Request for Proposal

For the Proof-of-Concept Pilot to Introduce Agri-advisory Services

for Horticulture Crops in Uttarakhand

October 23, 2023
Japan International Cooperation Agency

1. Background

(1) Problem statement

- Uttarakhand, located in northern India, holds substantial potential to emerge as a leading horticulture state. Its favorable climatic conditions and the production of high-quality horticultural produce are key drivers of this potential. The region benefits from lower temperatures in certain areas, allowing for year-round cultivation of vital vegetables such as peas, tomatoes, and cauliflower, ensuring a consistent supply of fresh produce. Uttarakhand is also committed to organic farming, dedicating over 23% of its total land to organic agriculture, thereby offering nutrient-rich and chemical-free horticultural products. Notably, the state cultivates premium varieties like Potato (Kufri Neelkanth), Peas (Arkil), and Ginger (Rio de Janeiro), renowned for their quality and nutritional value. In terms of production, Uttarakhand's horticulture sector contributes significantly to the state's economy, with vegetables alone accounting for over INR 1.5k crores and annual vegetable production exceeding 10 lakh tonnes. Fruit production, including apples, pears, apricots, and kiwis, also exceeds 6 lakh tonnes annually. The state's horticultural infrastructure is robust, featuring over 80 market yards, 90 nurseries, 50,000+ tonnes of cold storage capacity, 50 fruit preservation centers, and 300+ horticulture mobile teams, all supporting the growth and distribution of horticultural products. Uttarakhand's horticulture sector offers a compelling landscape for investment and partnership opportunities. With its favorable climate, organic farming focus, premium crop varieties, and robust infrastructure, the state is primed to significantly contribute to both the region's agricultural and economic development.

- Despite the significant agricultural potential of Uttarakhand, its farmers confront a multitude of challenges that impede the realization of higher incomes. First and foremost, low productivity across crops remains a formidable barrier. Farmers often lack awareness regarding the precise inputs required and their optimal quantities for effective yield and pest management. This knowledge gap leads to suboptimal farming practices, contributing to soil health degradation and a subsequent decline in overall productivity. In addition, limited access to and knowledge of best practices for water management further exacerbate crop stress during periods of water scarcity. Moreover, farmers frequently remain uninformed about new, higher-yielding crop varieties introduced by agricultural institutions, preventing them from embracing innovations that could significantly enhance their yields.

- Another critical challenge lies in uninformed cropping and marketing decisions. Farmers rely heavily on past experiences rather than real-time demand information when making decisions about crop selection and planting. This approach can lead to overproduction of certain crops and missed opportunities to secure better market prices. Furthermore, the lack of access to real-time market prices leaves farmers unaware of price fluctuations in different markets, making it difficult for them to maximize their income potential.

- A third set of challenges includes low irrigation levels and frequent wildlife attacks. Approximately 12% of Uttarakhand's agricultural land has access to irrigation facilities, significantly limiting the

ability to manage water resources effectively. This falls well below the Indian average of over 40% of agricultural land with irrigation access. Additionally, the loss of produce due to wildlife attacks, including damage caused by animals like pigs, monkeys, and boars, compounds the difficulties faced by Uttarakhand's farmers, hindering their ability to increase their incomes and attain sustainable agricultural growth. Addressing these multifaceted challenges is essential to unlock the full potential of Uttarakhand's agricultural sector and improve farmers' livelihoods.

- Uttarakhand have witnessed remarkable progress in addressing their respective agricultural challenges through government and international cooperation agency initiatives.

