



## Organic Agriculture in Uttarakhand: Progress, Potential, and Policy Perspectives

Sukesh Singh\* • J.P. Gupta

*Department of Geography, D. B. S. P. G. College, Dehradun-248001*

\*Corresponding Author Email id: [sukesh.rawat94@gmail.com](mailto:sukesh.rawat94@gmail.com)

**Received: 13.10.2024; Revised: 31.12.2024; Accepted: 31.12.2024**

©Society for Himalayan Action Research and Development

**Abstract:** Organic agriculture has emerged as a solution to global concerns over food security, environmental degradation, and climate change, with Uttarakhand playing a key role in India's organic farming landscape. The state currently boasts 2.26 lakh hectares of certified organic land, comprising 40% of its total agricultural area, and engages 4.80 lakh farmers in organic practices. Various government initiatives, including Paramparagat Krishi Vikas Yojana (PKVY), Rashtriya Krishi Vikas Yojana (RKVY), and the Namami Gange Project, have significantly boosted organic farming. Training programs and support from the Uttarakhand Organic Commodity Board and the Department of Agriculture further promote the sector. In a pioneering move, the government enacted the Uttarakhand Organic Agriculture Act 2019, making it the first Indian state to introduce such legislation. Currently, 10 development blocks are fully organic, with plans to expand statewide. However, achieving this ambitious goal requires enhanced financial support, better marketing, and more robust research efforts.

**Keywords:** Organic Farming • Sustainable Agriculture • Policy Development

### Introduction

Organic agriculture is a farming system that emphasizes the use of natural processes, biodiversity, and cycles adapted to local conditions, minimizing the use of synthetic inputs like chemical fertilizers, pesticides, and genetically modified organisms (GMOs). Instead, it relies on ecological principles and practices such as crop rotation, green manure, composting, biological pest control, and organic fertilizers to maintain soil health and ecosystem balance. The goal of organic agriculture is to produce food with the least amount of negative impact on ecosystems, animals, or people (FAO & WHO 2007). Organic farming is one of the fastest-growing sectors in agriculture, currently representing approximately 1% of the world's agricultural area. It is a farming system that relies on organic fertilizers such as compost manure, green manure, and bone meal. Additionally, it emphasizes techniques like crop rotation and companion planting to maintain soil health and promote sustainability (Seufert et al 2017). Organic agriculture is centered on the goals to achieve environmental, social, and economic sustainability, and these goals are among the

key elements that determine whether or not particular production practices are acceptable (Stockdale et al 2001). One of the many production techniques that are friendly to the environment is organic agriculture. Organic food's demand in world is continuously rising in both developed and developing nations, with a 20 to 25 percent yearly growth rate. Without a doubt, one of the agricultural output sectors with the fastest growth is organic farming (Ramesh et al 2005). Organic farming generally produces lower yields than conventional farming, although this yield difference varies depending on the crop species, agronomic conditions, and management practices. Under certain conditions, organic yields can be equal to conventional methods (Seufert et al 2012). Despite lower yields, organic farming is noted for its higher profitability, environmental friendliness, and the production of nutritious, pesticide-free food (Reganold & Wachter 2016). Organic farming is also recognized as a blend of traditional practices and scientific innovation, aimed at promoting ecological sustainability and enhancing living standards (Polacek and Diekmann 2013). The shift



toward organic farming is driven not only by environmental concerns, but also by increasing consumer demand for healthy and safe food options (Willer and Lernoud 2020).

India's organic farming sector is indeed gaining popularity domestically and internationally by taking advantage of the rich heritage of traditional farming practices. India is one of the largest producers of organic products in the world, where organic farming is done on millions of hectares of land. The country's diverse agro-climatic zones and wide variety of crops contribute to its suitability for organic agriculture. This diversity allows the cultivation of a wide range of organic products including grains, pulses, fruits, vegetables, spices and tea. Uttarakhand is among the forefront states in India for organic farming. Uttarakhand's unique geographical and climatic conditions, combined with its rich traditional agricultural heritage, create an ideal environment for the development of organic farming practices. Reliance on indigenous knowledge, especially among women, has been found to be an important factor in reducing dependence on external inputs in organic farming (Bodapati & Chander 2013). Despite the potential benefits, organic farmers in Uttarakhand face several challenges, including low initial prices, limited market access, reduced yield, and high transportation costs (Hanif et al 2019). Organic farming is prevalent in the hills of Uttarakhand; however, it is primarily unorganised, therefore the output and productivity are significantly below what is needed. Uttarakhand is the first and only province in India, which elaborated organic farming policy systematically. The present study focuses on the current state of organic farming in Uttarakhand and evaluates the government's policies and initiatives supporting its development.

