



Annual Report (2023 - 2024)



People's Science Institute



People's Science Institute

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Uttarakhand

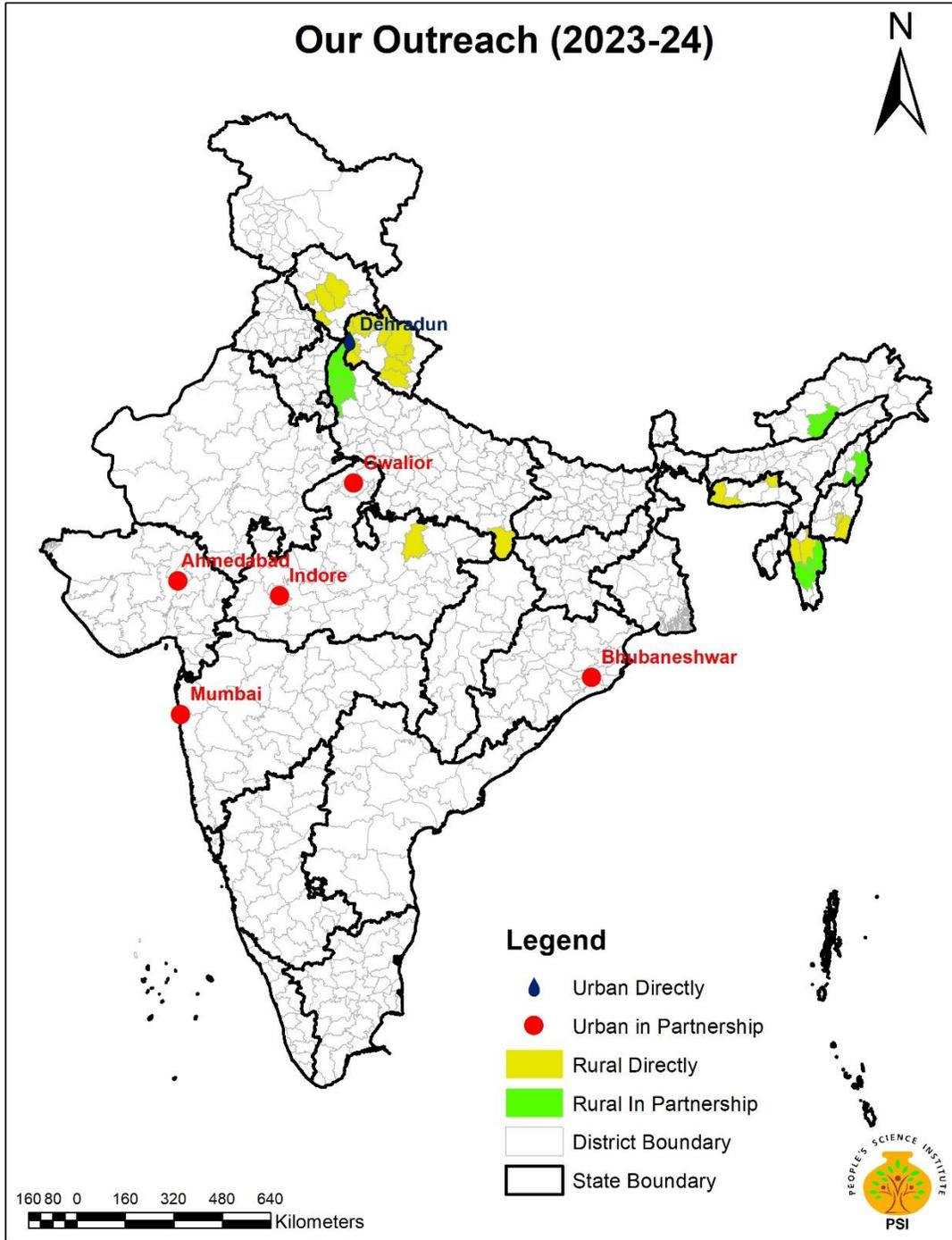
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States - 12

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 under the Societies Act (1860) in New Delhi. **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 capitals in communities.

Operationally PSI provides technical and managerial support to communities and organizations that work with them, implements development programs, and undertakes public interest research. The Institute's approach to implementing development projects is a participatory one with empowerment of the underprivileged and self-reliance as key objectives. Its 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 disciplines: (i) Natural Resources Management (NRM), (ii) Disaster Response and Mitigation (DRM), (iii) Environmental Quality Monitoring (EQM), and (iv) Innovative Projects.

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 springshaded development, environmental quality monitoring, disaster-safe housing, river conservation and dissemination of appropriate technologies.

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, research-based approach to problem-solving and formulation of policy guidelines. Besides communities and their partner voluntary organizations (VOs), PSI works with research institutions, government agencies, and occasionally donor organizations.

The Institute has a competent staff of socially conscious engineers, scientists, and social workers. It has an eco-friendly campus in Dehradun. It operates two state-of-the-art laboratories: (i) Geographical Information Systems and (ii) Environmental Quality Monitoring. PSI also has a small library with a few thousand books and periodicals.

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

II. YEAR 2023-24: AN OVERVIEW

In 2023-24, 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. In addition, it extended training and field support to different government, non-government and academic institutions mainly on springshed management. ~~and fluorosis mitigation.~~

Natural Resource Management (NRM):

PSI executed water, food and livelihoods security projects to benefit 8552 families in 110 villages of 7 districts 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 (GoI), Azim Premji Philanthropic Foundation (APPF) and Srijan (under MP Natural Farming Coalition).



Water, Food & Livelihoods Security

In the mountain districts of Himachal Pradesh and Uttarakhand, the focus was on NRM for sustainable livelihoods. The activities included 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 plantations, mushroom cultivation, bee keeping, and poultry. Off-farm livelihood activities included community based tourism, and women-led micro-enterprises. The project developed infrastructure for collection, processing and marketing in three clusters covering 30 mountain villages. Community-based institutions like SHGs, watershed committees and farmers' cooperatives were formed and/or strengthened. The benefitting households (kitne ?) earned an additional average annual income of Rs. 8,000 - Rs. 10,000 during the year under review (2023-24).

During the year PSI initiated three new multi-year programs in the foothills of the Lesser Himalaya (Mussoorie) and the Shivaliks (Haridwar). They were: (i) A scoping study for Purkul Watershed Development and Livelihoods Development Program in 3 villages in the Mussoorie foothills; (ii) Improving the livelihood systems efficiencies of economically weaker populations in 15 villages of Haridwar district; and (iii) Enhancing ground water recharge through Common Property Resources Management in 8 villages of Haridwar district. In the long run these initiatives are expected to benefit 1252 families in the selected villages.

In Bundelkhand, the focus was on demonstrating Climate Smart Agricultural measures for drought mitigation to improve food, nutrition and livelihood security in a socially-just manner. The activities included farm ponds for crop-sustaining irrigation; introducing innovative agronomic practices like SCI, natural farming, NPM, kitchen gardens and vegetable cultivation;

establishment of Technology Resource Centres, millet processing units and strengthening of village institutions to sustain these efforts. The program benefitted 4020 households in 35 villages of Panna district (Madhya Pradesh). Protective irrigation for 106 ha increased crop productivity between 40 and 90 per cent. Over 125 Farmers Interest Groups (FIGs) were established. The reported increase in annual household income ranged from Rs. 15,000 to Rs. 20,000, in 2023-24.

Environmental Quality Monitoring (EQM)

Water quality research studies focussed on ecological and health-related projects. They included (i) monitoring surface and ground water quality in the Hindon sub-basin and implementing sustainable agricultural practices; and (ii) fluorosis mitigation in Sonbhadra district (Uttar Pradesh). The Hindon river studies revealed significant pollution and highlighted the need for community involvement for sustainable agriculture, pollution control, and research to preserve river ecosystems.



Air & Water Quality Studies

Disaster Response and Mitigation (DRM)

The DRM group at PSI assisted IIT-Roorkee in a social survey to assess losses caused by the 2023 rainfall events in Kullu & Mandi districts of Himachal Pradesh. With the support of Sir Dorabji Tata Trusts (SDTT), it initiated the construction of reusable insulated temporary shelters for 60 families who had been rendered homeless by the floods.



Flood Study & Response

Innovative Projects

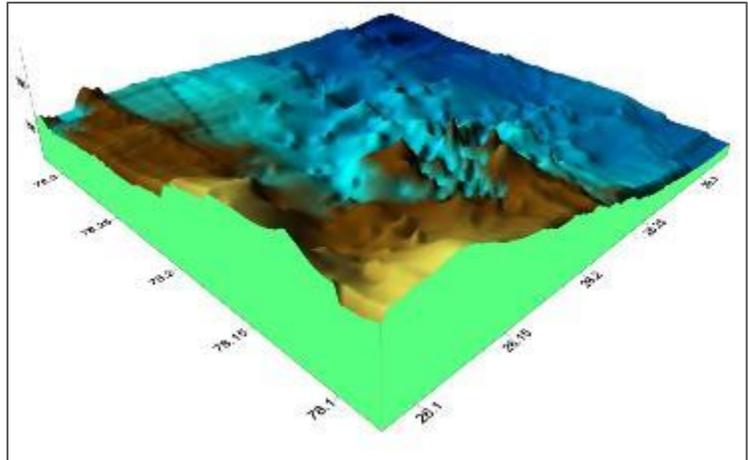
Inclusive and Sustainable Urbanization: With the help of local organizations PSI engaged with range of local actors including slum dwellers in Ahmedabad, Bhubaneshwar, Indore and Mumbai for co-developing solutions to address the ill-effects of air pollution. This study emphasized focussing on local priorities through stakeholder interaction and community engagement. It also stressed the importance of monitoring pollution levels.

PSI and ACWADAM (Pune) worked together to assist the Gwalior Municipal Corporation to manage shallow aquifers in the city under the



Training & Field Support

Atal Mission for Rejuvenation and Urban Transformation (AMRUT 2.0) program of the Union Ministry of Housing and Urban Affairs, benefitting 1200 households. The activities involved (i) Geological analysis to assess the local hydrogeological potential; (ii) Capacity building and stakeholder engagement with over 100 professionals from different government departments and NGOs in shallow aquifer management and enhancing their awareness and collaboration in water resource initiatives; (iii) Aquifer mapping to understand groundwater dynamics within and around Gwalior city, facilitating informed decision-making on water management strategies; (iv) Groundwater levels mapping to create a groundwater levels map of Gwalior city, (v) Identification of 17 potential shallow aquifer recharge sites in the city.



3-D projection of groundwater levels in Gwalior city

PSI, in partnership with IIT-Roorkee, undertook an evaluation of the Pradhan Mantri Awas Yojana (PMAY) in urban areas of Chamoli, Dehradun, Rudraprayag and Uttarkashi districts in Uttarakhand.

