Garhwal in Uttarakhand), and G.R. Halli (Chitradurga, Karnataka). After realizing tremendous tangible and intangible benefits from these watersheds, the ICAR developed 47 model watersheds in sixteen states in collaboration with State Agricultural Universities and State Departments. Encouraged with the success of the model watersheds, the Ministry of Agriculture conceived of a massive National Watershed Development Programme for Rainfed Areas (NWDPPRA) for conservation and sustainable development in 29 states during 1991. Subsequently, the focus of watershed development programmes shifted towards community participation besides biophysical aspects to achieve sustainability in production systems. Success of the watershed management programmes also attracted many international agencies like World Bank, ICIMOD, EEC, DANIDA, KfW Germany, SIDA and Swiss Development Corporation for collaboration and funding support. The research and training experience of the Institutes and its Research Centres is being utilized by the Ministries of Agriculture, Rural Development, Environment & Forests, and various Central and State departments in their developmental programmes. Its mandate is as follows:

- Research for management of land degradation in a primary production systems and rehabilitation of degraded lands in different agro-ecological regions of the country.
- Co-ordinate research network for developing location-specific technologies in the area of soil and water conservation.

¹⁴ <https://fcs.uk.gov.in/contactus>

- Centre for training in research methodologies and updated technology in soil and water conservation and watershed management.

It has completed research projects in the following areas¹⁵:

- Water Erosion Appraisal in Different Agro-Ecological Regions,
- Conservation Measures for Sustainable Production Systems
- Hydrological Behaviour of Watersheds for Conservation Planning
- Rehabilitation of Areas affected by Mass Erosion,
- Participatory Integrated Watershed Management,
- Socio-Economic Analysis and Policy Development for Watershed Management,
- Human Resource Development and Technology Transfer

Nodal person: Connection to be established as the TEEB Project progresses¹⁶

Relevant Universities

15. University of Horticulture & Forestry, Garhwal

Horticulture and forestry are the two major sectors that hold enormous potential for sustainable growth. With a view to develop these sectors through scientific interventions, the State Government established Uttarakhand University of Horticulture & Forestry (UUHF) by an Act of State Legislative Assembly with Head Quarter at Bharsar, Pauri Garhwal.

Keeping the need of sustainability of hill agriculture in view, the college was initially established as hill campus of G. B. Pant University of Agriculture & Technology on the directives of Planning Commission of India with subsequent signing of MOU between Govt. of India and Govt. of Uttar Pradesh in 1972 and was formally inaugurated in 1976. In 2011, the college came in the jurisdiction of newly created Uttarakhand University of Horticulture and Forestry, Bharsar, Pauri Garhwal, now the name of university is changed as Veer Chandra Singh Garhwali Uttarakhand University of Horticulture and Forestry, Bharsar, Pauri Garhwal. The college operates with the following mandate :

- Development of human resource for forestry, agro-forestry, hill agriculture and allied sectors.
- Development of location specific forestry/ agro-forestry models, and farming systems for hill agriculture.
- Conservation and utilization of natural resources.
- Processing and value addition of non-timber forest produce.
- Developing watershed management models for hill region.
- Mitigation of farmer-wild life conflict.

¹⁵ http://www.cswcrtiweb.org/index1.html?Research_Achievements.html

¹⁶ <http://www.cswcrtiweb.org/Index.html>

- Capacity building for entrepreneurship/self-employment.
- Dissemination of technologies for the benefit of hill farmers, forest tribes, nomades etc.

Nodal person: Connection to be established as the TEEB Project progresses¹⁷¹⁸

(It will be useful to establish connection with the College of Forestry of this University. College of Forestry (CoF) is situated at Ranichauri in Tehri Garhwal District.

16. Hemvati Nandan Bahuguna Garhwal University

The University, situated in the Garhwal region of Uttarakhand. It has jurisdiction over seven districts of Garhwal region of Uttarakhand. Its vision is to achieve excellence by empowering all stakeholders through promotion of innovations in the field of higher education by imparting training and education, and encouraging research for the development of the country with specific attention to the mountain region.