- Government initiatives in Uttarakhand have indeed made commendable progress in addressing the agricultural challenges faced by the state. Notably, the establishment of Farmer Producer Organizations (FPOs) across the region has played a pivotal role in enhancing farmers' competitiveness and equipping them to capitalize on emerging market opportunities. Furthermore, the development of clusters in Nainital has been instrumental in promoting best practices and facilitating the aggregation of agricultural produce. These clusters serve as centers of excellence, enabling knowledge sharing and the adoption of modern farming techniques. Uttarakhand has also set up 42 growth centers aimed at promoting identified economic activities and facilitating the distribution of niche local produce and services to broader markets. Additionally, the deployment of extension officers has proven invaluable in providing farmers with timely advisory services and solutions to enhance productivity. The presence of 319 Horticulture Mobile Teams has further strengthened the dissemination of farm inputs and technical information, empowering farmers with the knowledge and resources needed for efficient agricultural practices. However, despite these commendable efforts, challenges persist. Agricultural sustainability and income enhancement remain ongoing objectives.

(2) Importance of Innovation

- Digital interventions aimed at increasing productivity and climate resilience hold immense potential for uplifting farmers and boosting their income levels. By leveraging technology, farmers could get access to real-time information about crops health, soil health, pest and disease warnings, nutrient content etc. These digital platforms can further be supplemented by Extension Officers/ Ground Staff providing advisory to farmers on the optimum use of inputs to ensure higher productivity while factoring the farm-specific nuances. Agritech startups have been at the forefront of developing and implementing such solutions, aligning with the JICA's and Uttarakhand government's goal to transform agricultural landscape. These startups are not only facilitating advisory services but also offering training and support services to empower farmers. Furthermore, these startups are collaborating closely with the Governments to enable the field staff with accessible data and information for subsequent integration with India's vision of Agri-stack.

- The Proof of Concept (PoC) initiative is designed to reinforce ongoing efforts aimed at improving farmers' income levels and achieving the overarching goal of enhancing their financial well-being. Recognizing the pivotal role of digital solutions in the agricultural value chain, this PoC addresses various aspects, including package of practices for crops cultivated in the region, customized advisory for farm inputs, weather alerts, managing soil nutrient levels and implementing pest and disease control measures. Notably, the primary focus is on prioritizing and increase in productivity and climate resilience with end goal of increasing farmer incomes. Therefore, the chosen digital partner is expected to provide a robust advisory solution, while enhancements in other value chain aspects are considered supplementary. This approach seeks to empower farmers and drive their economic progress through innovative digital solutions.

(3) Announcing Bodies

- JICA, an implementing agency for Japan's Official Development Assistance (ODA), believes that cooperation with developing countries in the digital age needs to change fundamentally. As such, JICA has launched the JICA DXLab, an open-source mechanism to facilitate co-creation with technology solution providers ("Digital Partner") to transform ODA projects with digital technology and innovation. In March 2021, JICA committed a loan of approximately $50million (ODA loan) to the Government of India to finance the Uttarakhand project (Project) to uplift the livelihoods of farmers.

- The Department of Horticulture and Food Processing, Government of Uttarakhand (DHFP), serves as the primary agency for the Project. It functions as an intermediary between the Executive Committee and the Project Management Unit (PMU), handling all necessary communication, correspondence, and related matters regarding the project. This includes the exchange of communication, notes, reports, and other relevant documents between the PMU and external parties.

- State PMU, which will be established at Dehradun as capital of Uttarakhand state where locates DHFP office, shall handle the overall project planning and management, overall project coordination, including that with JICA, overall procurement management, financial management, monitoring and evaluation, and preparation of reports such as Quarterly Progress Reports and Project Completion Report.

- This request for proposal (RFP) represents a joint initiative by JICA DXLab and the Government of Uttarakhand to identify a Digital Partner for a proof of concept that is designed to offer agri-advisory services to farmers in Uttarakhand (PoC). The PoC is scheduled to commence in January, and if it proves successful, JICA and the Uttarakhand government may consider collaborating further with the chosen Digital Partner to enhance these solutions and expand their implementation to wider geographic regions as part of the Project.

2. Objectives of the PoC

(1) Primary Objective
- To identify and validate the effectiveness of a digital solution that offers customized advisory services to farmers, aiming to enhance the productivity of fruits and vegetables in Uttarakhand, with the objective of increasing their income.
- To examine the feasibility of scaled deployment upon successful completion of the PoC.