Miscellaneous

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

The year thus saw PSI contributing to various Sustainable Development Goals (SDGs). They included SDG 1 -- Ending Poverty, SDG 2 -- Ending Hunger, SDG 3 -- Good Health and Well-being, SDG 5 -- Gender Equality, SDG 6 -- Water and Sanitation, SDG 11 -- Sustainable Cities and Communities, SDG 12 -- Responsible Consumption and Production, SDG 13 -- Combat Climate Change and its Impacts, SDG 14 -- Conserve and Sustainably Use Aquatic Resources for Sustainable Development, and SDG 17 -- Partnerships for the Goals. In FY 2025, PSI plans to expand its activities to include climate change, livelihood security and sustainable urbanization.

We extend our gratitude to our well-wishers, knowledge and technical partners, grassroots level organizations, and communities who have been with us during this challenging but exciting journey. Your support and trust in us has stimulated our mission to work towards nation-building based on enhancing productivity, sustainability, equity, self-reliance and inclusivity while promoting people's science in all that we do.

III. PROGRAMME BRIEFS

III a Natural Resource Management for Livelihoods Security

III b Environmental Quality Monitoring

III c Disaster Response and Mitigation

III d Sustainable and Inclusive Urbanization

III e Training and Field Support

III a. Natural Resource Management for 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 LIFE Program	None	States: Uttarakhand, Himachal Pradesh Districts: Nainital, Solan 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 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 Villages: 4 Beneficiaries: 597 households
4	Springs Revival for Water Security and Skilled Livelihood Program in Chamoli & Almora districts	September 2023 to March 2024	20,00,000	CMA-CGM Agencies (India) Private Limited	None	State: Uttarakhand District: Chamoli, Almora Villages: 13 Beneficiaries: 580 households
5	Ground Water Recharge in Haljora Watershed, Haridwar district	January 2024 to Mar 2025	57,64,066	WIPRO Cares	None	State: Uttarakhand District: Haridwar Villages: 8 Beneficiaries: 380 households
6	Strengthening local innovation systems through S&T interventions for enhancing livelihoods systems efficiencies of Economically Weaker Sections in Haridwar district	December 2023 to December 2026	2,53,49,500	Department of Science & Technology (GoI)	KVK, Haridwar	State: Uttarakhand District: Haridwar Villages: 15 Beneficiaries: 600 Households
7	Scoping study in Purkul Watershed for Livelihoods Development of the vulnerable communities	November 2023 to March 2024	4,00,000	VANA Enterprises Ltd.	None	State: Uttarakhand District: Dehradun Villages: 4 Beneficiaries: 272 households

S. No.	Project Title	Total Project Period	Total Grant Amount (Rs.)	Funding Agency	Project Partners	Geographical Coverage
8	Climate Smart Agriculture for Drought Mitigation	January, 2020 to September 2023	3,44,10,764	Azim Premji Philanthropic Initiative (APPI)	None	State: Madhya Pradesh District: Panna 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 Villages: 20 Beneficiaries: 500 farmers

Farm-based and off-Farm Microenterprises for Livelihoods Security in Western Himalayan Landscape (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. PSI enabled its implementation in 10 villages of Kandaghat and Solan blocks in Solan district (H.P.) and 20 villages in Kotabagh and Dhari blocks of Nainital district (Uttarakhand).

To mobilize the villagers around the project objectives, PSI initiated community mobilization activities - introduction of the project and obtaining the villagers' consent for it, training, preparation of Village Development Plans (VDPs) and formation of Village Level Institutions (VLIs) in 25 villages during the January 2023- March 2023 period. This review focuses on the work done in FY 2024.

Objectives

To enhance livelihood incomes and security in the selected villages, in a participatory, socially just and environmentally sustainable manner.

Activities

To achieve the above objectives, in FY 2024 PSI's NRM team enabled the implementation of farm-based and off-farm activities in all the 30 selected villages. The Institute's NRM experts and field teams undertook the following activities: Till March 2024 had established 82 active SHGs and FIGs with 1152 members.

1. Guided villagers in five new project villages to prepare VDPs as an empowering process.
2. Continued the establishment of VLIs in all the project villages to ensure sustenance of collective activities in the long run.

3. Organized training and exposure visits for farmers, SHGs and home stay owners. PSI's NRM teams trained and assisted local farmers to adopt a variety of sustainable and remunerative agro-ecological practices for many vegetables, lentils and grains. The trainees learnt about SCI for different crops, preparation and use of organic fertilizers and natural farming practices. SHG members were trained in different micro-enterprise production and marketing processes. The field team led home stay owners on exposure visits.
4. Promoted farm-based (bee-keeping, mushroom cultivation, poultry and goatery) and off-farm (sewing, knitting, handicrafts, jute bag making and Aipan art) micro-enterprises.
5. Established processing units and marketing outlets for agriculture produce and off-farm enterprise products. Established Bio-Resources Centres (BRCs) in all the four project clusters to prepare and distribute organic fertilizers and pesticide.
6. To scale up the above activities PSI conducted cluster-level training and knowledge dissemination workshops.



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

Outputs

S. No.	Activity	Outputs
1.	VDPs Preparation	Villagers collectively prepared VDPs in five new villages of Solan district
2.	VLI's Establishment	By March 2024 there were 82 VLIs (SHGs + FIGs) with 1152 members
3.	Training, Demonstrations, Exposure Tours	(i) Trained about 1900 farmers in sustainable & remunerative agro-ecological practices and arranged their visits to demonstration farms to interact with practicing farmers. (ii) 29 beneficiaries trained in mushroom cultivation and as trainers to extend this activity. (iii) 42 families were instructed in goat rearing
4.	Establishment of Processing Units (PUs)	<ul style="list-style-type: none"> • 13 fruit and vegetable PUs, including three established after April 2024 • Turmeric PUs (Kandaghat block) and a spices PU (Kotabagh) • Cattle feed PUs in Kotabagh (four) and Dhari (three) clusters
5.	Establishment of Marketing Outlets	<p>Marketing outlets were established in X villages/locations and the total value of sales amounted to over Rs. 39.93 lakhs</p> <ul style="list-style-type: none"> • The vegetables and fruits PUs sold output worth Rs. 3.57 lakhs • 50 largely landless families earned Rs. 1.5 lakhs from sale of chicks, eggs and goats • 29 families sold 300 kg of mushrooms for Rs. 60,000 • Women SHGs engaged in off-farm micro-enterprises had sales of Rs. 7.6 lakhs during FY 2024 • 1000 farmers reported sales of vegetables, spices and pulses worth over Rs. 12 lakhs • Home stay owners had a gross revenue of Rs. 2.25 lakhs

Outcomes

The total value of all production in the 30 project villages, whether sold or self-consumed, was estimated at about Rs. 69.80 lakhs. This amounts to over 60 per cent of the total project grant investment for the January 2023 - March 2024 period. With the experience gained by the beneficiaries and the continuing support of PSI's NRM team, it is expected that the value of production in the following years will grow further. Thus investments in a local green economy can be expected to have a high rate of return, rarely matched by industries even though they do not bear many of the external negatives.



Promotion of SCI in Dhari, Nainital district, Ukd



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



Market outlet Kotabag cluster, Nainital district, Uttarakhand

Watershed-Based Springshed Development in Kamyaraula watershed, Almora district

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

Objectives

- Revival of drying springs to meet drinking water and minor irrigation needs.
- Undertake soil and water conservation measures.
- Create additional livelihood opportunities for women and vulnerable communities.
- Strengthening of the village-level institutions (VDC and SHG) and watershed committee.



Construction of trenches in Kamyaraula project, Almora district, Uttarakhand

Activities

- Villagers mobilized to dig trenches in the recharge zones of four drying springs.
- Guided construction/repair of irrigation guhls/canals to improve irrigation facilities and crop productivities.
- Constructed drinking water pipeline to provide safe drinking water to 18 households.
- Enabled plantation of grasses and fruits in the springs recharge zones.
- Promoted SCI cultivation of vegetable, spices, and pulses cultivation. Khasti Devi from PSI trained the farmers to prepare bio-inputs, treat seeds, spacing of plants, etc. PSI distributed seeds for pea, radish and green vegetables cultivation to 50 farmers.
- Organized meetings and exposure visits on natural farming for the village watershed committee, Mahila Mangal Dals, and SHGs.



Construction and repair of Irrigation Guhl in Kamyaraula project

Outputs

Springs Revival: Digging 361 trenches helped rejuvenate four springs in the Kamyaraula watershed.

Irrigation Facilities Improved: Constructed and repaired 579m (meters) length of irrigation guhls/canals, directly benefiting approximately 80 families and irrigating 5.8 ha. Crop productivity in Pea increased from 20 to 40 per cent. Farming households consumed vegetables and sold the surplus.

Water Pipeline Installed: An 880m long water pipeline and storage tank facility now provides 18 households and their cattle reliable drinking water supply and for irrigating kitchen gardens.

Biodiversity and Biomass Production: The watershed communities planted over 3800 grass slips for fodder production and 1500 fruit plants.

Seed distribution: About 15 farmers started earning income from the sale of surplus vegetables in the market. One farmer earned Rs.28,000 from the sale of vegetables.



Construction of water storage tank

Outcomes

Reviving springs and related development works in the Kamyaraula watershed have resulted in improved livelihoods for the local villagers. Improved drinking water supply and irrigation facility has benefitted a majority of the households. Training in SCI and cultivation of cash crops, spices and vegetables, has helped improve nutrition and incomes. Fodder and fruit plantation could further enhance livelihoods in the future. More importantly, working in a collective manner has improved the community spirit among the villagers.



Distribution of seeds of vegetables

NABARD Watershed Based Springshed Development in Khirganga watershed Bageshwar District

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

Objectives

- Revive five drying and one dried springs for drinking water and irrigation needs.
- Check soil erosion and conserve water through soil and water conservation measures.
- Create additional livelihood opportunities for women and vulnerable communities.
- Strengthen VLIs and other community-based organizations in the watershed.

Activities

- Villagers dug trenches in the recharge zones of the springs.
- Guided villagers to construct/repair irrigation guhls/canals for additional irrigation and improvement of crop productivities.
- The community constructed gabions and check dams to control soil erosion and landslips.
- Demonstrated SCI method for cultivating green peas by 40 farmers in about 1 acre
- Organized meetings and exposure visits on natural farming by the village watershed committee, Mahila Mangal Dals, and SHGs. Organized awareness camps on Women's Day and during the Harela festival.
- Trained women members of SHGs in sewing.



Construction of 558 m irrigation canal



Construction of trenches

Outputs

Springs Regeneration: Revived six springs by digging 358 staggered and contour trenches.

