Annual Report

(2019-2020)

People's Science Institute
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ABOUT PEOPLE'S SCIENCE INSTITUTE (PSI)

People's Science Institute (PSI) is registered as a society in New Delhi under the Societies Act (1860) and the Foreign Contributions Regulations Act (FCRA). 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." Operationally it provides technical and managerial support to communities and organizations that work with them, implements development programs and undertakes public interest research. The Institute is known in India's voluntary sector for its pioneering work in the fields of community-based natural resources and watershed management for improved livelihoods, promotion of agro ecological practices, geo-hydrology based springshed development, environmental quality monitoring, river conservation and dissemination of appropriate technologies.

PSI has active units for natural resources management, disaster mitigation and response, environmental quality monitoring and innovative projects. Each unit implements development projects, undertakes research and provides training as well as professional support. The Institute has a competent staff of socially conscious engineers, scientists and social workers to carry out these tasks. This annual report outlines the major activities of each group in 2019-20.

I. NATURAL RESOURCES MANAGEMENT

The Natural Resources Management (NRM) Group executes Institute's natural resource management activities. It strives for fulfilment of the basic needs of local communities in a sustainable, self-reliant, democratic and socially justifiable manner. It is mainly involved in community-led micro-planning and development programs for promotion of water, food and livelihoods security, especially in marginalized areas. It also undertakes research in improved agricultural practices, hydrology and water technologies and NRM institutions and policies.

The Uttarakhand Floods disaster response (UFD) program ended in March 2019. In 2019-20, the NRM Group continued with the implementation of (i) Follow up livelihoods' development activities of Uttarakhand Floods Disaster response program, (ii) Cluster Approach for Production, Processing and Marketing of Pulses for Livelihood Development in 10 villages of Ukhimath block, district Rudraprayag under Integrated Livelihood Support Program (ILSP) of Govt. of Uttarakhand, (ii) "Providing Safe and Sustainable drinking water and Sanitation in eight villages in Pinder valley of district Bageshwar" under Integrated Village Development Program (IVDP) of The Hans Foundation. New Delhi and (iii) "Upscaling Sustainable Agricultural Practices in Bahadrabad block of Haridwar district, Uttarakhand" under Mission Sunhara Kal (MSK) of ITC, Kolkata.

Two new projects were initiated during this period (i) Promotion of Green Watershed in Baddi area (Nalagarh block) district Solan, HP with support of ITC, Kolkata, and (ii) Springshed based

watershed development in 'Upper Khirganga' Springshed Kapkot block district Bageshwar, Uttarakhand, with support of NABARD, Dehradun.

I.1 Response to Uttarakhand Floods Disaster of 2013

During FY 19-20, PSI continued its Participatory Livelihood Rehabilitation Program in four villages of (i) Madhu Ganga valley, Ukhimath block (Rudraprayag district) and (ii) four villages of Revati valleys of Kapkot block (Bageshwar district). Though the financial support for the program from Star India had ended in March 2019, follow up livelihood activities were continued from the donations received from hundreds of individuals and enterprises post 2013 floods.
During this year, the program's focus was on (i) promoting sustainable agriculture through extension of System of Crop Intensification (SCI) and organic farming practices (ii) capacity building of cluster level federations and women's groups on marketing and business development planning. The new initiatives like Community Based tourism (CBT) and Cluster Resource Centres (CRCs) were further strengthened.

The major activities undertaken during the year are summarized below.

I.1.A Community Mobilization, Capacity Building and Institution Building

a. <u>Community Mobilization</u>

(i) Meetings: Meetings of village level institutions (VLIs) like *Gram Swaraj Samitis* (GSSs) and Aam *Sabhas* were organised by communities on their own. Other institutions like Mahila *Mangal Dals*, Savings and Credit Groups (SCGs) and Farmers' Interest Groups (FIGs) also held their meetings regularly. Implementation of different livelihood activities and their impacts along with other village level issues were discussed in these meetings.

Meeting with district officials in Village Uniyana

(ii) Planning with Departmental Officials:

For the preparation of Rabi 2019 -20, in the November 2019, one-day training-cum-awareness program was organised in Gadgu village of Madhuganga valley which was attended by women farmers. Mr. Rawat, Block Horticulture Officer, Ukhimath was invited as resource person. He gave technical information on

Planning of Rabi crop with women farmers by Block Horticulture Officer in Village Gadgu

cultivation of vegetables. At the end of the meeting, the farmers agreed to pay 50 percent cost of the seeds. Similar meetings were organised in other villages of both the valleys.

b. <u>Capacity Building</u>

(i) **Strengthening of SHGs and Linkages with NRLM:** SHGs in Madhuganga valley were strengthened through regular meetings. A training program on knitting was organised for SHG of Uniyana village. After completion of the training, two knitting machines were given to the group with 50 percent contribution. They have started knitting of sweaters. On the basis of demand from village started, the trained SHG members earned Rs. 3,000 from sale of sweaters. Other SHG groups in the valley were given training on preparation of *chauali laddoo*, liquid organic manure and organic pesticide.

Handing over of knitting machine to SHG, Uniyana

Training on Chaulai Loddoo Preparation

(ii) Exposure visit of farmers: One-day exposure visit was organised for the members of farmers' federation. They visited the farmers' cooperative and outlet established under Integrated Livelihood Support Program (ILSP) supported by govt. of Uttarakhand at Kedarnath yatra route in Chandrapuri district Rudraprayag. Interaction was done with project team and members of cooperative. The discussions focused on operational systems related to the management of the outlet.

Exposure visit of Farmers Cooperative

(iii) ISEED, IRMA's Training for the members of Cooperative and Federation

ISEED which is the entrepreneurship cell of the Institute of Rural Management, Anand (IRMA) and People's Science Institute collaborated to conduct a 3 days' entrepreneurship training to upcoming grassroots entrepreneurs. The

ISEED - IRMA Training on Entrepreneurship Development

participants (10), included farmers, SHG members, handicraft artisans and homestay owners, mostly women. A wide array of topics like basics of entrepreneurship, stakeholder management, business model canvas, communication as entrepreneurs and pricing of products were covered experts like Mr. Rahul Nainwal, an experienced social entrepreneur himself and Ms. Shubha Khade, Incubation Manager, IRMA.

A half a day field visit to a local farmers' market which sells organic produce directly to consumers by the farmers was arranged. The participants interacted first hand with the farmers who were the ones marketing their products and understood key factors influencing marketing strategies. The training was extremely helpful in developing vision and understanding on entrepreneurship.

Exposure visit of Budhbariya Baazar during Training Program

c. <u>Institution Building:</u>

(i) Meetings of Farmers Groups: Meetings of farmers groups were organised regularly, for discussing issues related to production of vegetables, spices and pulse crops, using crop intensification methods, nutrient management, collection of produce for the outlet and marketing. Officials from Agriculture and Horticulture Department were invited in these meetings. Distribution of seeds, use of organic nutrients and organic pesticides were discussed.

(ii) Meetings of Mahila Mangal Dals (MMDs): Meetings of *Mahila Mangal Dals* (MMDs) were held regularly. One of the issues discussed largely at these meetings was related to protection and maintenance of the fodder plantation undertaken in the. Gap filling was undertaken to replace plants damaged due to landslides and poor weather conditions, with the help of forest department. A total of 3,000 fodder plants were planted in Ransi, Uniyana and Raonlenk villages, where members of MMDs participated actively. The *Dekh Rekh Samitis* and MMDs will monitor the protection and maintenance of the plantation plots.

(iii) **Strengthening of farmers' Co-operative:** Formation of a farmers' co-operative "***Madhuganga Kisan Swayat Sahkarita***" was done in Madhuganga valley in September 2018. Initially a process of awareness and orientation of members was done. Meetings were organised at Cluster Resource Centre (CRC), Paundaar. Interaction with Agriculture

Training of members of farmers' cooperative

and Horticulture Departments were organised. An outlet was established at Mansuna market through which processing and marketing of local products was initiated along. The process of registration of the co-operative was completed in November 2019, after which membership drive was started at village level through GSSs, farmers' groups and SHGs. The Cooperative has developed assets like pulse, spices and millet processing machines.

I.1 B. Livelihood Development Activities

PSI's team continued to promote household level farm and off-farm interventions through local institutions. These activities are outlined below.

a. <u>Natural Resource Based Activities</u>

(i) Fodder Plantation: Plantation of fodder trees on community lands was done in the two valleys in July-August 2019. Local institutions, particularly *Mahila Mangal Dals* (MMDs), Van Panchayats and SHGs led the plantation drive. Regular monitoring, weeding, and manuring of the plantation area is done by the women's groups. Gap filling of the plantation plots of 2018 was also done. Besides fodder plantations in the common lands, plantation of Napier roots on field bunds of private lands was also done by the local communities.

Fodder plantation in Village Burwa

b. <u>Farm-based livelihood Activities</u>

Farm-based livelihood activities focussed on cultivation of vegetables and spices apart from growing cereals (paddy, maize, wheat) and pulses (kidney beans and lentils), based on Low External Input Sustainable Agricultural practices including system of crop intensification (SCI).

(i) Cultivation of vegetables and spices: In Kharif 2019, 297 farmers of Madhuganga Valley cultivated ginger and turmeric in about 7 ha. 50 percent cost of ginger seeds was supported by Horticulture Department while remaining was contributed by farmers. In Rabi 2019-20, 470 farmers cultivated garlic in about 11 ha.

In Rabi 2019-20, about 1.5 quintal seeds of vegetable crops like pea, cabbage and onion were distributed by Horticulture Department with 50 percent contribution from the farmers. In spite of COVID 19 and lockdown, farmers in Madhuganga valley earned Rs. 20,000 from marketing of pea in the local market.

Cultivation of Vegetables in Revati, M. Ganga valley

Processing of spices by SHG members

(ii) System of Crop Intensification (SCI):

Kharif 2019: Under SCI, in Madhuganga valley (10 villages). trials of local and Munsyari Rajma were done with 551 farmers in 23.5 ha through SCI (including practices like seed treatment, wider spacing, regular weeding, and nutrient management). SCI in Munsyari Rajma resulted in 40 percent yield increment and 24 per cent in local Rajma as compared to conventional methods.

Table 1.1: SCI in Kidney beans (Rajma)

Variety	**Local Rajma**		**Munsyari Rajma**	
Parameters	**Conventional (Average)**	**SCI (Average)**	**Conventional (Average)**	**SCI (Average)**
No of plants in 1 sq. m.	25	16	21	16
Length (cm)	3.7	5.2	4.5	5.8
Number of pods in a plant	15	28	22.5	40
Number of seeds in a pod	3.5	5	4	6.5
Weight of a pod (gram)	10.7	14.3	13	17.5
Production in 1 sq. m. (gram)	170	210	200	280
Increment in Production	-	24%	-	40 %

In Rabi 2019-20, under pulse production, lentil was grown by 66 farmers in 1.6 ha. While under vegetable cultivation, green pea was grown by 253 farmers in 4.5 ha. The crop cutting data revealed 66 percent and 50 per cent incremental yields in lentil and green pea crops respectively grown through SCI as compared to conventional method.

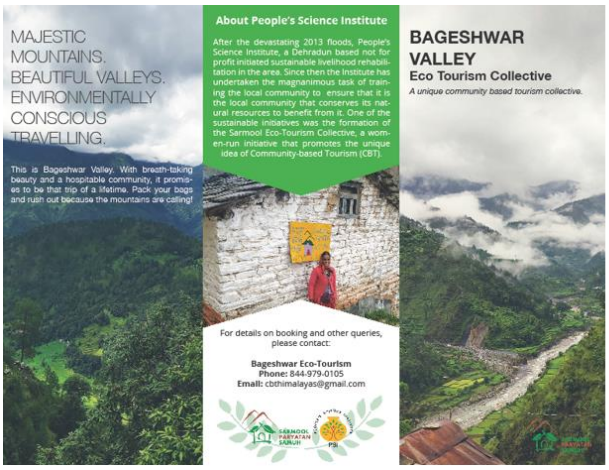
Crop cutting of Lentil in Madhuganga valley

c. Off-Farm Livelihood Activities

(i) Community Based Tourism: The community-based tourism initiative has completed one year of its operation in both Rudrapayag and Bageshwar districts. In April, 2019, Titli Trust (a well-known nature conservation organization who have supported communities in the IHR to establish Community Based Eco Tourism Initiatives), undertook a review of PSI's initiatives in both the valleys for understanding gaps and areas of improvement. Intensive capacity building activities with Titli Trust has further encouraged the homestay owners to better their facilities and experiences for travellers.