(2) Secondary Objective
- Increase productivity levels: Improve soil health through efficient input utilization, best water management practices, and knowledge of superior crop varieties.
- Higher resilience to climate, pests, and diseases: Usage of right pesticides, proactive alerts, and measures to prevent diseases, and weather forecasts for mitigation and optimization.
- Higher price realization: Real-time market demand and pricing data, demand forecasts to aid in crop planning, and information on available sales channels.

3. Duration and Timeline (Tentative)

(1) Contract Duration

- The Digital Partner may suggest a suitable duration with reasonable justification from December 2023 to up to June 2024 (6 months)
    - ➢ While the completion time of the PoC is flexible, the start date should be set tentatively for December 2023 for onboarding and setup and January 2024 for implementation.

Note:
- JICA acknowledges that the duration indicated might be limited. However, both JICA and the Government of Uttarakhand are committed to offering support to execute the PoC smoothly in a timely manner, from pre-PoC stakeholder management and cluster identification to foster community engagement.
- In the meantime, it should also be noted that while JICA strives to optimize the duration and effectiveness of the PoC, this does not mean JICA undermines the time it takes to produce meaningful and lasting outcomes. The duration of the PoC can be negotiable, depending on the status and progress of the PoC.
- In addition, as briefly mentioned in "1. Background", JICA has extended a substantial ODA Yen loan to the Uttarakhand state and upon successful completion of this PoC, there is a possibility of deploying the Digital Partner's solution as part of the Project from July 2024 onwards.

(2) Selection Timeline (Tentative)
- Opening of the RFP: October 23, 2023
- Closing date of submission: November 5, 2023
- Selection: November 6 –24, 2023
    - ➢ November 6 – 7: Screening and shortlisting of candidates
    - ➢ November 8 – 10: Interview and deep-dive discussion with the candidates
    - ➢ November 20 – 24: Finalization of the digital partner
- Award notice: In the last week of November 27, 2023
- Signature of Contract: By first week of December 4, 2023

4. Eligibility

(1) Organization capacity

- The Digital Partner must possess significant expertise in providing digital advisory services to diverse farming communities across different regions of the country.
- The management of the Digital Partner does not include individuals with a history of corruption, arrest records, or affiliations with criminal organizations.

(2) Proposed solutions
- Mandatory requirements for proposed solutions from the Digital Partner:

    - ➢ Proposed solution must provide farmers a comprehensive package of best practices for cultivation of vegetables and fruits to improve the productivity.
    - ➢ Proposed solution must provide but not limited to customized advisory across various domains like optimizing the use of farm inputs, providing climate insights, issuing weather alerts, managing soil nutrient levels to improve yields, implementing effective pest and disease control measures, and other services aligning with the business model.
    - ➢ Proposed solution should involve collaboration and cooperation with state extension officers to empower and enhance their abilities, enabling them to effectively leverage digital solutions

to communicate technology-based information to local farmers, thereby ensuring a sustained impact.

- Preferred, but not mandatory, solutions that can be proposed by the Digital Partner:

  ➢ May be tailored to the targeted region, taking into consideration the local language to engage with farmers effectively.
  ➢ May involve an on-site field team to offer training sessions on the utilization of digital tools to farmers, lead farmers, or extension officers as needed.
  ➢ May also leverage geo-tagging, remote sensing, AI and ML-powered IoT tools and devices to monitor real-time field data and deliver personalized advisory services to individual farmers.
  ➢ May include but not limited to a variety of communication channels which are more prevalent in the region like WhatsApp, SMS, or IVR calls to effectively engage farmers with the advisory services.
  ➢ May also provide market advisory on demand trends and market prices to aid farmers in making informed decisions about crop selection and cultivation.

5. Target Crops and Regions

(1) Target Location

- At least 2 districts must be selected from Nainital, Tehri Garhwal, Uttarkashi, Pithoragarh districts, Uttarakhand, India, with a focus on covering at least 2000-3000 farmers (subject to discussion).
  ➢ JICA currently finances the Project primarily concentrated in the aforementioned districts.

