



Annual Report (2023 - 2024)



People's Science Institute



People's Science Institute

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Uttarakhand

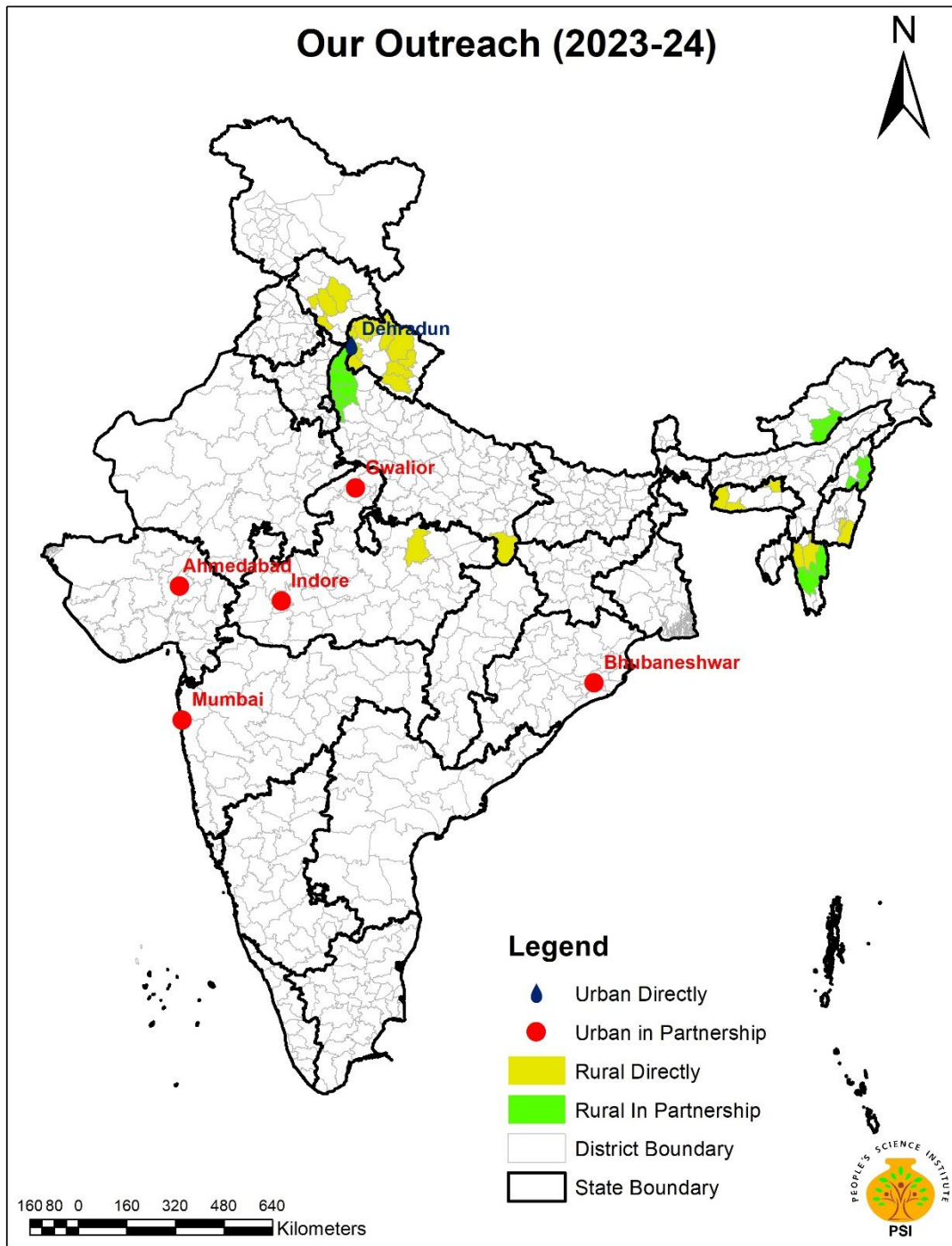
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States - 11

Districts - 37

Villages - 305

Households ~ 14,174

Cities/Towns - 11

I. ABOUT PEOPLE'S SCIENCE INSTITUTE

People's Science Institute (PSI) is registered as a society in New Delhi under the Societies Act (1860). **Its stated mission is, "To help eradicate poverty through the empowerment of the poor and the productive, sustainable and equitable use of available human and natural resources."**

At PSI, poverty is understood in terms of shortages of human, social, natural, physical, and financial capital in communities.

Operationally it provides technical and managerial support to communities and organizations that work with them, implements development programs, and undertakes public interest research. PSI's activities are spread all over India. Its current geographical focus is on the Himalayan states and the poverty-ridden Bundelkhand region.

PSI's activities are grouped under four units: (i) Natural Resources Management, (ii) Disaster Mitigation and Response, (iii) Environmental Quality Monitoring, and (iv) Innovative Projects. The activities of the first three units are defined by the needs expressed by communities or the organizations working with them. The Innovative Projects Group experiments with critical concepts, processes, and technologies to enable PSI to respond to emerging needs. Each unit implements development projects, undertakes research, and provides training as well as professional support. The Institute's approach to implementing development projects is a participatory one with empowerment of the underprivileged and self-reliance as key objectives.

The Institute has a competent staff of socially conscious engineers, scientists, and social workers to carry out the above tasks. It has its eco-friendly campus building in Dehra Doon. It operates two state-of-the-art laboratories for Geographical Information Systems and Environmental Quality Monitoring. The Institute has a small library with over 3000 books. It subscribes to several professional journals and periodicals. The staff is adequately equipped with personal computers and the necessary applications software. PSI possesses basic office equipment and training aids.

PSI has established a special niche for itself by undertaking projects on a large scale by using a systems approach to scale-up community-centered projects from a village to a district level, innovating social processes, administrative procedures, and technologies. It is also recognized for its professional, knowledge-based approach from problem analysis to formulation of policy guidelines. The number of communities, voluntary organizations (VOs) working with them, research institutions, government agencies, and occasionally donor organizations that seek the Institute's support or collaboration, continues to increase.

In the last 36 years the Institute has become well-known in the voluntary sector for its pioneering work in the fields of community-based natural resources and watershed management for improved livelihoods, promotion of agro ecological practices, geo-hydrology based springshed development, environmental quality monitoring, disaster-safe housing, river conservation and dissemination of appropriate technologies.

This annual report outlines the major activities of 2023-24.

II. YEAR 2023-24: AN OVERVIEW

In the year 23-24, PSI largely worked in four thematic areas i.e. (i) water, food and livelihoods security; (ii) water quality, (iii) flood disaster study and response; and (iv) sustainable and inclusive urbanization. Apart from the above it extended training and field support to different government, non-government and academic institutions on springshed management and fluorosis mitigation.

The water, food and livelihoods security programs of PSI, covered the Western Himalayan and Bundelkhand regions of India, covering a total of 8552 families from 110 villages from 7 districts of three states (Himachal Pradesh, Madhya Pradesh and Uttarakhand). These projects were supported by LIC -HFL - CSR, NABARD Uttarakhand, CMA-CGM Agencies (India) Pvt Ltd., Vana Enterprises Ltd., Wipro Cares, Department of Science & Technology, Ajim Premji Philanthropic Foundation (APPF) and Srijan (Under MP Natural Farming Coalition).



Water, Food & Livelihoods Security

In the mountain districts of Western Himalayan region (Himachal Pradesh and Uttarakhand), the focus was on natural resource management and promotion of sustainable livelihood activities like treatment of drying springs, increasing access to irrigation facilities, and enhancing crop productivity through agro-ecological practices. Farm based livelihood activities mainly included crop diversification, vegetables and spices cultivation, fruit and fodder plantation, mushroom cultivation, bee keeping, and poultry. Off farm livelihood activities included community based tourism, and sewing and knitting, especially as women driven enterprises. Infrastructure for collection, processing and marketing was developed in three clusters covering 30 mountain villages. Community based institutions like SHGs, watershed committees and farmers' cooperatives were formed and/or strengthened. The beneficiary households got an additional average annual income of about Rs. 8,000 - Rs. 10,000 in the second year of program implementation itself.

In the plain districts of Uttarakhand, three new multi-year programs were started, involving (i) scoping study for Purkul Watershed Development and Livelihoods Development Program for 3 villages in the foothills of Mussoorie, (ii) improving livelihood system efficiency of economically weaker sections in 15 villages of Haridwar district, and (iii) enhancing ground water recharge through Common Property Resources Management in 8 villages of Haridwar district. These initiatives are likely to benefit 1252 families of the 26 selected villages in the long run.

In the Bundelkhand region, the focus was on demonstrating Climate Smart Drought Mitigation through improvement of food, nutrition and livelihood security, in a socially-just manner. This included provision of life-saving irrigation through farm ponds; on-farm innovative agronomic practices like SCI, natural farming, NPM, kitchen garden, vegetable cultivation; establishment of

Technology Resource Centres, millet processing units and strengthening of institutional mechanism to sustain the efforts. The program covered 4020 households of 35 villages of Panna district of Madhya Pradesh. 106 ha was provided protective irrigation, with increase in crop productivity ranging from 40 to 90 per cent. 126 Farmers Interest Groups have been formed and strengthened. The reported increase in annual household income from different farm based interventions ranged from Rs. 15,000 to Rs. 20,000, in the last year of program implementation.

Under air and water quality studies, the research initiatives encompassed various ecological and health-related projects, including monitoring water quality of surface and ground water sources in the Hindon sub-basin and implementing sustainable agricultural practices, and studying air pollution in Ahmedabad, Bhubaneswar, Indore, and Mumbai, and addressing fluorosis in Sonbhadra district in Uttar Pradesh. The river studies revealed significant pollution and highlighted the need for community involvement, sustainable agriculture, pollution control, localized solutions, and scientific research to preserve river ecosystems. In target cities, research on air pollution emphasized local priorities, stressing the importance of monitoring, stakeholder interaction, and community engagement.

The disaster mitigation and response group, at PSI assisted IIT-R in undertaking a social survey assessment of losses and damages caused by extreme rainfall events of 2023 in Kullu & Mandi districts of Himachal Pradesh. Further with the support of SDTT, Mumbai it imitated the construction of reusable insulated temporary shelters for 60 families who have been rendered homeless due to the floods in villages of Kullu and Mandi districts.

Under inclusive and sustainable urbanization, PSI with the help of local organizations engaged with range of local actors including the slum dwellers in Ahmedabad, Bhubaneswar, Indore, and Mumbai for co-developing solutions to address the issue of air pollution and its ill effects. PSI in partnership with IIT-R also undertook an evaluation of PMAY in Chamoli, Dehradun, Rudrapur and Uttarkashi districts of Uttarakhand.



Air & Water Quality Studies



Flood Study & Response

PSI also continued to help in the management of shallow aquifers in Gwalior city under Atal Mission for Rejuvenation and Urban Transformation (AMRUT 2.0) implemented by the Ministry of Housing and Urban Affairs, benefitting 1200 households. It undertook (a) geological analysis for assessment of hydrogeological potential, (b) capacity building and stakeholder engagement involving over 100 professionals from different government departments and NGOs to shallow aquifer management, enhancing awareness and collaboration for water resource initiatives, (c) aquifer mapping to understand groundwater dynamics within and around Gwalior city, facilitating informed decision-making on water management strategies, (d) groundwater Level mapping to create a groundwater level map of Gwalior city, (e) identification of 17 potential shallow aquifer recharge sites in Gwalior city.

Apart from the above, PSI extended training and field support to various government, non-government and academic institutions program in the areas of springhhd management, flurosia mitigation, and preparation of Gram Panchayat Development Plans.

The year thus saw PSI mainly contributing to Sustainable Development Goals (SDGs) 1 (End Poverty), 2 (End Hunger), SDG 3 (Good Health and Well-being), SDG 5 (Gender Equality), 6 (Water and Sanitation), 11 (Sustainable Cities and Communities), 12 (Responsible Consumption and Production), 13 (Combat Climate Change and its Impacts), 14 (Conserve and Sustainably Use Aquatic Resources for Sustainable Development), and 17 (Partnerships for the Goals). In the coming year, the Institute plans to expand its activities, focusing on addressing climate change, livelihood security and sustainable urbanization.

In the end, we would like to extend our gratitude to our well-wishers, knowledge and technical partners, grass-root level organizations, and communities who have been with us during this challenging yet exciting journey. We are grateful for your support and trust in us because this has stimulated our mission to work towards nation-building based on the principles of productivity, sustainability, equity, self-reliance, diversity and inclusivity while promoting people's science in all that we do.