Irrigation Facilities Enhanced:

Constructed and repaired 558m long irrigation guhls/canals, to irrigate 10.6ha and directly benefit about 85 families.

Biomass Plantation: The watershed community planted 8000 grass slips to promote fodder production on the field bunds of 2ha farm land. They also established 1260 fruit plants contributing to bio-diversity.

Construction of Gabion Check Dams (GCD):

Constructed GCDs in 6.8ha to reduce the stream velocity and erosion and help of recharge of ground water and springs.



Storage tank for irrigation in Khirganga project, Kapkot, Bageshwar



Gabion Check Dams (GCD) Construction of for reducing the velocity of water of

Skilled Livelihood Program and Springs Revival in Chamoli & Almora districts of Uttarakhand

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

Objectives

To enhance food security and the climate change resilience of the local communities by:

- Regenerating springs and creating water storage capacities for irrigation.
- Evolving protocols in a participatory manner for the operation & maintenance (O&M) of the springs and equitable sharing of water.
- Introducing agro-ecological practices to farmers.
- Enhancing the longevity of the above initiatives by forming VLIs, Water Users Groups (WUGs) and Farmers Interest Groups (FIGs), and training them for O&M of the assets. Four local para-hydrogeologists were taught to measure spring discharge and water quality.

Activities & Outputs

- Created an inventory of 43 springs in Chamoli (8) and Almora (35) districts. Of these, 8 critical springs were selected in Chamoli (3) and Almora (5) for revival. The project's implementation efforts concentrated on them to sustainably increase their discharge and minimize the local water distress.
- Following the consent of the local communities, recharge area treatment activities were successfully implemented by the Water Users Groups (WUGs) and the para-workers.
- Two open water storage tanks were built in Chamoli to harvest the spring discharge. A stone masonry tank in Hanskoti village stores over 38,000 litres for irrigating 0.66 ha of 15 farming households. An RCC tank in Nakholi holds 15,000 litres to irrigate 1.17 ha for 25 households. It also supplies drinking water to 57 households.



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

- One FIG was established in each village of Chamoli district and trained in agro-ecological farming. Ninety two SCI demonstration plots were established for sustainable cultivation of wheat, barley, mustard, peas, and vegetables. FIG members received quality seeds for green peas and french beans to promote the SCI and trained in organic fertilizer production.



Demonstration of agro-ecological practices in villages of Chamoli district



Women performing Nukkad Natak at Rait village, Almora (Right). Widely spaced plants of green peas in a Chamoli village (Left)

- Awareness campaigns regarding sanitation and protection of the springs and recharge area were conducted in all the villages. The village youth and children made campaign posters and performed nukkad natak.



Awareness campaign through poster making by children & youth

- PSI selected four men (2) and women (2) -- in Almora (1) and Chamoli (3) -- as para workers and taught them the basic concepts of springshed management and agro-ecological farming. They are responsible for regularly collecting spring discharge and water quality data.

Outcomes:

Creating trained VLIs, agro-ecology aware farmers and para hydro-geologists will increase the likelihood of sustaining the practices and assets created. Springs regeneration and agro-ecological farming will enhance the climate change resilience of the local communities.



Para-workers recording in-situ water quality

Ground Water Recharge in Haljora Watershed, Haridwar district

Eight villages of Bhagwanpur and Bhadrabad blocks in Haridwar district of Uttarakhand had witnessed falling ground water levels. WIPRO Cares supported a project to enhance their ground water recharge.

Objectives

- Enhance ground water recharge and surface water storage
- Reduce soil and water erosion in the Haljora watershed
- Raise awareness on integrated surface and ground water management in the project villages
- Establish and mentor Community-Based Organizations (CBOs) and VLIs

Activities & Outputs

- PSI held six meetings to mobilize the local communities and establish VLIs in the watershed villages
- Five gabions were constructed to reduce soil erosion and increase ground water recharge.
- Six sub-surface dykes were built to increase the infiltration of base flows in the neighboring aquifers.
- Excavated soil in two community ponds to increase surface water storage.
- Produced a poster set on WUG formation and introduce O&M rules and regulations for the community ponds. FIGs were established later.

Outcomes

Infrastructure has been created or renovated in the watershed villages to enhance surface and ground water resources and reduce soil erosion. VLIs have been formed and mentored to ensure sustainable use of the water resources.



Construction of Gabion

S&T interventions to improve local innovation systems and enhance livelihood system's efficiencies for EWS in Haridwar district

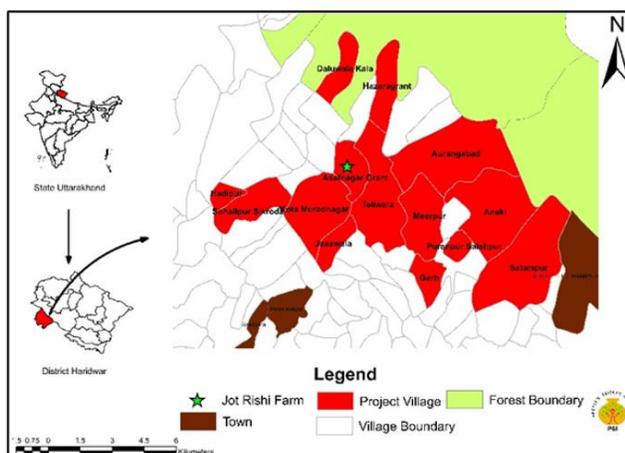
The Department of Science & Technology under its SUNIL program initiated a three years' project to promote the livelihood security of Economically Weaker Section (EWS) families in 15 villages of Bhadrabad block in Haridwar district of Uttarakhand. The Krishi Vikas Kendra (KVK) in Dhanauri provided knowledge support for the project.

Objectives

- To understand Local Innovation Systems (LIS) and their 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.
- Strengthen community resilience and future preparedness in rural communities through nudging and LiFE approaches
- **Activities & Outcomes**

The important activities done in FY 2023-24 are outlined below.

- Did a recce survey of the Bhadrabad Block and selected 15 villages for the project based on their EWS population and the willingness of the families to be involved in the project. A total of 729 EWS families were identified in the selected villages.



- Daluwala Kalan
- Teliwala
- Sohalpur Sikroda
- Hadipur
- Puranpur Salahpur
- Meerpur
- Kota Muradnagar
- Jasswawala
- Asafnagar Grant
- Garh
- Aneki
- Aurangabad
- Hazaragrant
- Salempur
- Rawali Mehdood

Project Villages of Haridwar District

- Organized a stakeholders' inception workshop at KVK, Dhanauri. The participants included Gram Pradhans from the selected villages, KVK scientists, block and district officials from relevant departments – including Mahila and Bal Vikas departments, representatives from Bhartiya Agro-Industries Foundation (BAIF) and Jyot Rishi farm and PSI's team. The officials provided information about various government schemes that could be accessed by the EWS families, while the KVK scientists briefly outlined information about the major crops in the area.
- Conducted PRA exercises to assess the existing socio-economic status, livelihood conditions and available resources – including institutional resources, of the EWS families in the villages.

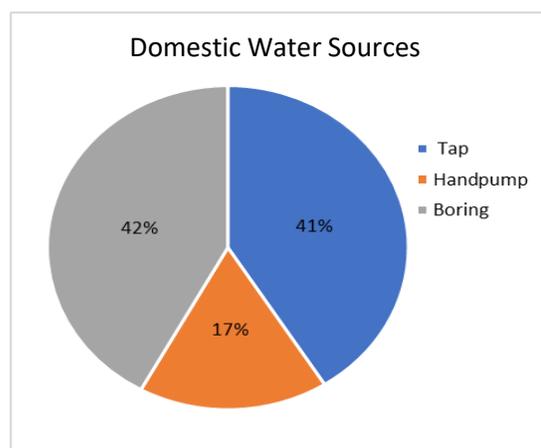
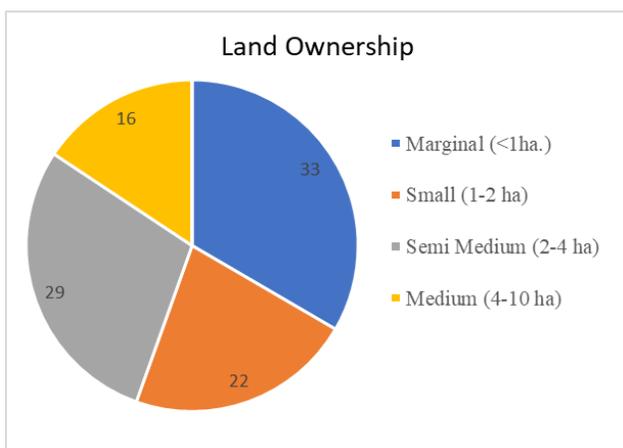
- Began a household survey among the selected families to determine their livelihoods, resources, and available institutional support.
- Undertook reconnaissance surveys to identify common property resources like ponds in the villages and finalized soil and water sampling stations.
- Set up agro-ecological demonstrations and provided necessary inputs such as seeds, organic materials, and technical support.
- 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
- Began the process to form FIGs.



Stakeholders' Workshop at KVK, Dhanauri

Findings/Outcomes

The PRA and household surveys revealed that the majority of EWS households rely on agriculture daily wages for their livelihood. Among the farmers, 33% are marginal landholders, 22% are small, 29% are semi-medium, and 16% are medium. All of them practice chemical farming, primarily using potash and DAP.



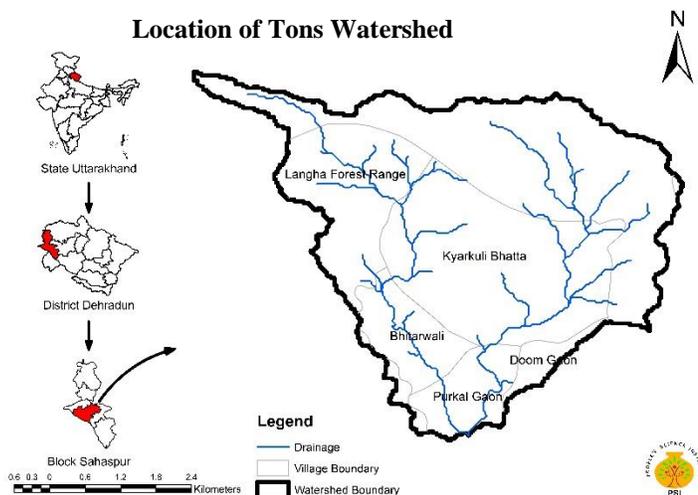
- About 41% of EWS households depend on tap water supply, while the rest rely on hand pumps and/or submersible pumps for their domestic water needs. Around 70% of EWS families dispose of their solid and liquid waste in open fields or drains.
- The major socio-economic challenges include small landholdings, low farm yields, poor skills for alternative livelihood options, and few CBOs or VLIs.