(2) Target Crops

- Fruits: apples, temperate fruits like peach, pear, plum, apricot, etc.
- Vegetables: Peas, tomatoes, potatoes, leafy vegetables like cabbage, cauliflower, exotic vegetables like broccoli, etc.
  ➢ The selection of these crops for prioritization during the PoC period is based on their sowing season and productivity. However, the Digital Partner retains the flexibility to opt for a different specific horticultural crop for the project if there is a good potential for farmers in cultivating the crops that aligns with the Project's overarching objectives.

6. Related Parties

(1) Primary Users

- PMU Team of Department of Horticulture and Food Processing, Uttarakhand State government
- JICA team

(2) Secondary Users (Targets)

- Farmers, Lead farmers, Extension officers, Local partners if any

(3) Operator

- Company engaged by JICA to operate JICA DXLab. Operator will be the contracting counterparty to Digital Partner.

7. Scope of Work

Scope of work may be negotiated after award notice to accommodate the selected solution/proposal.

(1) PoC Setup (4 weeks)

The setup phase will focus on furthering the understanding of the local requirements and developing a comprehensive plan for the PoC by adjusting the proposed plan. This phase will include the following tasks:

- Reviewing data and JICA reports: Conduct an in-depth review of available fruit and vegetable produce data in both the states and reports representing JICA's findings to better understand the nature and scope of productivity issues faced by the farmers in Uttarakhand.
- Conducting field visit and on-ground study in target clusters to gain an understanding of the agricultural landscape, farmer landholdings/ land fragmentation, key issues faced, etc. to be able to propose a more real and implementable solution.
- Detailed action plan: Based on the baseline study, develop a comprehensive plan of action along with JICA and BCG to establish alignment on prioritized crops and regions for the PoC.
- Success metrics: The plan should include the selection of appropriate key performance indicators (KPIs) aligned after the baseline study with all the stakeholders that can measure the impact of the PoC. Some of the examples may include but not limited to number of farmers onboarded, increase in farmers income before and during PoC, number of advisory messages/notifications sent, increase in productivity, etc.
- Identify potential local partners: If needed, the digital partner may consider identifying potential local partners such as lead farmers, Farmer Producer Organizations (FPOs), cooperatives, or any other relevant entities for on-ground deployment.

(2) PoC Implementation (6 months)

The implementation phase will focus on implementing the roll-out strategy. This phase will include the following tasks:

- Roll-out of the solution: Roll out the digital solution to farmers in the selected target location in Uttarakhand. This process should encompass the activities outlined in the proposed solutions as mentioned in the Section 4. (2).
- Onboarding and capacity building: Setup the onboarding process for farmers or local partners, if needed, onto the digital platform. This process should also include the deployment of training modules designed to ensure that the farmers are familiar with the solution and can use it effectively.
- On-field force deployment: Deploy the on-field team to provide hands-on support to actively engage farmers in adopting the advisory services and demonstrating the digital solution.
- Adaptation and localization: Adapt and localize solutions based on the local requirements.

(3) Monitoring and Evaluation

- Monitoring and evaluation: Monitor and evaluate the effectiveness of the solution in providing the Agri-advisory services to farmers for horticulture crops. The evaluation will be based on the KPIs developed during the design phase and will be used to assess the impact of the PoC.
- Ongoing support and maintenance: Provide ongoing support and maintenance for the solutions during the implementation phase.
- Reporting: Report on the PoC progress and insights on the effectiveness of the solution to related parties, including Uttarakhand State PMU team, JICA, and the Operator.
  - ➢ Develop a post-PoC deployment plan

> ➤ Organize / participate in the following reporting sessions:
> - Regular check-ups (once or twice a week) with JICA and the Operator
> - Weekly meetings with the Users, JICA and the Operator
> - A mid-term review session with extended members of the Users and the Operator after three months from the PoC launch (expected around the end of March 2024)
> - A final reporting session with extended members of the Users and the Operator at the completion of the PoC (expected around the end of June 2024)
> ➤ Draft the Deliverables, obtain feedback from the Operator and the Primary and Secondary Users, and finalize them.