Sustainable & Inclusive Urbanization



Training & Field Support

III. PROGRAMME BRIEFS

III a Water, Food and Livelihoods Security

III b Water Quality Studies

III c Disaster Study and Response

III d Sustainable and Inclusive Urbanization

III e Training and Field Support

III a. Water, Food & Livelihoods Security

S. No.	Project Title	Total Project Period	Total Grant Amount (Rs.)	Funding Agency	Project Partners	Geographical Coverage
1	Promoting Farm and off Farm based Micro-enterprise Development for Livelihoods Security in Western Himalayan Landscape under LIC LIFE Program (Livelihood Initiative for Financial Empowerment)	January 2023 to March 2024	1,15,97,750	LIC - HFL - CSR	None	States: Uttarakhand, Himachal Pradesh Districts: Nainital, Solan No. of Villages: 30 Beneficiaries: 2,000 households
2	Watershed Based Springshed Development in Almora district	September, 2022 to August, 2025	57,43,619	NABARD - RO Dehradun	None	State: Uttarakhand District: Almora No. of villages: 2 Beneficiaries: 103 households
3	Watershed Based Springshed Development in Bageshwar district	July 2022 to June, 2025	57,69,622	NABARD - RO Dehradun	None	State: Uttarakhand District: Bageshwar No. of villages: 4 Beneficiaries: 597 households
4	Spring Revival and Water Security and Skilled Livelihood Program in Chamoli & Almora districts of Uttarakhand	September 2023 to March 2024	20,00,000	CMA-CGM Agencies (India) Private Limited	None	State: Uttarakhand District: Chamoli, Almora No. of villages: 13 Beneficiaries: 580 Households

S. No.	Project Title	Total Project Period	Total Grant Amount (Rs.)	Funding Agency	Project Partners	Geographical Coverage
5	Ground Water Recharge in Haljora Watershed through Common Property Resources Management in Haridwar district of Uttarakhand	January 2024 to Mar 2025	57,64,066	WIPRO Cares	None	State: Uttarakhand District: Haridwar No. of villages: 8 Beneficiaries: 380 Households
6	Strengthening the local innovation systems through S&T interventions for enhancing livelihood system efficiency of EWS in villages of Haridwar district, Uttarakhand	December 2023 to December 2026	2,53,49,500	Department of Science & Technology	KVK	State: Uttarakhand District: Haridwar No. of Villages: 15 Beneficiaries: 600 Households
7	Scoping Study for Purkul Watershed Development and Livelihoods Development Program for the vulnerable communities of four selected villages	November 2023 to March 2024	4,00,000	VANA Enterprises Ltd.	None	State: Uttarakhand District:- Dehradun No. of Villages: 3 Beneficiaries:- 272 Households
8	Climate Smart Drought Mitigation and Livelihood Enhancement	January, 2020 to September 2023	3,44,10,764	Ajim Premji Philanthropic Foundation (APPF)	None	State: Madhya Pradesh District: Panna No. of villages: 35 Beneficiaries: 4,000 households
9	Aligning Farming with Nature	February 2022 to March 2023	26,05,000	Srijan under MP-NF Coalition	MP-NF Coalition	State: Madhya Pradesh District: Panna No. of villages: 20 Beneficiaries: 500 farmers

Promoting Farm-based and off-Farm Microenterprises for Livelihoods Security in Western Himalayan Landscape under LIC LIFE Program

LIC Housing Finance Ltd. supported a project to promote farm-based and off-farm microenterprises for livelihood security in the Western Himalaya region. Ten villages in two clusters, five each in Kandaghat and Solan blocks, Solan district (H.P.) and 20 villages in Kotabagh and Dhari blocks of Nainital district (Uttarakhand) were selected for project implementation.

Objectives:

- Preparation of Village Development Plans (VDP) in new villages.
- Formation of Village Level Institutions (VLIs).
- Capacity building of farmers and VLIs.
- Training and demonstrations of organic farming and agro-ecological practices.
- Development of farm-based and off-farm enterprises through processing and marketing.
- Improvement in the income of vulnerable communities.

Activities: PSI's team initiated and extended a number of activities in selected clusters of villages in Himachal Pradesh and Uttarakhand.

- Prepared VDPs for five new villages in Kaba Kalan cluster, Solan district, HP.
- Formed new VLIs such as Self-Help Groups (SHGs) and Farmer's Interest Groups (FIGs) in the new villages; strengthened existing institutions formed in Year-1. Till March 2024 had established 82 active SHGs and FIGs with 1152 members.
- Established new collection centers, processing units and market outlets; strengthened older centers and units.
- Set-up new farm-based micro-enterprises such as beekeeping and poultry; new goat rearing and mushroom cultivation units were established and old units were strengthened.



Mushroom cultivation by farmers in Dhari cluster, Nainital district, Uttarakhand

- Trained 29 beneficiaries in mushroom cultivation. Four mushroom cultivation units were established for them. A technical support agency, Alakh Cooperative, provided additional training to the beneficiaries for building their training capacities. This was meant to enable them to extend mushroom cultivation. X monitored the production units set-up by farmer-cooperatives.
- Distributed 210 goats among 42 new farmers to practice goat rearing.
- Organised training, farm demonstrations, and exposure visits for farmers and institutions on agro-ecological practices like SCI and organic, natural farming.
- Demonstrated farm-based agro-ecological practices for cultivation of green pea, finger millet, kidney beans, wheat and lentils. Seed treatment, plant spacing, weeding, use of bio inputs like *matka khad* were demonstrated for the system of crop intensification (SCI) method.
- Established Bio-Resource Centers (BRC) in all the four clusters to prepared and distribute liquid bio-resources like *jeevamrit*, *ghan jeevamrit*, *agnyastr* to participating group members in different crops, especially vegetables.
- Established four new homestay units in Dhari cluster to promote community based tourism. Sixteen homestay units established earlier were strengthened. Training, exposure visits were organized for the homestay owners.
- Trained SHG members in sewing, knitting, Aipan art, handicrafts, jute bag making and mushroom cultivation.



Promotion of SCI in Dhari, Nainital district, Ukd



Preparation of bio inputs for Bio-input Resource Center (BRC)

- Set-up sewing and knitting enterprises to empower women. Formed and trained 61 SHGs in all the four clusters. About 700 members from these SHGs were trained in sewing, knitting, Aipan art; making jute bags, juices, pickles, spices, dhoop agarbatti and handicrafts. Gave a revolving fund of Rs. 11.4 lakh to 17 SHGs mostly in the Dhari cluster to produce mainly sewing, knitting, aipan art products.
- Organized cluster-level workshops and collaborations in all four clusters for knowledge dissemination and scaling up the efforts.
- Submitted proposals through gram panchayats to the Irrigation Department to access convergence funds under existing government schemes.



Knitting product prepared by women groups in Dhari cluster, Nainital under off farm enterprises for women

Outcomes:

- **Establishment of processing units:** Added three new processing units in addition to 10 existing units, for processing fruits and vegetables. The existing unit in Kotabag block processes spices while the Kandghat clusters process turmeric powder. Cattle feed processing units were set-up in four villages of Kotabag cluster and three villages of Dhari cluster. They also market the items processed like jams, chutneys, juices and turmeric powder. The groups have earned a combined income of Rs.3.5 lakh from their sales.
- **Poultry and Goatry:** Poultry and goatry activities have successfully provided additional livelihoods to 50 very poor families with little or no landholding. The project supplied about 600 poultry chicks in the first year and 3,400 poultry chicks in the second year. The 50 families earned Rs. 1.5 lakh from the sale of chicks, eggs and goats.
- **Mushroom Cultivation:** Four mushroom cultivation units benefiting 29 farmers earned Rs. 60,000 from the sale of 300 kg. mushrooms for the beneficiaries, till end of March 2024.
- **Sewing, Knitting, Aipan art and Handicraft Enterprises:** These enterprises have proved to be good livelihood options for women's groups. About 300 women in the SHGs earned Rs.2.6 lakhs from the sale of their items. A revolving fund of Rs. 11.4 lakh was given to 17 SHGs mostly in Dhari cluster. Most of these groups produced products and earned Rs. 5 lakh from the sale of these products.



A Goatry unit Kotabag Cluster, Nainital district

- **Farm Demonstrations:** About 1,000 farmers, out of 1,900 farmers covered in the farm demonstrations, earned Rs. 12 lakh from the sale of vegetables, spices, pulses etc. in two seasons. A similar quantity of fruits, vegetables and pulses was also consumed at home by these families. SCI cultivation yielded 60 percent production increase compared to traditional methods in crops like finger millet, kidney beans and green pea.



Tillering in Finger millet (SCI) in Dhari, Nainital district, Ukd

- **Homestays:** The Community Based Tourism (CBT) project in Dhari cluster enabled 20 families to earn Rs. 2.25 lakh from homestay units by linking them with the District Tourism Department. An E-book and website was developed for the proper marketing of the homestays.
- **Strengthening of Institutions:** The 36 FIGs and 46 SHGs with 1152 members were active till March 2024. These institutions were strengthened through regular meetings and training programs. The FIGs were trained in in crop-specific agro-ecological practices.
- **Infrastructure and Market Development:** The project has led to the establishment of collection centres, processing units, market outlets, and stream lining supply chains that ensure fair market access for the farmers. This development has created a conducive environment for the local produce to reach a wider consumer base.
- **Impact on Households:** The diversified production enterprises enabled 2,000 households to benefit economically and nutritionally.



Market outlet Kotabag Cluster, Nainital district, Uttarakhand

Their efforts collectively resulted in a substantial cash income of Rs. 36,93,392 d from the sale of various farm and off-farm products. In addition an equal amount of fruits, vegetables, milk, honey, eggs, etc. were consumed by the producer families.

- **Growth Potential:** The project has demonstrated the potential for sustainable economic development in the mountain regions. The project activities can be expanded to create block-level growth centres through appropriate government schemes.

Watershed Based Springshed Development in Kamyaraula watershed, Almora

NABARD Regional Office, Dehradun supported a project to promote natural resource management activities in Kamyaraula watershed of Almora district of Uttarakhand, covering 103 families of two watershed villages.

Objectives

- Revival of drying springs for drinking water and minor irrigation purposes.
- Improvement of soil fertility through soil and water conservation measures.
- Create alternative livelihood opportunities for women and vulnerable communities.
- Strengthening of the village-level institutions and watershed-level community-based organizations.



Construction of trenches in Kamyaraula project, Almora district, Uttarakhand

Activities:

- Constructed staggered trenches in the recharge zones of four springs.
- Constructed and repaired irrigation guhls and canals for improving irrigation facilities and crop productivity.
- Installed drinking water pipeline in the Kamyaraula project to provide safe drinking water to the local community.
- Planted grass and fruit plants in the recharge zones. SCI pilots for cultivating vegetables, spices, and pulses.
- Organized meetings and exposure visits on natural farming for the village watershed committee, Mahila



Construction and repair of Irrigation Guhl in Kamyaraula project

Mangal Dals, and Self-Help Groups. Awareness camps were organized on Women's Day and the Harela festival.

- Facilitated monitoring visits by DDM NABARD Almora and the team from NABARD's regional office, Dehradun.

Outcomes:

Springshed Conservation: Revived 4 springs, in Kamyaraula, by constructing 361 trenches, ensuring sustainable water resources for the community.

Enhanced Irrigation Potential: Constructed and repaired 579 meters of irrigation guhls and canals, directly benefiting approximately 80 families and irrigating 5.8ha. Crop productivity increased from 20 to 40 percent. Farmers consumed vegetables and sold the surplus.

Water Security: Installed an 880m long drinking water pipeline and storage tank, providing 18 households with a reliable water supply for drinking, irrigating kitchen gardens and cattle.



Construction of storage tank for and 88m drinking water pipeline

Biodiversity and Biomass Production: Planted 3,805 grass slips to promote fodder production and sowed 1,500 fruit plants, which could lead to a local fruit industry and support agricultural diversity.

Seed distribution: Seeds of vegetables like green peas, radish, green vegetables were distributed to 50 farmers. Khasti Devi from PSI trained the farmers before distribution of seeds. About 15 farmers started earning income from the sale of vegetables in the market. One farmer alone earned Rs. 28,000 from sale of vegetables.



Distribution of seeds of vegetables

NABARD Watershed Based Springshed Development in Khirganga watershed Bageshwar District

NABARD Regional Office, Dehradun supported a project to promote natural resource management activities in Khirganga watershed of Bageshwar district of Uttarakhand, covering 597 families of four watershed villages.

Objectives

- Revival of drying or dried springs for drinking water supply and minor irrigation purposes.
- Improvement of soil fertility through soil and water conservation measures.
- Create alternative livelihood opportunities for women and vulnerable communities.
- Establish and strengthen VLIs and watershed-level community-based organizations (CBOs).

Activities:

- Constructing trenches in five recharge zones for the revival of six drying springs.
- Constructed or repaired irrigation guhls and canals for additional irrigation to improve crop productivity with the use of organic composts.
- 40 farmers cultivated green peas in 1 acre as a pilot using the SCI method.



Construction of trenches and cultivation of Pea crop

- Constructed gabions and check dams for to check soil erosion and landslips.
- Planted fodder, grass and fruit plants.
- Demonstrated SCI cultivation of vegetables, spices, and pulses.
- Organized meetings and exposure visits on natural farming for the village watershed committee, Mahila Mangal Dals, and Self-Help Groups. Organized awareness camps on Women's Day and the Harela festival. Trained women SHGs in sewing.

- Facilitated monitoring visits by DDM, NABARD Almora and the team from NABARD's regional office in Dehradun.

Outcomes:

Springshed Conservation: Revived six springs by constructing 358 staggered, contour trenches.

Enhanced Irrigation Potential:

Constructed and repaired 558 meters of irrigation guhls and canals, to irrigate 10.6 ha directly benefitting approximately 85 families. The use of the SCI method increased the productivity of peas by 45% in the pilot project.

Biodiversity and Biomass Production:

Planted 8,000 grass slips to promote fodder production on the field bunds of 2ha farm land. It is expected to annually produce about 8-10 tons of green fodder and improve milk production of 50 households. Planted 1,260 fruit plants like citrus, pear, peach, apple which will produce fruits in 3-4 years and improve nutrition and income security of 125 households.



Storage tank for irrigation in Khirganga project, Kapkot, Bageshwar

Construction of Gabion Check Dams (GCDs): GCDs were constructed in a catchment of 6.8ha to reduce the stream velocity and help the recharge of groundwater and springs. This will help enhance the irrigation water resources.



Gabion Check Dams (GCD) Construction of for reducing the velocity of water of stream, it also helps in storage of water, recharge of spring, and irrigation.

Spring Revival and Water Security and Skilled Livelihood Program in Chamoli & Almora districts of Uttarakhand

CMA-CGM Agencies (India) Pvt. Ltd. supported a project to promote revival of springs as well as promote agro-ecology in 13 villages of Almora and Chamoli districts of Uttarakhand benefiting 580 households.

Objectives:

- Regeneration of 8 springs, in Chamoli (3) and Almora (5) through engineering, vegetative, and social measures based on hydrogeological studies to build the resilience of local communities to climate change.
- Construction of two water storage tanks.
- Promoting agro-ecological practices among 80 farmers of Chamoli District.
- Formation and capacity building of local spring Water Users Groups (WUGs) and Farmers Interest Groups (FIGs), especially of women, for treating and maintaining springs and to achieve food security.
- Development of protocols for the operation & maintenance of springs, including sharing of spring water in a more equitable manner.
- Deployment of para hydro-geologist from communities for monitoring of spring discharge and water quality, strengthening of WUGs and FIGs, up scaling the impact of the program, and ensuring sustainability.

Activities:

- Forty-three springs were inventoried, eight in Chamoli and 35 in Almora. Of these, 8 critical springs were identified, three in Chamoli and five in Almora. PSI's implementation efforts concentrated on these eight critical springs to tackle the pressing issues of decreasing water discharge and to meet the villages' water requirements.