The University has a college of Forestry. Researchers from the college publish on agroforestry¹⁹. It might be good to connect with these researchers as the results from the project come for knowledge exchange and comments.

Nodal person: Connection to be established as the TEEB Project progresses²⁰

17. Forest Research Institute, Dehradun

The officers with specialization in forest management of Indian civil service are periodically trained at this institute. Forest Research Institute (FRI), began as a Forest School established in 1878. Initially named as Imperial Forest Research Institute, FRI came into being in 1906. Later renamed as Forest Research Institute and Colleges, with a number of centres located at different places all over the country administering research as well as training of Forest Officers and Forest Rangers. After reorganization of Forestry Research in the country and creation of Indian Council of Forestry Research and Education (ICFRE) in 1988, the training and research centres were given an independent status of institutes. Forest Research Institute, now one of the institutes under ICFRE, was conferred the status of Deemed University in December 1991 on the recommendations of the UGC, Ministry of Human Resource Development, Government of India. The objective of the institute is to:

- Impart education in such branches of forestry and environment as it may deem fit.

¹⁷ <https://www.uuhf.ac.in/contact-us/>

¹⁸ <https://www.uuhf.ac.in/academics/college-of-forestry-ranichauri/>

¹⁹ https://www.researchgate.net/publication/313367035_Existing_agroforestry_system_and_its_component_in_Tehri_district_of_Garhwal_Himalaya

²⁰ <https://www.hnbgua.ac.in/home>

- Provide for research and for the advancement of and dissemination of knowledge in the forestry and environment. The disciplines pursued in the Institute are Silviculture, Resource Survey and Management, Social forestry, Minor forest produce, Ecology and conservation, Genetics and tree propagation, Forest protection, Forest Botany, Forest products and Forest Operations. The thrust areas are bio-diversity, tree improvement & quality seed production, non-wood forest products, social forestry & wasteland afforestation, design development of modern forestry tools, etc.
- Create consciousness about forest and environment among the people through extension programs.
- Do all such other acts and things as may be necessary or desirable to further the safeguarding of environment and protection of forest & wildlife.

18. Indian Council of Forestry Research and Education, Uttarakhand

This is key research organization of the Ministry of Environment, Forest and Climate Change. It was made, 'Centre of Excellence for Land Degradation' in the UNCCD COP 14, announced by the Prime Minister during the COP. Presently, ICFRE with its Headquarters at Dehradun is an apex body in the national forestry research system that promotes and undertakes need based forestry research extension

The journey of ICFRE can be traced back to the establishment of the Forest School in Dehradun in 1878. It was in 1906 subsequently that the Imperial Forest Research Institute was founded by Government of India for taking forward forestry research in the country. In 1986 the Indian Council of Forestry Research and Education or ICFRE was formed as an umbrella organisation for taking care of forestry research, education and extension needs of the country. In 1991, the ICFRE was declared an autonomous body under the then Ministry of Environment and Forests and registered as a Society under the Societies Registration Act, 1860.

The Council has a pan India presence with its 9 Regional Research Institutes and 5 Centers in different bio-geographical regions of the country. Each Institute has a history of its own and under the umbrella of ICFRE are directing and managing research, extension and education in forestry sector in the states under their jurisdiction. The regional research Institutes are located in different states of India.

The institute operates with the mission to generate, advance and disseminate scientific knowledge and technologies for ecological security, improved productivity, livelihoods enhancement and sustainable use of forest resources through forestry research and education. The following objectives of the institute are relevant for the TEEB India Project:

- To undertake, aid, promote and coordinate forestry research, education and extension leading to scientific and sustainable management of forest resources in the country.
- To align forestry research programs in the council with national priorities including achievement of Sustainable Development Goals and combating climate change.
- To provide scientific advice and policy support to the central and state governments aiding informed decision making in forestry matters of national importance and international commitments.
- To act as a repository of scientific knowledge related to forestry, environment and climate change, and disseminate such knowledge to various stakeholders.
- To provide technical assistance and support to states, forest- based industries, tree growers, farmers and others for forest protection, afforestation, agro- forestry and allied activities
- To promote forestry education in the country and facilitate universities in improving quality through technical and financial support including development of uniform curriculum
- To support and advice Government on technical aspects of international conventions and treaties.