8. Deliverables

(1) Deliverables (in English)
- Project progress reports with higher-level analysis and findings from the data/impact captured by the solution. These reports should be submitted three times, specifically at the project's inception (mid-Dec 2023), during the mid-term review (end-Mar 2024), and the final report (end-Jun 2024).
- One final report, including but not limited to: (a) an outline of the result of the PoC; (b) details of the PoC activities; (c) quantitative and qualitative evaluation of the PoC based on a set of predetermined KPIs; (d) technical, operational, and strategic recommendations to Uttarakhand state PMU/JICA and the Operator; and (e) a preliminary scaled deployment strategy recommendations on data utilization/practices.

(2) Time of delivery (Tentative)
- July 15, 2024

(3) Method of submission
- Electronic data

9. Budget

- The maximum budget for the services is USD 100,000, inclusive of all taxes and expenses. Nevertheless, this amount remains subject to discussion based on the final PoC plan and associated costs.

10. IP and Other Considerations

- The intellectual property rights of the Deliverables set out in "8. Deliverables" created by the Digital Partner for this PoC shall be assigned to JICA (or party designated by JICA) upon completion of the inspection.
  - ➤ The consideration for the assignment of rights set forth in the preceding paragraph shall be included in the commission fee.
- The Digital Partner's solution that existed before the start of this work will be considered the Digital Partner's pre-existing intellectual property rights.
- Similarly, the intellectual property rights of the regarding the custom development of the digital solutions co-developed by the Digital Partner, Contractor and JICA during the PoC for the unique

purpose of PoC under this agreement, will be subject to discussion between the Digital Partner, Contractor and JICA.

- The handling of personal information and other data obtained with necessary consent and approval for use during the PoC shall be conducted in accordance with all applicable local and international laws, rules, and guidelines.
- In case the Digital Partner's solution requires data provided by DHFP PMU team for implementation (e.g., crop production data), Uttarakhand State PMU team will retain the ownership of data and grant the use of the data for pre-agreed purposes. The Digital Partner shall be responsible for obtaining the necessary permits or authorizations and they are strictly limited to using the data for the pre-agreed purpose. Details of the terms will be negotiated between the PMU team and the Digital Partner after partner selection.
- The utilization of collected data after the PoC, comprising both qualitative and quantitative metrics, will be contingent upon the discussions between JICA, the State teams, and the Digital Partner.
- After the selection of a Digital Partner, JICA plans to publish the selection on their website with the Digital Partner's consent. Additionally, JICA also aims to develop content to disseminate information about the ongoing project and its impact, both during and after the PoC, and they would highly value the collaboration and support of the Digital Partner in this endeavor.

11. Proposal Format

(1) Proposal Format

Electronic submission must be received at JICADXLab@bcg.com by the latest 20:00 Indian Standard Time on Nov 5, 2023. The email subject needs to be changed to "RFP-Uttarakhand Horticulture-PoC", followed by your organization name (for instance, RFP-Uttarakhand Horticulture-PoC-Name). The submission shall consist of the two separate files, Overview of General Information and Proposal Pitch Deck, both in the form of PDF/Word/PPT. Note that all submission materials need to be prepared in English.

The Digital Partners may make inquiries/information requests by email to JICADXLab@bcg.com. For any inquiry, the email subject must be changed to "Inquiry-Uttarakhand Horticulture-PoC", followed by your organization name (e.g., "Inquiry- Uttarakhand Horticulture -PoC-Name). The deadline for receipt of inquiry is Oct 30 Indian Standard Time.

(1) Overview of General Information (PDF/Word/PPT format)
- Provide all the following information by filling out the form provided in Attachment 1.

(2) Proposal Pitch Deck (PDF/Word/PPT format).
- Your proposal should include the following information:
  - ➢ Description of the proposed digital solution (to explain how the Digital Partner will deploy their solution/product offering in the targeted regions of the PoC).
  - ➢ Outline the project approach/implementation plan for deployment of the digital solution, highlighting:
    - o Types of advisory services to be provided
    - o Preferred regions and crops (vegetables and fruits)
    - o Involvement of local partners if necessary, such as extension officers
  - ➢ Planned impact including the number of farmers to be covered and the impact envisaged per farmer.