#### **Area of Study**

Uttarakhand is a newly formed Himalayan state that was established on 9th November, 2000, as the 27th state of the Indian Republic. Before this, it was part of Uttar Pradesh. The

Uttarakhand state stands as a guard to the Upper Ganga plain of Uttar Pradesh, and its expansion up to snowclad hills makes it look like a 'crown of Uttar Pradesh'. Geographically, this state is located between latitudes 28° 53'24" N and 31° 27'50" N and longitudes between 77° 34'27" E and 81° 02'22" E. The state's total geographical area is 53,483 square kilometres, which is about 10% of the entire Indian Himalayan Region. Uttarakhand is the country's 19th largest state in terms of total geographical area. Mountains cover approximately 86% of the state's land area. The state is divided into two regions, Garhwal and Kumaon, both in terms of geography and administration. As a result, this area is also known as the 'Garh-Kum region'. Geographers referred to this region as the 'U. P Himalaya' when it was still part of Uttar Pradesh (Kharkwal 2018).

Administratively, the Uttarakhand state has been divided into 13 districts (02 plain districts – Haridwar and Udham Singh Nagar, 02 Covering hill and plain areas- Dehradun and Nainital, and rest 09 are hill districts- Uttarkashi, Tehri Garhwal, Pauri Garhwal, Rudraprayag, Chamoli, Almora, Pithoragarh, Champawat, and Bageshwar). The state has 95 development blocks and 102 tehsils. The state has 16,502 inhabited villages and number of towns of various status 133 but according to 2011 census, but the real number of towns having a defined definition is 86. According to the 2011 Census of India, Uttarakhand's population was 1.01 crore, up from 85 lakh in 2001. There were 5,137,773 males and 4,948,519 females, for a sex ratio of 103.824 males to 100 females. The percentage of decadal growth from 2001 to 2011 was 18.81%, which was 1.6% lower than the 1991-2001 period. During the decade 2001–2011, Uttarakhand's population expanded by 1.6 million.

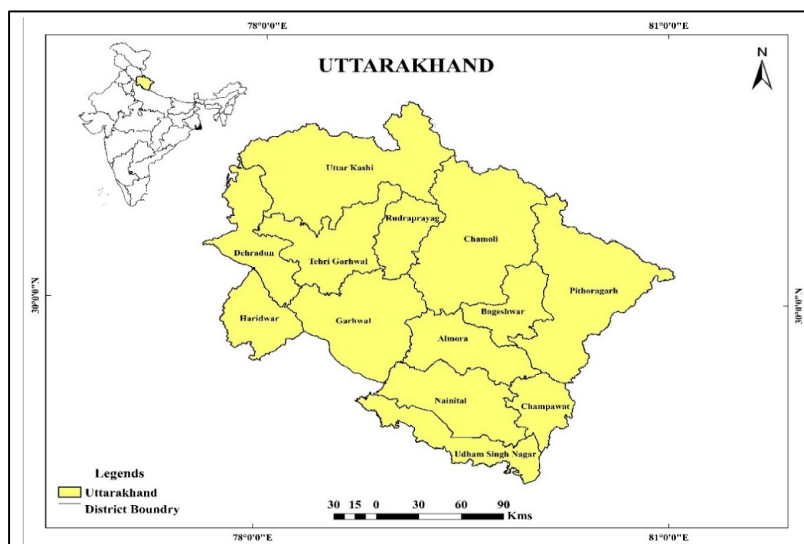
#### **Materials & Methods**

The present study, focused on Uttarakhand, is based on secondary data meticulously collected from various reputable sources. A



comprehensive examination of existing literature, government reports, and historical records was undertaken, involving a thorough

analysis of available information on the subject.



**Figure 1. Location Map of Study Area**

Secondary data was collected from various published sources including data from International Federation of Organic Agriculture Movement (IFOAM), the Research Institute for Organic Agriculture (FiBL), Agricultural and Processed Food Products Export Development Authority (APEDA), and official records of Uttarakhand Organic Commodities Board (UOCB), Directorate of Agriculture, Uttarakhand and related government websites.

## Results and discussion

### World scenario of organic farming

According to the FiBL-IFOAM annual report 2024, 96.4 million hectares of organic agricultural land, including in-conversion areas were managed organically in 2022 worldwide. Oceania (53.2 million hectares, or comprising half of the world's organic agricultural land, at 55 percent) and Europe (18.5 million hectares, or 19 percent) are the regions with the largest areas of organic agricultural land. 9.5 million hectares (10 percent) are found in Latin America, followed by 8.8 million hectares (9.2 percent) in Asia,

3.6 million hectares (3.8 percent) in North America, and 2.7 million hectares (2.8 percent) in Africa. Australia (53.0 million hectares), India (4.7 million hectares), and Argentina (4.1 million hectares) are the countries with the largest amounts of organic agricultural land.