Trench measurement by a para-worker and a WUG member at Malla Khol Naula, Rait village, Almora district

- Following consent from the respective communities, treatment activities in the recharge area were successfully implemented and completed. The Water Users Groups (WUGs) were active in implementing the work, while the para-workers oversaw and monitored the entire process.
- Two open water storage tanks were built in Chamoli utilizing the spring discharge. The Hanskoti tank, a stone masonry structure, stores 38,280 litres, irrigating 0.66 ha for 15 farming households. The Nakholi tank, an RCC structure, holds 15,000 litres, irrigating 1.17 ha for 25 households and supplying drinking water to 57 households.
- Training sessions and demonstrations were conducted to promote agro-ecological practices in 8 villages of Chamoli district, namely Basina, Devpuri, Eda, Hanskoti, Harmani Malli, Juda, Marora, and Nakholi. In all 92 demonstration plots were established, focusing on crop intensification methods, organic fertilizer production, and sustainable cultivation of wheat, barley, mustard, peas, and vegetables.



Demonstration of agro-ecological practices in villages of Chamoli district

- In Chamoli eight existing WUGs were strengthened, while 6 new WUGs (3 in Chamoli and 3 in Almora) were formed through democratic village-level meetings. These WUGs, known as Dhara-Naula Sanrakshan Samooh (DNSS), represent households dependent on local springs.
- Eight FIGs were established in the Chamoli villages, where demonstrations and training on agro-ecological practices were provided. FIG members received quality seeds for green peas and french beans to promote the System of Crop Intensification.



Women performing Nukkad Natak at Rait village, Almora



Establishment of agro-ecological practices in Chamoli villages (peas, mustard & vegetables)

- Awareness campaigns regarding sanitation and protection of the springs and recharge area were conducted. Campaign activities included poster-making by village youth and children, nukkad nataks, etc.



Awareness campaign through poster making by children & youth

- Four para workers in Almora (1) and Chamoli (3) were selected and trained. They were responsible for regularly collecting discharge and water quality data. They included two men

and two women. These para workers were introduced to the concepts involved in springshed management and good agro-ecological practices.



Para-workers recording discharge and in-situ water quality

Outcomes / Results:

Expected Result	Target	Outcome/Achievement
1. Spring Inventory, DTR Preparation, Regeneration of Springs	8 springs	• 43 Springs Inventoried • DTRs prepared for 8 drying springs of 6 villages • 8 drying springs treated
2. Construction of Water Tanks	2 tanks	• 2 storage tanks in Hanskoti and Nakholi villages of Chamoli district completed
3. Formation of WUGs and FIGs	13 WUGs & 8 FIGs	• 8 earlier WUGs and 6 new WUGs have been formed. In Rait village one common WUG has been formed for the three springs. 8 FIGs have been formed in Chamoli.
4. Deployment of para hydrogeologists	2	• 4 para hydrogeologists, Male (2), Female (2)
5. Implementation of Recharge Work	8 Springs	• 8 springs, Almora (5), Chamoli (3)
6. Demonstration of good agro-ecological practices	80 Farmers	• 92 Farmers in 8 villages of Chamoli on wheat, mustard, barley, pea and vegetables

Ground Water Recharge in Haljora Watershed through Common Property Resources Management in Haridwar district of Uttarakhand

WIPRO Cares supported a project to enhance the ground water recharge in 8 villages of Bhagwanpur and Bhadrabad blocks of Haridwar district of Uttarakhand which have been reporting falling ground water levels.

Objectives:

- Promote ground water recharge through drainage line treatment and water harvesting
- Create additional water storage through renovation of community ponds
- Reduce soil and water erosion in the watershed area
- Raise awareness on integrated water management in the project villages
- Establish and strengthen community based institutions

Activities:

- Six meetings were held for community mobilization and institution building in the watershed villages
- Five gabions were constructed to reduce soil erosion and increase ground water level.
- Six sub surface dykes were installed to increase the infiltration of base flows in the neighboring aquifers.
- Excavation of soil was completed in two community ponds (One each near Anganwadi and Neelkanth factory).
- A poster set related to Water User Group (WUG) formation for operation and maintenance of community ponds and their rules and regulations was designed
- Two meeting were held to form WUGs for the community ponds of Anganwadi and Neelkanth factory.



Construction of Gabion

Outputs:

- Village communities were motivated for undertaking soil and water conservation works.
- Formation of WUG for renovation of Anganwadi pond.
- Initiation of formation of farmers' interest groups (FIGs) in the concerned villages.



Excavation of soil

Strengthening the local innovation systems through S&T interventions for enhancing livelihood system efficiency of EWS in villages of Haridwar district, Uttarakhand

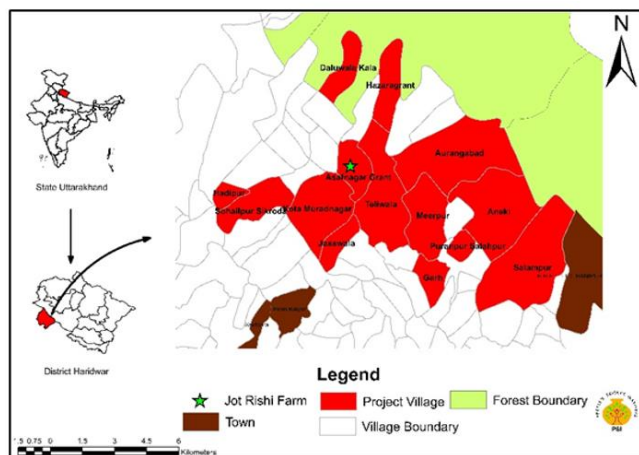
The Department of Science & Technology under its UNIL program initiated a three years' program to promote the livelihood security of about 600 economically weaker section families in 15 villages of Bhadrabad block of Haridwar district of Uttarakhand.

Objectives:

- To understand Local Innovation System (LIS) and its role in developing sustainable livelihood security in a rural context,
- To develop a watershed based sustainable livelihood system model for EWS community through S&T interventions and green skill development,
- Further strengthening of community resilience and future preparedness in rural communities through nudging and LiFE approaches.

Activities:

- Finalized 15 study villages in Bahadrabad Block, Haridwar District, Uttarakhand.
- Established collaboration with KVK, Dhanauri.
- Organized stakeholders' inception workshop.
- Identified Economically Weaker Section (EWS) families.
- Conducted participatory rural appraisal (PRA) to assess current livelihood conditions and available resources for EWS families in the selected villages.
- Carried out household surveys to identify gaps in livelihoods, resources, and institutional support for EWS families.
- Identification of ponds and selection for rejuvenation.
- Set up agro-ecological demonstrations and provided necessary inputs such as seeds, organic materials, and technical support.
- Finalized soil and water sampling stations.



- [Daluwala Kalan](#)
- [Teliwala](#)
- [Sohalpur Sikroda](#)
- [Hadipur](#)
- [Puranpur Salahpur](#)
- [Meerpur](#)
- [Kota Muradnagar](#)
- [Jasswawala](#)
- [Asafnagar Grant](#)
- [Garh](#)
- [Aneki](#)
- [Aurangabad](#)
- [Hazaragrانت](#)
- [Salempur](#)
- [Rawali Mehdood](#)

Project Villages of Haridwar District

- Established a Grameen Facility and Innovation Centre.
- Procurement of advanced equipment such as GPS, agriculture drone, harrow, thresher, soil and water testing kits, automated weather station etc.
- Selected farmers for the formation of Farmers' Interest Groups (FIG).

Findings/Outcomes

- A stakeholders' inception workshop was held at KVK, Dhanauri (Haridwar), where major crops were identified, including sugarcane, wheat, paddy, mustard, lentil, maize, black gram, pearl millet, sorghum, brinjal, tomato, chili, and sesame.
- Various government schemes were identified for convergence to achieve the project's objectives, such as the Horticulture Technology Mission, Food and Nutrition Security Mission, and National Mission on Micro-Irrigation.
- A total of 729 EWS (Economically Weaker Section) households were identified, covering approximately 1,900 hectares in 15 villages of Bahadrabad Block, Haridwar District.
- Major socio-economic challenges included small landholdings, low farm yields, a lack of skills for alternative livelihood options – especially during lean seasons – and a lack of livelihood-based institutions.
- Environmental issues mentioned included inadequate waste management systems, deteriorating soil health, falling groundwater levels, poor water quality, and carbon emissions.
- Findings from PRA and household surveys revealed that the majority of EWS households rely on agriculture and daily wages for their livelihood.



Stakeholders' Workshop at KVK, Dhanauri (Haridwar)

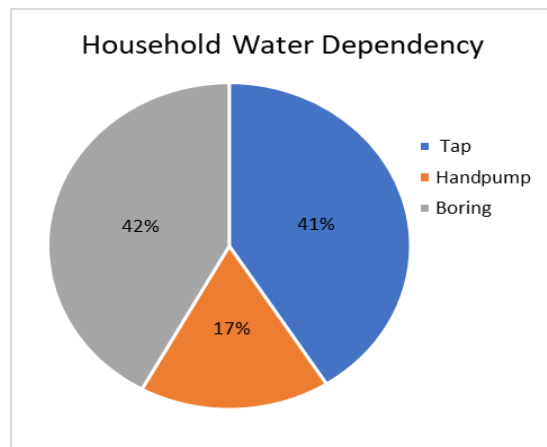
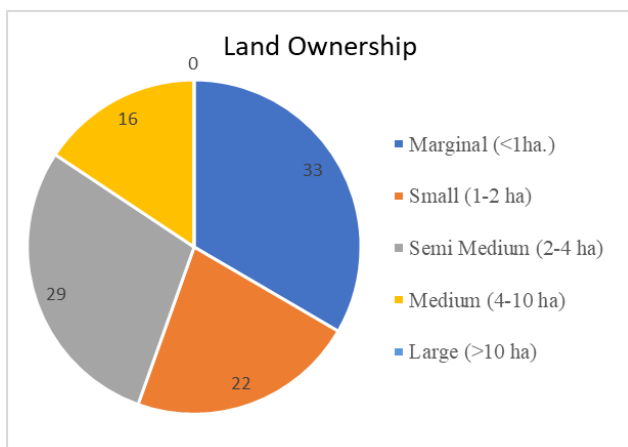


Identification of EWS Households at Sohalpur Sikroda



Land preparation and seed distribution (Okra and Urad) at Jaswawala

- Among EWS farmers, 33% are marginal, 22% are small, 29% are semi-medium, and 16% are medium, with 100% practicing chemical farming, primarily using potash and DAP.



- For domestic water, 41% of EWS households depend on pipeline supply, while 59% rely on hand pumps and/or submersible pumps.
- Around 70% of EWS households dispose of their solid and liquid waste in open fields or drains.
- Advanced agricultural equipment has been procured to support farmers.



Installation of Automatic Weather Station at GFIC



Demonstration of Fertilizer spraying with drone

Scoping Study for Purkul Watershed Development and Livelihoods Development Program

Vana Enterprises Ltd. supported a scoping study for developing a Purkul Watershed and Livelihoods Development Plan for the vulnerable communities of 3 villages in the foothills of Mussoorie in Dehradun district of Uttarakhand.

Objectives:

- Estimate gaps in water, food, fodder and livelihoods requirement of the concerned communities to facilitate need based planning activities.
- Plan for soil conservation activities to improve the soil health status and identify drying springs for their rejuvenation.
- Explore scope for climate resilient agro-ecological practices like System of Crop Intensification to increase agricultural production in a sustainable manner.
- Evaluate effectiveness of the existing village level institutions (VLI's) to assess the need for formation/strengthening of new and existing VLI's.
- Propose promotion of farm and off farm livelihood activities, especially for the vulnerable and landless households.
- Explore the possibility of development of infrastructure for collection, processing and marketing of local farm and off farm produce.

Activities:

- Rapport Building through village level meetings, organized in all the 10 hamlets of the four selected villages of Purkul watershed, which is located in Sahaspur block of Doon valley in Dehradun district of Uttarakhand.
- Participatory Rural Appraisal (PRA) exercises in each hamlet which include transect walk, social and resource mapping, seasonal analysis, wealth ranking, and venn diagramming



- Survey of 272 households across 10 hamlets of 3 villages conducted.

- Technical and Social Feasibility of various soil and water conservation measures as well as livelihood activities for the vulnerable households were identified based on the availability of land, water, livestock and labour.

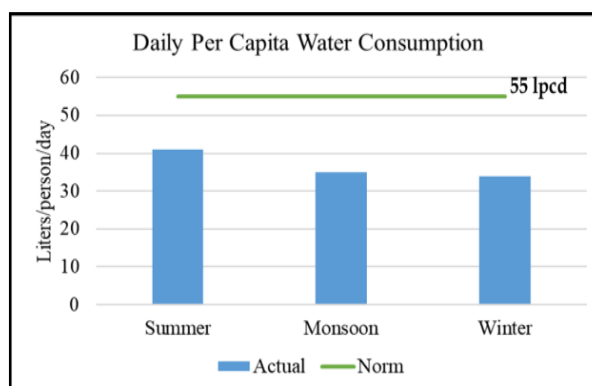
Proposed Activities:

- **Soil Conservation Activities –**

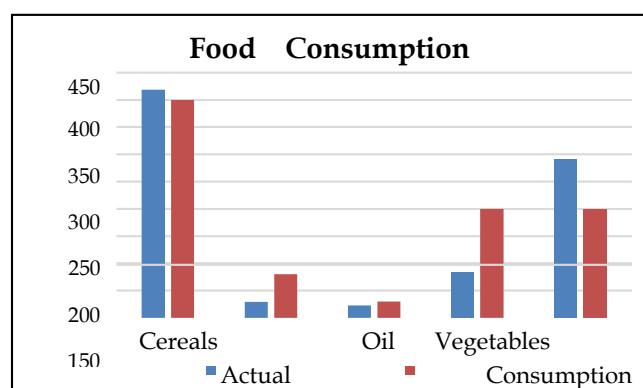
- To prevent soil erosion, 50 gabion check dams were proposed along the drainage lines, especially in Bhitarkuli village.
- Community plantations were proposed on 2 hectares of land in each of the seven hamlets in Bhitarkuli and Kiyarkuli villages.

- **Water Resources Management -**

- Eleven drying springs were proposed for recharge.
- Distribution chambers and GI pipes were suggested in two hamlets of Bhitarkuli village to improve tap water supply.
- A pond in Purkul village was identified for desiltation to enhance rainwater storage and groundwater recharge.
- A new 10-meter canal using spring water for irrigation was proposed in Kandriana hamlet.
- Five rooftop rainwater harvesting tanks, each with a capacity of 5 kilo liters, were proposed for seven hamlets across Purkul, Bhitarkuli, and Kiyarkuli villages.