Nodal person: Connection to be established as the TEEB Project progresses²¹

Other important stakeholders

19. National Seed Cooperation (NSC) – Lucknow Branch

National Seeds Corporation Ltd. (NSC) is a Schedule 'B'-Miniratna Category-I level Public Sector company wholly owned by Government of India under the administrative control of Department of Agriculture Cooperation & Farmer's Welfare, Ministry of Agriculture and Farmers Welfare. NSC was established in 1963 to undertake production of foundation and certified seeds. At present, it is undertaking production of certified seeds of nearly 600 varieties of 60 crops consisting of cereals, pulses, oilseeds, fiber, fodder, green manure and vegetables, in its farms and through its registered seed growers. There are about 8 Farms and 12500 registered seed growers all over the country who are undertaking the seed production programmes in different agro-climatic conditions through the NSC.

Nodal person: Connection to be established as the TEEB Project progresses²²

20. Uttarakhand Livestock Development Board

²¹ <https://icfre.gov.in/contact>

²² Sh. Mukesh Kumar Jat

Address : Lakshh Plaza, 4th Floor, INS-19, Sec.7-C, Vrindavan Yojna, Amar Shaheed Path, Lucknow- 226029,
<https://www.indiaseeds.com/regional-area-offices.html>

The board is an autonomous body with the Principal Secretary, Forest & Rural Development as the Chairperson, ex-officio; members from various fields both within and outside the government and the Chief Executive Officer as the Member Secretary. The Board has the rights, powers, privileges and responsibilities provided for from time to time by the law of India.

The purpose of this board is to promote breeding and development of cows and buffaloes both of indigenous and exotic breeds along with those of economic importance by the introduction, promotion and adoption of appropriate technologies for improving their production, and to arrange, organize and undertake all activities, viably, relating to and necessary for improving livestock production and productivity.

Its mission is to adopt, introduce, integrate, promote, manage, organize and undertake all activities viably for the genetic improvement and subsequent increase in productivity of cattle & buffaloes in the state.

Nodal person: Connection to be established as the TEEB Project progresses²³

21. SUVIDHA (Not for Profit Organization in the area of Organic Farming)- Uttarakhand

SUVIDHA abbreviated as Society for the Upliftment of Villagers & Development of Himalayan Areas is a non-profit, rural development and voluntary organization founded in the year 2004

Suvidha delivers solutions in the field of agriculture, rural development, women empowerment, education and health.

Suvidhas' pioneering research on the hazards of chemical farming, the costs of industrial agriculture and the risks of genetic engineering have led to a paradigm shift. This research has proved that contrary to the dominant assumptions, ecological agriculture is highly productive and is the only lasting solution to hunger and poverty.

SUVIDHA is engaged in the promoting of organic and sustainable agriculture in India especially in the states like Uttarakhand, Madhya Pradesh, Jammu & Kashmir, Odisha, Andaman & Nicobar, Delhi, Uttar Pradesh, Maharashtra and Chhattisgarh. SUVIDHA has facilitated establishment of nearly 256 producer groups and contract production projects in some of the above mentioned states. The following areas of work will be relevant for the project:

- On and Off Farm Input Management
- Internal and External Audits
- Soil Health Management
- Access to High Quality Training Material
- Demonstrations
- Certification of Conversion of Land

²³ <http://www.uldb.org/general-information.php>

- Supply Chain Management
- Value Chain Development
- Identification and clarification of emission-reduction responsibilities for a facility
- Calculation of carbon footprint
- Recommendations regarding greenhouse gases and CO2 emissions reductions
- Recommend sources for 'carbon credits'