Scoping Study for Livelihoods Development Plan in 3 Villages of the Tons Watershed, Dehradun district

Vana Enterprises Ltd. supported a scoping study for preparing a Livelihoods Development Plan (LDP) for vulnerable communities of 3 villages in the Tons Watershed in the foothills of Mussoorie (Dehradun district).

Objectives

The project aimed to prepare LDPs in three villages of the Tons watershed to improve the local livelihood assets (water, food, fodder) and livelihoods of the local communities through soil conservation, rejuvenation of drying springs, introduction of climate resilient agro-ecological farming and off-farm livelihoods. It also aimed to identify the need for establishing VLIs and strengthening existing CBOs to sustain the development processes and outcomes.



Activities

- Rapport building through village meetings in all the 10 hamlets of the project villages.
- Participatory Rural Appraisal (PRA) exercises in each hamlet which included transect walks, social and resource mapping, seasonal analysis, wealth ranking, and venn diagrams.
- Socio-economic survey of 272 households in all the hamlets.
- Technical and social feasibility of necessary soil and water conservation measures.
- Livelihood activities for the vulnerable households were identified based on the availability of land, water, livestock and labour.



Findings from PRA and household survey:

- The 272 households surveyed include about 29 per cent dalit, 5 per cent OBC and 0.4 per cent ST households, the remaining belong to the general category.

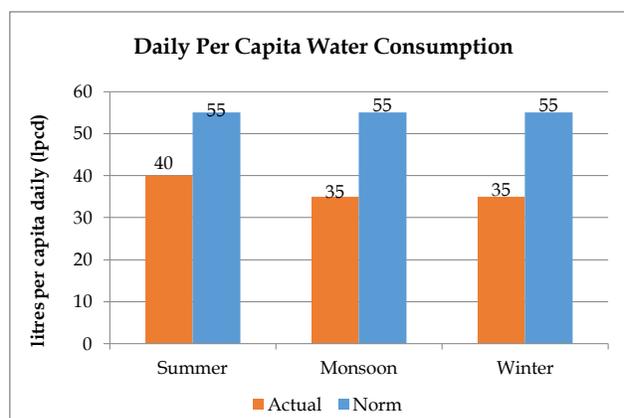
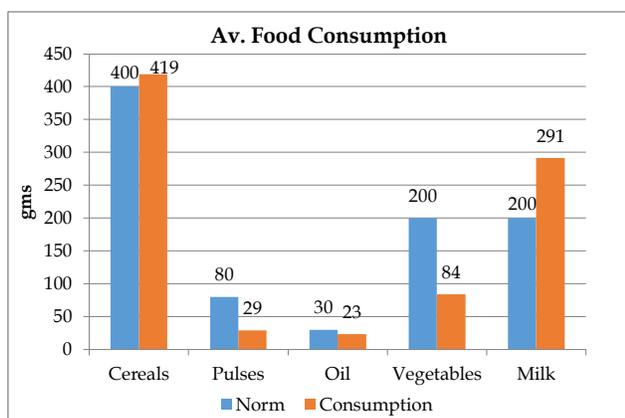
- Wealth-ranking was done based on the assessment by the villagers in each village. For all the project villages, it is estimated that 10 per cent households are well off, 26 per cent are self-sufficient, 35 per cent are poor and 29 per cent very poor. The villagers' assessment is based on employment, land holding, livestock ownership, etc.

The average income levels of the different economic categories are given in the table below.

S.N.	Item	Distribution			
		Well off	Self sufficient	Poor	Very poor
1	No of families	28	70	96	78
2	Av. annual income (Rs. Lakh)	4.6	1.9	0.8	0.5
3	Total landholding	7.2	6.5	5	4.8

50 nalis = 1ha

- Government service, army or pension are the major income sources of the well-off households, the self-sufficient families are engaged in petty business or are in private jobs. The poor and very poor have limited livelihood resources and depend largely on labour.
- Overall land use in the watershed is: agriculture 14 per cent, forest 72 per cent and other 14 percent. About 90 per cent of the forest land is under the State Forest Department. The rest is accessed by the local communities.
- The average landholding per family is about 0.1 ha. or 4 nali of which on an average the irrigated area is only about 20-25 per cent.
- There are 10 springs in the project villages. Almost all the households are dependent on spring water. All the springs are accessed for domestic needs, while 7 springs are partly used for irrigating kitchen gardens.
- The daily per capita water consumption ranges from 30 to 40 lpcd, which is much below the standard of 55 lpcd. This is largely due to irregular and inadequate pipeline supply, as well as the distance to the springs.
- For the project villages, the average daily consumption of cereals and milk is adequate but the consumption of pulses, vegetables and oil is quite low. Hence there is a need to enhance food production at the household level.



- There are 16 SHGs, one Mahila Mangal Dal and one Van Panchayat in the three villages.

Outcome

Based on the recommendations of the villagers at hamlet and village level meetings PSI's team prepared an LDP to enhance the productivity of the natural resource base and access to the required resources.

The plan was presented to VANA Enterprises. It has approved a grant to fund a five-year livelihoods development program. The major field activities include soil conservation, water resources development, farming interventions and capacity building of the VLIs and CBOs.

The proposed activities included (i) soil conservation works, e.g., gabion check dams, community plantations; (ii) springs regeneration and pipeline supply to 2 hamlets, desilting a pond in Purkul village, repair of an irrigation canal and roof-top rainwater harvesting tanks in all the hamlets; (iii) farm-based interventions including fruit plantations, kitchen gardens and introduction of agro-ecological practices; (iv) farm-based enterprises like goat-rearing for landless families, mushroom cultivation and a dairy.

Climate Smart Drought Mitigation and Livelihood Enhancement

Panna district is a heavily forested, tribal district in the drought-prone Bundelkhand region of Madhya Pradesh. Since 2010, PSI has been programmatically engaged in implementing community-led development projects for climate smart and sustainable agriculture and non-farm livelihoods in Panna's villages. The present project has helped expand this programme.

This project began in January 2020 with the support of Azim Premji Philanthropic Initiatives (APPI). Its basic aim is to improve food, nutrition and livelihood securities of vulnerable communities in 40 selected villages in three clusters of Panna's Sahnagar block. The project was initially planned for three years, up to December 2022. But almost one year was lost to the Covid pandemic and the project was extended up to March 2024. This report covers the work done in FY 2023-24.

Objectives

To improve food, nutrition, and livelihood security in a socially just manner in the project villages, the main project thrusts were to establish strong CBOs and VLIs, enhance agricultural productivity and secure livelihoods.

Activities & Outputs

VLIs and CBOs: PSI's field teams activated and strengthened *Aam Sabhas* (village or hamlet-level general assemblies), established earlier, at regular monthly meetings and revised VDPs in all the village/hamlet units. They organized field trips for selected members of the existing 108 FIGs and five Farmers Field Schools to expose them to innovative farming practices.

Irrigation Systems: The project made farming more secure for 480 households, by installing (i) micro-irrigation and (ii) community solar-pump irrigation systems. It created 106ha new irrigated area, through farm ponds (75ha) and solar-pump based irrigation (31ha).



Drip micro-irrigation system in a vegetable field



Community-based Solar system for irrigation

Community-based Seed Banks, TRCs and BRCs: Traditional vegetable seeds and good quality foodgrains seeds are available at 34 seed banks established earlier. Regular meetings and training sessions at the seed banks in FY 2024 helped improve food diversity.

The Technology Resource Centres (TRCs) make available farm equipment, while the Bio-Resources Centres produce and distribute bio-fertilizers and pesticides like *jeevamrit*, *ghan jeevamrit*, *agnyastr* and vermi-compost. The field teams conducted regular discussion meetings and training, provided equipment support, and established demonstration farming plots through the TRCs and BRCs, respectively.

Nutrition Security: Sustainable food grains production was enhanced in FY 2024 by promoting SCI cultivation, natural farming and bio-pesticides for major crops like paddy, wheat, maize, pigeon pea, horse gram and mustard on 782ha to benefit 2240 farmers. Kitchen gardens in 2986 households provided 23 varieties of vegetables and fruits, doubling the earlier number of varieties. The size of most nutrition gardens also increased from 100m² to 200m² in FY 2024.



SCI mustard Panna M.P.

Outcomes

Data gathered from 2240 households revealed that there was a significant increase in food production: Cereals - 430kg/family, Pulses -- 190kg/family, Vegetables -- 700kg/family and Millets -- 300 kg/family. Many families had some surplus for sale after self-consumption. This will help improve their nutrition and cash incomes. The survey indicated an annual income enhancement range of Rs.14,600 to 18,100 per household



Farmer interest group Panna M.P.

By the end of the project period, a strong spirit of community action also emerged. For example, the FIGs have united as a single forum to seek funding from government schemes to promote their livelihood initiatives. Good governance practices have emerged in the form of self-regulated local committees. This provides hope for growth of community-led development in the area.

Up-scaling Farming Aligned with Nature across Agro-ecologies in MP

Introduction:

To extend PSI's work as an MP-Natural Farming (MP-NF) Coalition partner, the Bharat Rural Livelihoods Foundation (BRLF) supported its project "Upscaling Farming Aligned with Nature across Agro-ecologies in MP" in 22 villages of Panna's Sahnagar block. The project area selected by PSI is a tribal area. In this project 500 farmers were trained in natural farming practices as a first step in a multi-pronged approach.

Objectives

- Encouraged the use of bio-alternatives for chemical fertilizers, insecticides, pesticides and weedicides
- Promoted agro-ecologically appropriate crop diversification and biodiversity through multilayer cropping and use of traditional seeds, crops and their varieties.
- Guided local entrepreneurs, community institutions and built capacities of all concerned stakeholders, especially women.
- Developed a Community Resource Person (CRP) based farm extension system.

Activities & Outputs

- **Developed Natural Farming (NF) Patches:** To avoid problems of scattered NF plots and to get effective results 22 NF patches were established with 9 farmers per patch on 87 acres. The patches were used for NF farming, crop planning, farmers training and demonstrations. Bio-inputs were prepared at the patch level for chemical-free farming.



- **Adoption of NF:** The main practices introduced were minimum tillage, mulching, use of IPM techniques for crop protection, seed selection, organic seed treatment and organic nutrient management. Over 520 farmers practiced NF on 462 acres for crops like maize, pigeon pea, mustard and bengal gram.

- **Promotion of Nutrition Gardens:** Farming household cultivated nutrition garden to grow and consume chemical and poison free fresh fruits and vegetables in the kharif, rabi and zayed seasons through 554 lead farmers. PSI organized exposure tours for the participating farmers. They obtained seeds from seed banks established in their villages and prepared almost all the inputs themselves, thus reducing their input costs.