Gaps in Water consumption



Gaps in Food consumption

- **Watershed Livelihood Activities**

- Farm based Intervention

- ✓ Agro-ecological practices to improve vegetable and spice cultivation in irrigated areas and pulses in unirrigated land.
- ✓ Kitchen gardens proposed for fresh vegetables and improve nutrition.
- ✓ Planting fruits like orange, lemon, sweet lime, and malta using agro-horticulture methods.

- Farm-based Enterprises

- ✓ Goatry: 50 goatry units, especially for landless families and families with low landholding.
- ✓ Mushroom cultivation: Three mushroom units (one in each village).
- ✓ Dairy: One dairy with milk collection, processing and marketing outlet in Badi Bhitarkuli.

Climate Smart Drought Mitigation and Livelihood Enhancement

Ajim Premji Philanthropic Foundation (APPF) extended its support for building climate resilience of 40,200 families of 35 villages of Panna district of Madhya Pradesh Bundelkhand.

Objectives:

The primary focus was to enhance agricultural productivity and improve nutrition and livelihoods security.

- Provide life-saving irrigation for rainfed crops during dry spells.
- Introduce innovative agronomic practices like SCI, kitchen garden, and vegetable cultivation.
- Introduce off-farm livelihood activities.
- Established institutional mechanisms to sustain the efforts.

Activities:

- Established solar based irrigation systems at a community level to provide irrigation for kitchen gardens, to ensure good production in vegetables and crops.
- Capacity building of FIGs, farmers, team members regarding sustainable agriculture, exposures organized regarding different agri based and non agri based livelihood activity.
- Strengthened Community-based Technology Resource Centers (TRCs), initiated earlier by PSI, Bio Resource Centers (BRCs), and seed banks by organizing training, conducting meetings, and providing equipment support, established demo plots along with the TRCs and BRCs.
- Promoted SCI for major crops of the Bundelkhand region (paddy, maize, pigeon pea, wheat, mustard, horse gram)
- Strengthened VLI and FIGs to ensure self-reliant development and good governance practices within the community.



Community based Solar system for irrigation



SCI mustard Panna M.P.

- Introduced the concept of Aam Sabha (at village and hamlet level) meetings to encourage active community participation and inclusive decision-making. VDPs prepared earlier were revised for all villages.

Outputs:

- **Diverse Irrigation Solutions:** Irrigation security to 480 households, including micro-irrigation and solar-based irrigation systems, to provide sustainable water access.

- **Sustainable Agriculture:** Introduced improved agronomic practices (SCI, Natural farming, and Non-Pesticide Management) on 782ha to benefit 2,240 farmers.



Drip installation in vegetable field Panna M.P.

- **Nutrition Security:** 2,986 households established kitchen gardens growing 23 varieties of vegetables and fruit plants in all.
- **Technology Access:** Strengthened 34 existing TRCs and 3 BRCs to provide essential farming tools and knowledge to the local communities in 34 villages.
- **Strengthening of seed banks:** Strengthened seed banks by regular meetings and training. 34 seed banks helped conserve food diversity. Local traditional vegetables and good quality grains seeds were available in these seed banks. Farming households of 34 villages got economic and nutritional benefit from these seed banks.

- **Strong Village Institutions:** 108 FIGs and five Farmers Field Schools, were established in 2022-23. To strengthen these institutions exposures for selected members were organized. The FIGs help promote livelihood activities. Efforts are further being made to bring all the FIGs under a single Farmer Producer Organization.



Farmer interest group Panna M.P.

Aligning Farming with Nature

Srijan under MP- NF Coalition provided additional support for promoting natural farming among 500 farmers of 20 villages of Panna district of Madhya Pradesh Bundelkhand.

Objectives:

- To scale up natural farming practices among farmers by adopting more resilient and adapted agroecology-based farming.
- To establish village-level resource centers.
- To enhance the skills of local resource persons to spread awareness about natural farming.
- To recognize and honor champion farmers by sharing their stories.

Activities:

- Implemented integrated and sustainable natural farming practices like composting (Bhu-NADEP), using liquid organic manure, and pest repellents (jeevamrit, ghan jeevamrit, Neemastra, Agnyastra, mathastra), mulching, bio-fencing, and Non-Pesticide Management (NPM) in collaboration with selected farmers for rabi crops like Mustard, Bengal gram, wheat.



Composting practice (Bhu NADEP) Panna M.P.

- Strengthened three BRCs by organizing regular meetings of BRC committees, and training in financial management.
- Conducted capacity-building programs for FIGs.
- **Bio-fencing Patches:** To protect crops from animals, demonstrated bio fencing for group of households based on locally available shrubs, plants, and trees.
- Established Crop Diversity Blocks (CDBs) to promote traditional varieties, e.g., 16 traditional paddy



Bio fencing at group level Panna M.P.

varieties were established in Siharan village. Organized farmers exposure visits for selecting different varieties and to develop a better understanding of their usefulness.

Outputs:

Sustainable Farming Demonstration in Rabi season: 448 farmers initiated sustainable farming practices through natural farming and SCI for rabi crops over an area of 240 acres.

Promotion of Kitchen Gardens: 430 households established kitchen gardens during the rabi season using natural farming principles, to grow fresh, organic produce. They adopted proper plant spacing, seed treatment, organic manuring, pest and disease control practices, and staking to grow fresh and healthy vegetables.



Kitchen garden Satdhara village, Panna M.P.

Strengthened Three BRCs:

Initiated the production of organic inputs for sustainable farming. The BRCs provide good quality timely bio-inputs to farmers who are unable to prepare these inputs themselves.

Crop protection- The 20 villages are in a forested area. Crops require protection from wild animals like Nilgai, wild pigs, monkeys and from domestic animals due to an open grazing culture. Bio fencing is an effective and sustainable natural method to protect crops. It is difficult to adopt at an individual level. Hence community-based bio-fencing was promoted. Six bio-fencing patches were completed to secure 68 farms.



Bio input resource centre, Panna M.P.

III b. Water Quality Studies

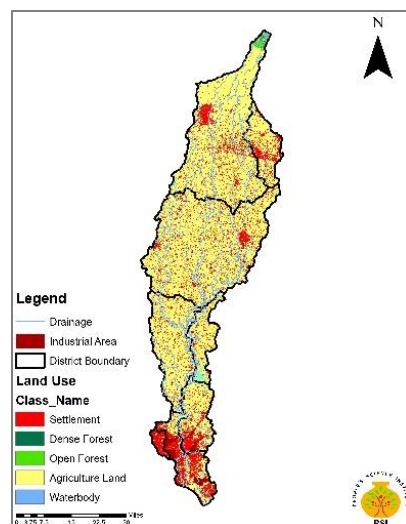
S. No.	Project Title	Total Project Period	Total Grant Amount (Rs.)	Funding Agency	Project Partners	Geographical Coverage
1	Co-creating Sustainable Agri-Water Use in the Hindon sub-basin –A Multi Scale Participatory Approach	February 2022 to January 2027	84,39,535	Indian Institute of Science Education and Research (IISER) Kolkata)	Netherland Partners: Wageningen University and Research (WUR) and Utrecht University (UU), Indian Partners: IISER-K, ICAR-IIFSR and IIT-R	State: Uttar Pradesh Districts- Saharanpur, Muzaffarnagar, Shamli, Meerut, Baghpat, Ghaziabad and Gautam Budhha Nagar No. of Villages: 8

Co-creating Sustainable Agri-Water Use in the Hindon Sub-basin –A Multi Scale Participatory Approach

PSI in partnership with Indian Institute of Science Education and Research (IISER) Kolkata, ICAR-IIFSR and IIT-R is addressing the issues of surface and ground water pollution through a multi-stakeholder approach through the support of DST, New Delhi.

Objectives:

- Examining the role of agricultural practices in depleting the water resources and causing pollution in the Hindon sub-basin.
- Collaborative development of agricultural strategies to alleviate pressure on the river system, while ensuring productivity and competitiveness.
- Identifying and involving relevant stakeholders to guide and support the implementation of corrective measures for reducing pollution in the Hindon River.



Land Use map of Hindon Sub-basin

Activities:

- Participatory Rural Appraisal (PRA) in 13 Hindon sub-basin villages to gather essential data on existing cropping practices, agricultural chemicals usage, and their effects on water pollution in the vicinity of these villages.
- Based on the findings of the PRA, house-household surveys were conducted in seven villages of the Hindon sub-basin to quantify the level of chemicals used, understand health impacts at the household level and analyse the economics of chemical agriculture in practice.
- Collection of samples for isotope analysis of river, ground, and rain water samples.
- Soil samples were also collected from demonstration sites for testing nutrients (NPK), pesticides and metals (Cd, Cr, Pb and Zn) levels.



PRA at Mukari Village, Baghpat



Water sampling at Mukari Village, Modinagar Road

- Initiated community-based water quality monitoring (WQM) in six Hindon sub-basin villages, so that the concerned communities understand the pollution stress in the sub-basin and practise sustainable agriculture.
- WQM, including physico-chemical and bio-monitoring, was conducted during the pre-monsoon season from the confluence of the Hindon and Dhamola rivers in Saharanpur to the confluence of the Yamuna and Hindon rivers in Gautam Buddh Nagar. Their tributaries. And groundwater samples were also analysed.
- Agro-ecological practices such as the System of Sugarcane Intensification by nursery and single bud method were demonstrated on 0.8ha in four villages of Saharanpur and Muzaffarnagar districts.



**Land Preparation at Bhanhera
Khemchand**



Transplanting of Sugar Cane plants



**Plant growth measurement,
Sadhauli Hariya**

- About 240 stakeholders were identified in 7 districts of the Hindon sub-basin. Civil society and non-government organizations-99, industries-10, research institutes and academia-11, government departments-34, health departments-4, media-2, lawyers-2 and progressive farmers-78.
- Stakeholders' meetings were conducted at 4 different locations for participants from the Hindon sub-basin districts. The Saharanpur, Muzaffarnagar and Ghaziabad meetings were conducted solely by PSI. The Meerut meeting was conducted in collaboration with ICAR-IIFSR. About 130 relevant stakeholders (including Farmers, NGO/CSOs, Research and Academic Institutions; U.P. State Pollution Control Board; Agriculture, Irrigation and Rural Development departments, and KVK) highlighted their opinions and priorities.



**Stakeholders meeting at Modipuram,
Meerut on 28 July 2023**



**Stakeholders meeting at
Saharanpur on 18 July 2023**



**Stakeholders meeting at
Muzaffarnagar on 26 July 2023**

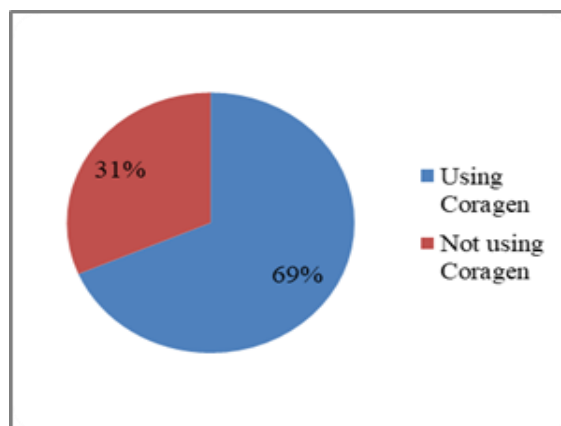


**Stakeholders meeting at
Ghaziabad on 21 November**

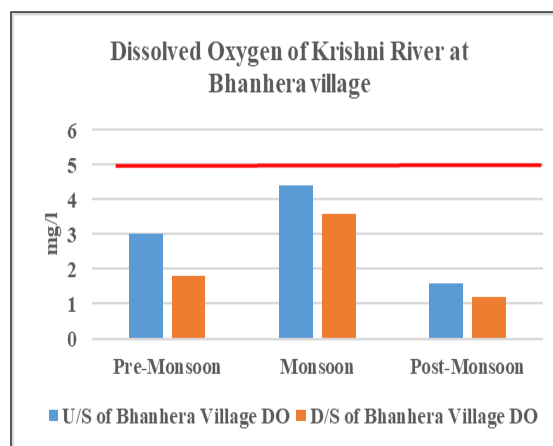
- Team leaders from each of the seven districts were selected to initiate the formation of a basin-level platform for addressing the problem pollution involving all the concerned stakeholders.

Key Findings:

- The surveys and PRA exercises indicate that the predominant use of chemical fertilizers and pesticides, while boosting agricultural productivity in the short term, add long-term risks to both environmental health and human well-being.
- The cultivation of major crops such as sugarcane, rice, wheat, and mustard is heavily reliant on these agri-chemicals, contributing to soil degradation and water pollution.
- In Mukari, 69% of sugarcane farmers use Coragen pesticide particularly on the CO-0238 sugarcane variant. Other common insecticides include Ferterra, Furadan, Cartap and Regent.
- Community based water quality monitoring (WQM) conducted in Bhanera village, Saharanpur district revealed that the Dissolved Oxygen (DO) is deteriorating from upstream to downstream in River Krishna. It was also observed that DO was less than the standard limit (5.0mg/l) prescribed by CPCB (1979) in all the seasons. This is not suitable for aquatic life.
- The bio-monitoring results revealed that the water quality at all 22 stations of the Hindon, Krishna, Kali and Yamuna rivers falls in CPCB's most polluted Class E.
- Various suggestions were received from the stakeholders. They included (i) educational excursions/exposure visits to best practices locations for agri-water management by local communities; (ii) incentives for farmers for shifting to organic farming; (iii) emphasis on societal ownership of rivers; (iv) raising awareness through wall paintings and writings; (v) well-established drainage structures; (vi) discouraging solid waste disposal in rivers; (vii) utilization of right to work program (MGNREGA) and CSR funds for cleanliness drives; (viii) plantation drives on river banks; (ix) regularly monitoring the efficiency of industrial wastewater treatment; and (x) enforcement of punitive measures against polluters. The meetings also highlighted the role of media and journalists in creating awareness among concerned stakeholders and the need to establish an accountable and empowered committee with representatives of the different stakeholders for proper management of the Hindon sub-basin.