- ➢ Value proposition for farmers and other stakeholders of the ecosystem, in qualitative and quantitative terms.
- ➢ If available, impact materials or case studies conducted by the company or any third party for past projects.
- ➢ Provide a total expected cost (after tax) and a detailed breakdown of the costs.
- ➢ Any other facts, figures, and details of the solution that are considered relevant to achieve the objective of this PoC.

12. Evaluation Criteria

(1) Initial Shortlisting

- The selection of Digital Partners for interviews will be based on the submitted proposals on or before Nov 5, 2023. Initial shortlisting will prioritize the solution's applicability and potential impact on farmer income upliftment.

(2) Interview & Detailed Discussion

- Shortlisted potential partners would be invited for interviews in the presence of JICA and State Government where the following key aspects will be discussed in detail:
  - ➢ Relevance of the proposed digital solution to Uttarakhand state context
  - ➢ Potential impact that can be delivered in the PoC, considering the number of farmers impacted and their income improvement
  - ➢ Track record of conducting similar projects in the past in India or similar regions
  - ➢ Scalability and adaptability of the solution from practical and financial standpoints in the context of Uttarakhand

(END)

Attachment 1: Form for the Overview of General Information
Attachment 2: Uttarakhand Horticulture Context

Attachment 1: Form for the Overview of General Information

Electronic submission must be received at JICADXLab@bcg.com by the latest 20:00 Indian Standard Time on Nov 5, 2023. The email subject needs to be changed to "RFP-Uttarakhand Horticulture-PoC", followed by your organization name (for instance, RFP- Uttarakhand Horticulture -PoC-Name). The submission shall consist of two separate files, Overview of General Information and Proposal Pitch Deck, both in the form of PDF/Word/PPT. In order to be considered for funding, submission documents must be prepared in English and fulfil each of the following items.

Fill out this form and include it as a cover page of the Overview of General Information.

1. Contact Information	
Organization Name	
Contact person name and title	
Address	
Phone Number	
Email Address	
Organization description (Max 150 words)	
Ownership structure and ultimate beneficiary owners, if relevant	

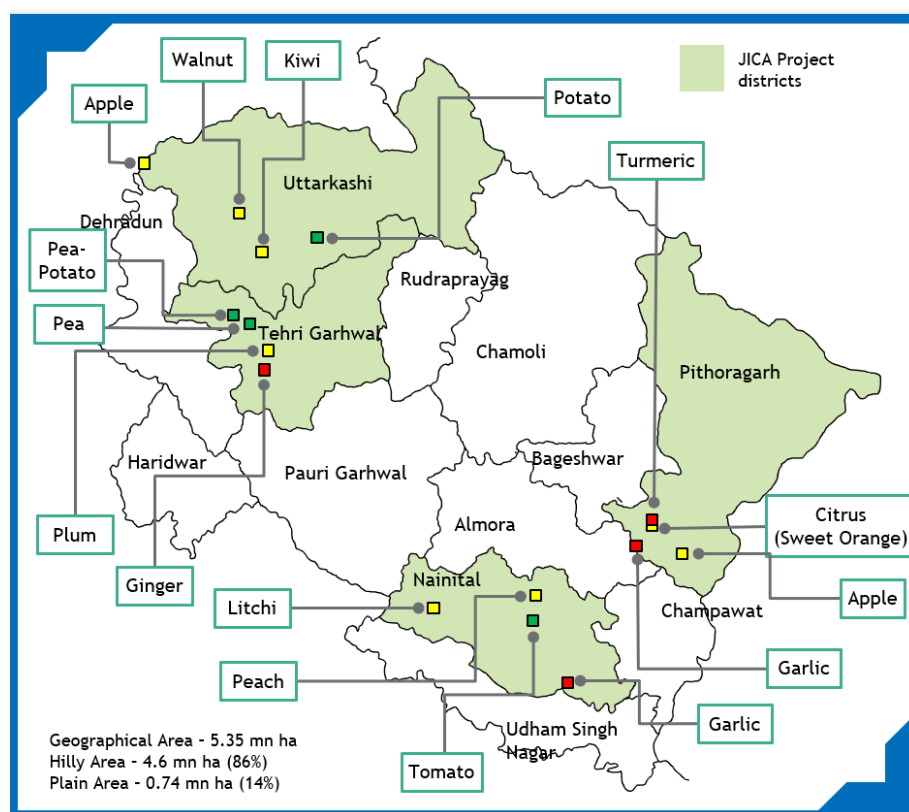| 2. Documentations (a copy to be included in the PDF file)	Check/attached
Company/Organization registration certificate or equivalent	
At least 2 years of audited financial statements	
Tax certificate *If your organizations are exempted from filing tax, please submit a tax exemption certificate	