In this one year a range of activities were organized including capacity building of homestay owners, marketing of the initiative through brochures and social media, exposure visits, local festivals celebration for travellers and registrations of homestays. The Madhmaheshwar Paryatan Samuh (MPS) in Rudraprayag, organized a 3-days' festival in January 2020 to celebrate the Shivratri festival and had guests coming in from Delhi, Dehradun and Uttarkashi. The entire planning and execution was undertaken by MPS members themselves and the guests thoroughly enjoyed their stay. In Rudraprayag district, MPS has 10 homestays of which 7 are registered. The others are in the process of getting their registrations done.

A profit analysis of homestay owners of both the valleys, based on their earnings in one year, revealed an annual profit of Rs. 18,000 per family.



I.1 C. Skills Development

a. Development Professional Training (DPT)

Due to poor quality school and college education, rural youth usually find it hard to compete in the formal job market. A ten months' certificate course initiated by PSI in 2016 is designed to meet the human resources needs of the non-profit sector and provide employment to rural youth after ten months of intensive training in the basic concepts and practice of rural development. The course combines classroom lectures focusing on theory and analysis, using carefully selected case

studies, group discussions, field visits, practical work and internships. The students undergo three month-long internships with different VOs to gain work experience under different situations.

The third DPT batch of 7 students from Uttarakhand (5), MP (1) and Bihar (1), completed their course in June 2019. Two of them decided to continue further studies while four joined PSI at Dhar and Bundelkhand (MP), Baddi (Himachal Pradesh) and Dehradun (Uttarakhand).

The fourth batch of DPT consisting of 6 students started in August 2019. In the initial weeks they were given exposure in different localities of Dehradun like Vasant Vihar, Rajpur Road, and slum area of Kudbuda Mohalla, giving them an opportunity to compare the lives of these communities with the life in their own villages. They also visited some institutions like Navdanya, Latika Roy Foundation and CBED. After completion of their first four modules on development model, institution building, micro-planning, sustainable agriculture, and appropriate technologies, in February 2020 the DPT students were sent on month long internships in MKSS Byawar (Rajasthan), Sangtin, Sitapur (UP) and PSI's Bundelkhand program area (MP). The internship program was completed in the first week of March.

For looking into the scope of improvement of DPT course, a three-day event named "DPT Mela" was organised in November 2019, which was attended by seven participants from all the three batches. The objective of the event was to identify areas of growth, challenges, future plans/ vision of these youth and identify their capacity building needs.

Students of DPT Batch -3 during DPT Mela

Students of DPT Batch -4 organizing Save Climate Campaign

b. <u>Computer Literacy Training</u>

Youths in remote villages of Madhuganga and Revati valleys have limited access to computers and opportunities for computer education. Presently in daily life, knowledge of computer is necessary. Governments and corporate offices are also promoting E-Commerce & E-Governance. It is therefore important for all youth to maintain a minimum level of proficiency in using electronic gadgets like computers/laptops, mobile phones, etc., so that all the useful information can be viewed on their phone/PC by accessing the internet.

In June 2019, computer training program was started in Madhuganga valley. A local youth Gireesh Negi was appointed as computer trainer, supported by Manoj Sharma from PSI Dehradun. The Cluster Resource Centre (DRC) was equipped with all the facilities for training like furniture, desk top and lap top computers, printers and internet connection. Up to March, 2020, 27 youth including 12 girls have completed three months' computer course. Topics and subjects like Paint Brush, Note Pad, Word, Excel, Power Point, Hindi and English typing were covered in the three months' basic course.

Computer Course at CRC Rudraprayag

c. <u>Cluster Resource Centre (CRC)</u>

The Cluster Resource Centre constructed by PSI in Paundaar hamlet of Village Uniyana in Madhuganga valley) became operational from June, 2019. In addition to regular computer classes the centre is used for organising meetings and training programs for the farmers, self-help groups and cluster level farmers' federation registered as farmers' cooperative. It was also used for storage of relief material during distribution of dry ration under COVID -19 relief work done by PSI. On special demand of local community, a part of the CRC was also used for quarantine of migrant workers. The CRC is also used for stay of PSI team members and is further being developed for demonstration of homestay.

Cluster Resource Centre (CRC), Rudraprayag

I.2 Cluster Approach for Production, Processing and Marketing of Pulses for Livelihood Development

Pulses are important for food, income and nutritional security. Increased production of pulses can reduce the malnutrition especially among mountain women and children. Under Integrated Livelihood Support Program (ILSP) of Govt. Of Uttarakhand in Sept. 2017, PSI started a project on development of cluster approach for production, processing and marketing of pulses in 10 villages of Madhuganga valley. The main activities are: formation of farmers' institutions at the village and cluster levels, capacity building of progressive farmers, FIGs' formation,

strengthening of farmers' cooperatives, demonstrations, extension of production, grading, processing, value addition and marketing of pulses. Activities completed from April 2019 to March 2020 are summarized below.

I.2.A Capacity Building

a. **Training on Organic Farming**

For promotion of organic pesticides in pulse production, one-day training program was organized in November 2019, for para technicians and FIGs. About 20 facilitators and farmers from different villages attended the program. The training focussed on preparation of *Matka kahd, Panchgaya* and *Agnyastr*.

b. **Training on Seed Bank**

In March 2020, a training on seed conservation, seed production and seed bank was organised for farmer's groups and members of Madhuganga farmers' cooperative. About 50 progressive farmers (including 20 para technicians) were selected for undertaking seed production.

Training on Seed production and Seed bank

I.2.B Farm Demonstrations

During the year, 870 farmers from 10 villages undertook cultivation of pulses like Kidney Beans (Rajma), Toor and Gahat in Kharif; and Lentil (Masoor) and Pea (Matar) in Rabi season. Total area covered under pulses in Kharif and Rabi season is 29.8 ha.

Table 2.1: Cultivation of pulses in Madhuganga valley (2019-20)

Season	Crops	Total Farmers	Area in *nali* (ha)	Production (Q)
Kharif	Rajma, Toor, Gahat	551	1176.5 (23.5)	78.6
Rabi	Masoor, Matar	319	313 (6.3)	8.9
Total		**870**	**1,489.5 (29.8)**	**87.5**

I.2.C Processing Unit and Market Outlet

A pulse processing unit and outlet was established in Mansuna (a central market place in the program area. Farm produce like pulses, millets, spices and pickle were collected from the producer farm families, processed/ graded and marketed through outlet. A total of Rs. 1.2 lakhs were earned from the sale of 27.6 quintal farm produce.

Market Outlet at Mansuna, Rudraprayag

Table 2.2: Sale and Income of Outlet (2019-20)

Farm Produce/ Items	Sale (Q)	Income (Rs.)
Pulses (Rajma and other)	1.5	16,800
Millets (Mandua, Jhangora, Chaulai)	25	70,460
Spices (Haldi, Dhaniya)	0.5	18,750
Other (Pickle)	0.6	14,640
Total	**27.6**	**1,20,650**

I.3 Providing Safe and Sustainable Drinking Water and Sanitation in selected remote villages of Pindar valley, district Bageshwar

Under the Integrated Village Development Program (IVDP) of The Hans Foundation, a program for providing safe and sustainable drinking water and sanitation in eight villages of Pinder valley - a remote region in Bageshwar district was started in April 2017. Execution of Detailed Project Reports (DPRs) of four villages (Khati, Badiyakot, Kalu and Sorag) was almost completed up to March 2019. Some finishing work was completed after extension of the project for three months i.e. up to June 2019. The progress of various program activities undertaken from April 2019 to March 2020 in three additional villages is as follows:

I.3.A Community Mobilization and Capacity Building

a. **Village Meetings**

Initially village level meetings were organized in the 3 new villages (Borachak, Kilpara and Wachham) to understand issues related to access of domestic water, status of existing sources and their usage, and prevailing sanitation practices. Village level facilitators were further identified with the help of communities who could take additional responsibility of community mobilization institution building and execution of proposed DPR activities.

Community Mobilisation in Wachham Village

b. **Formation of Users Water and Sanitation Sub Committees**

Users Water and Sanitation Sub Committees (UWSSCs) were formed in all the three villages. A total of 34 members (21 males and 13 females) were selected in these UWSSCs through open village meetings. Orientation of UWSSCs' members and village level facilitators was undertaken to explain various components of water and sanitation, as well as their role and responsibilities for operationalising the system at village level.

Meeting of Water Users in Borachak Village

c. Awareness Camps

Subsequent to formation of UWSSCs, awareness camps were organized in the villages. These camps focused on issues pertaining to proper use and management of water sources, health and sanitation. About 240 people participated in these awareness camps.

d. Water Quality Testing Training

Providing safe water is one of the objectives under the project. General awareness on water quality testing and usage of boiled water was done through village level meetings and camps. Training of village level facilitators and representatives of UWSSCs was done on different aspects and parameters of water quality. A total 25 participants (10 Female and 15 male) attended the training at Kapkot.

Training on water quality testing at Kapkot

I.3.B. Execution of DPR

After the orientation of the UWSSC committees, and the opening of bank accounts of UWSSCs in Bharadi, the work of implementation was started.

a. Transportation of Pipe and other Construction Materials

Transportation of pipes and fittings was carried out in three phases. The pipes were first transported from Dehradun to pipe store at Bharadi. After Bharadi, about 60 km road is in very bad condition. Therefore, pipes were loaded in small trucks and transported to the road head

Transportation of pipes from store to Pindar valley

(where a store was arranged) near three villages. In the third phase, the villagers lifted pipes and transported on head to the work site (1-18 km trek) from the main road of their village. Materials such as stones and sand is collected locally while cement was collected and transported from Kapkot and Bharadi market. Due to road block during monsoon and snow fall, difficulties were faced in transporting materials delaying construction work.

b. Construction Activities

The UWSSCs' members supervised the construction activities, after being briefed about the design of chamber and storage tanks by the PSI engineers. Local labor was used in layout and fitting of pipe line.

Under the program, 46,969 m pipelines will be laid under 26 schemes benefiting 341 households including 48 SC families) of the three remotely located villages.

Table 3.1: Details of schemes and beneficiaries under BKW

S. No.	Village	No. of Schemes	Length of Pipe-line (m)	Beneficiary Households	
				Total	SC
1	Borachak	5	6147	57	1
2	Kilpara	7	10554	82	21
3	Wachham	14	30268	202	26
Total	**3**	**26**	**46,969**	**341**	**48**

Laying out of pipes

I.4 Promotion of Sustainable Agriculture Practices in Bahadarabad block, district Haridwar, Uttarakhand

Under the CSR commitment of "Mission Sunhara Kal (MSK)" of ITC, PSI has extended the implementation of "Promotion of Sustainable Agricultural Practices" in five new villages of Bahadarabad block of Haridwar district in Uttarakhand during the FY 2019-20. The objectives of the program for this year were:

- Develop village level plans for enhancing climate change adaptive capacity by promoting sustainable water and food security through the strengthening of village institutions
- Promote water harvesting and water recharging interventions which will enable the creation of additional water storage and efficient water use in the identified localities in the project areas
- Establish Farmers' Field Schools for the new cluster and undertake capacity building of the established CHCs and village level farmers' groups and schools.

- Enhance agriculture production by reducing cost through sustainable agriculture practices like sustainable SRI, Zero Tillage & sustainable sugarcane initiative (SSI).