Nodal person: Connection to be established as the TEEB Project progresses²⁴

22. SARG Vikas Samiti, Uttarakhand

SARG Vikas Samiti, Uttarakhand is a non-profit organization promoting Organic and Biodynamic Agriculture Systems in India. SARG is based in Uttarakhand and operates out of Dehradun, Nainital, Akola and Hoshangabad. SARG started out as a small but quality based training centre in Manohar Biodynamic Farms in Nainital. SARG has been active in the state of Uttarakhand, Uttar Pradesh, Maharashtra, Mizoram, Madhya Pradesh, Punjab and Andhra Pradesh. Founder of SARG played an important role in the development of the Organic Agriculture policy of the new state of Uttarakhand which was later adopted by many states including government of India. SARG Maharashtra actively demonstrated the "DHULE PATTERN" of organic farming in Maharashtra which has been steadily progressing over the years.

SARG has developed unique methods of user-friendly methodologies and package of practices for the adoption of the Organic and biodynamic for small and large farmers. These methodologies and practices are available in different regional languages. SARG supports different farmers across the board to convert from conventional into organic/Biodynamic. Presently SARG guides more than 50,000 farmers in the Country.

SARG has played a crucial role in the policy formation of Organic Agriculture in the state of Uttarakhand since 2000. The state of Uttarakhand under the able stewardship of Dr RS Tolia (Chief Secretary 2005) took the concept to the Mountain states of India. Consequently a national policy for Organic Agriculture in the country, specifically for the mountain states was announced. The organization has pursued Organic Agriculture in different states, especially Maharashtra, where the organization plays a pivotal role in the systematic implementation of organic agriculture related programmes. In Uttarakhand the organization is involved in public events like Haats, farmer's trainings, capacity building activities of different user groups etc.

They have initiated a Thoor. Budhwarya (Thour) is primarily an organic vegetable market where the different organic farmers from in and around Dehradun come and sell their vegetables every Wednesday. Budhwarya community is a proactive group of environmentally

²⁴ <http://www.suvidha-india.org/contact.php>

conscious people who converge every week to not only shop but also meet to discuss a number of current issues.

Nodal person: Connection to be established as the TEEB Project progresses²⁵

23. Shri Ram Solvent Extractions Pvt. Ltd. Uttarakhand

This company is a leading supplier of Biofertilizers in Uttarakhand. Connecting with them and sharing research results with them will be useful to see gaps, challenges and opportunities for organic farming in the state.

Nodal person: Connection to be established as the TEEB Project progresses²⁶

24. Uttarakhand Seed & Tarai Development Coop.

It was established in 1969 by GB Pant University of Agriculture and Technology University, Government of India and Farmers of tarai area. Later, restructured as U.P. Seeds and Tarai Development Corporation Ltd. in 1978. As a result of division of state of Uttar Pradesh this was named as Uttaranchal Seeds and Tarai Development Corporation Ltd. (UAS & TDC) on 27.12.2003. Now owing to change in state name(i.e. serperation of Uttarakhand and Uttar Pradesh) the Corporation was changed as Uttarakhand Seeds and Tarai Development Corporation Ltd. (UKS & TDC) in 2009. It now operates across the state-20,000 hectares seed production area. The mission of UKS & TDC is to act as an effective instrument in accelerating the farm production, productivity per unit and thus, improve the socio-economic status of the rural areas. The Corporation endeavours to:

- Make available quality seed, timely and in adequate quantity at reasonable and economical price in its marketing territories, through Public, Cooperative and Private network of distributors and dealers.
- Liaise and associate with research organization of repute, for developing production of scientifically proven high yielding seed varieties;
- Arrange, through selected growers at suitable location, production of foundation seeds and certified seeds, as required from season to season.
- Maintain organization, systems and procedures to ensure quality of seeds grown, procured, processed and packed, stored and marketed.
- Aim at generating internal resources for facilitating steady growth and development in servicing the farmers.

Nodal person: Connection to be established as the TEEB Project progresses²⁷

²⁵ <http://www.sargindia.org/contact-us.htm>

²⁶ <https://www.bloomberg.com/profile/company/1601778D:IN>

²⁷ <https://www.pantnagarseeds.com/ukstdc-officials>