Farmers using Coragen pesticide in Mukari Village



Presence of DO in Krishna River, Bhanera Village, Saharanpur district in 2023

III c. Disaster Study and Response

S. No.	Project Title	Total Project Period	Total Grant Amount (Rs.)	Funding Agency	Project Partners	Geographical Coverage
1	Social survey to assess losses and damages by the North Indian floods in Kullu & Mandi District of Himachal Pradesh" (DS-HP IITR)	December 2023 to March 2024	2,14,819	IIT-Roorkee	NA	State: Himachal Pradesh District: Kullu & Mandi
2	Prototyping disaster response shelters: A project to develop & deploy temporary shelters in response to the Himachal Pradesh floods, 2023	December 2023 to September 2024	86,09,000	Sir Dorabji Tata Trust	MVS, RTDC	State: Himachal Pradesh District: Kulu, Mandi Villages: 21 Beneficiaries: 60

Social Survey to Assess Losses and Damage by the North-Indian floods in Kullu and Mandi Districts of Himachal Pradesh

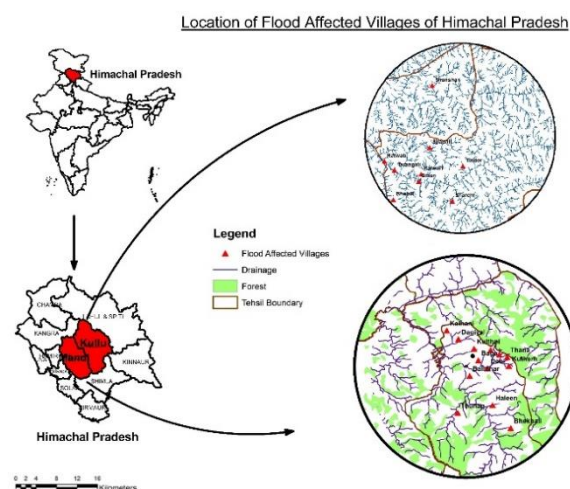
PSI in partnership with IIT-R undertook a livelihood impact assessment study of 14 village communities affected by extreme rainfall events in Kullu and Mani districts of Himachal Pradesh.

Objectives:

- To assess the impact on livelihood capitals and recovery challenges faced by communities affected by the 2023 floods in 14 villages of Kullu and Mandi districts (H.P.)

Activities:

- The project team designed a household survey questionnaire in Hindi, in consultation with IIT-R.
- The team tested the draft questionnaire with a few affected households before finalizing it.
- It collected and analyzed 366 household responses.
- Focus Group Discussions were conducted with village communities in the presence of the Gram Pradhan to understand the livelihood impacts and recovery process.



Findings:

- 35 per cent households reported completely destroyed houses while 30 per cent reported loss of agricultural land and livestock.
- Other losses were in terms of damaged infrastructure, soil erosion, land subsidence, damaged water schemes, etc.
- Connectivity issues significantly impacted work, education and health care access for 43 per cent households.
- Around 68 per cent respondents said that markets, schools, and temple closures had severely broken social bonds. 38% of them claimed high impact because of the tourist place loss.
- There was an urgent need for shelters with over a third of the households rendered homeless. Comprehensive planning and restoration work is required to address the loss of different livelihood capitals.

Percent of Respondents reporting livelihood losses				
Livelihood Capital Affected	No Loss (%)	Low Loss (%)	Medium Loss (%)	High to Very High Loss (%)
Natural Capital	21	14	39	26
Physical Capital	4	5	24	67
Financial Capital	37	6	9	48
Social Capital	11	1	20	68
Human Capital	18	16	47	19

Natural Capital: Land, Livestock and Agriculture

Physical Capital: Roads, Markets, Tourist Places

Financial Capital: House, Shops

Social Capital: Health, Education, Transport Facilities

Human Capital: Food and Livelihoods

Prototyping Disaster Response Shelters: Deploying Temporary Shelters in Response to the Himachal Pradesh Floods, 2023

SDTT, Mumbai supported a project for establishing temporary shelters for 60 homeless families from flood affected 21 villages of Kullu and Mandi districts of Himachal Pradesh.

Objective:

- To construct reusable insulated temporary shelters for 60 flood-affected homeless families of Kullu and Mandi districts in Himachal Pradesh.

Activities:

- Selected 60 beneficiary families for constructing temporary shelters based on socio-technical feasibility.
- Planning design of reusable insulated temporary shelters in consultation with A B Lall Architects.
- Procured and transported materials to the fabrication centres in Kullu and Mandi districts.
- Meeting held with SDMA, Shimla for support in making the temporary shelters.
- Handbook on construction of temporary shelter was printed and distributed to the beneficiaries.
- Produced a poster for beneficiaries on dos and donts.
- Constructed 3 temporary shelters in Kullu (1) and Mandi (2) districts.



construction of temporary shelter

Outcomes:

- Approval by District Disaster Management Authority (DDMA), Mandi and Kullu districts.
- Beneficiaries of three constructed temporary shelters have moved in and expressed their satisfaction with the units. Rest of the units will be built in coming months.



Construction of Temporary Shelter

III d. Sustainable & Inclusive Urbanization

S. No.	Project Title	Total Project Period	Total Grant Amount (Rs.)	Funding Agency	Project Partners	Geographical Coverage
1	Air Pollution Local work program	January 2022 to May 2023	1,20,94,282	US Aid-India, New Delhi.	Deen Bandh Samaj Seva (DBSS) Indore, Habitat and Livelihood welfare Association (HALWA) Mumbai, Rehthan Adhikar Manch Ahmedabad, Odisha Basti Sangharsh Samiti (OBSS)	Cities: Ahmedabad, Bhubaneshwar, Indore, and Mumbai
2	Shallow Aquifer Management for Gwalior city Under AMRUT 2.0	February 2022 to October 2023	15,00,000	National Institute of Urban Affairs	ACWADAM and Gwalior Municipal Corporation	State: Madhya Pradesh City:- Gwalior Beneficiaries:- 1200 Households
3	Evaluating PMAY-Urban's Contribution in Uplifting Housing Satisfaction, Socio-Economic conditions and improving Disaster Resilience in Uttarakhand	September 2023 to Mar 2024	8,00,000	IIT-Roorkee	NA	State: Uttarakhand Districts: Chamoli, Pithoragarh, Rudraprayag, Uttarkashi, Dehradun. Towns: Gopeshwar, Pithoragarh, Augustmuni, Chinyalisaur, Vikasnagar

Air Pollution: Local Perceptions and Priorities in Selected Cities USAID-India Local Works Program Design Support Services

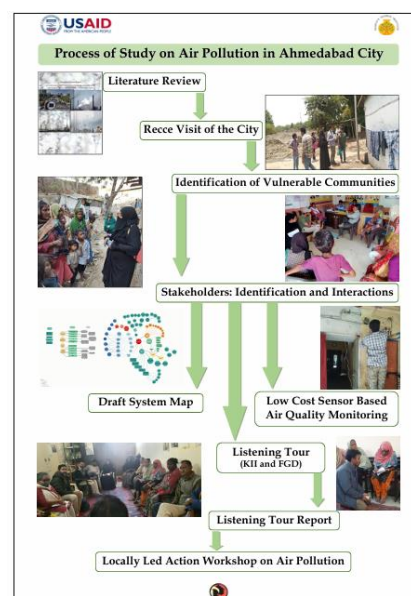
USAID-India provide support for understanding local perceptions and priorities about air pollution related issues in Ahmedabad, Bhubaneshwar, Indore, and Mumbai cities of India.

Objectives:

- To engage with local actors and build on existing knowledge of air pollution in Ahmedabad, Bhubaneshwar, Indore, and Mumbai to better understand local priorities, existing efforts, networks and gaps in the local system.
- To co-develop solutions with communities to ensure that they reflect local priorities that local leadership can sustained.

Activities:

- Conducted *Locally-Led Collaborative Action (LLCA)* Workshops in all the four selected cities. Its objectives were to share the findings of the previous phases of the study with the respondents and obtain their feedback, with special reference to the recommendations, the systems map and create a space for interaction across sectors.
- Develop IEC material for presentations, group discussions and scoring table; display materials like updated city maps, a flowchart of the various phases of this entire exercise, a system map, key observations and recommendations based on the literature review and listening tour.
- Update the air pollution landscape systems maps of the four cities by sharing with stakeholders at the workshop.
- Finalizing the workshops report.



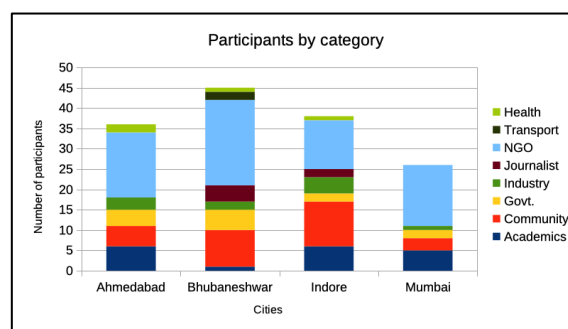
Flowchart explaining the study process

Key Findings:

The meetings were well attended, with 145 participants from community members, NGOs, and government agencies in all the four cities.

Cross-sectoral collaboration

- Academics, vulnerable groups, and activists highlight the need to amplify marginalized voices through collaboration with civic authorities.



Participants in all the four cities

- Ward Sabhas and public hearings are key platforms for fostering relationships and influencing change.
- Collective action and rapport-building can address public service issues, but more contentious matters, like infrastructure projects, may require different strategies.

Community Research

- Stakeholders emphasized the challenge of representing vulnerable communities in policymaking, as dialogue is often seen as dissent.
- Participants stressed the role of academic institutions in supporting community movements with data and called for more participatory processes in policy and city planning.
- They also recommended integrating air pollution education in colleges.

Air Quality Monitoring

- Respondents emphasized the need for greater acceptance of low cost air quality sensors with proper calibration, noting the high costs and challenges of importing continuous monitoring stations.
- Cost-benefit analyses between sensors and CAAQMs should be conducted.
- Air quality monitoring locations should consider land use, land area, and population density.
- Consistent presentation of air quality data across media outlets was stressed, along with health impact interpretations.
- Participants living in vulnerable communities also supported the establishment of sensors in polluted residential areas with a display of the air quality data. The participants in Indore ranked the provision of air quality monitors as the highest priority recommendation on the dot scoring chart.



Fig 1: Ahmedabad workshop



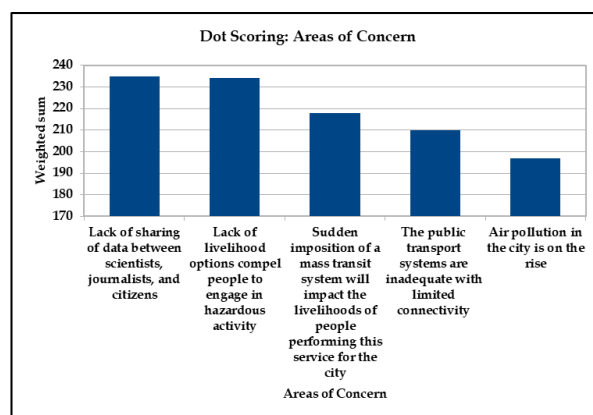
Figure 2 Breakout groups added details to city recommendations at Bhubaneswar



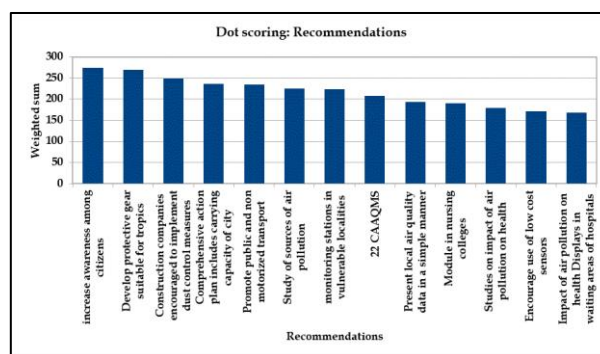
Scoring of concern and recommendations

Appropriate Technologies

- Groups in Indore and Mumbai resisted focusing on adaptive technologies, emphasizing pollution reduction at the source.
- Long-term systemic change is needed, but current technologies are inaccessible to poorer communities, worsening health disparities.
- Sector-specific improvements like better Pollution Under Control (PUC) certification and fuel quality testing were recommended.
- Concerns included dust from street sweepers, recycling of lithium batteries and pollution exposure for outdoor workers.
- Involving existing workers in new waste management and transport systems is crucial to protect their livelihoods.
- High costs of converting to electric vehicles and clean technologies require financial support and long-term savings projections to encourage adoption.



Dot Scoring: Area of concern (Bhubaneswar)



Dot scoring: Recommendations

Information, Education and Communication

- Recommendations include air pollution education for students, exposure visits, and multi-media methods like games and films.
- Media coverage is inconsistent; participants prefer engaging stories and collaboration with pollution control boards and medical doctors.
- Suggested information-sharing methods include social media, mobile apps, and pre-movie short films, though existing apps are underused.
- The health sector should provide safety information for vulnerable groups through brochures and health workers.
- Participants in Indore believe the government can effectively address air pollution if committed, as demonstrated by Indore's Clean City campaign.
- Participants called for integrating air pollution education in environmental engineering courses and offering internships.

Shallow Aquifer Management for Gwalior City under AMRUT 2.0

The National Institute of Urban Affairs sought PSI's help in the management of shallow aquifers in Gwalior city under Atal Mission for Rejuvenation and Urban Transformation (AMRUT 2.0)

Objectives:

- Enhance the practical and action-oriented knowledge of city stakeholders on scientific management of shallow aquifers.
- Demonstrate the use of recharge wells, rainwater harvesting and water conservation structures to revive and rejuvenate depleting shallow aquifers.
- Explore avenues to scale up the pilot to the rest of the city.

Activities:

- Engaged with government and non-government agencies in Gwalior city to assess the current situation of shallow aquifers and gather valuable insights.
- Organized a workshop to disseminate the significance of the AMRUT program for Gwalior city and foster awareness and collaboration.
- Conducted comprehensive surveys to assess hydrogeological aspects and engineering feasibility, identifying suitable pilot sites for shallow aquifer recharge initiatives.
- Prepared a detailed technical report outlining the management strategies for shallow aquifers, incorporating findings from the surveys and site assessments.
- Engaged with civic authorities to discuss project progress, ensuring alignment with civic initiatives.
- Installed monitoring systems at selected sites to track the progress and effectiveness of shallow aquifer recharge activities, enabling data-driven decision-making.
- Selected three sites for shallow aquifer recharge.
- Started implementation work at two sites.