With the above objectives during this year, PSI team focused on Integrated Agriculture Practices (IAP) and Soil and Moisture Conservation (SMC).

1.4 A Mobilization

a. Net Planning

Net planning was done in 5 villages with the help of PRA exercises and household surveys to understand the socio-economic conditions and potentials for developmental interventions. At the end of PRA exercises, FGDs were done with key stakeholders. The outcomes of different PRA exercises were analysed and presented in village level workshops. Major focus was to plan climate smart sustainable agriculture and natural resource management activities in these villages.

PRA exercises for Planning

b. Awareness Generation

Village level workshops were organised with members of WUG, FIG and FFS. Signage and display boards were used for mass awareness among villagers about the on-going activities. To create public awareness, messages were also painted on the walls at appropriate sites in all villages.

Wall Painting

1.4 B Capacity Building

a. Meeting and workshop

Community level meetings were organized in each village to explain the project objectives. Regular meetings were held with farmers to explain about soil and moisture conservation activities, ground water recharge techniques, organic farming practices to increase water efficiency in agriculture while reducing input costs and increasing profits through group farming.

Community Level Meetings

b. FFS Formation

During the year, 13 farmer field schools (FFS) were formed in the five new project villages. A total of 246 farmers registered in these FFSs. Members of farmer's field school were selected through the village level meetings. Each FFS has one lead farmer and 25 student farmers.

Meeting of Farmers' Field School

c. Training

Several training programmes were organized for (FFSs) members to create awareness among them regarding soil and moisture conservation activities, organic farming methods, water and climate sensitive agricultural practices like SRI, SSI and Zero tillage. Project team also demonstrated sustainable farming practices (SRI, SSI and zero tillage) on farmers' fields.

1.4 C Integrated Agriculture Practices

Demonstration of different sustainable agricultural practices like SRI, Zero tillage in Wheat and SSI were done on 15 ha of land with help of 27 farmers. Seeds of vegetables were distributed to 30 farmers with convergence of agriculture department. Total 297 ha of agricultural land was covered under Sustainable Agricultural Practices (SRI - 28 ha, SSI - 152 ha, Wheat through zero tillage method - 117 ha).

System of Rice Intensification

Zero Tillage Wheat

1.4 D Soil and Moisture Conservation Activities

Under soil and water conservation activities, many physical structures like community ponds, farm ponds, gabions, field bunds, grass seeding and plantation that can reduce soil erosion and increase groundwater levels were undertaken as under.

- Drainage line treatment - Total 10 Gabions and 10 Dykes were constructed on drainage lines in two villages to reduce soil erosion and increase infiltration.
- Field Bunding: Field bunding was done by 37 farmers in protecting 43 ha from soil erosion.
- Farm ponds: Total 5 farm ponds were dug creating 15,591.74 cu. m of water storage capacity for rain water harvesting and creating lifesaving irrigation facility.
- Community ponds renovation: Total 3 community ponds were renovated to increase their water storage capacity and recharge ground water level.
- Rain Gauge Meter: 5 rain gauge stations were installed in 5 villages.
- Foreshore Plantation & Grass seeding: 60 plants were planted along field bunds and pond renovation sites. Lemon grass has been planted on 38 hectare of lands.

Gabion and Dyke

Field Bund

Farm Pond

Community Pond

I.5 *"Promotion of Green Watershed"* at Baddi-Nalagarh Area of Solan District in Himachal Pradesh

Under the "Mission Sunehra Kal (MSK)" of ITC, PSI has started implementation of project "Promotion of Green Watershed" at Baddi-Nalagarh Area of Solan District in Himachal Pradesh. The main objective of the project is to recharge springs and increase farm production incurring less costs. Six villages were selected for implementation while 6 villages were selected for net planning for next year.

1.5 A Mobilization

a. Net Planning

Before starting the implementation work in the village, PRA exercises and detailed household level survey were done in 4 villages. The Net Planning includes:

Village Profile including demographic data, social and resource maps, resource ownership, farm land related information, irrigation system, livestock population, wealth classification of families, and marketing systems.

Seasonal and Crop calendars: Cropping pattern along with farm activity calendar (sowing, transplanting, weeding, manuring, irrigation, and harvesting).

Institutional profile and analysis: Various institutions (government, community based, others) and their relationship with villagers, accessibility, service efficiency etc.

PRA Exercise

Resource Mapping

b. Awareness Raining

Mobilization meetings were organized regularly to sensitize community members about the project objectives and towards importance of integrated agriculture practices and soil and moisture conservation activities, 20 wall paintings were prepared and displayed in the six villages. Also booklets on SCI & SWI were prepared and distributed among the farmers for enhancing their understanding and knowledge on these practices.

1.5 B Capacity Building

a. Meetings & Workshops

Monthly meetings were organized with water user groups (WUGs) and members of farmers' field schools (FFSs). This year, 12 community level meetings were organized with WUG & FFS members to build awareness about SCI & SWI. Discussion was done on the importance of SCI, organic farming, soil and moisture conservation measures, spring recharge techniques, reducing input cost and increasing income through IAP.

Community Village Mapping

b. Institution Development and Training

Six FFSs were formed in the 5 project villages. 145 student farmers were enrolled in these FFSs. For capacity building of student farmers, regular trainings were organized at village level. 12 village level training were organized with the members of FFSs. The main objective of these training was to enhance the understanding of farmers on SCI/SWI practices. 145 farmers attended these trainings. 37 student farmers participated in exposure visits to KVK, Solan and Karsog, Mandi to learn about various methods of sustainable agriculture practices and about institutional mechanisms developed by local communities for water management in district Mandi.

Formation of Farmers' Field School

Exposure Tour of FFS

1.5 C Integrated Agriculture Practices

Through FFS, 44 farmers were mobilised for demonstration of Systematic Crop Intensification (SCI) practices.

On field training was given to these farmers and 44 demonstration plots were setup for rice, maize, wheat, gram and mustard. 33 plots of wheat crop, 1 for paddy and 10 for maize were demonstrated. Total area covered under sustainable agriculture practices is 3.79 ha.

Demonstration Plot for SCI being Prepared

1.5 D Soil and Moisture Conservation Activities

Under soil and water conservation activity, drainage line treatment works, grass seeding and plantation, and community pond renovation was undertaken checking soil erosion while increasing ground water recharge.

a. **Drainage Line Treatment**

12 gabion structures were constructed which will help in reducing soil erosion from 18.89 ha. of community land by checking the velocity of runoff water.

Construction of Gabion

b. **Foreshore Plantation & Restoration of commons**

1581 fruit plants were planted by 51 farmers in 6.84 ha of agriculture fields. This included different varieties of apple, pomegranate, lemon, jackfruit etc. Along with this, 3000 plants (bamboos, bel, amaltas etc.) were planted along the community ponds and field bunds to check soil erosion. Grass seeding was also done along the boundaries of the community ponds. Similarly, 1,1500 plants were planted in 18.21 ha of community barren and pasture lands. Under the maintenance work of commons, social fencing, removing of lantana and maintenance of plants was done in 15 ha. For the fencing of these plots 955 cu m of cattle protection trenches were dug along the boundary of the plots.

Grass Plantation around Community Pond

c. **Water Resource Development**

During the year, 20 ponds were constructed having storage capacity of 25,912 cum. These 20 ponds will directly benefit 95 farmers in irrigating 29.17 ha of agriculture land directly. Along with ponds, de-silting of one ponds was done.

I.6 Springshed Based Watershed Development in Upper Khirganga springshed at Kapkot block of Bageshwar District

In January 2020 a new project on Springshed based Watershed Development was started in 'Upper Kheerganga' Springshed Kapkot block of Bageshwar district, with the financial support of NABARD, Dehradun. Under Pre-Project Implementation Phase (PPIP) of the project, Entry Point Activities (EPA) were started in January 2020.

The process started with village level meetings, institution building, selection of *lok sevikas* and identification of activities under EPA. Engineering activities were completed while community mobilisation activities will be initiated after relaxation of lockdown.

Table 7.1: Different Activities Completed under EPA

S.No.	Village	Structure type	Location	Work	Beneficiaries
1.	Jhopra	Construction of drinking water storage tank	Govt. Junior School (Goginapaani hamlet)	Construction of drinking water storage chamber	14 School children, 25 households
2.	Mallade sh	Construction of irrigation canal (guhl)	Masiyagair (Sunardhar hamlet)	Canal repair , Canal new construction	130 households, (SC - 4, ST - 2, OBC - 44, Gen-80) 5 ha land
3.	Farsali Palli	Repair of irrigation canal (guhl)	Naulagair (Farsalipalli hamlet)	Canal repair	60 households (SC - 18, OBC-13) 8 ha land)

Aam sabha meeting in Village Malla Desh

Construction of canal under EPA

I.7 Remarks

After completion of support from Star TV, from April 2019, the Participatory Livelihood Rehabilitation Program focused on extension of System of Crop Intensification (SCI) and organic farming practices along with capacity building of cluster level federations and women groups on business development planning and marketing of farm produce. For the capacity building of cluster level federations linkages were established with ISEED- IRMA. This training course helped the participants in development of conceptual understanding on the basics of entrepreneurship.

The new initiative on Community Based tourism (CBT) was further strengthened through capacity building of the *paryatn samooh*s in both the valleys. Services of Titli Trust, helped in understanding gaps and areas of improvement. Visitors who participated in the three day Shivratri festival organised in January by Madhuagnag Paryatan Samooh (MPS) gave very good reviews building up the confidence of MPS. Intensive capacity building activities with Titli Trust for Sarmool Paryatan Samooh (SPS) has encouraged the homestay owners to better their facilities and experiences for travellers. Home stay owners have improved the infrastructure and started making sign boards through their own efforts.

Cluster Resource Centre (CRCs) constructed in Madhuagnaga valley started functioning from June 2019 with the initiation of three months' computer course. We hope in addition to the ongoing computer training course, this centre will be developed as a front office of MPS, office and meeting place of the community based institutions like farmers' cooperative, information centre and a place for the planning, discussion, training on different farm and off farm livelihood activities.

Two new projects were initiated during the year. Promotion of Green Watershed in Baddi area. Solan, Himachal Pradesh will be further developed through climate smart village approach while the springshed based watershed development project in Kapkot block of Bageshwar district of Uttarakhand will be developed in to new generation watershed.

Considering the increasing challenges of changing climate change, food and nutrition insecurity, decreasing soil health, the Natural Resources Management Group looks forward to expand its farm based livelihood development programs building on the concepts of agro-ecology and natural farming for promotion of water saving nutritional crops.

I.8 Financial Statement

NRM Group's Financial Statement (2019-20)

S. No.	Project	Funding Partner	Opening Balance (Rs.)	Income (Rs.)	Utilization (Rs.)	Balance (Rs.)
1	Uttarakhand Flood Disaster	Individual Donations	1,11,43,724	-	45,25,638	66,18,086
2	Jal Dhara Bageshwar (JDB)	The Hans Foundation	(1,27,946)	1,42,141	14,195	-
3	Integrated Village Development Plan (IVDP)	The Hans Foundation	89,355	894	90,249	-
4	Drinking Water Scheme of 3 Villages- (IVDP-BKW)	The Hans Foundation		1,28,56,397	1,15,88,401	12,67,996
4	Implementation of IVDP-DPR (BKS)	The Hans Foundation	7,38,881	47,63,925	53,72,002	1,30,804
5	ILSP –Pulse project	Uttarakhand Gramya Vikas Samiti	7,39,895	21,620	8,09,118	(47,603)
6	Mission Sunehra Kal (MSK) in Bahadarabad block, Haridwar & Baddi (H.P)	ITC Limited	7,50,932	1,47,28,505	1,21,69,517	33,09,920
	TOTAL		**1,33,34,841**	**3,25,13,482**	**3,45,69,120**	**1,12,79,203**

II. DISASTER MITIGATION AND RESPONSE

The deadly catastrophe COVID -19 plagued the world in the beginning of 2020. After announcement of lockdown on 24th March 2020, the Institute started identifying distressed families not only in Dehradun but also in its field sites of Rudraprayag, Bageshwar and Pauri Garhwal districts in Uttarakhand; and Dhar and Panna districts in Madhya Pradesh to respond to the crisis.