The share of the World's organic land to total agricultural land was 2.0 percent in 2022. The highest organic shares of the total agricultural land, by region, were in Oceania (14.3 percent) and in Europe (3.7 percent; European Union: 10.4 percent). Liechtenstein (43.0 percent), Austria (27.5 percent), and Estonia (23.4 percent) had the largest organic shares, with several nations reaching significantly greater shares than the world average. In 22 countries, 10 % or more of the land used for agriculture is organic. In 2022, the area under organic farming expanded by 20.3 million hectares (26.6 percent), with numerous countries reporting significant growth. The most substantial increases in organic farmland were observed in Australia, India, and Greece. Australia saw a surge of more than 17,328,259 hectares (+49%), while India experienced a growth of nearly 2,068,825 hectares (+78%).



Greece's organic farmland expanded by almost 390,223 hectares (+73%).

### Organic farming in India

Organic farming in India has ancient roots, traditionally practiced without reliance on chemicals. However, the Green Revolution in the mid-20th century significantly increased the use of chemical inputs in Indian agriculture (Reddy 2010). To revive organic farming, the National Programme for Organic Production (NPOP) was launched in 2001 under the Agricultural and Processed Food Products Export Development Authority (APEDA), Ministry of Commerce and Industry. NPOP sets organic standards based on international guidelines, including those from Codex and the International Federation of Organic Agriculture Movements (IFOAM). Initially,

the focus was on exports supported by third-party certification systems. India's first official organic farming policy was introduced in 2005 (Khurana & Kumar 2020). India currently ranks 2nd globally in organic agricultural land and 1st in the number of organic producers (FIBL & IFOAM Year Book 2024). The total area under organic certification in India is 7.3 million hectares, covering 4.48 million hectares of cultivable land and 2.85 million hectares of wild harvest collection (APEDA 2023-24). Madhya Pradesh leads with the largest certified organic area (11.48 lakh hectares), followed by Maharashtra, Gujarat, Rajasthan, and Odisha. Sikkim, the first fully organic state, along with Uttarakhand and Kerala, also contribute significantly.

**Table 1. State Wise Cultivated Area under Organic Certification during 2023-24**

S. NO.	State Name	Organic Area (In Ha)	Conversion Area (In Ha)	Total Area (In Ha)
1	Madhya Pradesh	6,12,816.04	5,35,420.03	11,48,236.07
2	Maharashtra	2,67,229.29	7,33,851.03	10,01,080.32
3	Rajasthan	2,15,299.44	3,64,792.79	5,80,092.22
4	Gujarat	92,333.51	5,88,486.48	6,80,819.99
5	Odisha	77,696.34	1,03,325.94	1,81,022.28
6	Sikkim	75,472.85	256.93	75,729.78
7	Uttar Pradesh	52,888.78	13,502.55	66,391.34
8	Uttarakhand	51,628.19	50,192.21	1,01,820.39
9	Kerala	36,208.78	8,055.13	44,263.91
10	Karnataka	30,612.23	40,473.76	71,085.99
11	Andhra Pradesh	25,876.73	37,801.96	63,678.69
12	Jammu & Kashmir	24,963.10	9,783.64	34,746.75
13	Meghalaya	20,111.78	9,591.53	29,703.30
14	Bihar	19,086.93	9,975.19	29,062.13
15	Tamil Nadu	18,099.17	24,659.11	42,758.27
16	Assam	15,433.92	11,645.48	27,079.40
17	Chhattisgarh	11,289.44	3,854.69	15,144.13
18	Goa	11,180.12	1,107.28	12,287.40
19	Himachal Pradesh	8,181.83	1,152.46	9,334.28
20	Manipur	7,172.00	25,412.50	32,584.50
21	West Bengal	7,011.49	1,106.32	8,117.80
22	Tripura	5,884.31	14,597.06	20,481.36
23	Arunachal Pradesh	5,841.22	10,696.31	16,537.53
24	Telangana	5,399.72	79,465.44	84,865.16
25	Jharkhand	3,523.82	50,884.38	54,408.20
26	Nagaland	3,340.15	12,881.41	16,221.56
27	Mizoram	3,230.30	11,008.00	14,238.30
28	Haryana	2,260.07	665.27	2,925.33
29	Punjab	1,009.40	10,080.01	11,089.41
30	Pondicherry	21.17	0.34	21.51
31	New Delhi	5.17	4.44	9.60