- **Crop Diversity Block (CDB) for Wheat:** Exposure visits to CDBs helped farmers to realize the importance of traditional varieties, especially in rainfed conditions. They established a CDB in Birampura village to promote 10 traditional paddy and wheat varieties. The varietal selection was done according to local conditions and the farmers' needs. They have locally made available 16 traditional varieties of paddy and 10 of wheat in the seed banks.
- **Promotion of Millets Farming:** Bundelkhand region with inconsistent rainfall is very suitable for millets and pulses farming. Sixty-seven farmers demonstrated *kodo* millet NF on cultivation on unirrigated and less fertile land with good production. They served as demonstrations for other farmers. Now *kodo* millet seeds are available in seed banks. These farmers are planning to increase production and market millets.

- **Leverage with departments.** Workshops and meetings were organized with government department. This introduced farmers to government officials and government schemes and the registration process to avail the schemes. Total government funds of Rs. 1,98,228 were leveraged under the project while Rs. 2,75,772 were contributed by farmers.



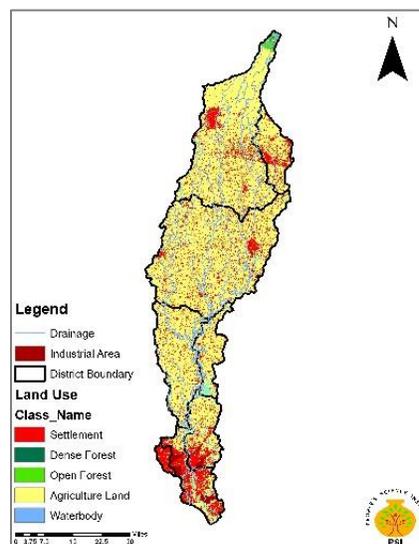
Workshop with government department village Siharan Panna M.P.

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 Villages: 8
2	Fluorosis mitigation in selected villages of Sonbhadra district	September 2020 to March 2024		Banwasi Sewa Ashram, Govindpur, Sonbhadra district	None	State: Uttar Pradesh Districts: Sonbhadra Villages: 2 Beneficiaries: 100 households

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

The Hindon sub-basin, in the northwestern U.P. section of the Ganga basin, suffers from water depletion due to over-extraction and pollution by agriculture, industry and household consumption. PSI joined a 5-year (2022-27) multi-institutional research programme led by IISER (Kolkata) to study the contribution of agriculture to the water quantity and quality problems. The study is being conducted in a participatory manner with farmers and other stakeholders in the sub-basin to jointly formulate a vision for future development processes and its implementation in the region. This review briefly summarizes the work done by PSI during FY 2024. The programme is funded by the Department of Science & Technology, Government of India.



Objectives

The specific objectives of PSI's contribution in the programme are:

- Examining the role of agricultural practices water resources depletion and pollution in the Hindon sub-basin.
- Participatory formulation of agricultural strategies to alleviate pressures 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 River Hindon sub-basin.

Activities

The major activities were:

- PSI's team conducted PRA exercises in 13 Hindon sub-basin villages and gathered data of existing cropping practices, agricultural chemicals usage, and their effects on water pollution in the vicinity of these villages. It also undertook house-household surveys in seven villages to quantify the levels of chemicals used, understand their health impacts and the economics of the local agricultural practices.



PRA at Mukari village, Baghpat

- PSI's scientists carried out physico-chemical-bio monitoring at 22 different stations all along the Hindon river and its tributaries. Groundwater and soil samples were collected for later determining nutrients (NPK), pesticides and metals (Cd, Cr, Pb and Zn) levels. They initiated community-based water quality monitoring (WQM) in six villages, so that the concerned communities could understand the pollution stress in the sub-basin and practise sustainable agriculture.



Water sampling at Hindon River at Barnava (Meerut)

The team demonstrated the System of Sugarcane Intensification as an example of an agro-ecological practice on 0.8ha in four villages of Saharanpur and Muzaffarnagar districts.



Land preparation in Bhanhera village



Measuring plant growth, Sadhauri Hariya

- About 240 stakeholders were identified in 7 districts of the Hindon sub-basin. They included 78 progressive farmers and representatives from NGOs, industries, research institutes, academia, government departments, media, and lawyers. About 130 of them attended stakeholders' meetings conducted at Saharanpur, Muzaffarnagar, Meerut and Ghaziabad and shared their opinions and priorities. Team leaders from each of the seven districts were selected to initiate the formation of a basin-level forum to address the pollution and water depletion problem involving all the concerned stakeholders.



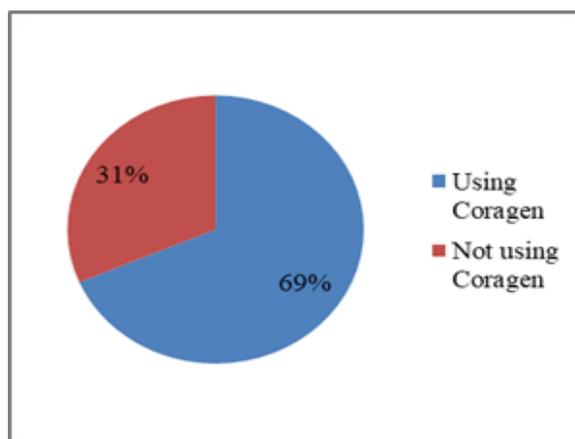
Stakeholders meeting, Muzaffarnagar



Stakeholders meeting, Meerut

Key Findings:

- The surveys and PRA exercises indicate a pervasive use of chemical fertilizers and pesticides, to boost agricultural productivity in the short term, but add long-term risks to environmental health and human well-being.
- Bio-monitoring results revealed the total absence of benthic macro invertebrates in the water at all 22 stations of the Hindon, Krishna, Kali and Yamuna rivers. This indicates that the water quality of these rivers falls in CPCB's most polluted Class E, unfit for all life forms.
- The major suggestions from the stakeholders included (i) Offering incentives to farmers to shift to organic farming; (ii) Societal ownership of rivers; (iii) Well-established drainage structures is needed; (iv) Discouraging solid waste disposal in rivers; (v) Plantation drives on river banks; (vi) Regular monitoring of industrial wastewater treatment efficiency; (vii) Need for an accountable and empowered committee, including representatives of the different stakeholders, for proper management of the Hindon sub-basin; and (viii) Enforcement of punitive measures against polluters. The meetings also highlighted the role of media and journalists in creating awareness among all stakeholders.



Farmers using Coragen pesticide in Murkari village

Fluorosis Mitigation in Selected Villages of Sonbhadra District

Villages in the vicinity of the Banwasi Sewa Ashram in Sonbhadra district (U.P.) show high prevalence of dental and skeletal fluorosis due to excessive fluoride exposure, primarily through drinking water and food. Fluorosis is often caused by high fluoride levels in drinking water and food crops irrigated with fluoride-rich water. Sustained consumption can lead to bones deformation and crippling of the victim. The project was funded by Banwasi Sewa Ashram, Sonbhadra district.

Objective

Relate the levels of fluoride contamination in the local water resources with the nature and extent of fluorosis prevalence in the selected villages and establish a model approach for fluorosis mitigation by the regular use of fluoride-free drinking water, complemented by a diet rich in nutritional supplements.

Activities

A team of PSI's scientists conducted the following major activities in Kushmaha and Govindpur villages of Sonbhadra district, during FY 24:

Estimation of fluoride concentration in drinking water and urine as well.

- Selection of 100 households/individuals based on water and urinary fluoride report.
- Provided fluoride removal kits (Watsan) to the 74 households and regularly monitored its performance.
- Nutritional intervention by providing trainings for preparing calcium rich products such as Til, Methi and Jiggery/Mahua Laddoo and promoted to intake calcium rich fruits and vegetables. Additionally, Calcium, Vitamin D, Vitamin C supplements have also provided to moderate and severely affected dental and skeletal fluorosis cases and Iron to severely anaemic persons.
- Health survey and medical examination: Alkaline Phosphatase, Serum Calcium and Vitamin-D, X-ray Check-up to observe the impact of excess fluoride on the bones of the villagers.
- Establishment of 60 kitchen garden (PoshanVatika) which grow calcium rich vegetables such as Bottle-gourd, bitter gourd, brinjal, green leafy vegetables and some, fruit



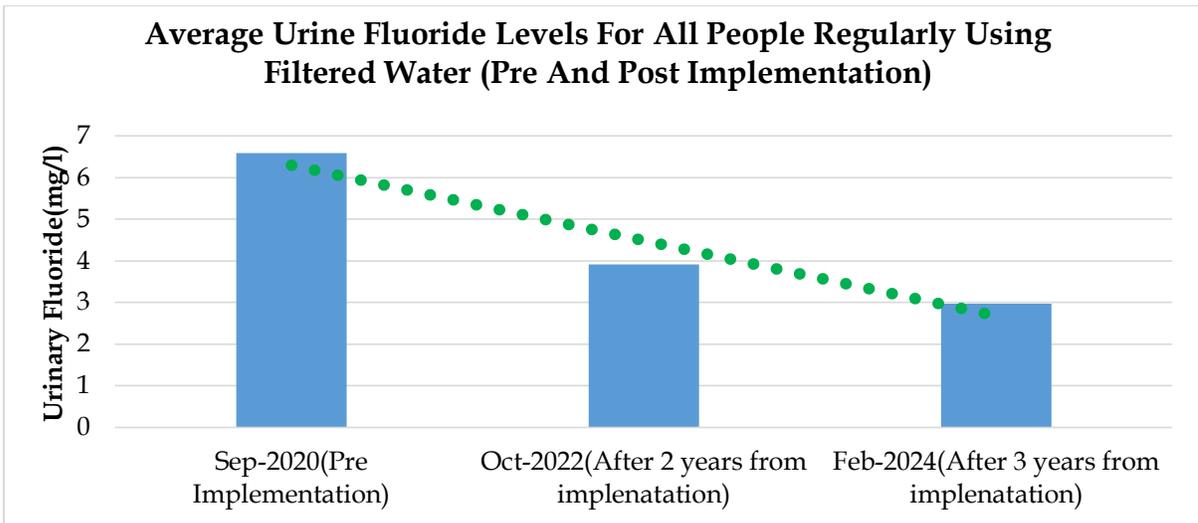
Skeletal Fluorosis

plants, tomato, coriander, amaranth, and leafy greens.

- Provided Ayurveda medicine (Godanti, Prawal, Yashtimadhu and Raktchandan) medicine under the supervision of Prof Anand (BHU) to 41 person from 41 households, who were having increased urinary fluoride while consuming fluoride free drinking water and calcium rich products.
- Capacity building to community for monitoring the kit based water quality especially fluoride concentration.
- Tola meeting and workshop and public conference.