II.1 Response of PSI in COVID -19

Some of the activities undertaken by PSI in response to COVID-19 in march are as under

II.1 A Distribution of Essential Items

PSI started its response with identification of distressed families and issue of an appeal to its team members for donations. It further developed a list of essential items including dry ration for about one month (for a family of 5 members), packed them with the help of local grocery stores and distributed it to the identified distressed families with the help of volunteers. Till end of March, ration kits and other essentials were distributed to about 78 families located in different parts of Dehradun.

II. 1 B Preparation and Distribution of Sanitiser

The Environment Quality Monitoring Group (EQMG) at PSI prepared 100 ml and 50 ml bottles of sanitisers. These bottles were distributed along with the ration kits in different localities of Dehradun.

Sanitizer prepared and distributed by PSI's EQMG Lab in Dehradun

III. ENVIRONMNETAL QUALITY MONITORING

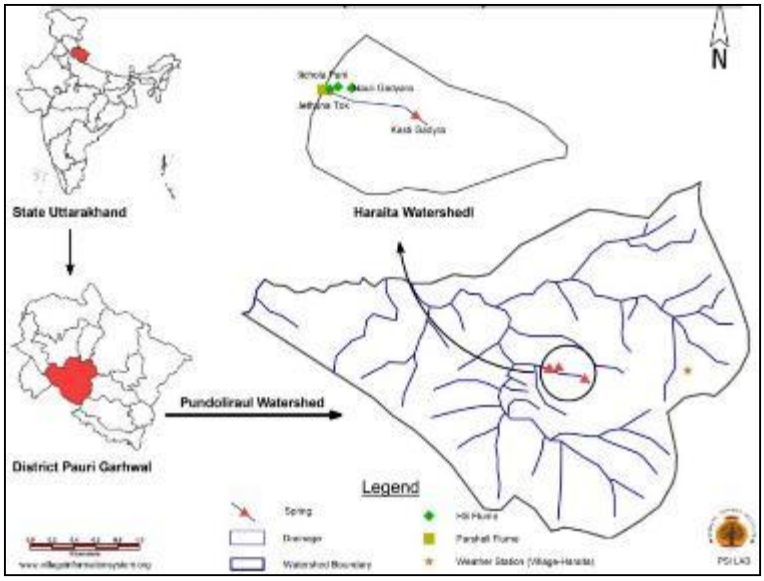
PSI's Environmental Quality Monitoring Group (EQMG) monitors environmental quality, contamination levels and their impacts. It builds the capacities of VOs and communities to gather and interpret pollution data and plan for mitigating pollution-related problems. It also assesses the environmental impact of development projects. It operates a well-equipped laboratory in Dehradun. In 2019-20, EQMG was engaged in promoting community-based springshed development activities in the Himalayan region, by implementing and providing technical support to other organizations. It also entered into its third phase of the participatory ground water management primarily for capacity building of the different stakeholders through digital content. The Group moved into a sixth phase of its fluorosis mitigation program in Dhar district of Madhya Pradesh and also monitored water quality of several rivers in the Ganga basin for policy advocacy. Activities carried out during the year are highlighted below.

III.1 Community Based Springshed Development in the Indian Himalayan Region

Springs are an indispensable source of freshwater for mountain communities in the Indian Himalayan region (IHR). However, haphazard developmental activities in the form of urbanization, industrialization and tourism have greatly impaired the recharge areas of springs leading to water security issues, in terms of both quantity and quality. In order to help the communities, cope up with this problem, PSI is promoting community-based springshed management in the IHR using scientific tools. It is also extending its technical expertise in springshed management to the concerned government departments and other agencies.

II.1 A Water Security Planning in the Indian Himalayan Region

This project was initiated in January 2018 under National Mission for Himalayan Studies (NMHS) supported by MoEF & CC. It is being led by PSI with IIT-Roorkee; Department of Land Resources (DoLR for, Nagaland; WWF-India (for Arunachal Pradesh); and Arghyam as its partners. The project primarily focuses on demonstrating a model based on



Haraita micro-watershed, Pauri Garhwal with installed instruments

hydrological approach and community involvement for increasing spring discharge and promoting sustainable and equitable use of the augmented groundwater for maintaining water security in the IHR. The work is being carried out in 6 headwater watersheds which are in the most water scarce zones of districts – Phek and Zunheboto in Nagaland; Almora and Pauri Garhwal in Uttarakhand, and Tawang and West Kameng in Arunachal Pradesh.

In the Uttarakahnd pilot micro-watersheds – *Haraita* in Pauri Garhwal and *Shiv Gadera* in Almora, automatic weather stations, Parshalll flumes, water level sensors, pan-evaporimeters etc. have been installed for continuous collection of high resolution hydrological data for spring discharge, stream flow, rainfall and the rate of evaporation.

AWS in Shiv Gadera micro-watershed, Almora

Parshall flume at first order stream in Shiv Gadera micro-watershed, Almora

The findings so far indicate high dependency of the spring discharge and stream flow on rainfall. The discharge data obtained from *Shiv Gadera* springs indicate a uniform underlying geology as compared to *Haraita* which has a fractured bedding plane hence variable spring flow dynamics. This indicates that intense planning for spring rejuvenation is needed for complex geological areas like Haraita. In other words, assessing and understanding the underlying geology and hydrological processes of Himalayan springs is of paramount significance to scientifically plan for rejuvenation of springs. In addition, stream flow data collected from the selected sites will help to understand the effect of land use/land cover on stream flow in the watershed.

In this way, working at a micro watershed level with high resolution data will help to develop an integrated approach to resolve water scarcity issues by involving the communities. Spring water will have to be used wisely and monitored on a regular basis for its discharge and quality by the local people. Therefore, village level institutions have been formed and para-workers have been trained in water quality, discharge, rainfall and spring treatment measures using digital training material to sustain the work and help in taking decisions at the local level. Towards the end of the project, best climate resilient practices based on the hydrological model would be designed and advocated for water security at the watershed level.

Para-workers being trained in water quality monitoring

II.1.B Reviving Springs in Uttarakhand

Springs are the lifelines for an estimated 200 million people in the Indian Himalayan Region (IHR) and adjacent areas. Besides providing water for domestic needs, they can also provide water for irrigation and sustain the lean season stream flows. In the last few decades, however, the quantity and quality of springs' discharges in the IHR have declined appreciably. More than half the springs in the IHR are said to have either dried-up or have become seasonal, primarily due to anthropogenic activities and climate change impacts. This has reduced water availability, jeopardized livelihoods, and increased the drudgery of women who gather their household's daily needs.

Given the tremendous role and importance of springs, these need to be rejuvenated and managed by the local communities for providing safe and secured water primarily for drinking, in an equitable and sustainable manner. Towards this, PSI is helping the rural communities to revive critical springs in water scarce villages of five districts – Almora, Pauri Garhwal, Dehradun, Nainital and Pithoragarh with the support of Bajaj Auto Limited. This 3 years' program initiated in 2017 was expected to revive 50 critical springs to benefit about 1000 rural households in terms of increased availability of water for domestic and irrigation purposes. 318 springs have been identified across the five districts out of which 102 springs are in a critical state. During the year, 50 of these critical springs were revived after conducting social and hydrogeological feasibility studies, formation and strengthening of village level institutions and preparation of community based springshed development plans. A cadre of trained para-workers is being developed for regular monitoring of water quality, rainfall and spring discharge and for maintenance of the recharge area.

Trenches dug in Chanch Village, Almora

II.1.C Meghalaya Participatory Springshed Management

PSI and three other spring initiative partners – ACWADAM, CHIRAG and PRASARI are extending capacity building services for spring rejuvenation under the Community Led Landscapes Management Project (CLLMP), for a period of two tears, initiated by the Meghalaya Basin Management Agency (MBMA) with the support of the World Bank. The objective is to provide training in hydrogeology, aquifers, restoration of springs, soil and water conservation measures and preparation of village water security plans to representatives of the State Program Management Unit (SPMU), District Program Management Unit (DPMU) and the Village Community Facilitators (VCFs). The program will help to implement community based springshed management across the state of Meghalaya. Training through a Training of Trainers (ToT) approach will develop 100 professionals who will operate as 'Master Trainers' for the state. The Master Trainers will train the VCFs into para-professionals. These trained para-professionals will further undertake capacity-building exercises for the communities under the supervision of the Master Trainers and the resource agencies. In this way, the Master Trainers will constitute the backbone of CLLMP training and capacity building program. They will assist in the successful implementation of springshed development and management in roughly 400 identified villages across the state of Meghalaya. As per the program, the first round of training and guided mentoring was started in January 2020 wherein 89 Master Trainers were trained virtually by using specially developed digital content.

III.2 Community-based Fluorosis Mitigation in Dhar district, Madhya Pradesh (IHR)

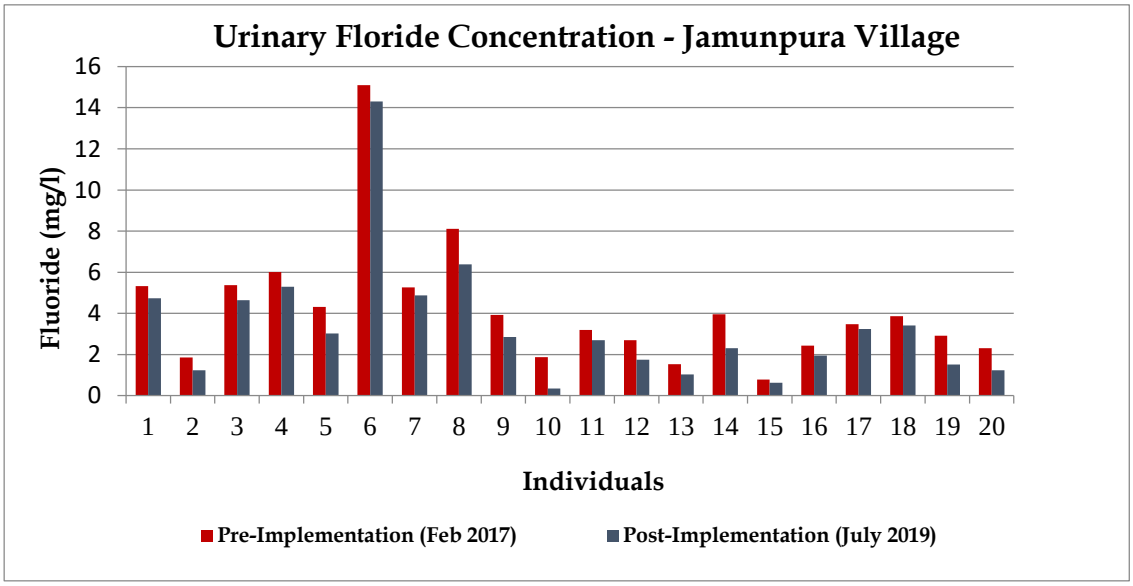
PSI has been working on community-based fluorosis mitigation in Dhar district since 2013 with the support of FRANK Water, UK, benefitting more than 10,000 people in 21 fluoride affected villages. In 2018, the Integrated Water Resources Management (IWRM) approach was introduced by FRANK Water which included groundwater recharge, WASH initiatives, safe drinking water supply systems, and advocacy at the local level for the adoption of the IWRM approach under the ongoing government schemes. The idea was that groundwater recharge efforts would not only increase water availability, but would also help reduce the fluoride concentration in water due to the dilution effect. WASH awareness and good hygiene practices would help reduce waterborne disease cases. Fluoride safe drinking water supply systems would help in mitigating fluorosis and government involvement will help in sustaining and scaling up the approach in other villages. As a pilot, in 2018-19, the approach was implemented in 4 villages - Jamniamota, Jamunpura, Maseedpura and Hanumantiya.

