



TRANSFORMING AGRICULTURE IN UTTARAKHAND: GOVERNMENT YOJANAS AND AWARENESS INITIATIVES FOR A SUSTAINABLE FUTURE

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INTRODUCTION

Agriculture is the backbone of Uttarakhand's economy, with nearly 70% of the state's population depending on it for their livelihood. However, unlike the fertile plains of northern India, Uttarakhand's agriculture faces unique geographical and environmental challenges due to its hilly terrain, fragmented landholdings, and dependence on traditional farming methods. Despite these difficulties, the state has vast potential for organic farming, horticulture, and the cultivation of high-value medicinal plants. Over the years, both the central and state governments have launched several Yojanas (schemes) to support farmers, improve irrigation facilities, promote organic farming, and introduce modern agricultural techniques.

GEOGRAPHICAL AND CLIMATIC CONDITIONS IMPACTING AGRICULTURE

Uttarakhand is divided into two major regions:

1. The Hilly Region (covering over 85% of the state's area)
2. The Tarai and Bhabar Region (covering about 15% of the state's area)

Each of these regions presents distinct challenges and opportunities for agriculture.

- **Hilly Terrain:** The hilly districts, such as Pithoragarh, Uttarkashi, Chamoli, and Tehri, face issues like steep slopes, poor soil retention, limited irrigation facilities, and frequent landslides. These conditions make large-scale commercial farming difficult. However, these areas are suitable for traditional and organic farming, as well as the cultivation of fruits, medicinal plants, and spices.



➤ **Tarai and Bhabar Region:**

The plains of Udham Singh Nagar, Haridwar, and parts of Nainital have fertile alluvial soil, making them ideal for the cultivation of high-yield crops like wheat, rice, and sugarcane. This region benefits from better irrigation facilities and mechanization compared to the hilly areas.

- The climate of Uttarakhand varies significantly across regions, influencing the types of crops grown. The high-altitude areas experience cold winters and moderate summers, supporting crops like apples, walnuts, and plums, while the lower regions with a subtropical climate are suitable for wheat, paddy, sugarcane, and pulses.



SOIL TYPES AND AGRICULTURAL SUITABILITY

Uttarakhand has a variety of soil types, which determine the crops grown in different regions:

Soil Type	Characteristics	Suitable Crops
Alluvial Soil	Found in Tarai and Bhabar, highly fertile, well-drained	Wheat, Rice, Sugarcane, Pulses
Sandy Loam	Found in mid-hill regions, prone to erosion	Millet, Pulses, Fruits, Vegetables
Clayey Soil	Found in valley regions, retains moisture well	Rice, Finger Millet (Mandua), Barnyard Millet (Jhangora)
Mountain Soil	Found in high-altitude areas, rich in organic matter	Apples, Walnuts, Medicinal Plants

Due to steep slopes and heavy rainfall, soil erosion and fertility loss are major concerns in hilly areas. The lack of irrigation facilities further limits productivity, as many farmers rely on rain-fed agriculture.

MAJOR CROPS GROWN IN UTTARAKHAND

Uttarakhand's agriculture is diverse, with different regions cultivating food grains, fruits, and medicinal plants.

1. Staple Food Crops

- **Wheat (*Triticum aestivum*):** Grown in Tarai and valley regions with irrigation facilities.
- **Rice (*Oryza sativa*):** Cultivated in Udham Singh Nagar and Haridwar under favorable conditions.
- **Maize (*Zea mays*):** Popular in mid-altitude areas where irrigation is limited.

2. Millets and Pulses

- **Finger Millet (*Mandua*) and Barnyard Millet (*Jhangora*):** These climate-resilient crops are traditional staples of hilly communities.
- **Lentils (Masoor), Horse Gram (Kulthi), and Black Gram (Urad):** Common pulses cultivated in small landholdings.

3. Horticultural and Cash Crops

- **Apple, Plum, Peach, and Walnut:** Grown in higher altitudes like Nainital, Almora, and Uttarkashi.
- **Tea (*Camellia sinensis*):** Kumaon region is emerging as a tea-growing hub.
- **Sugarcane:** Cultivated in the plains of Haridwar and Udham Singh Nagar.

4. Medicinal and Aromatic Plants

- **Chirayta, Kutki, and Ashwagandha:** High-demand medicinal plants with commercial value.
- **Lemongrass, Rosemary, and Lavender:** Promoted for essential oil production.