<b>Total:</b>	<b>17,11,107.27</b>	<b>27,64,729.64</b>	<b>44,75,836.90</b>
---------------	---------------------	---------------------	---------------------

Source: APEADA (2024)

India produced about 3.6 million metric tons (MT) of certified organic products which includes all varieties of food products, such as fruit, vegetables, tea, coffee, oilseeds, fibre, sugar cane, cereals & millets, cotton, pulses, aromatic & medicinal plants, and processed foods. India exported in the year 2023-24 the total volume being 2,61,029 MT. About INR 4007.91 Crore (494.80 million USD) was realized from the export of organic food. The USA, EU, Canada, Great Britain, Sri Lanka, Vietnam, Australia, Thailand, New Zealand, Japan, Korea Republic, and Switzerland are among the countries to which organic products are exported.

#### **Organic Agriculture in Uttarakhand**

Agriculture is a primary occupation in Uttarakhand, vital for the state's sustainable economic development. Despite having only 14% of its total land (7.41 lakh hectares) available for cultivation due to forest and wasteland cover, agriculture remains crucial. About 89% of the landholdings are small and marginal, leading to high input costs. While the fertile Tarai region faces issues from chemical overuse, hilly areas suffer from soil erosion. Most of the state's agriculture is rain-fed, with irrigation confined to the plains.

Uttarakhand has emerged as a leader in organic farming, supported by its unique policy framed in 2000, making it the first Indian state to do so. About 80% of farmers engage in organic farming by default under rain-fed conditions, providing food security with nutritious and diverse crops (Meena & Sharma 2015). Rain-fed mixed farming in hilly areas has encouraged the adoption of organic farming, and by 2010-2011, certified organic farmland spanned 105,486 hectares—a figure that has since doubled. Key government initiatives, such as the Uttarakhand Organic Commodity Board (UOCB) and support for exporting organic basmati rice, have driven this growth (Ramola 2019). Organic farming

offers significant export potential and market opportunities, particularly as traditional hill farming involves minimal chemical use. The state's natural farming practices, including organic compost preparation, have facilitated the transition to organic farming (SAP 2017). Local crops such as mandua (finger millet), sawan (barnyard millet), kauni (foxtail millet), cheena (proso millet), naurangi (rice bean), rajma (kidney bean), and gahat (horse gram) are traditionally cultivated using organic methods. These crops, known for their nutritional and medicinal properties, are resilient to drought, ensuring food security for farmers during dry spells. Additionally, the hilly districts produce over 57% of Uttarakhand's total vegetables, positioning the state as a key supplier of off-season organic vegetables (State Planning Commission Uttarakhand).

The UOCB has identified 42 market-potential organic commodities, including basmati rice, spices, and beans, facilitating export and reducing production costs by 16% for some crops, such as mandua, while increasing yield by 45%. Nevertheless, challenges in infrastructure, branding, and employment generation persist. Enhanced marketing, value addition, and institutional support can further boost the sector's development (Mittal et al 2008). In a significant move, Uttarakhand became India's first state to implement an 'Organic Agriculture Act' in 2019, declaring 10 blocks entirely organic. These include Dunda, Pratapnagar, Jaihari Khal, Jakholi, Augustmuni, Ukhimath, Dewal, Salt, Betalghat, and Munsyari. The Act prohibits the sale and use of chemical fertilizers and pesticides in these blocks, solidifying the government's commitment to making Uttarakhand a fully organic state.

The Department of Agriculture promotes organic farming through two certification programs: the Participatory Guarantee System





(PGS) under the Paramparagat Krishi Vikas Yojana (PKVY) and third-party certification under the National Program for Organic Production (NPOP) and National Organic Program (NOP), with support from the Rashtriya Krishi Vikas Yojana (RKVY). Nine Indian states, including Uttarakhand,

Nagaland, Sikkim, and Mizoram, have drafted organic farming policies, with Uttarakhand and Sikkim officially declaring themselves ‘Organic States.’ Currently, 40% of India’s total organic farming is conducted in Uttarakhand, reflecting the state's significant potential in organic agricultural development.

**Table 2. The Status of Organic Production in Uttarakhand (2024)**

Total Area Under Certified Organic Cultivation	2,26,540 Hectares
Total Production	44,745.43 MT
Number Of Farmers	4,80,350 Farmers
Total Quantity Exported (2022-23)	97 MT
Value Of Total Export (2022-23)	₹4.2 Crore (\$0.5 Million)

Source: (UOCB and APEADA 2024)

At present, in Uttarakhand around 2,26,540 Hectares land is under organic farming, covering over 4,80,350 farmers and 60 crops. The area under organic farming is 36 percent of the total agricultural area of the state. In 2023-24, Uttarakhand produced 44,745.43 metric tons (MT) (Table 2) of certified organic products. However, organic exports from Uttarakhand faced challenges, with a significant decline noted in recent years. In 2022-23, the state exported 97 tonnes of organic products worth approximately ₹4.2 crore (\$0.5 million), down from 285 tonnes worth ₹11.6 crore (\$1.7 million) in 2021-22.