Drinking water supply system in Malpura village

In 2019-20, four new villages i.e. Patelpura, Jamunjhiri, Newpura and Malpura were taken up for groundwater recharge based on hydrogeological studies along with WASH awareness and implementation of community-based water supply system. The Integrated Child Development Services (ICDS) and the Primary Health Care Centers (PHCs) were involved in training 164 ASHA and ANM workers in personal hygiene, chlorination of wells, and water quality monitoring.

Training of ASHA & ANM in water quality monitoring

Health camps were organized by the Health Department to check fluorosis cases and to provide supplements like vitamin and calcium tablets to the people. Groundwater recharge measures increased the availability of drinking water and also caused dilution of fluoride concentration in groundwater. Consumption of fluoride safe drinking water reduced the fluoride concentration in the urine, suggesting health improvements in the long run.



III.3 Participatory Groundwater Management Under BRLF Program

As a consequence of the hygiene awareness drive, a total of 385 applications for toilet construction were submitted by the water user committees of the villages to the gram panchayat which were forwarded to the Swatch Bharat official, Dhar for further action. In this way the project moved towards achieving the goals and outcomes outlined in the project plan.

Bharat Rural Livelihood Foundation (BRLF) had initiated a program on Participatory Groundwater Management (PGWM) in 2015 for addressing the groundwater crisis while transforming people's livelihoods in the Central Indian tribal belt. PSI was engaged in this program for providing technical support to two BRLF partners, namely Parhit Consortium and FES for piloting PGWM in seven villages of Shivpuri and Sheopur districts in M.P, Udaipur district in Rajasthan, and Yavatmal district in Maharashtra. During this multi-year program, PSI trained the project staff of the partner organizations. Based on the estimated gap between water demand and supply, recharge structures were proposed. Field facilitation was provided to carry out the groundwork. Activities during 2019-20, resulted in successful preparation and implementation of groundwater recharge plans as per the needs of the people. The villagers were involved in the entire process of planning, decision making and implementation.

Exemplary work has been accomplished in the pilot villages with the active participation of the local communities. In Ranipura village located in Karahal block of district Sheopur in Madhya Pradesh, protocols for groundwater use for irrigation and domestic needs were developed after continued interactions and demystification of hydrogeological science to the communities. The protocols included crop water budgeting, prohibition on the digging of bore wells, sharing of well water, changes in cropping pattern, and soil and water conservation measures to augment water supply and regulate the demand. This resulted in an increase in total cultivated area and production of low water intensive, but highly remunerative crops like mustard, millet, sesame, etc. Likewise, in Kalothara village, Shivpuri district, Madya Pradesh, a 20 years' old broken stop dam was rebuilt by the villagers and Parhit Samaj Seva Sansthan with the technical support of PSI. It not only increased the groundwater level but also helped the farmers grow wheat in rabi season and improve their livelihood opportunities.

III.4 Building capacities for Participatory Groundwater Management in India

Stop dam reconstructed in Kalothara village

Villagers irrigating their fields with the water collected through the stop dam

Technology based learning management system is emerging as an effective medium to reach out to a large number of people. It can be a means of communication, interaction and knowledge transfer, especially in the difficult mountainous terrain and geographical conditions where

frequent travelling is not possible. It can be used to scale-up the successful approaches and for transferring appropriate knowledge to the concerned stakeholders.

III.5 River and Wetland Studies

PSI has been working on the Digital Learning Management System (DLMS) with Arghyam since 2018. In December 2019, Arghyam and PSI mutually agreed to create content for training different stakeholders for participatory springshed management. Considering the needs of the frontline workers for easy and quick access to knowledge and expert advice more frequently and for resolving the issues they might face in the field, a set of digital content was planned to be developed for building their capacities at scale. Towards this, PSI decided to develop practitioner-oriented content on springshed management, which would be useful for the para-workers and the village community. The ultimate goal of this program is to create a curriculum on springshed management using digital content. A functional grid has been worked out to plan the content to be created as per the roles and responsibilities of the different stakeholders who are usually involved in the springshed management work.

III.5 A Environmental Flows Assessment of five major rivers of Uttar Pradesh

PSI evaluated Environmental Flows (E Flows) requirements along five major rivers of Uttar Pradesh - Ganga, Gomti, Ghaghara, Sharada, and Rapti from December 2019 to March 2020 with the support of WWF-India. The objective is to integrate the E Flows recommendations developed during this exercise into the overall water resources allocation and management as part of the individual river basin management plan. During the first phase, especially designed surveys were conducted along the Gomti, Ghaghara, and the Sharada rivers. The Building Block Methodology was used for E Flows assessment which considers both ecological and socio-cultural aspects of the flow regimes. PSI studied the socio-cultural flows with a view to assess the religious, livelihood and historical flow expectations and needs of the riparian dwellers.

The study highlighted the far-reaching downstream impacts of dams and barrages. Livelihoods, cultural practices, and peoples' lives along the Sharada have been negatively impacted by the presence of the Banbassa and Sharada barrages. Besides alteration of flow regimes, the barrages have also changed the channel profile and increased erosion along the banks. The changes in the channel profile have made the river prone to flooding. The situation along the Ghaghara is similar and exacerbated by the sudden releases of water upstream of Ayodhya on festival days. These releases

Ghaghara river at Ayodhya showing low flows

demonstrate a warped understanding of 'environmental flow releases' as they are unnatural, and harm downstream users. Along the Gomti, it is urban pollution that mostly impacts the river. The livelihood of an entire village, populated by fisher folk, has been lost due to the outfall of sewage from the city. The impact downstream is lessened a little, but fish kills remain a recurrent problem even 150 km downstream of the barrage. River Ganga and Rapti will be studied in the next phase.

III.5.B Water Quality Assessment of Renuka Wetland

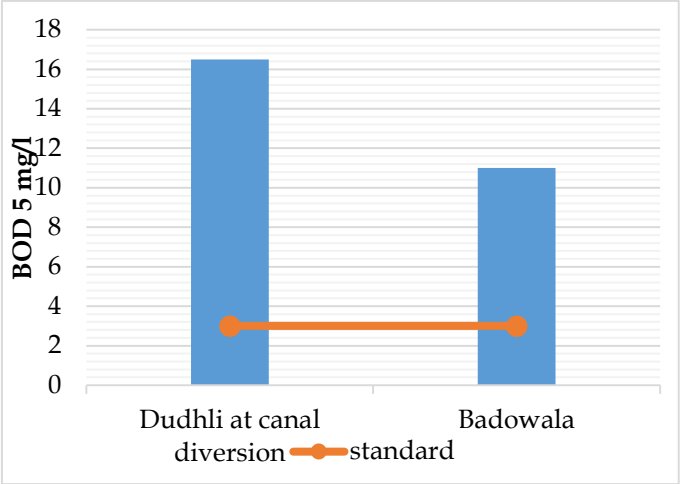
The Renuka wetland Ramsar site is situated in Sirmour district, Himachal Pradesh. The water quality of this lake is gradually deteriorating due to deforestation and soil erosion. The water flowing into the lake from the surrounding hills is heavily loaded with silt. Nearly a quarter of the lake has shrunk due to siltation. The resultant eutrophic conditions are adversely affecting the aquatic biodiversity. In order to conserve Renuka and similar other Ramsar wetlands, GIZ has initiated a Wetland Management for Biodiversity and Climate Protection project. The Renuka study is being carried by PSI, ACWADAM and IIT Roorkee with the support of GIZ.

Sampling stations at Renuka Lake and Parashuram Tal

The first round of sampling was done in February, 2020 from 36 sites at different locations of the lake as depicted in the image. Various, physico-chemical, bacteriological parameters and hydrogeological components were studied. The study revealed the presence of total coliform and fecal coliform bacteria in Renuka lake water as well as in Parashuram Tal, indicating inflow of domestic sewage and animal waste from nearby villages into the water bodies. Parameters like alkalinity, total hardness and calcium were found to be slightly higher than the permissible levels, which could be because of limestone deposits. On an average, nitrate was found to be within the standard limit (45.0 mg/l) however, at some sampling sites, it was found to be little higher than the limit. This could be attributed to agricultural activities near the lake. This is probably making the lake nutrient rich and eutrophic. A second round of water quality monitoring along with the study of benthic macro-invertebrates is being planned for a detailed analysis and to suggest remedial measures.

III.5.C Water Quality of Suswa river

Suswa river flows through the Eastern part of Dehradun city. It receives a copious volume of municipal wastewater through its major tributaries - Rispana and Bindal at Mothrowala and joins Song river by passing through the Rajaji National Park. The loads of toxic waste that Suswa carries, has become a threat to the wild animals of the National Park and also for the health of nearby residents who are dependent on the river water for their domestic and irrigation needs. PSI took the initiative of monitoring the water quality of Suswa river. Samples were collected on 19th March 2020 from two sampling sites – Badowala and from the canal diverted for irrigation at Dudhli. Though the pH, TDS, TSS and COD were found to be within the limits prescribed by CPCB for surface water bodies, BOD was found to be several times higher than the limits for surface water which is not suitable for drinking, bathing and even for irrigation purposes. Continuous monitoring and proper treatment like phyto-remediation for reducing the organic load is required before the effluents are released into the rivers. The local authorities were informed about the status of Suswa for further action.

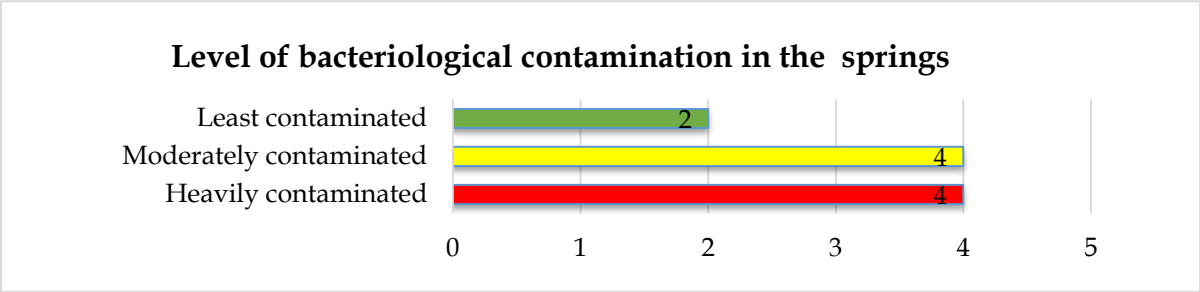


BOD at the sampling sites

III.6 Research Studies

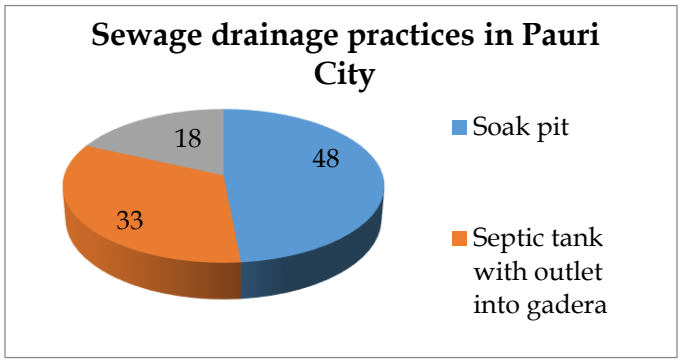
III.6 A Groundwater Sanitation Nexus

The IHR is going through rapid urbanization. Several mountainous peri-urban areas are converting into unplanned urban areas impacting the local water resources in terms of quantity and quality. PSI is carrying out groundwater sanitation nexus studies at different project sites in the IHR since 2017. During 2019-20, it carried out this study in the Pauri city of Uttarakhand. People in the Pauri city and surrounding villages are largely dependent on natural springs for their domestic and livelihood needs. These springs are not only drying up due to haphazard