Hydrogeological and engineering survey at Lakmiganj.

Key Findings:

Geological Assessment of Hydrological Prospects: Comprehensive geological analysis of Gwalior to assess its hydrogeological potential and gain practical insights into its water resources.

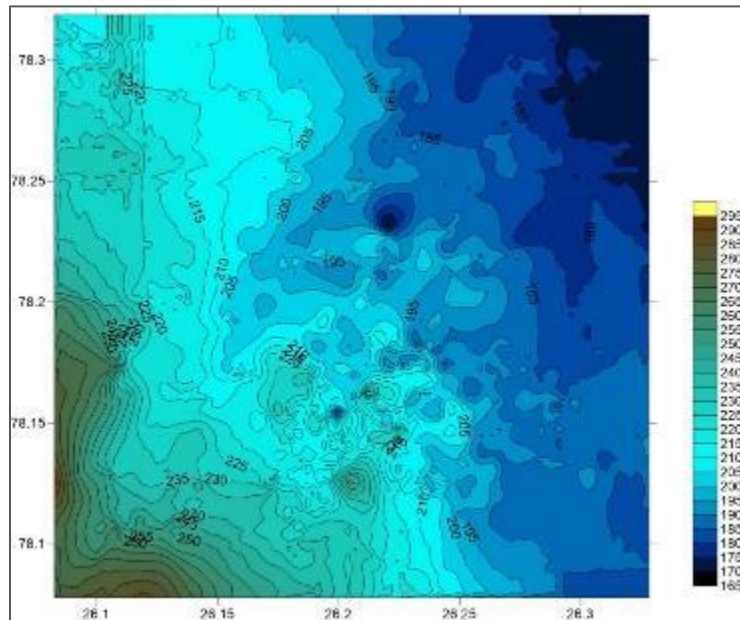
Capacity Building and Stakeholder Engagement: Introduced over 100 professionals from different government departments and NGOs to shallow aquifer management, enhancing awareness and collaboration for water resource initiatives.

Aquifer Mapping for Groundwater Movement: Implemented aquifer mapping to understand groundwater dynamics within and around Gwalior city, facilitating informed decision-making on water management strategies.

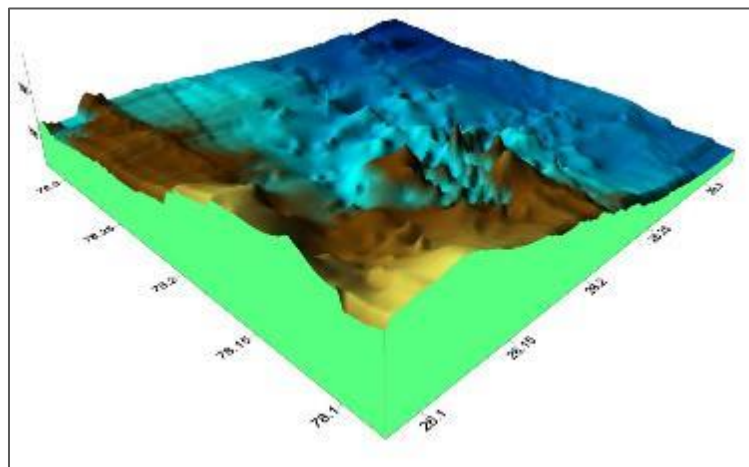
Groundwater Level Mapping: Created a groundwater level map of Gwalior city using data from 3000 water bodies supplied by Jal Nigam Gwalior. The map revealed disparities, with the Northeast region displaying the lowest groundwater levels and the Southwest exhibiting the highest levels.

Identification and Intervention at Aquifer Recharge Sites: Identified 17 potential shallow aquifer recharge sites in Gwalior city, finalizing 5 sites for intervention. Thorough design and estimation was done, considering the urban landscape for effective implementation.

Recognition and Publication: The groundwater level map received acclaim from the Ministry of Urban Affairs and was published in the Gwalior Groundwater Booklet, recognizing the significance of the findings in urban water resource planning.



Ground water level map of Gwalior city prepared from groundwater level data provided by Jal Nigam Gwalior



3 D projection of Groundwater level data of Gwalior city

Evaluating PMAY Urban's Contribution in Uplifting Housing Satisfaction, Socio-Economic Conditions and Improving Disaster Resilience in Uttarakhand

IIT-R sought PSI's support in evaluation the performance of PMAY in selected towns of Bageshwar, Chamoli, Dehradun, Rudraprayag and Uttarkashi districts of Uttarakhand.

Objectives

- To evaluate PMAY's contribution towards housing satisfaction, disaster resilience, and augmenting livelihood opportunities in urban areas of Uttarakhand.
- To assess PMAY's contribution towards the overall well-being of beneficiary families, including their livelihood, health and sanitation, education and economic stability.
- To appraise the post-occupancy housing satisfaction of the PMAY urban beneficiaries in different terrains (hills, valleys, and plains) of Uttarakhand.
- To evaluate the structural resilience of the housing units of the PMAY beneficiaries and the impact of modifications made by beneficiaries in improving their overall resilience.

Research Methodology

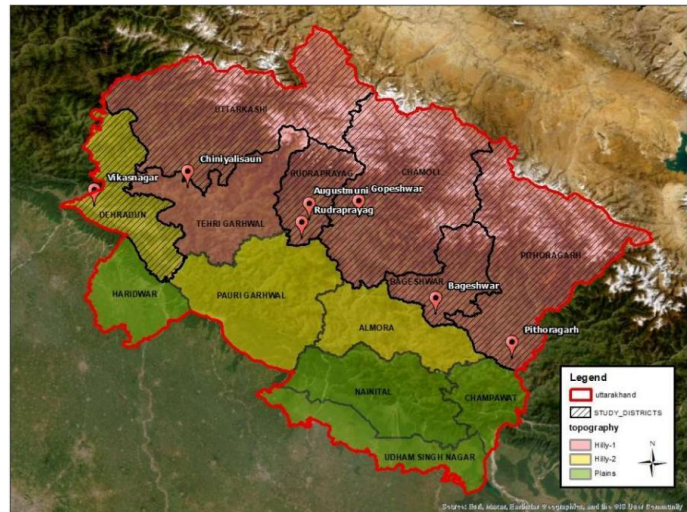
- The study areas and beneficiaries were identified based on three basic criteria: terrain and location, ease of access, and the number of beneficiaries.
- A comprehensive literature review was conducted to determine the survey parameters.
- Drafted a survey questionnaire to understand the housing satisfaction parameters, along with the socio-economic and disaster resilience aspects.
- Conducted a pilot survey to refine the draft questionnaire.
- Simultaneously, focus group discussions were organized to qualitatively understand insights about incorporating disaster resilience in PMAY housing schemes.
- The quantitative and qualitative analyses aimed to identify the strengths and weaknesses of the PMAY scheme in meeting housing satisfaction criteria, in socio-economic and disaster-resilience terms.
- The final step involved formulating policy recommendations based on the study findings to enhance the efficacy of the PMAY scheme in addressing housing satisfaction in Uttarakhand.

Research Areas

Selected urban areas in six districts of Uttarakhand: Agastyamani (Rudraprayag), Bageshwar (Bageshwar), Chiniyalisaur (Uttarkashi), Gopeshwar (Chamoli), Pithoragarh (Pithoragarh), and Vikasnagar (Dehradun). Stratified sampling was done for the survey.

Conclusions

PMAY housing in Uttarakhand has significantly raised the beneficiaries' living standards, social status, safety, and security. Occupants expressed general satisfaction with the physical characteristics of their houses and the functional space adequacy. Most of the occupants, however, raised concerns about the lack of public spaces for recreation and public transportation facilities in the vicinity. Less attention has been given to the technical aspects of disaster resilience in the structures.



A. Short-term recommendations

- i. Implement proper quality of materials and construction through appropriate monitoring mechanisms to ensure that houses meet quality standards.
- ii. Continuously review and update programs based on feedback and evolving needs to enhance the program's effectiveness.
- iii. Involve multiple stakeholders such as architects, planners, and engineers in Urban Local Bodies (ULBs) to provide technical assistance for construction.
- iv. Ensure time-bound release of installments to beneficiaries.

B. Long-term recommendations

- i. Government's funding should consider the variations in the construction costs between hills and plains.
- ii. Promote capacity building of masons and laborers for incorporating appropriate disaster resilience features in housing.
- iii. Develop social infrastructure facilities alongside housing to create sustainable urban environments.
- iv. Consider family size in housing plans to avoid congestion and ensure adequate room allocation.
- v. Evaluate land suitability for construction to ensure safety and sustainability.
- vi. Utilize appropriate materials and designs to provide thermal comfort.

III e. Training and Field Support

S. No.	Project Title	Total Project Period	Total Grant Amount (Rs.)	Funding Agency	Project Partners	Geographical Coverage
1	Community based forest management and livelihood improvement in Meghalaya (MEG LIFE)	November 2023 to May 2027	57,39,291	Central Himalyan Rural Action Group (CHIRAG)	PRASARI, HUCWARM, ACWADAM	State: Meghalaya District: West Garo Hills, South Garo Hills, Ribhoi No. of Villages: 18 Beneficiaries: 400 Households
2	Preparing of Detailed Technical Report (DTR) for 20 springs in Arunachal Pradesh under the project "Springshed Management-Water Security Programme: Tata Water Mission - 2022-27' Arunachal Pradesh.	April 2023 to December 2023	39,91,350	North East Initiative Development Agency (NEIDA)	CHIRAG, ACWADAM, HUCWARM	State: Mizoram, Nagaland, Arunachal Pradesh Districts: Mizoram - Champhai, Serchhip, Lunglai Nagaland - Phek, Kiphire, Tuensang Arunachal Pradesh - Papumpare, Lower Subansari
3	Preparation of DPR	December 2023 to April 2024	1,20,000	NABARD Manipur	None	State: Manipur District: Tengnoupal, Thaubal No. of villages: 4 Beneficiaries: 274 Households
4	Hydrogeological mapping for identification of recharge area of springs for four springsheds located in selected villages of Mengpui Basin Mizoram.	March 2023 to April 2023	2,48,236	IIT- Roorkee	IWRD, Mizoram	State: Mizoram District: Aizawl No. of villages: 2 Beneficiaries: 58 Households

S. No.	Project Title	Total Project Period	Total Grant Amount (Rs.)	Funding Agency	Project Partners	Geographical Coverage
5	Preparation of 4 springshed management plans in Daldawk (2 springs) and Dakla (2 springs)	February 2023 to May 2023	4,98,432	Irrigation and Water Resource Department	None	State: Mizoram Districts- Aizawl and Mamit No. of Villages: 2 Beneficiaries: 52 Households
6	DPR Preparation of Bhagwara, Samirpur Watershed FIP Project	December 2023 to October 2024	2,06,445	Manav Vikas Sansthan, Bilaspur	None	State: Himachal Pradesh District: Hamirpur No. of Villages: 15 Beneficiaries: 718 HH
7	Development of GP wise Sustainable Natural Recourse Management Plan Banwasi Seva Ashram	December 2022 to March 202	5,00,000	Banwasi Sewa Ashram	None	State: Uttar Pradesh District: Sonbhadra No. of Villages: 5
8	Training for Conducting Module for 9 IFS Probationers	June 2023	1,62,840	Indira Gandhi National Forest Academy, Dehradun	None	NA
9	Training Program on Hydrogeological Study and Potential Recharge Zone Identification for Springshed in Himachal Pradesh.	November 2023	1,04,500	NABARD- Himachal Pradesh Regional Office	None	NA

Community-based Forest Management and Livelihood Improvement in Meghalaya (MEG LIFE)

Objectives:

- Preparation of 125 Springshed Treatment Plans (STPs), including mapping critical springs, hydrogeological mapping, and preparation of detailed treatment plans
- Vetting of 30 treatment plans prepared by the MEG LIFE team.
- Capacity Building of selected representatives from the State, District, and Block Project Management Units in springshed mapping, identification of required interventions, preparation and implementation of village-wise STPs.

Activities:

- Compiled a comprehensive spring inventory in 18 villages. Selected one spring from each village for treatment. The process involved discussions with local stakeholders to ensure that the selected springs were prioritized based on the community needs and water usage pattern.
- The team collected data on various parameters such as physiology, geology, land use, and water quality in all 18 villages. Data collection enabled the team to gain a deeper understanding of the springs' characteristics, water sources, and surrounding environmental conditions.
- Based on the data collected, the team prepared Detailed Technical Reports (DTRs) for each of the 18 selected springs. These reports provided an in-depth analysis of each spring's condition, treatment requirements, and recommended interventions to ensure sustainable management of the springs.
- To enhance the capacity of the MEG LIFE Field Staff, the project organized two comprehensive training sessions focusing on spring



Community Engagement in MegLIFE Project Village



Field Data Collection

typology, geology, spring treatment, and management. The training equipped the field staff with the necessary skills and knowledge to effectively implement and maintain the spring treatment interventions, ensuring long-term project success and community benefits.



Field & Classroom training of MEG LIFE field staff.

Outcomes:

- The spring inventory was compiled and used to select 18 springs for treatment, aligning with the community needs and water usage patterns. This approach helped ensure that the project's efforts would have a significant impact on providing access to clean water.
- Data collection and analysis revealed spring characteristics and water quality issue. The DTRs yielded a comprehensive understanding of treatment requirements and recommended interventions for each spring, guiding project implementation and resource allocation.
- Training equipped the field staff with knowledge and skills for spring treatment, geological surveys, management, and sustainability. This ensured sustainable benefits, as local stakeholders should be able to maintain and manage improved water sources.

Preparing Detailed Technical Reports (DTRs) for 20 springs each in Arunachal Pradesh, Mizoram and Nagaland under the project “Springshed Management-Water Security Programme: Tata Water Mission – 2022-27”.

Objectives:

- To provide training on springshed management to the North East Initiative Development Agency.
- Preparation of a total of 60 springshed development plans (SDPs), encompassing 20 plans for each of the states of Arunachal Pradesh, Mizoram, and Nagaland.
- On-field handholding of the NEIDA team during the preparation of SDPs.