This 66 percent decline was attributed to global economic downturns, stricter European Union regulations, and issues with certification bodies. In response to these challenges, the Agricultural and Processed Food Products Export Development Authority (APEDA) and the state government have developed plans to promote organic products and boost shipments. The state is set to establish mandis (markets) for organic produce to ensure that farmers will not face marketing hurdles once the target of 50 percent organic farming area is achieved by 2025 (The Hindu business line 2024).

**Table 3. District Wise Area of Organic Farming in Hectare (2022-23)**

Sr. No.	District	Area Under PGS Certification	Area Under Third Party (NPOP) Certification	Total
1	Uttarkashi	16440	6198.70	22638.70
2	Rudrapryag	9320	7557.73	16877.73
3	Tehri Garhwal	33680	8227.66	41907.66
4	Chamoli	14620	7265.69	21885.69
5	Pauri Garhwal	14620	8086.07	22706.07
6	Dehradun	5040	5129.44	10169.44
7	Haridwar	12400	4793.33	17193.33
8	Almora	10560	10652.06	21212.06
9	Udham Singh Nagar	1000	4765.02	5765.02
10	Champawat	4260	3258.69	7518.69
11	Nainital	7440	7819.26	15259.26
12	Pithoragarh	7360	5682.21	13042.21
13	Bageshwar	4000	3039.03	7039.03
<b>Total</b>		<b>140740</b>	<b>82474.87</b>	<b>223214.87</b>
<b>Plain District</b>		<b>13400</b>	<b>9558.345</b>	<b>22958.345</b>
<b>Hill District</b>		<b>127340</b>	<b>72916.527</b>	<b>200256.527</b>

Source: Directorate of Agriculture, Uttarakhand



The Table 3 presents the distribution of organic farming areas across 13 districts in Uttarakhand for the year 2022-23, categorized by two certification types: PGS Certification and Third Party (NPOP) Certification. PGS Certification is a locally oriented assurance system which certifies producers through active stakeholder participation and is based on social networks, trust, and knowledge sharing. Third Party (NPOP) Certification refers to certification by an accredited external body under the National Program for Organic Production (NPOP), known for its stringent standards and international recognition. The table also provides the total area of organic farming for each district in Uttarakhand for the year 2022-23.

The data reveals that Tehri Garhwal (41,907.66 ha) has the largest total area of organic farming followed by Pauri Garhwal (22706.07) and Uttarkashi (22638.70), while Udham Singh Nagar (5,765.02 ha) has the smallest. The aggregate data reveals that Uttarakhand has 140,740 hectares under PGS certification and 82,474.87 hectares under Third Party certification, summing up to 223,214.87 hectares of organic farmland. The table also distinguishes between plain and hill districts, with the former covering 22,958.345 hectares and the latter 200,256.527 hectares, showing that hill districts have a significantly larger total area of organic farming compared to plain districts.

#### **Government Initiative Towards Organic Farming Development in Uttarakhand**

The shift towards sustainable agricultural practices has become imperative in the face of increasing environmental concerns and the need for food security. Since becoming a state in 2000, Uttarakhand has actively promoted organic farming. In India, Uttarakhand stands out as a pioneering state in the promotion and adoption of organic farming. The unique geographical and climatic conditions of Uttarakhand, combined with its rich agricultural heritage, provide an ideal backdrop for organic farming initiatives. The

state government has launched several initiatives to support the development of organic farming, recognizing its potential for environmental conservation and economic growth. These initiatives aim to transform the state's agricultural landscape, promoting sustainable practices and establishing Uttarakhand as a model for organic farming. The Mission Organic Uttarakhand aims to convert the entire state into an organic farming hub by increasing the area under organic cultivation and providing support for organic certification. Government plans to expand organic farming to 250,000 hectares by 2030. Additionally, it aims to gradually increase the use of bio-fertilizers in agriculture from the current 0.3 kg per hectare to 0.6 kg per hectare (Uttarakhand Vision 2030).