Outcomes:

- To assess the impacts of the interventions, medical testing of a small sample of the participants (who were having moderate to severe sign and symptoms) and health surveys were conducted and observed that, after the intervention for 17 serious skeletal fluorosis cases, 5 bedridden individuals remained unable to move, but their digestive issues gradually improved. Of the 12 others with mobility difficulties, 5 were able to take on light household tasks, and 7 resumed doing mild work. In the case of severe dental fluorosis, 25 out of 37 people saw a clear reduction in enamel scrapes and tooth yellowing, although some didn't notice much change. However, everyone reported relief from stomach issues. For the 26 people with non-skeletal fluorosis, those who used filtered water for over 6 months, along with nutritional supplements, experienced relief from indigestion, reduced knee pain, and found it easier to move their joints. The serum calcium data from March 2024 highlights the benefits of calcium as an antidote to fluorosis, with noticeable improvements in joint and skeletal health and overall productivity over the past year. Urinary fluoride results showed that for people regularly consuming fluoride-free water, the concentration of fluoride in their urine decreased by an average of 3 mg/L compared to pre-intervention levels.



Recommendations:

- Regular monitoring of water quality and urinary fluoride is important because it clearly indicate the exposure of fluoride in human body.
- Government support is crucial for scaling and expanding these efforts to other regions.
- Continuous education and counselling are necessary to motivate affected individuals, who often disengage due to health-related frustrations, until permanent behavioural changes are achieved.

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 districts, Himachal Pradesh	December 2023 to March 2024	2,14,819	IIT-Roorkee	NA	State: Himachal Pradesh Districts: Kullu & Mandi
2	Constructing Prototype Temporary Shelters: For Disaster Response After the Himachal Pradesh Floods, 2023	December 2023 to September 2024	86,09,000	Sir Dorabji Tata Trust	MVS RTDC	State: Himachal Pradesh Districts: Kullu, 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

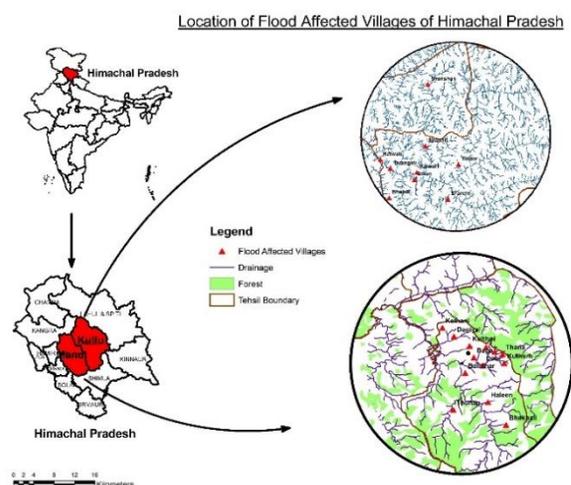
PSI in partnership with IIT-R undertook a livelihood impact assessment study of 14 village communities affected by extreme rainfall events in Kullu and Mandi districts of Himachal Pradesh.

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% respondents reported complete destruction of houses while 30% lost agricultural land and livestock.
- Other major destruction included damaged infrastructure, soil erosion, land subsidence and damaged water schemes
- Connectivity issues significantly impacted work, education and health care access for 43 per cent households.
- Around 68% respondents said that markets, schools, and temple closures had severely broken social bonds. 38% claimed high impact because of lost tourism revenue.

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

Conclusion

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.

Constructing Prototype Temporary Shelters: For Disaster Response After the Himachal Pradesh Floods, 2023

Sir Dorabji Tata Trusts supported a project for constructing temporary shelters for 60 homeless families in 21 flood affected villages of Kullu and Mandi districts in H.P. This report covers the activities done in FY 2023-24.

Objective:

- To provide mid-term temporary shelters for 60 flood-affected families of Kullu and Mandi districts.

Activities:

- Selected 60 beneficiary families for constructing temporary shelters based on socio-technical factors.
- Planned 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.
- Printed and distributed a handbook on construction of temporary shelters, to the beneficiaries.
- Produced a poster for beneficiaries on dos and donts.
- Constructed 3 temporary shelters in Kullu (1) and Mandi (2) districts that were reviewed and approved by the DDMA offices in the two districts.

Outcomes:

- The beneficiaries, the relevant Gram Pradhans and the GoHP gave written consents for dismantling all the temporary shelters after two years and transfer of

the materials to the DDMA (Kullu & Mandi) for their reuse.



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 Perceptions and Priorities in Selected Cities	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) Bhubaneshwar	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, Chimalisaur, Vikasnagar

Air Pollution: Local Perceptions and Priorities in Selected Cities

News media in India's metropolitan cities often report poor air quality (AQ) problems, particularly among young and elderly people. The "Air Pollution: Local Perceptions and Priorities in Selected Cities" project funded by USAID-India Local Works Program Design Support Services aimed to evolve community-led sustainable solutions to air pollution problems by engaging with local communities in Ahmedabad, Bhubaneshwar, Indore, and Mumbai.

The main activities included stakeholder identification, literature review, AQ monitoring, and conducting workshops to identify local priorities, current efforts, and weaknesses in the air pollution control system. The findings revealed that for the poorer communities issues like evictions, water scarcity, livelihoods, and human rights were more critical than air pollution. Most respondents identified garbage dump yards, burning garbage, and vehicle emissions as key contributors to air pollution. The stakeholders emphasized that existing air pollution laws were sufficient but they needed strict enforcement. This report covers the work done in FY 2023-24.

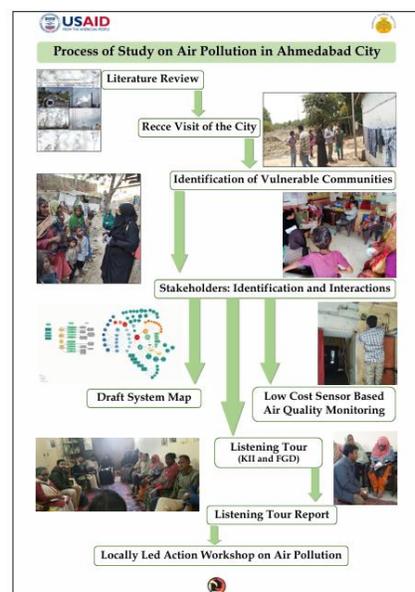
Objectives

- 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 jointly solutions with communities to ensure that they reflect local priorities that local leadership can sustain.

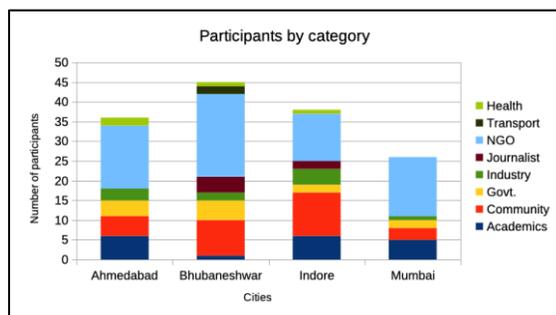
Major Activities

- Conducted *Locally-Led Collaborative Action (LLCA)* Workshops in all the four selected cities to (i) Share the findings of the previous phases of the study with the respondents and (ii) Obtain their feedback, with special reference to the recommendations, the systems map and create a space for interaction across sectors.
- Jointly updated the air pollution landscape systems maps of the four cities with the stakeholders.

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



Flowchart explaining the study process



Participants in all the four cities



Fig 1: Ahmedabad workshop

Key Findings

Cross-sectoral Collaboration

- Cross-sectoral collaboration highlighted a need to amplify marginalized voices and foster relationships to influence change through dialogue with civic authorities. Ward Sabhas and public hearings are key fora for this.
- Secondly, while collective action and rapport-building can address most public service issues, contentious matters require different strategies.

Community Research

- More participatory processes are required in policy making and city planning. But dialogue involving vulnerable communities is often seen as dissent in policymaking.
- Academic institutions can support community movements with data.
- Integrating air pollution education in college education is necessary.

AQ Monitoring

- Greater acceptance of data gathered with properly calibrated low cost AQ sensors is required since imported continuous monitoring stations are expensive and regulations compliance is difficult.
- Vulnerable communities desire display of AQ sensors data in polluted residential areas. Participants in Indore ranked the provision of AQ monitors as the highest priority recommendation.
- AQ monitoring locations should consider land use, land area, and population density.



Figure 2 Breakout groups added details to city recommendations at Bhubaneswar

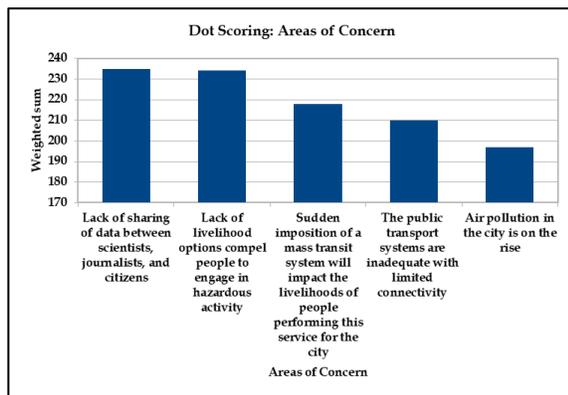


Scoring of concerns and recommendations

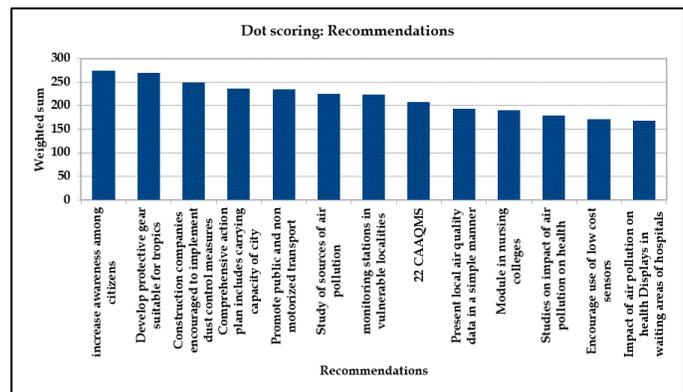
- Consistent presentation of AQ data along with health impact interpretations across media outlets is needed.

Appropriate Technologies

- Groups in Indore and Mumbai resisted focusing on adaptive technologies, emphasizing pollution reduction at source.
- Long-term systemic change is needed, but poor communities cannot access current technologies, worsening health disparities.
- Concerns included dust from street sweepers, recycling of lithium batteries and pollution exposure of outdoor workers.
- Involving existing workers in new waste management and transport systems is crucial to protect their livelihoods.
- Sector-specific improvements like better Pollution Under Control (PUC) certification, fuel quality testing and incentives for converting to electric vehicles and clean technologies were also made.