Attachment 2: Uttarakhand Horticulture Context

Table 1: District-wise annual production (in MT) of fruits – Uttarakhand

Districts	Apple	Pear	Peach	Plum	Apricot	Mango	Litchi	Total
Dehradun	7,808	2,157	805	1,483	1,757	10,287	6,602	42,560
Pauri	2,981	2,820	990	1,467	1,291	8,162	341	35,738
Tehri	1,984	4,937	927	2,688	1,214	10,265	12	28,909
Chamoli	2,892	1,367	1,169	313	394	485	8	12,831
Rudraprayag	215	230	179	142	77	238	9	2,550
Uttarkashi	20,192	4,170	1,609	1,063	1,161	443	9	34,484
Haridwar	-	1,354	705	-	-	26,278	4,698	104,136
Nainital	8,550	9,142	26,430	6,295	2,926	32,759	9,275	109,107
Udham Singh Nagar	-	568	-	-	-	35,203	2,313	54,173
Almora	14,080	35,794	20,568	20,564	17,902	23,826	94	176,847
Bageshwar	14	1,172	548	153	72	3,757	26	12,744
Pithoragarh	3,043	12,577	3,932	1,662	1,150	2,788	714	49,592
Champawat	331	1,828	940	618	377	2,302	539	13,698
Total	**62,090**	**78,115**	**58,802**	**36,447**	**28,320**	**156,793**	**24,640**	**677,370**

Source: Department of Horticulture and Food Processing, Government of Uttarakhand; The Preparatory Survey on Uttarakhand Integrated Horticulture Development Project (March 2022)

Table 2: District-wise annual production (in MT) of vegetables – Uttarakhand

Districts	Potato	Pea	Tomato	Cauliflower	Cabbage	Onion	Total
Dehradun	15,604	10,226	7,073	16,705	3,533	2,963	90,001
Pauri	15,780	2,531	5,724	1,911	3,396	7,157	62,530
Tehri	49,210	21,319	3,755	564	6,924	7,390	113,345
Chamoli	6,162	1,120	399	377	1,316	831	18,495
Rudraprayag	9,360	271	177	76	604	233	12,703
Uttarkashi	30,144	5,102	12,343	1,624	3,440	2,068	75,446
Haridwar	35,355	9,300	16,771	10,143	13,540	6,094	126,682
Nainital	26,596	9,553	21,670	2,028	12,335	5,315	87,089
Udham Singh Nagar	62,604	30,648	20,180	5,712	7,531	4,952	160,410
Almora	54,421	3,612	5,089	2,367	3,702	1,617	99,525
Bageshwar	5,648	801	479	576	1,452	1,290	13,516
Pithoragarh	46,063	2,020	10,474	877	9,332	4,961	121,557
Champawat	11,695	1,341	6,250	334	2,131	599	32,981
Total	**368,641**	**97,845**	**110,382**	**43,293**	**69,234**	**45,469**	**1,014,279**

Source: Department of Horticulture and Food Processing, Government of Uttarakhand; The Preparatory Survey on Uttarakhand Integrated Horticulture Development Project (March 2022)