MAJOR AGRICULTURAL YOJANAS IN UTTARAKHAND

The following table provides an overview of key agricultural schemes implemented in Uttarakhand:

Scheme Name	Objective	Key Benefits	Implemented By
Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)	Provides financial support to farmers	₹6,000 per year to small and marginal farmers	Ministry of Agriculture & Farmers Welfare
Paramparagat Krishi Vikas Yojana (PKVY)	Promotes organic farming	Financial assistance, organic certification, and training	Government of Uttarakhand
Rashtriya Krishi Vikas Yojana (RKVY)	Boosts agricultural productivity	Funds for infrastructure, irrigation, and technology	Ministry of Agriculture & State Agriculture Department
Pradhan Mantri Fasal Bima Yojana (PMFBY)	Provides crop insurance against losses	Compensation for crop damage due to natural disasters	NABARD & Insurance Companies
National Mission on Sustainable Agriculture (NMSA)	Encourages climate-resilient farming	Soil health management, water conservation	Indian Council of Agricultural Research (ICAR)
Integrated Horticulture Development Mission	Promotes high-value horticultural crops	Support for fruit cultivation, polyhouses, and irrigation	Ministry of Agriculture & Farmers Welfare

MAJOR AGRICULTURAL YOJANAS IN UTTARAKHAND

To ensure the success of these schemes, the government has launched several awareness initiatives to educate farmers about modern farming techniques and available financial support.



1. Krishi Melas and Training Camps

- Farmers are provided with hands-on training in organic farming, crop diversification, and sustainable agriculture.
- Experts and scientists guide farmers on best practices and available schemes.

2. Digital and Mobile-Based Awareness

- Government mobile apps like "Kisan Suvidha" provide real-time weather updates, market prices, and pest control techniques.
- WhatsApp groups and helplines connect farmers with agricultural experts.

3. Farmer Producer Organizations (FPOs)

- Small farmers are encouraged to form FPOs for collective bargaining and

better market access.

- The government provides financial aid for FPO registration and operations.

4. Water Conservation Awareness

- The "Per Drop More Crop" initiative promotes efficient irrigation techniques such as drip and sprinkler systems.
- Farmers are trained in rainwater harvesting and soil moisture conservation.

5. Promotion of Organic and Natural Farming

- Uttarakhand is positioning itself as an organic farming hub. Farmers receive training and incentives for shifting to organic methods.
- The government supports organic certification to help farmers market their products better.

TRADITIONAL LAND MEASUREMENT UNITS IN INDIA

State/Region	Land Measurement Unit	Equivalent in Square Feet (Approx.)	Equivalent in Gaj (Square Yard)
Uttar Pradesh, Bihar	Bigha	2,500 - 27,000 sq. ft (varies by district)	278 - 3,000 Gaj
Punjab, Haryana	Killa	43,560 sq. ft (1 Acre)	4,840 Gaj
Rajasthan	Bigha	27,225 sq. ft	3,025 Gaj
Maharashtra, Gujarat	Guntha	1,089 sq. ft	121 Gaj
West Bengal, Assam	Katha (Cottah)	720 - 1,600 sq. ft (varies)	80 - 178 Gaj
Tamil Nadu, Kerala	Cent	435.6 sq. ft	48 Gaj
Karnataka	Gunta	1,089 sq. ft	121 Gaj
Himachal Pradesh	Biswa	1,350 - 2,160 sq. ft (varies)	150 - 240 Gaj
Uttarakhand	Nali	2,160 sq. ft	240 Gaj
Odisha	Guntha	1,089 sq. ft	121 Gaj
Andhra Pradesh, Telangana	Ankanam	72 sq. ft	8 Gaj
Madhya Pradesh, Chhattisgarh	Acre	43,560 sq. ft	4,840 Gaj
Jammu & Kashmir, Ladakh	Kanal	5,445 sq. ft	605 Gaj
North-East India	Bigha/Katha	1,600 sq. ft	178 Gaj

CHALLENGES IN UTTARAKHAND'S AGRICULTURE SECTOR

Despite these efforts, farmers in Uttarakhand face several challenges:

- 1. Small Landholdings** – Most farmers own less than 1 hectare of land, making commercial farming difficult.

2. **Climate Change Impact** – Rising temperatures and erratic rainfall affect crop yields.
3. **Limited Market Access** – Remote villages lack proper roads and storage facilities.
4. **Low Awareness** – Many farmers are unaware of government schemes or lack the technical knowledge to benefit from them.

- **Digital Literacy Programs** – Teaching farmers how to use mobile apps and digital platforms for better access to information.

THE WAY FORWARD

To further strengthen Uttarakhand's agricultural sector, the following steps should be taken:

- **Strengthening FPOs** – Encouraging more farmers to join cooperative societies for better bargaining power.
- **Improved Road Connectivity** – Developing rural roads to enhance market access.
- **Advanced Training Centers** – Establishing more agricultural training institutes in remote areas.

CONCLUSION

The government's agricultural programs are having a major impact on farming in Uttarakhand. These initiatives aim to increase productivity while also promoting sustainable practices in agriculture. By encouraging organic farming, farmers can grow healthier crops and reduce their reliance on chemical fertilizers and pesticides. This shift not only helps the environment but also improves the quality of the produce, making it more attractive to health-conscious consumers. To support farmers, the government has introduced various financial assistance programs. These help farmers buy necessary tools, seeds, and other supplies, easing their financial burden and allowing them to invest in better agricultural methods. This support is especially important for small-scale and marginal farmers who often have difficulty accessing funds.