Dot Scoring: Area of concern (Bhubaneswar)



Dot scoring: Recommendations

Information, Education and Communication

- Include air pollution education for students, integrate it in environmental engineering courses, offer internships, exposure visits, and multi-media methods like games and films.
- Consistent media coverage with engaging stories and collaboration with pollution control boards and medical doctors is preferred.
- Information-sharing methods can include social media, mobile apps, and pre-movie short films; existing apps, however, are underused.
- The health sector should provide safety information for vulnerable groups through brochures and health workers.
- Indore participants believed that governments can effectively address air pollution if committed, as demonstrated by Indore’s Clean City campaign.

Shallow Aquifer Management (SAM) for Gwalior City under AMRUT 2.0

Under AMRUT 2.0 (Atal Mission for Rejuvenation and Urban Transformation), Gwalior is one of the 10 cities selected for SAM. Due to excessive groundwater exploitation, the water table is declining, and demand is rising with the city's rapid growth. To address this, PSI and its partners created a groundwater contour map using data from 3,000 water bodies provided by the Gwalior Municipal Corporation. They surveyed 20 sites and selected three sites—Janak Taal Hills, Lakshiganj Hills, and Senapati Hanuman Mandir—for aquifer recharge.

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 SAM strategies, incorporating findings from the surveys and site assessments.
- Regularly discussed project progress with civic authorities, for 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 and began implementation at two sites.



Hydrogeological and engineering survey at Lakmiganj.

- **Key Findings:**

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

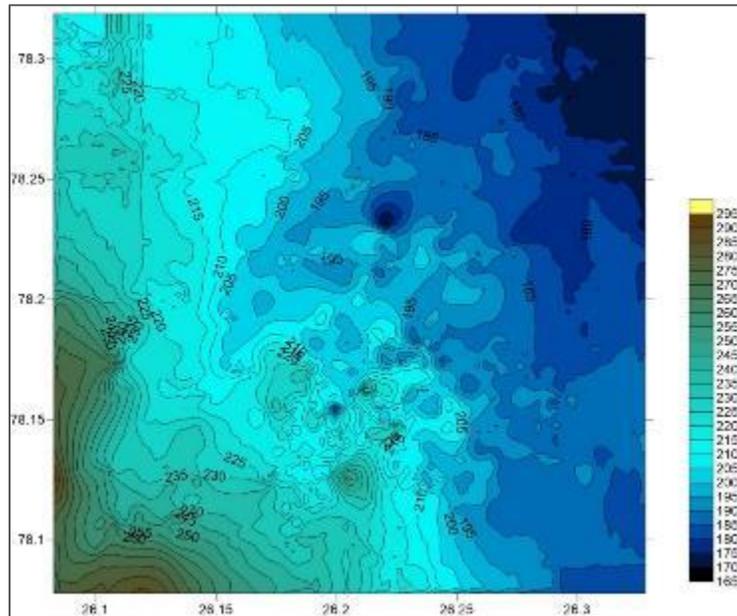
Capacity Building and Stakeholder Engagement: Introduced over 100 professionals from different government departments and NGOs to SAM, enhancing awareness and collaboration for water management.

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.

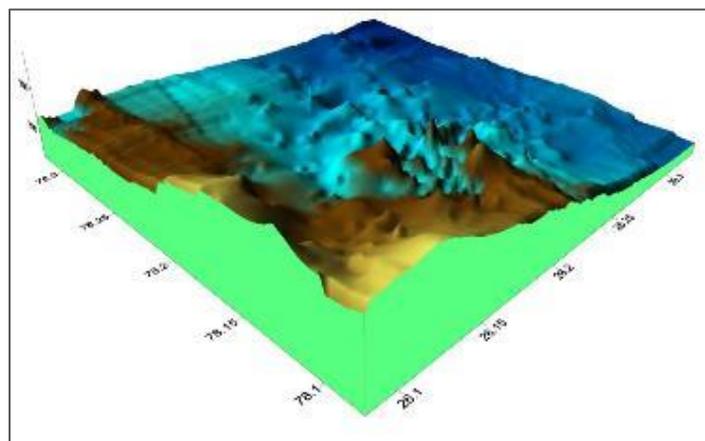
Groundwater Level Mapping: Created a groundwater level map of Gwalior city using data from 3000 water bodies supplied by Jal Nigam Gwalior. It revealed disparities; the Northeast and the Southwest regions displayed the lowest and highest groundwater levels, respectively .

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 were 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

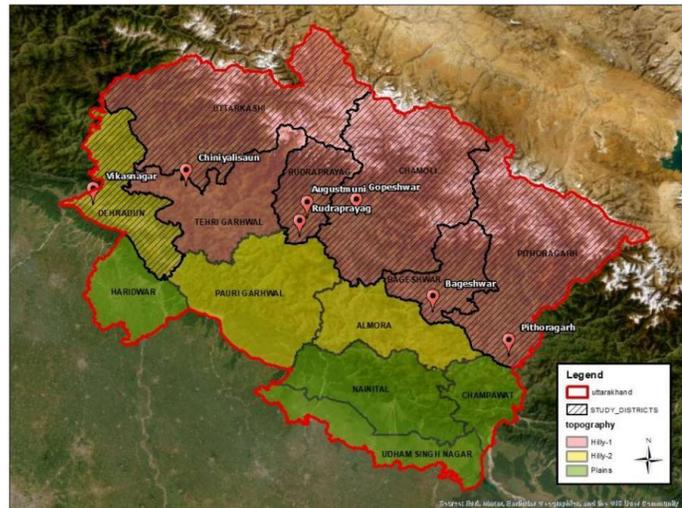
- PSI selected the study areas and beneficiaries based on three basic criteria: terrain and location, ease of access, and the number of beneficiaries.
- It conducted a comprehensive literature review to determine the survey parameters.
- The Institute drafted a survey questionnaire to understand the housing satisfaction parameters, along with the socio-economic and disaster resilience aspects.
- It conducted a pilot survey to refine the draft questionnaire.
- Simultaneously, PSI organized focus group discussions 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

PSI selected urban areas in six districts of Uttarakhand: Agastyamani (Rudraprayag), Bageshwar (Bageshwar), Chiniyalisaur (Uttarkashi), Gopeshwar (Chamoli), Pithoragarh (Pithoragarh), and Vikasnagar (Dehradun). It carried out a stratified sampling survey.

Conclusions

PMAY housing in Uttarakhand has significantly raised the beneficiaries' living standards, social status, safety, and lysecurity. The occupants are general satisfied with the physical features of their houses and the functional space adequacy. Most of them, 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 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	States: 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 Districts: Tengnoupal, Thaubal 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 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 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 Villages: 15 Beneficiaries: 718 households
7	Development of GP wise Sustainable Natural Recourse Management Plan Banwasi Seva Ashram	December 2022 to March 2023	5,00,000	Banwasi Seva Ashram	None	State: Uttar Pradesh District: Sonbhadra 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)

The government of Meghalaya has initiated the MEG LIFE project to promote community-based forest management and enhance livelihood opportunities. An integral component of this initiative is springshed management. PSI is a key partner in a consortium led by CHIRAG, to expedite project implementation and enhance the capacity building of the MEG LIFE personnel. It is assisting MEG LIFE in preparing 125 springshed management plans. It is also facilitating capacity building programmes, which include classroom instruction and field training.

Objectives

- Preparation of 125 Springshed Treatment Plans (STPs), including hydrogeological mapping and identifying critical springs.
- Reviewing 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 springs inventory in 18 villages. Selected one spring from each village for treatment. Held discussions with local stakeholders to ensure that the selected springs were prioritized based on the community needs and water usage pattern.
- Collected data on various parameters such as physiology, geology, land use, and water quality in all 18 villages. It enabled the team to understand springs' characteristics, water sources, and surrounding environmental conditions.
- Prepared Detailed Technical Reports (DTRs) for each selected spring, to provide an analysis of each spring's condition, treatment requirements, and recommended interventions to ensure sustainable management of the springs.



Community Engagement in MegLIFE Project Village

- To enhance the capacity of the MEG LIFE field Staff, the project organized comprehensive training focusing on spring typology, geology, spring treatment, and management. It equipped them with the necessary skills and knowledge to effectively implement and maintain the spring treatment interventions, ensuring long-term community benefits.



Field Data Collection



Field & Classroom training of MEG LIFE field staff.

Outcomes

- The spring inventory helped select 18 springs for treatment, aligning with the community needs and water usage patterns, to ensure a significant impact on access to clean water.
- Data collection and analysis revealed spring characteristics and water quality issue. Each DTR recommended the treatment required, guided project implementation and resource allocation.
- Training has equipped the field staff with knowledge and skills for spring treatment, geological surveys, management, and sustainability. This ensures sustainable benefits, as local stakeholders have been enabled 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".

The North East Initiative Development Agency (NEIDA) has commenced the "Springshed Management - Water Security Program: Tata Water Mission - 2022-27." A part of this initiative involves comprehensive hydrogeological and engineering assessments of 60 selected springs, with 20 springs each in Arunachal Pradesh, Mizoram, and Nagaland. The program also incorporates specialized training for NEIDA's geologists and engineers, to enhance their technical capabilities in springshed management. This is intended to improve NEIDA's proficiency in executing future springshed development projects.

Objectives

- To train NEIDA personnel in springshed management.
- Preparation of 60 Springshed Development Plans (SDPs), encompassing 20 plans each for Arunachal Pradesh, Mizoram, and Nagaland.
- Provide field support to the NEIDA team during the preparation of SDPs.

Activities

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

Outcomes:

- Created a springshed development cadre for NEIDA to undertake groundwater conservation in Arunachal Pradesh, Mizoram and Nagaland.
- NEIDA reported that 43 of the 60 springs have shown an increasing water discharge trend.
- This project has laid 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

The Wangjing Women and Girls Society (WWAGS) is based in Wangjing village, Thoubal district, Manipur. PSI extended technical support to it for implementing a watershed-based springshed program to improve water and food security across four villages in Thoubal and Tengnoupal districts. This collaboration with WWAGS opens up new opportunities for engagement and strategic partnerships for sustainable resource management in Manipur.

Objectives:

- Preparation of hydrogeological and engineering reports for 14 springs in 4 villages of Tengnoupal & Thoubal districts in Manipur.

Activities:

- Conducted hydrogeological and engineering surveys in 4 villages of the selected districts, Tengnoupal & 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.

Outcomes:

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

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

The Indian Institute of Technology, Roorkee (IIT-R) is implementing a research and development-based micro-watershed development project in Lamchip and Sailam villages of Aizawl district to promote water availability and soil conservation. It sought PSI's support to assess water consumption needs, conduct comprehensive social and surveys and carry out hydrogeological and engineering surveys to identify groundwater recharge areas and design appropriate structures in it. IIT-R has provided instruments to measure springs discharge, rainfall and sediment loss from the watershed.

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.