Activities:

- Conducted hydrogeological and engineering surveys at 60 springs sites.
- Conducted hands-on training during fieldwork for the NEIDA team, particularly focusing on developing the skills of geologists and engineers in the team.

Outcomes:

- Created a springshed development cadre in three states for NEIDA. They will work for groundwater conservation in Arunachal Pradesh, Mizoram and Nagaland.
- NEIDA has observed that 43 out of the 60 springs have shown an increasing trend of water discharge.
- This project has established a foundation for future initiatives in the region.
- The success of the project has inspired the organization to plan additional collaborative projects with PSI.

Watershed-based Springshed Development Program for WWAGS, Imphal, Manipur

Objectives:

- Preparation of hydrogeological and engineering reports for 14 springs in 4 villages (Heinoukhong, Ingangklok, Thamlai, and Konaitong) Tengnooupal & Thoubal districts in Manipur.
- Submission of proforma with project activities to NABARD, Imphal.

Activities:

- Conducted hydrogeological and engineering surveys in 4 villages of the selected districts, Tengnooupal & Thoubal, Manipur.
- Collected primary social and agricultural data of the villages.
- Prepared hydrogeological report and identified recharge area of 14 springs.
- Prepared engineering estimates and designs for the recharge activities.

Future Outcome:

- The project will benefit 258 households in 4 villages, with a total population of 1526.
- Increase in spring water discharge.
- Reduction in soil erosion.
- Increase in soil moisture
- Increase in biomass productivity

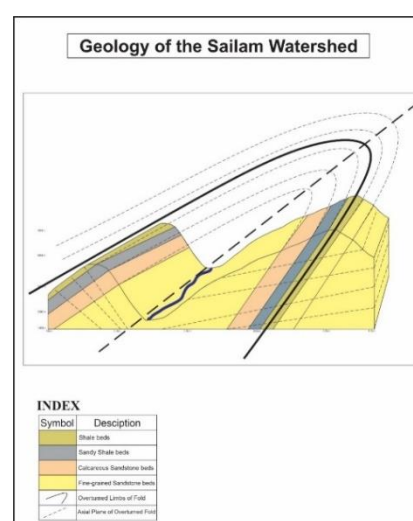
Springshed and Micro-Watershed Development in Mizoram, IIT-R

Objectives:

- Hydrogeological mapping of springs (Recharge area delineation).
- Household survey in spring-dependent villages for water security planning.
- Identification and intervention plans for recharge areas.
- Implementation of recharge activities in springs recharge areas.
- Hydrological survey and watershed development plan for two micro-watersheds.

Activities:

- Conducted hydrogeological and engineering feasibility surveys for 4 springs and 2 micro watersheds in Lamchhip and Sailam villages of Aibawk block.
- Developed water security and springshed development plans for 4 springs.
- Implemented recharge activities in the four springs using a participatory approach.
- Prepared watershed development plans for two micro-watersheds in Lamchhip Village of Aizawl District.



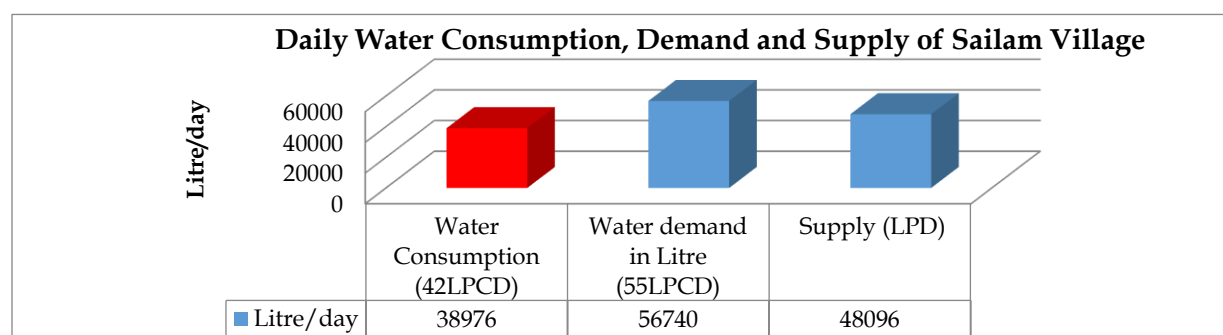
Outputs:

Watershed Maps: Detailed watershed maps prepared showing drainage, contour, land use and geological features.

Spring Typology Analysis: 2 Depression-cum-fracture springs, and 2 fracture springs.

Water Budget Analysis: There is a higher gap in Lamchhip village (1,11,911 LPD) as compared to Sailam village (17,849 LPD) during the summer season.

Watershed Development Plans: Treatment measures (costing Rs. 28.19 Lakhs) such as contour trenches, ponds, brush wood check dams, loose boulder check dams, and gabions have been proposed in 81 ha to preventing soil erosion.



Preparation of 4 springshed management plans in Daldawk (2 springs) and Dakla (2 springs), Mizoram

Objectives:

- Conduct detailed hydrogeological mapping to define recharge areas for springs
- Provide engineering recommendations and treatment estimates for the identified springs
- Impart practical training to geologists and engineers from the Institute of Water Resources Development (IWRD), Aizawl, Mizoram.

Activities:

- Hydrogeological and engineering feasibility surveys of four springs in two villages of Aizawl and Mamit districts.
- Field training of hydrogeologists and engineers.
- Hydrogeological mapping of 2 watersheds.



Field Training of IWRD officials in Springshed Management

Outcomes:

- **Capacity Building and Positive Engagement:** During the hydrogeological surveys in the springshed areas, the IWRD staff received commendable feedback from their colleagues. Deliberations took place concerning the potential implementation of supplementary training sessions for the IWRD staff in Aizawl, Mizoram, showcasing a proactive approach for enhancing their capacity.
- **Expansion of Collaborative Projects:** The success of the IWRD project has inspired the organization to plan additional collaborative projects in partnership. The accomplishments of this project have established a foundation for future initiatives in the region.

DPR preparation of Bagwara Samirpur Watershed, Hamirpur District, (H.P.)

Manav Vikas Sansthan (MVS), Bilaspur sought support for preparation of DPR of Bagwara Samirpur watershed of Hamirpur district of Himachal Pradesh

Objectives:

- Restoration and improvement of soil quality to raise its productivity.
- Reducing the impact of natural hazards, especially in the context of climate change.
- Improvement of the income of the population by regenerating the natural resources
- Improvement of storage infrastructure, transportation, and agricultural marketing
- Improving physical health by providing clean drinking water, access to sanitation and better nourishment

Activities:

- Meetings and PRA exercises done with the watershed community
- Identified key issues affecting the watershed and its community, including water scarcity, impact on local livelihoods, changes in land use patterns, and soil erosion
- Conducted a thorough watershed survey to collect necessary data on topography, soil types, water resources, and vegetation cover
- Planning and designing soil and water conservation measures in the watershed and estimating the costs associated with proposed activities.

Outcomes:

- Prepared a comprehensive project report with detailed watershed maps illustrating drainage, contours, and land use, finding recommendation for watershed management.
- Proposed treatment measures costing Rs. 2.11 crores, including contour trenches, ponds, check dams, and plantations for 1334 hectares to prevent soil erosion and support livelihood and income generation activities.



PRA Exercise at Samirpur village



Field Work in Watershed Area for Planning Interventions.

Development of Sustainable Natural Resource Management Plans, Sonebhadra, Uttar Pradesh

Banwasi Sewa Ashram, Govindpur, Uttar Pradesh sought support for preparation of Sustainable Natural Resources Management Plans for five villages of Sonebhadra district.

Objectives:

- Preparation of village development plans (VDPs)
- Natural resource mapping of 5 Gram Panchayats
- Conservation planning
- Participatory ground water management
- Training of BSA staff persons, PRI members and village volunteers

Activities:

- Trained 20 BSA staff persons, PRI members and village volunteers in preparing VDPs.
- Prepared base maps, including land use, problems maps, natural resources maps including water resources, soil type, texture and depth mapping in 5 villages
- Survey of and mapping of cropping patterns/agro-ecological practices, land ownership and water budgeting in 5 villages
- Prepared Detailed Project Reports including solutions and remedial measures for 5 villages

Outputs:

- Trained 22 persons of Banwasi Sewa Ashram in micro level planning.
- Prepared VDPs of Manbasa, Faripan, Jugail, Khairadeeh and Rajmilan.



Other Capacity Building Activities

1. Training in Springshed Management conducted for 9 IFS Probationers from the Indira Gandhi National Forest Academy, Dehradun

PSI conducted a 5-day training program on Springshed Management and Water Quality Analysis from June 12-16, 2023. Its aim was to enhance the participants' knowledge and skills in springshed management and water quality analysis.

The program began with an orientation session at PSI. It was followed by introductory sessions on springshed concepts, hydrogeological properties of rocks, springs inventory and typology, and a six-step implementation protocol. The participants gained hand-on experience during field training sessions, which covered identification of rock types, springs inventory and discharge measurement.

The program also included field trips to PSI's participatory groundwater management project at Thanakasoga GP (Sirmour district, H.P.), and springshed management work at Kalsi, (Dehradun district).

The training ended with a field demonstration of kit-based water quality analysis at Sashtadhara, Dehradun, where the participants learned about water quality parameters and testing methods. The final day concluded with feedback and presentations from the participants at PSI Dehradun. They shared their experience and insights gained during the training.

2. Training Program on Hydrogeology of Springsheds and Delineation of the Recharge Zone in a Springshed for NABARD, HP Regional Office.

A 3-day training program on the hydrogeology of springsheds and delineating the recharge zone in a springshed was conducted from November 19-22, 2023 in Himachal Pradesh with the funding support of NABARD. The program commenced with a pre-visit to the field area. The indoor sessions covered springshed concepts, hydrogeological properties of rocks, and spring inventory and typology, and a six-step implementation protocol. The participants gained hands-on experience during the field training, which dealt with springs inventory, hydrogeological mapping, and discharge measurement.



Training participants with PSI's Resource Persons at Shimla, H.P

The use of Google Earth software for hydrogeological mapping, and recharge area identification was also practically demonstrated. The training concluded with a comprehensive recap, preparation of geological cross-sections, and documentation of hydrogeological data.

The participants appreciated the expertise and guidance provided by the PSI resource persons. The training enhanced their knowledge and skills in identifying potential recharge areas and conducting hydrogeological studies in springsheds, thereby achieving the training's objective.

IV. PUBLICATIONS 2023-24

1. Dass, B.; Daniel, D; Saxena, N.; Sharma, A.; Sen, D.; Sen, S. 2023: “Informing watershed management in data-scarce Indian Himalayas”, Water Security, Volume 19, <https://doi.org/10.1016/j.wasec.2023.100138>
2. Yasmin, T., Khamis, K., Ross, A., Sen, S., Sharma, A., Sen, D., Sen, S., Buytaert, W., and Hannah, D. M., 2023: “Brief communication: Inclusiveness in designing an early warning system for flood resilience “, Nat. Hazards Earth Syst. Sci., 23, 667–674, <https://doi.org/10.5194/nhess-23-667-2023>.
3. Poster Set (set of 6) on Haljora Watershed.
4. Poster Set (set of 7) on Water User Groups
5. Poster Set (set of 4) and Handbook on Temporary Shelter.
6. Poster Set (set of 6) Livelihood development program for Purkul watershed area

V. ICC REPORT

- No complaint was received in 2023-24.
- Compliance requirements under the ACT were fulfilled in terms of:
 - ✓ Dissemination of PSI’s POSH policy to the staff
 - ✓ Certified online courses on POSH for IC Members, Managers, and staff
 - ✓ Posters and notices in the office to create awareness regarding the law
 - ✓ Quarterly IC meetings
 - ✓ Submission of the annual report to the District Officer
- Ms. Sumita Nanda, Chief Operating Officer of Latika Roy Foundation was appointed as the External Member in June 2022.

VI. FINANCIAL REPORT

Project Wise Financial Statement (2023-24)

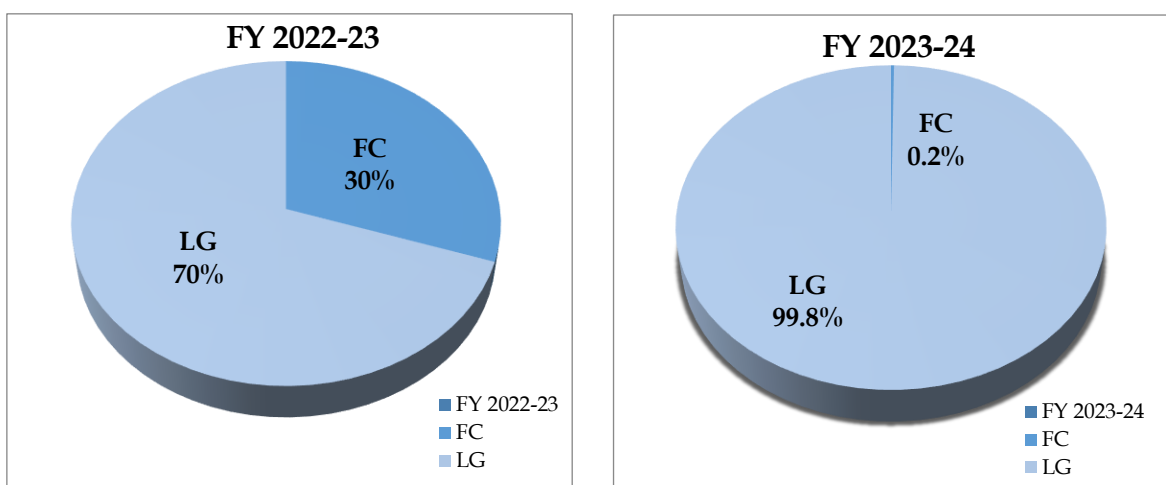
S. No.	Project	Funding Partner	Opening Balance (Rs.)	Income (Rs.)	Utilization (Rs.)	Balance (Rs.)
1	Promoting Farm and off Farm based Micro-enterprise Development for Livelihoods Security in Western Himalayan Landscape under LIC LIFE Program (Livelihood Initiative for Financial Empowerment)	LIC - HFL - CSR	-1,17,069	1,13,49,920	1,11,45,413	87,438
2	Watershed Based Springshed Development in Almora district	NABARD -RO Dehradun	-1,13,073	1,74,000	2,99,892	-2,38,965
3	Watershed Based Springshed Development in Bageshwar district	NABARD -RO Dehradun	-41,007	3,48,000	2,94,641	12,352
4	Preparation of DPR	NABARD Manipur	-	70,000	13,944	56,056
5	Climate Smart Drought Mitigation and Livelihood Enhancement	Ajim Premji Philanthropic Foundation (APPF)	-7,31,303	1,26,74,101	1,18,68,662	74,136
6	Aligning Farming with Nature	Srijan under MP- NF Coalition	6,64,178	4,828	6,69,006	-
7	Upscaling farming Aligned with Nature across Agro-Ecologies in MP	BRLF	-	6,53,758	6,50,000	3,758
8	Ground Water Recharge in Haljora Watershed through Common Property Resources Management in Haridwar district of Uttarakhand.	WIPRO Cares	-	22,00,000	22,08,615	-8,615
9	Springshed Development in Chamoli & Almora District, Uttarakhand	CMA-CGM Agencies (India) Private Limited	-	20,00,000	20,00,000	-
10	Strengthening the local innovation systems through S&T interventions for enhancing livelihood system efficiency of EWS in villages of Haridwar district, Uttarakhand	Department of Science & Technology	-	23,69,159	32,09,137	-8,39,978