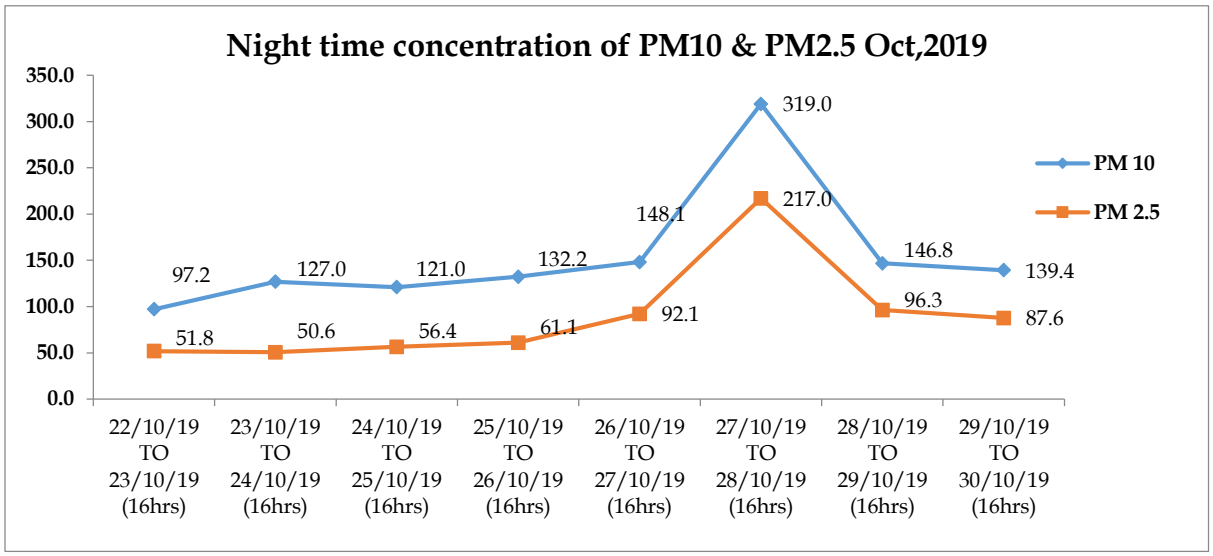
developmental activities, but are also getting contaminated due to improper sanitary practices and dumping of waste in the spring recharge area.

PSI studied water quality of 10 springs of Pauri town and their catchment areas to determine the nature and extent of bacteriological contamination and their transport pathways into the groundwater. All the springs were found to be contaminated with fecal coliform bacteria. The study also highlighted the lack of proper sewerage system in the city resulting in direct discharge of blackwater into the *gaderas*.



III.6.B Air quality monitoring during Diwali in Dehradun

Air pollution has been a persistent problem in Dehradun city mainly due to growing numbers of vehicles on its narrow lanes and hilly terrain which allows less dispersion of pollutants into the atmosphere. PSI has been monitoring air quality of the city. This year, the team examined PM2.5 and PM10 before and during Diwali festival using the respirable dust sampler. As expected, the PM10 and PM2.5 concentrations were found to be several times higher than the National Ambient Air Quality Standards (24 hr) of 100µg/m^3 and 60µg/m^3 respectively. The highest concentrations were recorded on the night of Diwali.



III.6.C Laboratory Experiment to study the Rate of Degradation of Fecal matter

A study was conducted in PSI's laboratory to study the rate of degradation of human fecal matter. The samples were subjected to three different conditions – open environment (as in the case of open defecation); covered with a transparent glass box with a 100W bulb glowing inside, and the third sample was kept in a black box with 200W bulb. The parameters studied were pH, TDS,

temperature, moisture content in the feces, biochemical oxygen demand, chemical oxygen demand and fecal coliform count with respect to time (in hours). This test was performed once in the spring season (March 2019) and thrice in the winter season (November, December and January 2019-2020). As per the data collected, the fecal coliform count was least in the sample which was kept in an open natural environment. The fecal matter had degraded completely within 9 to 11 days. This study suggests that dry decomposition of fecal matter is faster in open conditions.

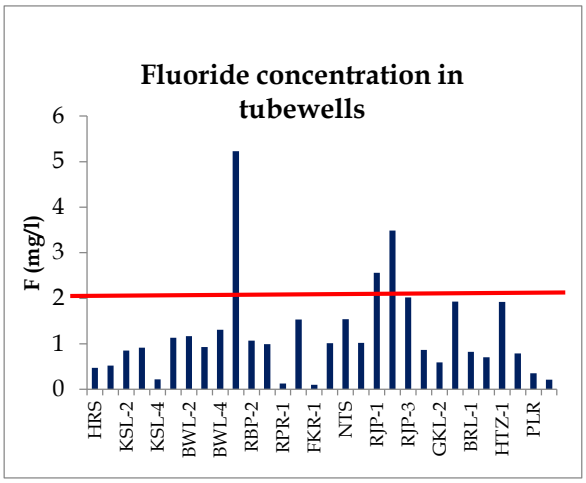
III.7 Other Activities

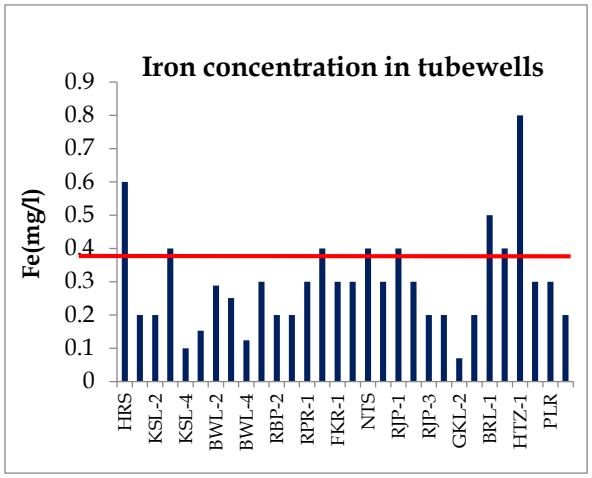
III.7.A Springshed Management in collaboration with Forest Department, Uttarakhand

In view of the growing concern for springshed management in Uttarakhand, a consortium has been formed involving the Forest Department and the local organizations having experience in springshed management. The objective is to build the capacity of the forest officials and develop a state level program for springshed management in Uttarakhand. PSI is one of the members of this consortium and had taken up the responsibility of preparing spring rejuvenation plans for some of the critical springs identified by the Forest Department in Pauri Garhwal, Dehradun and Rudraprayag districts. As a pilot, plan is being prepared to build the capacities of about 120 forest rangers and guards representing 10 Forest Divisions out of a total of 40 divisions along with representatives of Jal Sansthan and Swajal working under the Jal Jeevan Mission.

II.7.B Water quality monitoring in Sikar district, Rajasthan

Sikar is a semi-arid district of Rajasthan with substantial dependency on deep bore tubewells for its drinking water supply. Three out of 9 blocks in Sikar are suffering from geogenic contamination of water and related health impacts. PSI was approached by the Jankidevi Bajaj Gram Vikas Sanstha (JBGVS) for water quality monitoring and possible remedial measures. 30 samples of tubewell water were collected from November 18-20, 2019 from 14 randomly selected villages. These samples were tested for pH, TDS, fluoride, total hardness, calcium, magnesium, total alkalinity, chloride, sodium, potassium, iron, nitrate, and phosphate. The parameters TDS, alkalinity, fluoride and iron were found to be higher than the permissible limits for drinking water as per the Bureau of Indian Standards. The results indicate that the ground water quality is not suitable for drinking and irrigation purposes, particularly in 5 out of 14 villages - Rambaxpura, Rajpura, Baral, Hatyaz and Ruppur. Several cases of dental fluorosis among children were also detected in these villages.





PSI has recommended (JBGVS) for a participatory groundwater management approach to develop an alternative paradigm for addressing the prevailing groundwater issues. Awareness generation programs on groundwater quality, its impact and possible remedial measures on health should be conducted for the concerned communities. In case of the villages where alternate safe sources of water are not available, appropriate treatment measures for reduction of high TDS, fluoride and iron should be made available by the concerned authorities.

II.7.C Water Quality Testing Kits

PSI's EQM laboratory in Dehradun tests water samples and also produces low cost water testing kits which are purchased by various organizations all over the country. In 2019-20, 300 water samples were tested in the lab. Most of the drinking water samples were from PSI's project sites, Doon School, Ramrati Eye clinic Dehradun, etc. The group sold 36 water testing kits and 57 refills.

III.7.D Knowledge and Information Dissemination

The following case studies/articles were published and presented:

- Stories of Change: Case Study Challenge, Azim Premji University (2019-20): Fluorosis mitigation through community-based safe drinking water supply in Dhar district, Madhya Pradesh.
- Bacteriological Contamination of Springs in The Indian Himalayan Region: Paper presented at the XIIIth World Aqua Congress, New Delhi, October 30, 2019.
- Aquifer Mapping Based Participatory Ground Water Management: Case Study of Ranipura Village of Madhya Pradesh, Paper presented at the XIIIth World Aqua Congress, New Delhi, October 31, 2019.
- Lebong Community's Response to Water Crisis: CERD Green Chronicles, Issue 1, Vol. 1, 2020.
- Van Mahotsava: Why Planting Trees Is Important, The Times of India, July 12, 2019, P-3.
- Go Green This Van Mahotsava, Garhwal Post, Dehradun, July 3, 2019
- https://www.indiawaterportal.org/articles/go-green-van-mahotsava, July 8, 2019

III.7.E Meetings and Workshops

Members of the EQM Group represented PSI at

- Annual Review Meeting at NIH, 19-20 May, 2019
- National Springshed Management workshop at Kohima, Nagaland, organized by ACWADAM on 29 May, 2019
- Shri Umesh Dobhal Smriti Lecture at Haridwar: Lecture Delivered by Dr Ravi Chopra on 14 July, 2019
- Training workshop on pollution monitoring and impact assessment at Govinpur, Sonebhadra from 12-18 August, 2019
- Training of NABARD officers on Springshed management at Dehradun on 16 Sep, 2019
- Attended National Springshed Management workshop at Delhi, organized by ACWADAM from 10-11 Sep, 2019
- Meeting in Bhopal on drafting new water policy of Madhya Pradesh at Bhopal on 11 Oct, 2019
- Stakeholders meet at Itanagar (Forest department, PHED, Horticulture department, GB Pant institute, WWF) on 19 Oct, 2019
- Meeting on inputs for India's water policy, about water quality issues in India, organized by Water Practitioners' Network (WPN) at Delhi from on 4-5 Nov.2019
- 49th meeting of working group of NIH at Roorkee on 19 Nov. 2019, (Meeting with NABARD, Forest Department, SWC Department, Govt Arunachal Pradesh for potential collaboration for Springshed Development program on 19 Nov. 2019
- State level workshop on IWRM organized by Samarth organization in Raipur on 20-22 Nov. 2019
- Meeting with the District collector and all department heads, Dhar on 3 Feb. 2020
- Workshop on operation of science laboratory instrument and environmental studies, organized by Govt P G collage, Parasia, Chhindwara, MP on 25-27 Feb. 2020
- Rajasthan state workshop on Integrated Fluorosis Mitigation, 3 March, 2020.

III.8 Remarks

The focus of EQM Group this year was on implementing community based springshed development in the IHR. It also provided training and field facilitation to government departments officials in different states to carry out pilots on community based springshed development. This has led the team to emerge as a leading technical support organization for this kind of work in the region. It has also led to new collaborations with various government departments like NABARD, Meghalaya Basin Management Agency, GIZ, WWF, Forest

Department, IIT-Roorkee, NIH etc. PSI received the prestigious Earth Care Award 2019 for its spring revival work in Nagaland. Efforts will be made in the coming year to extend this activity in other Northern states like Assam, Tripura and Manipur.