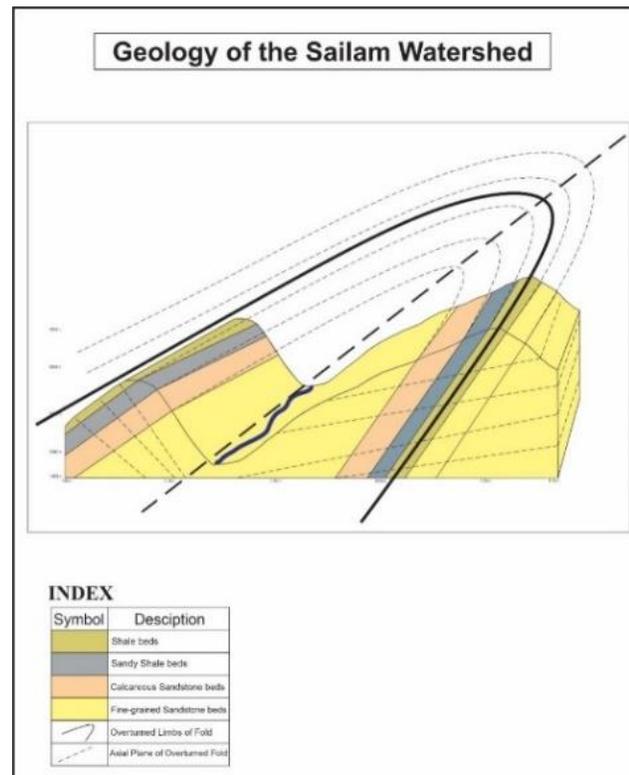
Activities:

- 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:

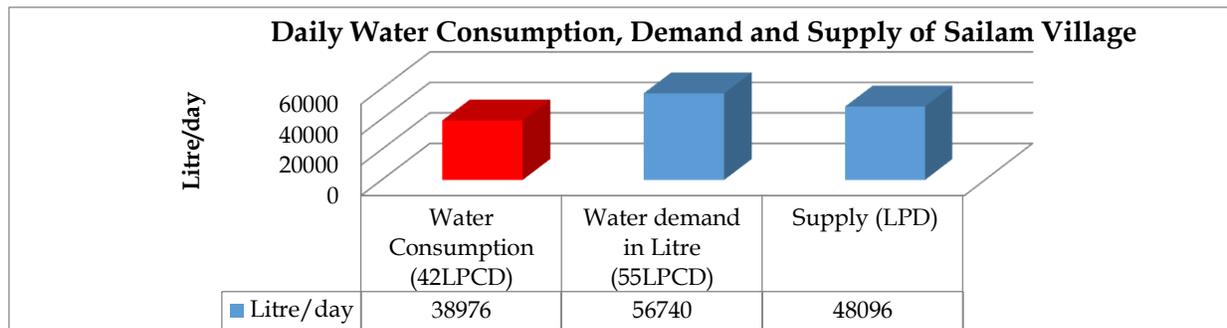
Watershed Maps: Detailed watershed maps prepared showing drainage, contour, land use and geological features.

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

PSI's scientists prepared four springshed development plans in two villages of Aizawl and Mamit districts for the Irrigation and Water Resources Department (IWRD), GoMm. It was a part of a pilot programme to guide the future direction of springshed management in Mizoram

Objectives

- Prepared a detailed hydrogeological map to delineate the springs' recharge areas.
- Provide engineering recommendations and treatment estimates for the identified springs.
- Impart practical training to geologists and engineers from IWRD, Aizawl, Mizoram.

Activities

- Hydrogeological and engineering feasibility surveys of four springs in 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, to showcase a proactive approach for enhancing their capacity.
- **Expansion of Collaborative Projects:** The success of the IWRD pilot project has inspired the organization to plan additional collaborative projects. 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.)

The Samirpur-Bagwara Watershed is located in Bamson block of Hamirpur district (H.P.), about 15 km east of Hamirpur town. It lies in the catchment area of Kunah Khad, a significant tributary of River Beas. The primary aim is to provide water security for the inhabitants of the Indian Himalayan Region (IHR) through watershed development.

PSI helped Manav Vikas Sansthan (MVS) to prepare a DPR to address critical water scarcity issues affecting the local population, using its extensive knowledge and experience of water security, livelihood, and agriculture. This initiative focuses on sustainable water management to overcome problems of erratic rainfall, reduced infiltration, and water scarcity in order to enhance agricultural productivity, improve socio-economic conditions, and restore ecological balance, ultimately preventing migration. The project period is from 2024 to 2028.

Objectives:

- Restoration and improvement of soil quality to raise its productivity.
- Reduce the impact of natural hazards, especially in the context of climate change.
- Regenerate the local natural resources to improve the income of the local people.
- Improve the storage infrastructure, transportation, and agricultural marketing.
- Improve physical health by providing clean drinking water, access to sanitation and better nourishment

Activities:

- Meetings and PRA exercises with the watershed community
- Identified key issues affecting the watershed and its community,
- Conducted a watershed survey to collect necessary data on topography, soil types, water resources, and vegetation'
- Planning and designing soil and water conservation measures in the watershed with cost estimates for the proposed activities.

Outcomes:

- Prepared a comprehensive watershed management plan, including costing of the proposed measures.



PRA Exercise at Samirpur village



Field Work in Watershed Area for Planning Interventions.

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

Sonbhadra is a tribal district with emerging food safety and drinking water supply crisis. Its economy is mainly dependent on agriculture. It has the highest percentage of forest area and Scheduled Tribe (ST) population among all the districts of Uttar Pradesh. It is also called as Energy Capital of India. There is a high potential to increase the farm productivity of almost all the crops in the project area which is less than the district average.

Banwasi Seva Ashram is working for the development of 30 villages in this area under Mission Samriddhi Program. It approached PSI to train its staff to prepare 5 model Sustainable Natural Resources Management Plans. The project period was from April 2023 to February 2024.

Objectives

- Preparation of 5 model Sustainable Natural Resources Management Plans, including natural resource mapping, participatory ground water management and conservation planning
- Train BSA staff persons, PRI members and village volunteers

Activities & Outputs

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



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)

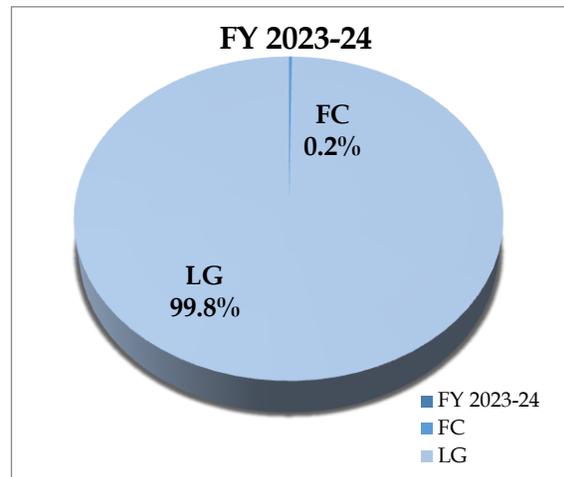
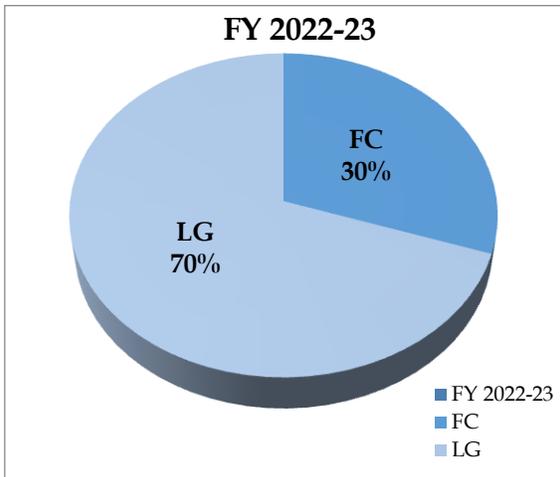
S. No.	Project	Funding Partner	Opening Balance (Rs.)	Income (Rs.)	Utilization (Rs.)	Balance (Rs.)
1	Promoting Farm and off Farm based Micro-enterprise Development for Livelihoods Security in Western Himalayan Landscape under LIC LIFE Program (Livelihood Initiative for Financial Empowerment)	LIC - HFL - 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 Wadhvani.	01.08.2023	17.12.2023
25.	Makkan Singh	01.07.2017	

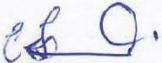
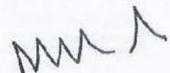
S. No.	Name	Date of Joining	Date of Leaving
26.	Manoj Kumar	10.07.2006	
27.	Naveen Gusain	02.04.2018	
28.	Neelam Bisht	01.04.2023	
29.	Prem Narayan	01.11.2018	
30	Prem Singh Rawat	01.09.2018	
31	Priyank Bharti	01.04.2019	
32	Priyanshu Gupta	11.05.2022	
33	Puran Bartwal	03.01.2011	
34	Pushpa Juyal	21.12.1992	
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 Mahar	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

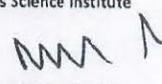
S. No.	Name of the Intern	College/ University	Internship Period	Project Allocated
1	Ms. Ashwini Panpatil	Fergusson College, Pune	June 11, 2023 to August 22, 2023.	Social Participatory and Rural Kick-off (SPARK), under Panihar and Shiv Shakti Springshed Management and Development Project and spring rejuvenation 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 <small>Digitally Signed by SA1011 KUMAR SINGH Date: 2024.09.28 16:37:45 +05'30'</small>			For People's Science Institute			
Satish K. Singh FCA; BCOM(H) Membership No. 526351 UDIN - 24526351BKEYLB8425 Dated: 26.09.2024 Place: New Delhi			 Prof. Shambu Prasad. President	 Dr. Debashish Sen Director		

PEOPLE'S SCIENCE INSTITUTE					
ITBP Road, P.O.Kanwli, Dehradun-248001					
AUDITED INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31st MARCH 2024					
Amount in Rs.					
<u>INCOME</u>	<u>Sch.</u>	<u>2023-24</u>			<u>2022-23</u>
		<u>LG</u>	<u>FC</u>	<u>Total</u>	<u>Total</u>
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
<u>EXPENDITURE</u>					
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

<p>For Singh Satish & Associates Chartered Accountants FRN: 032138N</p> <p>SATISH Digitally signed KUMAR by SATISH SINGH KUMAR SINGH Date: 2024.09.29 163814 +0530'</p> <p>Satish K. Singh FCA; BCOM(H) Membership No. 526351 UDIN - 24526351BKEYLB8425 Dated: 26.09.2024 Place: New Delhi</p>	<p>For People's Science Institute</p>   <p>Prof. Shambu Prasad. Dr. Debashish Sen President Director</p>
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