Key government initiatives include:

#### **Uttarakhand Organic Commodity Board (UOCB)**

Uttarakhand Organic Commodity Board (UOCB) is the nodal agency for Organic Farming in Uttarakhand. It was established on May 19, 2003, under the Societies Registration Act, 1860. Tasked with the mission 'To make Uttarakhand the organic capital of India', UOCB plays an important role in encouraging organic activities in agriculture and allied sectors such as horticulture, medicinal aromatic plants and herbs, and animal husbandry. The vision of UOCB is 'To achieve sustainable rural development in the state of Uttarakhand through organic farming'. As the nodal agency for promoting organic farming in the state, the Uttarakhand Organic Commodities Board (UOCB) has several key roles: advising the state department on development of organic infrastructure, supporting and promoting institutions to build forward and backward linkages for organic farming, conducting research on various aspects of organic produce to create a comprehensive activity database, and collaborating with national and international organizations to promote organic farming in the state. As the state's nodal agency for



organic farming, the Uttarakhand Organic Commodity Board (UOCB) is extensively involved in all aspects of the marketing chain. This includes farmer training, ensuring quality input availability, managing the internal control system (ICS) for certification, constructing post-harvest infrastructure, and developing marketing linkages. The Centre for Organic Farming (COF), funded by the Sir Ratan Tata Trust and operated under the UOCB, functions as an independent body within the UOCB framework. The COF supports organic initiatives with technical expertise and human resources, and its Organic Basmati Export Program (OBEP) is a key initiative focused on creating marketing channels for exporting organic Basmati rice.

#### **Uttarakhand State Organic Certification Agency (USOCA)**

The Uttarakhand State Organic Certification Agency (USOCA) received accreditation from the National Accreditation Body (NAB), Ministry of Commerce and Industry, Government of India, in November 2005, with accreditation No. NPOP/NAB/0011. USOCA is the first government body in India to be accredited for organic inspection and certification according to both national and international standards, and it is ISO 9001:2015 certified in compliance with ISO Guide 65. The Uttarakhand government assigned work to USOCA to certify the country's organic production and handling system in accordance with National and International Organic Standards. USOCA is a wing of the autonomous agency of the state government, USS&OPCA, which is registered under the Societies Registration Act of 1860. USOCA administration is non-discriminatory in terms of race, national background, religious affiliation, sex, age or marital status. All operators will be treated equally. The candidature of any customer cannot be rejected on the basis of the above criteria. The organization is committed to certifying environmentally sound food production and the preservation of natural resources, as well

as improving soil quality and health through organic and sustainable farming practices.

#### **Establishment of Centres of Excellence**

The Government of Uttarakhand has established the "Centre of Excellence (CoE) for Organic Farming" to promote and support organic farming in the state. This initiative aims to enhance organic farming practices, provide training and resources to farmers, and promote sustainable agriculture. Four centres of excellence have been established at Dhakrani (Dehradun), Majkhali (Almora), Khatima (Udham Singh Nagar) and Narendra Nagar of Tehri Garhwal district. The centre of excellence at Majkhali has been upgraded to an organic training and teaching institute. The Central government has a scheme where states can get ₹10 crores of financial assistance for making a Centre of Excellence.

#### **State Centre for Training and Research on Organic Farming (SCTROF)**

Training and capacity building is paramount for organic agriculture. A state level training centre for organic farming at Majkhali, Almora was set up in order to impart trainings and increase the capacities of different stakeholders of the state as well as in other states. With the aim to fulfil the knowledge prerequisites of stakeholders the centre has developed different training modules which ensure the structured and practical approach for organic farming. This is supported with different educational material, which can be used as future reference. The entire course of training is conducted by a team of qualified and experienced resource persons to ensure quality education. The training centre is supported by Research & Development cell established in the centre premises. The R&D cell has research scientists and associates conducting action research in critical areas of commercial crops, important for the hill regions.

#### **Uttarakhand Organic Agriculture Act 2019**

Uttarakhand is pioneering the revival of traditional agriculture practices and has become the first state in India to introduce an





Organic Agriculture Act (2019), initiating official steps toward converting the state into a fully organic state. Although the state's 10 development blocks are already organic, this act is intended to make the entire state organic. The Act allows regulation of NGOs, private entities and traders involved in the export market and processing of organic products. It will also regulate the sale of chemical fertilizers and impose a penalty of up to Rs 1 lakh on any stakeholder involved in the sale of banned substances. With the implementation of this Act, it will also become easier to obtain organic certification and will promote organic certification of agricultural products. Moreover, the state 'Organic Uttarakhand brand' will receive encouragement.

#### **Major Schemes of Government to Promote Organic Farming**

Paramparagat Krishi Vikas Yojana (PKVY), Rashtriya Krishi Vikas Yojana (RKVY), and Namami Gange project are some of the key schemes promoting organic agriculture practices in the state. Every three years, the government spends around 1.3 million INR on promoting organic farming practices. Under various schemes, farmers receive organic inputs (bio fertilizers and bio pesticides) and other natural agricultural inputs like Beejamrit, Ghanjeevamrit, Neem cake etc. Other inputs include vermicompost and phosphate-rich organic manure.