In the community based fluorosis mitigation program in Dhar, PSI integrated the WASH and Integrated Water Resources Management (IWRM) approach to further strengthen the program. Government departments like the Integrated Child Development Services (ICDS) and the Health Department were involved in various activities. PHED Dhar has approached PSI to collaborate for fluorosis mitigation in a cluster of 15 fluoride affected villages in two blocks of Dhar district. The case study on Dhar submitted for the "Stories of Change – Case Study Challenge" 2018 - 19 organized by APPI, was adjudged among the best 10 case studies out of a total of 95 submissions.

The year 2019-20 was the last year for the BRLF pilot program on participatory groundwater management which had begun in 2015. However, the program has left behind impacts beyond expectation in the project areas and has been acknowledged by BRLF in several advocacy workshops. The experience gained will help PSI in replicating the work in other areas under the upcoming Atal Bhujal program.

The river studies carried out in the Ganga basin highlighted the critical condition of the rivers, and the importance and consideration of the socio-cultural aspect in EFlows assessment. The study will hopefully advocate for EFlows assessment into the river basin management plan. PSI's competency in river studies has helped in taking up the Renuka wetland study with reputed organizations. The findings will help to recommend remedial measures to conserve such biodiversity hotspots.

Since last few years, PSI is carrying out the groundwater sanitation nexus studies in its different project sites which repeatedly indicate deteriorating quality of spring water in the IHR. With such studies, it has been able to highlight the importance of maintaining water quality along with water availability. It is looking forward to developing digital content for knowledge dissemination on water quality and spring treatment measures. This will benefit a large number of stakeholders and help in achieving water security.

The city and lab based studies on air quality monitoring and rate of degradation of fecal matter can highlight new findings with further investigation and can also be used for public awareness. Informed communities will also be able to work as pressure groups to get the local authorities take necessary actions.

III.9 Financial Statement

EQM Group's Financial Statement (2019-20)

S. No.	Project	Funding Partner	Opening Balance (Rs.)	Income (Rs.)	Utilization (Rs.)	Balance (Rs.)
1	Community Based Springshed Development	G.B. P NIHESD	20,43,850	53,27,154	44,28,825	29,42,179
2	PGWM	ARGHYAM	4,50,289	9,92,480	10,12,240	4,30,529
3	Reviving Spring in Uttarakhand	Bajaj Auto Limited	22,97,373	1,34,19,980	89,00,377	68,16,976
4	BRLF	ACWADAM	(90,042)	9,13,792	9,12,837	(89,087)
5	PSM/MEG	SWCD, Meghalaya	10,70,627	-	4,08,834	6,61,793
6	Fluorosis Mitigation	Frank water	14,92,893	21,99,053	32,38,965	4,52,981
7	Ganga Water Quality Monitoring	WWF-India	1,43,726	2,49,500	3,28,857	64,369
8	Springshed Development in Darjeeling & Kalimpong	WWF-India	(1,10,558)	630025	10,77,387	(5,57,920)
9	Mizoram Springshed Development	GIZ	-277453	277453	-	-
10	Development of Village Water Security Plan (DVWSP)	GIZ	-	453161	4,53,161	-
	TOTAL		**70,20,705**	**2,44,62,598**	**2,07,61,483**	**1,07,21,820**

IV. INNOVATIVE PROJECT GROUP

PSI has been implementing Gram Swaraj Abhiyan in Bundelkhand since 2011 under NIRD, Tata Education Trust and BRLF. Along with the central theme of livelihood enhancement, all the interventions have been institutionalized to ensure sustainability. Tribal families in Panna district are collectively working not only towards poverty reduction but also towards ensuring inclusive development.

In year 2019-20, a programme to strengthen science, practice and policy for scaling up SCI in rainfed regions of India was also promoted with the financial support from RRAN.

In January 2020, the IP group began a 3-year programme with the financial support from APPI for promoting climate smart drought mitigation and agronomic measures for enhancing food, nutrition and livelihood security of small and marginal farmers enhance food, nutrition, livelihood security and to establish village level institutions for increasing the accessibility to government schemes.

The GIS lab continued to provide a wide range of information relating to demography, infrastructure and natural resources in visual and data form to various projects at PSI.

IV.1 Ensuring Sustainable Livelihood for Tribal Communities through Forest Rights Act and Watershed-Based Development in Bundelkhand Region of Madhya Pradesh.

The program initiated in 2018 is being executed in 36 Gram Panchayats (95 villages) in two tribal blocks of Damoh and Panna districts targeting about 10,000 households out of which 66 per cent are tribal families. The implementation is in a consortium mode, named "Bundelkhand Development Alliance" which is a partnership of Manav Jivan Vikas Samiti in Tendekheda, Damoh, and People's Science Institute in Shahnagar, Panna. PSI is extending capacity building support for engineering and technological innovations to the partners, in addition to implementing project activities in Shahnagar block.

The project objectives are:

Primary Objectives

- Enable and Empower drought-stricken tribal communities
- Sustainable livelihood (food, nutrition, natural resources, increasing productions)
- Access to rights & entitlements of marginalized tribal communities

Other Objectives

- Capacity building of communities and organizing local youth
- Access FRA & government development schemes
- Build village institutions to sustain self-reliant development and good governance
- Economic development & watershed development

The major outputs and expected outcomes are:

- Settling 5000 individual farmers claim under FRA and community forest rights for 50 villages.
- Village Development Plans formulated by Gram Sabhas in all villages and their incorporation in the Block Development Plan.
- Covering 2500 households under new agronomic practices (SCI, organic, NPM, etc) and 5000 households under land development programs.
- 6500 ha area covered under watershed development to provide secured irrigation to 25% of the targeted households.
- To try and achieve annual income enhancement of Rs 15,000 per household.

The annual progress during the period of April 2019 to March 2020 for the consortium and PSI is briefly summarized below:

Components	Processes	Major Achievement
Land rights and entitlements under FRA and government schemes	Padyatra, *Jan Sunvayee*, village meetings, awareness-raising through communication materials like posters, booklet, trainings, state level consultation.	• 2362 forest rights applications filed (target 2200) • 51 applications settled (target 1500) • Approximately 49 acres FRA claims settled • Application for CFRs have been submitted in 28 villages (target 32) • Women's land joint ownership rights advocacy
Strong Village Level	Village meetings, Focus on Aam Sabha	• *Aam Sabha* (village unit) meeting conducted in all 75 villages (target 75)

Components	Processes	Major Achievement
Institutions (VLIs) to sustain self-reliant development and good governance	and Gram Sabha, existing SHGs, training, continuous dialogue, identification of need-based institutions, training on Government schemes	• *Gram Sabha* on 15 Aug, 2 Oct, 26 Jan in all GPs • Strengthened 128 SHGs (target 160) • Mobilizing *Van Adhikar Samitis* in 40 villages (target 40) • Towards long term development goal - village wise identification of livelihoods' interventions
Natural resource management through watershed development	Identification of work by communities through process of PRA VDPs, Approval of VDPs in Gram Sabha, PGWM training, engineering training	• VDPs prepared in 7 villages (target 7) • Irrigation security 705 households (target 800) • PGWM planning in 5 villages in process (target 4) • Convergence achieve to the tune of Rs. 342 lakhs for watershed, irrigation and land development activities • Community contribution Rs. 82.34 lakhs • Co-finance with APPI for construction of farm ponds
Agronomic interventions to increase productivity	Seasonal training, farmers field demonstration of SCI, Azola, organic practices, NPM, Field level hand-holding, equipment supply, preparation of communication materials for farmers, exposures trips, crop cutting analysis with communities, setting up village level Technology Resource Centres (TRCs)	• Agronomic practices 2887 HH (target 2000 hh) • NPM demonstrations in 19 villages (target 19 villages) • Azola pits - 306 household (target 400) • Community based Technology Resource Centre - 37 villages (target 23) • Convergence to the tune of Rs. 1 lakhs • Community contribution Rs. 4 lakhs • Co-finance with APPI

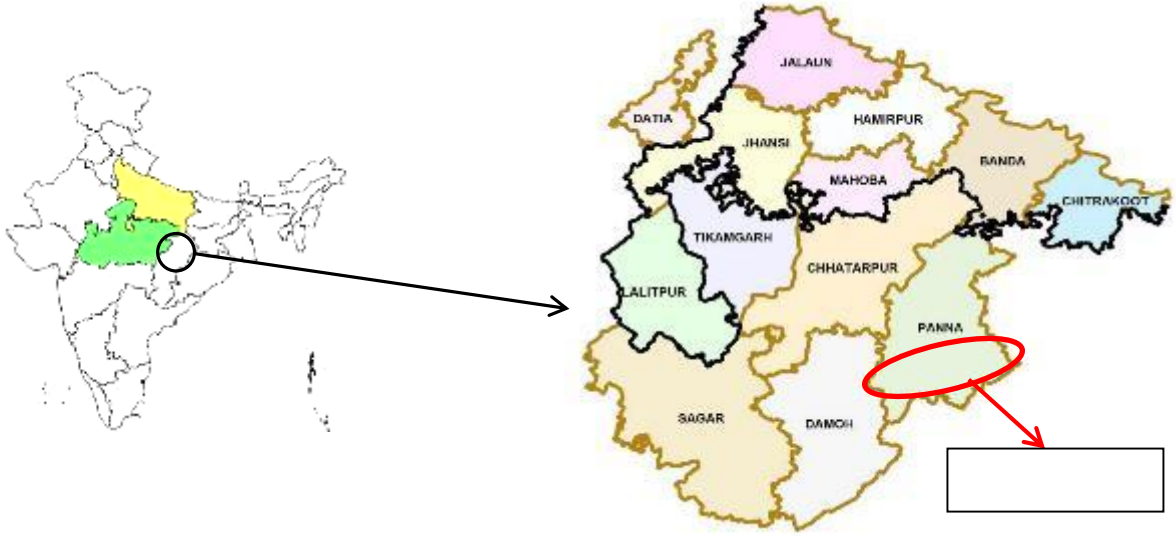
Snippets

Villagers in Mehnguwa kala have not only reduced their average crop of cultivation from Rs.3000 to Rs.500 per acre but are also able to increase productivity by 2-3 Quintals/acre.

Progressive farmer, Bhole Singh from Kathai village (Panna) practiced agronomic interventions. He supported other farmers by providing room for TRC and 2000 sq. ft. area for demonstrations.

IV.2 Promoting Climate smart drought mitigation and agronomic measures for enhancing food, nutrition and livelihood security of small and marginal farmers.

In January 2020, PSI initiated a three year program in 33 villages of Shahnagar block of Panna district with financial support from Azim Premji Philanthropic Initiatives (APPI) to demonstrate and extend a model of climate smart agriculture by promoting drought proofing measures and innovative agronomic practices like SCI to improve water, food, and nutrition and livelihood security among vulnerable small and marginal farmers in a participatory, inclusive, and socially-just manner by promoting life-saving irrigation for rainfed crop during dry spells, on-farm innovative agronomic practices, off-farm activities and institutional mechanism to sustain the efforts.



The objectives of the program are as follows-

1. To enhance food, nutrition and livelihood security
2. To establish village level institutions and to increase accessibility to government schemes

Major outputs and outcomes expected are-

1. Enabling participation of 75% of small & marginal farmers and women in Aam/Gram Sabha. 80% of HHs have access to government schemes
2. Covering 2000 households under new agronomic practices (SCI, organic, NPM, etc) and to try and achieve annual income enhancement of Rs 15,000 per household.
3. FPO with 1000 farmers to be promoted

IV.3 Strengthening Science, Practice and Policy for scaling up SCI in Rainfed regions of India.

A one year program with support of Revitalizing Rainfed Agriculture Network (RRA N) was initiated to strengthen science, practice and policy for scaling up SCI in rainfed regions of India. This project was implemented in 5 States with 2 partners other than PSI – SUPPORT in Hazaribagh and Ramgarh districts of Jharkhand, PRAGATI in Koraput district of Orissa and PSI in Solan (HP), Bageshwar (UK) and Panna (MP).