S. No.	Project	Funding Partner	Opening Balance (Rs.)	Income (Rs.)	Utilization (Rs.)	Balance (Rs.)
11	Prototyping disaster response shelters: A project to develop & deploy temporary shelters in response to the Himachal Pradesh floods, 2023	Sir Dorabji Tata Trust	-	86,80,902	52,69,417	34,11,485
12	Co-creating Sustainable Agri-Water Use in the Hindon sub-basin –A Multi Scale Participatory Approach	Indian Institute of Science Education and Research (IISER) Kolkata)	2,77,358	14,55,363	17,46,408	-13,687
13	Evaluating PMAY-Urban's Contribution in Uplifting Housing Satisfaction, Socio-Economic conditions and improving Disaster Resilience in Uttarakhand	IIT- Roorkee	-	5,60,000	8,00,468	-2,40,468
14	Participatory Springshed Management	Soil & Water Conservation Department	5,40,318		6,892	5,33,426
15	Environment Education program & Service Projects		44,13,456	77,62,917	80,60,994	32,15,560

PSI's balance sheet and consolidated income and expenditure account for 2023-2024, ending March 31, 2024 are attached as Annexures 1a and 1b.

During the year the Institute generated grants worth Rs. 4,06,10,180 and donations worth Rs. 23,09,285. Other receipts from bank interest, consultancies, sale of products and publications amounted to Rs. 98,23,789. Adding the opening balance and other incomes the total income for 2023-2024 amounted to Rs. 5,30,87,708. The Institute spent Rs. 5,17,66,906 leaving a balance of Rs. 13,20,802. Unutilized grants carried forward amounting to Rs. 27,01,992 the amount transferred to the capital fund is Rs. 21,99,669.

The pie-charts below show the sourcing of income from local grants & donations and foreign grants & donations for 2023-2024 & the previous year.



The main donors for local and foreign grants for 2023-24 are listed below.

Azim Premji Philanthropic Initiatives PVT LTD (APPI), Self-Reliant Initiatives through Joint Action (SRIJAN), CMA CGM Agencies (India) Private Limited, WGF India, , LIC HFL, Amity University, BRLF, Wipro Cares, Department of Science & Technology, Sir Dorabji Tata Trust, NABARD - Uttarakhand, Forest Department, IISER Kolkata, IT Roorkee,, IWRD Mizoram, Vana Enterprises Limited, Manav Vikas Sansthan, NEIDA, Uttarakhand, GIZ India, Ambuja Cement Foundation, Irrigation and Water Resource Department - Haryana, Banwasi Sewa Ashram, US Aid India, National Institute of Urban Affairs, IIT Roorkee, Irrigation and Water Resource Department - Mizoram, Central Himalyan Rural Action Group (CHIRAG)

PSI is thankful to all of them for their support.

VII. EXECUTIVE BOARD 2023-24

Prof. Shambu Prasad	Chairperson	Rural Management
Prof. Janki Andharia	Treasurer	Disaster Management
Dr. Kshama Metre	Member	Medical Practitioner
Dr. Himanshu Kulkarni	Member	Hydrologist
Dr. Sumit Sen	Member	Prof. (Hydrology), IIT- Roorkee
Dr. Malavika Chauhan	Member	Independent Consultant
Dr. Debashish Sen	Director (Ex-Officio)	Scientist

VIII. PSI STAFF 2023-24

S. No.	Name	Date of Joining	Date of Leaving
1.	Abhishek	01.04.2018	
2.	Adarsh Shukla	01.08.2018	
3.	Akhilesh Chandra Shukla	01.01.2024	
4.	Amit Petwal	01.11.2016	
5.	Anil Kumar Gautam	01.03.2002	
6.	Anita Sharma	02.07.2012	31.05.2023
7.	Arvind Nigam	06.06.2017	
8.	Bhagwati Pandey	20.03.2017	31.05.2023
9.	Chakradhar Tripathi	15.06.1988	30.06.2023
10.	Darshan Lal	01.06.2013	
11.	Debashish Sen	01.03.1988	
12.	Dhara Singh	01.10.2016	30.06.2023
13.	Dharmendra Singh	18.06.2018	31.10.2023
14.	Diksha Upadhyay	01.01.2024	
15.	Dinesh Sharma	02.10.1997	
16.	Dineshwar Nath Dwivedy	17.08.1998	30.06.2023
17.	Gaurav Panwar	04.11.2020	10.11.2023
18.	Heena Kannauj	01.03.2016	31.03.2023
19.	Iqbal Ahmad	01.02.2020	
20.	Kajal	01.07.2021	
21.	Kamal Dabar	01.04.2019	31.03.2023
22.	Khasti Devi	01.05.2018	
23.	Kuldeep Prasad Uniyal	20.12.2023	
24.	Mahendra Wadhwani.	01.08.2023	17.12.2023

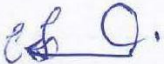
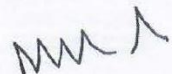
S. No.	Name	Date of Joining	Date of Leaving
25.	Makkan Singh	01.07.2017	
26.	Manoj Kumar	10.07.2006	
27.	Naveen Gusain	02.04.2018	
28.	Neelam Bisht	01.04.2023	
29.	Prem Narayan	01.11.2018	
30	Prem Singh Rawat	01.09.2018	
31	Priyank Bharti	01.04.2019	
32	Priyanshu Gupta	11.05.2022	
33	Puran Bartwal	03.01.2011	
34	Pushpa Juyal	21.12.1992	
35	Rajesh Kumar	01.04.2018	30.06.2023
36	Ram Sewak Prasad	01.11.1994	
37	Ramesh Singh Rawat	16.09.2004	
38	Sandeep Gussain	02.04.2018	
39	Sanjay Uniyal	01.11.2017	
40	Sharad Yadav	01.05.2017	
41	Shyam D. Yawle	15.04.2021	
42	Srishti Meher	01.05.2023	
43	Subhash Singh Rawat	01.06.2002	
43	Vikas Singh Panwar	18.06.2018	
44	Vikram Singh	01.02.2000	
45	Vinod Niranjana	15.01.2014	
46	Jitendra Kachhwaha	16.04.2022	20.07.2023
47	Amit Singh	01.04.2022	
48	Amit Soni	28.04.2022	30.09.2023
49	Vishal Choudhari	17.03.2023	

IX. INTERNSHIP 2023-24

S. No.	Name of the Intern	College/ University	Internship Period	Project Allocated
1	Ms. Ashwini Panpatil	Fergusson College, Pune	June 11, 2023 to August 22, 2023.	Social Participatory and Rural Kick-off (SPARK), under Panihar and Shiv Shakti Springshed Management and Development Project and spring rejuvenation works in Chanoli and Naini Barakote villages, block Bhaisiyachhana, district Almora (Uttarakhand), supported by Frank water, UK
2	Mr. Karanveer Singh	Govind Ballabh Pant Social Science Institute, Jhusi, Prayagraj (Allahabad)	June 20, 2023 July 25, 2023	Impact of Agricultural practices on ground and surface water sources at Bhojpur Village, District- Saharanpur, Uttar Pradesh.
3	Mr. Shakti Singh	GovindBallabh Pant Social Science Institute, Jhusi, Prayagraj (Allahabad)	June 20, 2023 July 25, 2023	Impact of Agricultural practices on ground and surface water sources at Bhojpur Village, District- Saharanpur, Uttar Pradesh.
4	Mr. Ajay Savatwan	Tata Institute of Social Sciences, Mumbai	May 1 st 2023 to June 12 th 2023	Chemical Agriculture's Impact on Quality of Surface and Groundwater at Sadhauli Hariya village, Saharanpur District, Uttar Pradesh
5	Mr. Ayush Sharma	Tata Institute of Social Sciences, Mumbai	May 1 st 2023 to June 12 th 2023	Chemical Agriculture's Impact on Quality of Surface and Groundwater at Bhanhera Khemchand village, Saharanpur District, Uttar Pradesh.
6	Ms. Shilpi Sachdeva	Tata Institute of Social Sciences, Mumbai	May 1 st 2023 to May 21 st 2023	Status of chemical agriculture and its effect on crops and health in Maleera village, Muzaffarnagar District, Uttar Pradesh.
7	Ms. Riya Soin	Doon University Dehradun	January 9, 2024 to February 9, 2024	Water Quality Monitoring of Hindon River.

S. No.	Name of the Intern	College/ University	Internship Period	Project Allocated
8	Mr. Ritvik Agarwal	SPJIMR, Mumbai	March 6, 2024 to April 4, 2024	Livelihood Gap Identification of Economically Weaker Section (EWS) Families in Villages of Bahadrabad block, Haridwar district, Uttarakhand.
9	Mr. Sahil Gupta	SPJIMR, Mumbai	March 6, 2024 to April 4, 2024	Livelihood Gap Identification of Economically Weaker Section (EWS) Families in Villages of Bahadrabad block, Haridwar district, Uttarakhand.

X. BALANCE SHEET 2023-24

PEOPLE'S SCIENCE INSTITUTE					
ITBP Road, P.O.Kanwli, Dehradun-248001					
AUDITED BALANCE SHEET AS AT 31st MARCH 2024					
					Amount in Rs.
CORPUS / CAPITAL FUND AND LIABILITIES	SCH.	2023-24			2022-23
		LG	FC	Total	Total
(a) Endowment Fund	A	-	5,97,837	5,97,837	5,97,837
(b) Campus Fund	B	2,20,230	36,85,298	39,05,528	39,05,528
(c) Reserve & Surplus	C	81,49,995	(13,26,421)	68,23,574	1,04,04,433
(d) Fixed Asset Fund		93,12,946	1,78,58,871	2,71,71,817	2,79,59,435
(e) Grant (to the extent Unutilised)	D	27,01,992	-	27,01,992	3,44,454
(e) Community revolving Fund		75,000		75,000	-
(e) Current Liabilities	E	13,75,278	-	13,75,278	7,10,774
(f) Staff Gratuity Fund		28,97,654	3,58,671	32,56,325	32,08,831
Total (Rs.)		2,47,33,095	2,11,74,256	4,59,07,351	4,71,31,291
Assets					
(a) Non Current Assets					
Fixed Assets	F	93,12,946	1,78,58,871	2,71,71,817	2,79,59,433
(b) Current Assets					
Cash and Cash Equivalents	H	32,81,327	12,40,355	45,21,682	53,09,425
Other Current Assets	I	27,73,740	13,125	27,86,865	68,31,451
Investments	G	93,65,082	20,61,905	1,14,26,987	70,30,982
TOTAL (Rs.)		2,47,33,095	2,11,74,256	4,59,07,351	4,71,31,291
For Singh Satish & Associates Chartered Accountants FRN: 032138N SATISH KUMAR SINGH Digitally signed by SATISH KUMAR SINGH Date: 2024.09.28 16:37:45 +05'30'			For People's Science Institute  Prof. Shambu Prasad, President		
Satish K. Singh FCA; BCOM(H) Membership No. 526351 UDIN - 24526351BKLEYL88425 Dated: 26.09.2024 Place: New Delhi			 Dr. Debashish Sen Director		

PEOPLE'S SCIENCE INSTITUTE					
ITBP Road, P.O.Kanwli, Dehradun-249001					
AUDITED INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31st MARCH 2024					
Amount in Rs.					
INCOME	Sch.	2023-24			2022-23
		LG	FC	Total	Total
Donations & Project Grants	J	4,29,19,465	-	4,29,19,465	1,86,07,394
Interest Income	K	7,98,524	1,28,023	9,26,547	9,54,376
Environment Education and Services Receipts	L	85,63,563	-	85,63,563	2,30,04,656
Other Income	M	3,33,679	-	3,33,679	2,14,663
TOTAL		5,26,15,231	1,28,023	5,27,43,254	4,27,81,089
Grant Unutilised C/f		3,44,454	-	3,44,454	1,42,98,591
Total		5,29,59,685	1,28,023	5,30,87,708	5,70,79,680
EXPENDITURE					
Expenditure					
Program Expenses	N	4,67,62,363	(11,200)	4,67,51,163	4,69,03,620
Administrative Expenses	O	50,15,673	70	50,15,743	83,88,602
Total		5,17,78,036	(11,130)	5,17,66,906	5,52,92,222
Excess of Income over Expenditure		11,81,649	1,39,153	13,20,802	17,87,458
Less :Transfer to Unutilised Grant		27,01,992	-	27,01,992	3,44,455
Less: Transfer to Gratuity fund		-	-	-	-
Less : Fixed assets purchased during the year		21,99,669	-	21,99,669	-
Net Excess of Income over Expenditure		(37,20,012)	1,39,153	(35,80,859)	14,43,003
For Singh Satish & Associates Chartered Accountants FRN: 032138N SATISH KUMAR SINGH Digitally signed by SATISH KUMAR SINGH Date: 2024.09.26 16:36:14 +0530' For People's Science Institute  Prof.Shambu Prasad. Dr.Debashish Sen President Director Satish K. Singh FCA; BCOM(H) Membership No. 526351 UDIN - 24526351BKCYLB8425 Dated: 26.09.2024 Place: New Delhi					