**Rashtriya Krishi Vikas Yojna (RKVY):** The RKVY is an umbrella scheme launched in 2007 to ensure the holistic development of agriculture and allied sectors by incentivizing states to increase public investment in these domains. The scheme's broad objective is to make farming a remunerative economic activity. For the same government of India is providing financial assistance for third-party certification covering adoption and certification. Under the scheme, UOCB is selecting farmers on a large scale and providing training on traditional farming practices. The Board has also established a comprehensive internal control system and

covered 62,000 hectares area under 1,25,000 farmers as per NPOP and NOP standard certification in 2019-20.

#### **Paramparagat Krishi Vikas Yojana (PKVY):**

Under PKVY, organic agriculture is promoted through the adoption of the organic village by cluster approach and Participatory Guarantee System-India (PGS) certification. The scheme is currently being implemented in 13 districts of Uttarakhand and 3900 clusters have been identified. Under this scheme, support is being provided for training of farmers, organic certification, fertilizer management, soil testing, marketing of organic products and agricultural equipment in 7800 hectares. An amount of ₹ 13127.40 lakh has been released in relation to the action plan of the year 2018-19. Which has been fully utilized. In the year 2021-22, ₹ 3316.11 lakh has been received for the third phase in relation to the demand for additional funds from the Government of India, which has been allotted for implementation under the scheme.

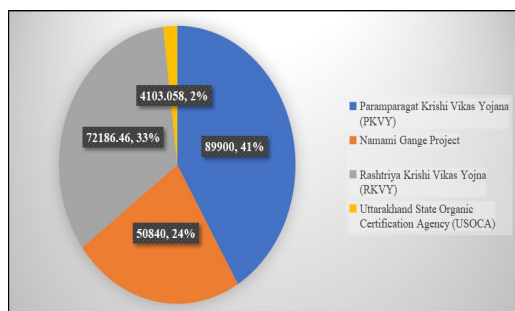
**Namami Gange Project:** The organic farming project of Namami Gange Program in Uttarakhand aims to reduce pollution along the banks of river Ganga by promoting organic farming. The project was launched in May 2020 with 90% central funding of Rs 400 crore, and is being implemented by the state agriculture department. The project aims to bring 50,000 hectares of village land under organic farming by adopting a cluster approach. As of November 2020, the government had approved organic farming in 42 villages in five districts near the Ganga. The project is expected to improve the water quality and agricultural produce along the Ganga. Improvement in water quality will benefit the river ecosystem and organic farming will provide people with high quality fruits and vegetables.

In addition to these major schemes, Uttarakhand also promotes organic farming through other significant initiatives such as the Deendayal Upadhyay Sahkarita Kisan Kalyan Yojana, Uttarakhand Start-up Policy 2018,



Mission Uttarakhand Organic program etc. These comprehensive initiatives and schemes collectively aim to establish Uttarakhand as a model for organic farming, promoting environmental conservation and economic growth while ensuring the sustainability and prosperity of its agricultural communities.

Figure 2 illustrates the distribution of organic farming areas across various government schemes in Uttarakhand for the year 2021-22. The schemes included in this chart are Paramparagat Krishi Vikas Yojana (PKVY), Namami Gange Project, Rashtriya Krishi Vikas Yojna (RKVY), and Uttarakhand State Organic Certification Agency (USOCA). Each scheme's contribution is represented as a portion of the total organic farming area, shown in hectares. PKVY emerges as the predominant scheme, covering 89900 hectares (41%) of the total organic farming area in Uttarakhand.



**Figure 2. Area under different organic schemes in Uttarakhand (hectare) 2021-22**

Source: Directorate of Agriculture, Uttarakhand

This scheme focuses on promoting traditional organic farming methods, emphasizing the use of indigenous practices and inputs to ensure sustainable agriculture. The Namami Gange program is the second-largest contributor, accounting for 50840 hectares (24%) of the organic farming area. This initiative aims to integrate organic farming with the broader objective of cleaning and rejuvenating the Ganga River. RKVY supports organic farming as part of its wider goal to boost agricultural development across India. In Uttarakhand, it covers 72186.46 hectares (33%) of the organic

farming area, indicating significant investment in organic agricultural practices to enhance productivity, sustainability, and farmer incomes. USOCA, though covering a relatively smaller area 4103.06 hectares (2%), plays a crucial role in certifying organic farms. Certification ensures that farming practices meet established organic standards, providing assurance to consumers and facilitating market access for farmers.