The goal of the program was to come out with policy level strategic interventions for SCI operationalization under major schemes like NFSM, PMKVY, NRLM etc. by way of -

1. Scientific validation of SCI results in crops other than wheat and paddy
2. Piloting a cluster level approach through NRLM/NFSM
3. Thorough study of the policy level gaps
4. Bringing learning from grass root level to think-tank table through process of networking.

The program has four components-

S. No.	Project Component	Process Adopted
1.	Scientific Validation of SCI	PoPs for different Kharif and Rabi crops were developed with the help of IARI scientists and NCS members. KVKs were approached for trails in their own farms and support farmers in selected clusters
2.	Piloting Cluster level Approach	On-field trials were set up with farmers. Farmers were trained and exposed to KVK demonstration plots. Visits of government officials were facilitated to fields to mobilize their support and for the inclusion of SCI into the existing government programs.
3.	Policy Research and Analysis	Study the incorporation and implementation of SCI in some of the case states of Bihar, Andhra Pradesh, Tamil Nadu and Tripura.
4.	Networking and building Alliance	Linkages with different key stakeholders who are expected to play a key role in scaling up SCI through mainstream government programs in the coming years. This includes IARI, ATARIs, state agricultural universities, KVKs, NGOs, NGO networks, and farmers.

One state level workshop was organized in Odisha with all stakeholders (39 participants) on "SCI Policy deliberations – A future road map for Odisha state" on 14th February 2020 in Bhubaneshwar, Odisha. As Odisha has been on forefront in up scaling SRI for more than a decade, through various agriculture and livelihood schemes, the lessons and learning which came out of the workshop might help in developing long term pro-poor production strategy-based experiences on Science and Practices of SCI, and policy changes in the government policies to upscale.

The annual progress during the period of April 2019 to March 2020 for the program is briefly summarized below:

S. No.	Project Component	Expected Output	Achieved Output
1	Policy research and analysis	Analytical report for each state identifying gaps in policy design and implementation	3 states have been covered - Tripura, Bihar as good cases and Odisha from project states.
		Policy briefs for SCI operationalization for one state	In progress
		-	One State level all-stakeholder consultation was conducted in Odisha
2	Piloting under NRLM	Design on pilot, district/state level consultation and promises of budget allocation by at least one state	To achieve this, field level demonstrations were set up at five project locations. Government officials visited the plots. The design for cluster level approach will be integrated with NFSM. KVK Panna included one village in their pilot program.
3	Scientific validation of SCI	Setting up methodology with KVK/IARI etc. for scientific validation	Scientific validation for Kharif and Rabi crops were set up with some of the KVKs.
		-	Above validations have helped in setting up protocol for scientific validation
		Documentation of best practices (15 case studies)	6 case studies have been prepared.
4	Networking processes	Network straightening at national level (NCS)	Timely review meetings were conducted among the members of NCS
		Formation of SCI specific regional networks - Process begins with 25-30 members	Process begun in HP, MP and Odisha. Jharkhand has existing network and partner organization has put in efforts to revive it.

IV.4 Remarks

Based on the experiences of the Bundelkhand program, the following activities have been identified which are likely to be followed up in the next financial year:

- Livestock: Need for health, feed and shelter management has been identified for goatry
- FPO: Formation of Farmer Interest Groups (FIGs) and possibility of Agri based FPO for oil spilling, dehusking, pulse processing, millets revival, etc.
- Technology Resource Centre: Scope of developing an economical model for selling of NPM products, usage of agri-implements
- Farm ponds: Construction of farm ponds for life saving irrigation through APPI and government convergence
- Millet revival programme: PSI would promote less water intensive nutritious crop of *Kodo*
- NTFP based FPO/Company in tie with Dabur Limited initiated by MJVS

IV.5 Financial Statement

Financial Statement (2019-2020)

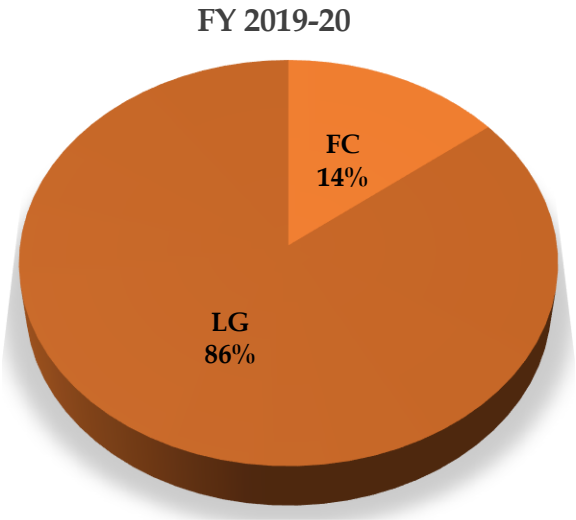
S. No.	Project	Funding Partner	Opening Balance (Rs.)	Income (Rs.)	Utilization (Rs.)	Balance (Rs.)
1	Sustainable Development in Bundelkhand region of M.P	MJVS-BRLF	49,939	15,43,113	16,64,600	(71,548)
2	Climate Smart Agriculture in Bundelkhand region (Panna district, MP))	Azim Premji Philanthropic Initiatives PVT LTD (APPI)		1,02,72,604	7,72,709	94,99,895
3	SCI RRAN	Friends of WWB India	-	18,60,000	20,55,528	(1,95,528)
	TOTAL		**49,939**	**1,36,75,717**	**44,92,837**	**92,32,819**

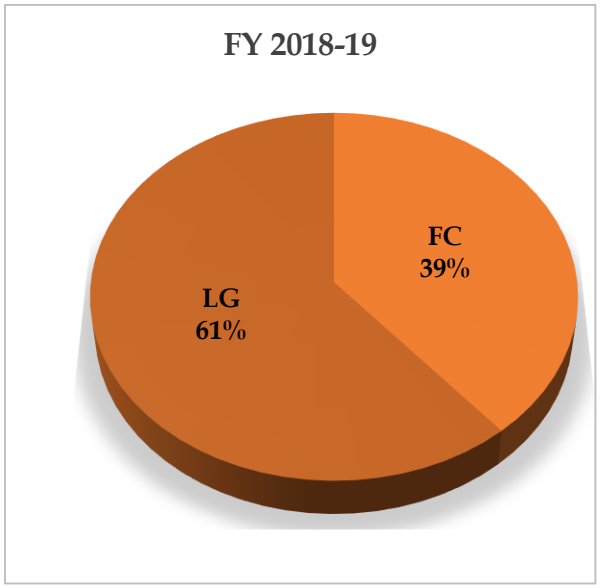
V. FINANCIAL REPORT

PSI's balance sheet and consolidated income and expenditure account for 2019-2020, ending March 31, 2020 are attached as Annexures 1a and 1b.

During the year the Institute generated grants worth Rs. 4,19,52,565 and donations worth Rs. 2,84,05,177. Other receipts from Bank interest, consultancies, sale of products and publications amounted to Rs. 71,18,121. Adding the opening balance and other incomes the total income for 2019-2020 amounted to Rs. 9,78,81,348. The Institute spent Rs. 6,48,83,027 leaving a balance of Rs. 3,29,98,321. Unutilized grants carried forward amounting to Rs. 3,12,35,042 the surplus transferred to the capital fund is Rs. 17,63,278**.**

The pie-charts below show the sourcing of income from local grants & donations and foreign grants & donations for 2019-2020 & the previous year.





The main donors for local and foreign grants are listed below. PSI is thankful to all of them for their support.

Indian: ACWADAM, Arghyam, The Hans Foundation, ITC Ltd., MJVS, Soil & Water Conservation Department of Meghalaya, Bajaj Auto Limited, G.B. Pant National Institute of Himalayan Environment & Sustainable Development, UGVS, APPI, NEIDA, CML, S&WC,RWD Itanagar, Govt of Arunachal Pradesh, GIZ India, Forest Department Uttarakhand.

Foreign: Frank Water, Friends of WWB India, The Hans Foundation, GIZ, ICIMOD, and WWF India.

VI. EXECUTIVE BOARD 2019-20

Dr. Kshama Metre	Chairperson	Medical Practitioner
Dr. Navin Juyal	Treasurer	Scientist
Prof. Janki Andharia	Member	Disaster Management
Dr. V. C. Goyal	Member	Hydrologist
Dr. Nivedita Narain	Member	Social Scientist
Prof. Shambu Prasad	Member	Rural Management
Dr. Debashish Sen	Director (Ex-Officio)	Scientist

VII. PSI STAFF 2019-20

S.NO.	Name	Date of Joining	Date of Leaving
1	Vargish Bamola	04.01.16	
2	Puran Bartwal	03.01.11	
3	Priyank Bharti	01.04.19	
4	D.N. Dwivedy	17.08.98	
5	Aman Gupta	05.10.18	01.07.19
6	Anil Kumar Gautam	01.03.02	
7	Ashish Gaur	13.07.18	
8	Naveen Gusain	01.04.18	
9	Sandeep Gussain	01.04.18	
10	Pushpa Juyal	21.12.92	
11	Vijay Kumar	01.04.19	
12	Deepa Kaushalam	01.08.18	01.10.19
13	Surendra Kaintura	01.10.12	01.09.19
14	Ravinder Kumar	17.08.18	
15	Manoj Kumar	10.07.06	
16	Sandhya Kumari	17.04.17	
17	Darshan Lal	01.06.13	
18	Prem Narayan	01.10.18	
19	Priyanka Negi	01.11.16	01.03.20
20	Arvind Nigam	19.06.17	

S.NO.	Name	Date of Joining	Date of Leaving
21	Vinod Niranjan	15.01.14	
22	Ravi Niranjan	17.07.18	
23	Prankit	01.04.19	01.06.19
24	Vishal Patel	18.11.15	
25	Ram Sewak Prasad	01.11.94	
26	Bhagwati Pandey	20.03.17	
27	Amit Petwal	01.11.16	
28	Adarsh Shukla	01.08.18	
29	Prem Singh Rawat	01.09.18	
30	Mahendra Singh Rajwar	01.01.08	
31	Nitin Rana	19.09.16	01.08.19
32	Roshan Rathod	15.02.18	
33	Seema Ravandale	01.04.17	
34	Milan Rawat	12.12.18	
35	Ramesh Singh Rawat	16.09.04	
36	Subhash S. Rawat	01.06.02	
37	Debashish Sen	01.03.88	
38	Anita Sharma	02.07.12	
39	Dinesh Sharma	02.10.97	
40	Akhilesh Singh	01.02.18	
41	Aprajita Singh	01.10.16	10.09.19
42	Makkan Singh	01.07.17	
43	Vikram Singh	01.02.00	
44	Chakaradhar Tripathi	15.06.88	
45	Kunal Sharad Upasani	01.02.18	
46	Diksha Upadhyay	01.05.19	
47	Sanjay Uniyal	01.11.17	
48	Sharad Yadav	08.05.17	
49	Salman Zaheer	16.05.19	
50	Abhishek	01.07.19	
51	Rajesh Kumar	01.04.17	
52	Pradeep Singh	01.04.19	
53	Vikas	01.04.19	
54	Alok Singh	01.04.19	
55	Bharat Singh	01.04.19	
56	Meena Panwar	01.04.19	
57	Kamal Dabar	01.04.19	
58	Tanuja Koranga	01.04.19	01.11.19

S.NO.	Name	Date of Joining	Date of Leaving
59	Dharamendra	01.04.19	
60	Heena Kannauj	01.04.19	
61	Khasti Devi	01.04.19	
62	Dhara Singh	01.08.19	
63	Meheli Chakraborty	08.11.19	
64	Bhupendra Rana	18.09.19	
65	Shubham Chauhan	01.01.20	
66	Iqbal Ahmad	01.02.20	
67	Amit Rana	17.02.20	
68	Biswajyoti Basu	18.01.20	
69	Harshita Umrao	11.02.20	

VIII. BALANCE SHEET 2019-20