### Conclusion

Uttarakhand has emerged as a leader in organic farming, leveraging its rich agricultural heritage and favorable conditions since becoming a state in 2000. The growing demand for organic products offers immense potential for economic growth. However, the state faces several challenges, including inadequate infrastructure, marketing issues, yield reduction, and climate-related risks, particularly in its hilly regions. Strategic investments and supportive policies are essential to overcome these hurdles. With ambitious targets, such as converting 250,000 hectares to organic cultivation by 2030 and doubling bio-fertilizer use, Uttarakhand aims to establish itself as India's organic farming hub. The state government's continued focus on sustainable development and organic agriculture is critical for ensuring long-term success. Addressing key challenges through comprehensive strategies can further enhance Uttarakhand's position as a pioneer in organic farming, driving rural development and ecological sustainability.

### Acknowledgment

The authors gratefully acknowledge the Directorate of Agriculture, Government of Uttarakhand, and the Uttarakhand Organic Commodity Board (UOCB), Dehradun, for their valuable data on organic farming in the state. Special thanks are extended to Ms. Kiran Mamgai, Assistant Agriculture Officer, Organic Cell, Krishi Bhavan, Nanda Ki Chowki, Dehradun, for her support and



assistance. The authors also sincerely thank all individuals who contributed to this study.

## References

- Babu C & Karunakaran N (2021). Status, benefits and future prospects of organic farming in India: A review. *Journal of Management Research and Analysis*, 8(3), 103-111.
- Bodapati S & Chander M (2013). Integrating indigenous knowledge of farmers for sustainable organic farming: An assessment in Uttarakhand state of India. *Indian journal of traditional knowledge*, 12(2), 259-264.
- Government of Uttarakhand (2019). *State Agriculture Plan (2012-17) Uttarakhand*. <https://rkvy.nic.in/static/SAP/UK/XI%20Plan/SAP%202017.pdf>
- Government of Uttarakhand (2021). *Uttarakhand Vision 2030*. [https://20pt.uk.gov.in/department7/library\\_file/file-28-05-2022-06-59-26.pdf](https://20pt.uk.gov.in/department7/library_file/file-28-05-2022-06-59-26.pdf)
- Haneef R, Sharma G & Ahmad T (2019). Constraints Faced by Farmers Practicing Organic Farming in Hill Region of Uttarakhand, India. *Int. J. Curr. Microbiol. App. Sci*, 8(5), 1149-1157.
- Kharkwal S C (2018). *Uttarakhand Geo-Economic Profile: A Geographical analysis of Physical, Cultural and Economic Scenario*. India: Winsar Publication.
- Khurana A & Kumar V (2020). State of organic and natural farming: challenges and possibilities. *New Delhi*.
- MERI YOJANA\_book\_04-12-23.pdf (uk.gov.in)
- Mittal S, Tripathi G & Sethi D (2008). *Development strategy for the hill districts of Uttarakhand* (No. 217). working Paper.
- Polacek K M & Diekmann F (2013). Organic farming. *Reference & User Services Quarterly*, 52(3), 197-204.
- Ramesh P, Singh M & Rao A S (2005). Organic farming: Its relevance to the Indian context. *Current science*, 88(4), 561-568.
- Ramola S (2019). *State Of Mountain Agriculture Report*. [https://www.mountaininitiative.in/wp-content/uploads/2023/05/StudyReports-04-IMI\\_FAO\\_Report\\_on\\_SOMA.pdf](https://www.mountaininitiative.in/wp-content/uploads/2023/05/StudyReports-04-IMI_FAO_Report_on_SOMA.pdf)
- Reddy B S (2010). Organic farming: status, issues and prospects—a review. *Agricultural Economics Research Review*, 23(2), 343-358.
- Reganold J P & Wachter J M (2016). Organic agriculture in the twenty-first century. *Nature plants*, 2(2), 1-8.
- Seufert V, Ramankutty N & Foley J A (2012). Comparing the yields of organic and conventional agriculture. *Nature*, 485(7397), 229-232.
- Seufert V, Ramankutty N & Mayerhofer T (2017). What is this thing called organic?—How organic farming is codified in regulations. *Food Policy*, 68, 10-20.
- Stockdale E A, Lampkin N H, Hovi M, Keatinge R, Lennartsson E K M, Macdonald D W, ... & Watson C A (2001). Agronomic and environmental implications of organic farming systems. *Uttarakhand State Organic Certification Agency (USOCA)*
- Willer H & Sahota A (2020). The world of organic agriculture, statistics and emerging trends 2020 at BIOFACH 2020.
- Willer H, Trávníček J & Schlatter S (2024). *The World of Organic Agriculture. Statistics and Emerging Trends 2024*.