ANNUAL REPORT (2015 - 2016)

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, 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 2015-16.

I. NATURAL RESOURCES MANAGEMENT

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

In 2015-16, the NRM Group was primarily involved in facilitating implementation of the participatory livelihoods' development plans as part of 2013 Uttarakhand Floods Disaster response program. The NRM group has also participated in and organized various consultations around relevant issues for capacity building of its own members and its partner organizations. The details are discussed in the following section.

I.1 Response to Uttarakhand Floods Disaster of 2013

During the year, PSI continued its Participatory Livelihoods Rehabilitation Program, facilitating communities of 22 selected villages (2047 households) in (i) the Madhu Ganga valley in Rudraprayag district, and the (ii) Revati and (iii) Saryu valleys in Bageshwar district, in partnership with local grass root level organizations. The program is financially supported by

Star India (for Madhu Ganga and Revati valleys), Axis Bank Foundation (for Saryu valley) apart from donations received from hundreds of generous individuals and enterprise.

At the start of this year in April 2015, the project's focus shifted from planning to implementation. The focus was on formation and strengthening of democratic Village Level Institutions (VLIs) through whom the various interventions were initiated in the selected villages. Major activities undertaken during the year are summarized below.

I.1a Institution Building

Each program village has at least a Gram Swaraj Samiti (GSS), Mahila Swaraj Sangathan (MSS), Saving and Credit Groups (SCGs), Farmers Interest Groups (FIGs), and User Groups (UGs), which are expected to lead the development of the village and bring about *Gram Swaraj* in the villages. By April end, the operational guidelines describing the structure, functions and operational procedures of all these institutions were prepared. The roles of each of these institutions along with their status are briefly described below.

(i) Gram Swaraj Samitis (GSSs): The *Aam Sabha* of each village is constituted by one male and one female member from every household. The Gram Swaraj Samiti (GSS) is an executive body of the *Aam Sabha*. It is primarily responsible for implementing the livelihood development plans and liaison with the *Gram Panchayat* and other government organizations. In April 2015, the process of formation of GSSs was taken up as a priority. Members of GSSs were selected in the *Aam Sabha* meetings of different villages. In most of the villages, GSS formation was completed till the month of June.

GSS meeting in village Uniyana, Madhu Ganga

Table 1: Status of GSSs

Cluster (Villages)	Total Households	Number of GSS	Total Members	Female Members	BPPL Members
Madhu Ganga (5)	669	5	61	34	37
Revati (8)	819	8	80	40	38
Saryu (9)	559	9	75	44	42
Total (22)	**2,047**	**22**	**216**	**118**	**117**

BPPL= Below Perceived Poverty Line

After the formation of GSSs, the process of opening of GSS bank accounts was initiated in nearby branches for the transfer of funds related to livelihood interventions. Following their orientation GSS members in consultation with the *Aam Sabhas* prepared work plans for the next quarter. On the basis of these plans, the GSSs submitted proposals to the respective

partner organizations (POs) for release of funds. PSI finally released advances to GSSs through the concerned POs. GSSs are responsible for organizing monthly *Aam Sabha* meetings and overseeing all the development works under the program. Livelihood Development Teams (LDTs) in each cluster and subject experts from PSI provided technical support and guidance to the VLIs during implementation of the program.

(ii) Mahila Swaraj Sangathans (MSSs): The Mahila Swaraj Sangathans (MSSs) in the villages of Revati and Saryu valleys are platforms where women from all the households meet, discuss and resolve their problems. In Madhu Ganga valley, existing MMDs at the village level have been strengthened.

Table 2: Status of MSSs

Cluster (Villages)	Total Households	Number of MSS/MMD	Total Members	BPPL Members
Madhu Ganga (5)	669	**5**	**-**	**-**
Revati (8)	819	7	245	113
Saryu (9)	559	9	82	53
Total (22)	**2,047**	**16**	**327**	**166**

The MSSs/MMDs focus on activities related to women and child health, education, forest and water conservation, apart from improvements in agricultural productivity and crop protection. They are also expected to raise their concerns in *gram sabha/panchayat* meetings and submit proposals to the concerned agency or departments.

(iii)Savings and Credit Groups (SCGs): Some savings and credit groups (SCGs) existed earlier in the concerned villages under other development projects like Ajeevika. Additional SCGs were formed, especially considering BPPL households who had been excluded from existing SCGs. The members of SCGs deposit Rs10- Rs.100 on a monthly basis depending upon their economic status.

Table 3: Status of SCGs

Cluster (Villages)	Total Households	Number of SCGs	Total Members	BPPL Members	Total Savings (Rs.)	Total Inter Loaning (Rs.)
Madhu Ganga (5)	669	16	170	141	195,540	16,000
Revati (8)	819	48	424	141	148,859	35,650
Saryu (9)	559	24	234	98	581,876	259,000
Total (22)	**2,047**	**88**	**828**	**380**	**866,275**	**310,650**

In the Revati cluster, the local PO has linked 10 SCGs with the National Rural Livelihood Mission (NRLM).

(iv) Farmers' Interest Groups (FIGs): Farmers Interest Groups (FIGs) are collectives, formed of 10 to 15 members, aimed at improving farmers' knowledge regarding agricultural practices, use of better quality seeds/seedlings, efficient farm management, and marketing of produce. FIGs' formation began in September 2015.

Through FIGs' meetings, have begun cultivating vegetables (tomato, capsicum, pumpkin, brinjal and cabbage) by growing/purchasing seedlings grown inside poly-tunnels from the project's poly-tunnel owners. Construction of vermi-compost pits was promoted to increase the production of vegetables and other crops. A total of 54 FIGs have been formed in the three clusters. They play an important role in the planning of crop cycles and marketing of vegetables.

FIG's meeting in Ransi, Madhu Ganga cluster

Table 4: Status of FIGs

Cluster (Villages)	Total Households	Number of FIGs	Total Members	BPPL Members
Madhu Ganga (5)	669	18	240	175
Revati (8)	819	23	385	209
Saryu (9)	559	13	159	112
Total (22)	**2,047**	**54**	**784**	**496**

The process of formation of cluster level farmers' federations has also been initiated. These federations will be involved in dissemination of knowledge regarding improving seed quality, composting practices, crop planning and protection measures, innovative practices like the System of Crop Intensification (SCI), and information regarding markets.

I.1b. Community Mobilization

Most of the community mobilization activities were centered around the formation and strengthening of VLIs. Various other activities were organized through active involvement of GSSs and MSSs in the different valleys during the year, including:

(i) Celebration of Human Rights Day: The International Human Rights Day was celebrated in Revati valley on 10th December 2015 in Sama village. Members of various village level institutions particularly women attended the meeting and raised their concerns relating to issues of health, education and women's rights.

(ii) Cluster level Meeting on Convergence Funding: On 25th February, 2016 twenty five participants, including GSS and MSS members from the Saryu cluster attended a meeting to seek government support for the program activities.

(iii) Awareness cum Felicitation Camps: One day awareness cum felicitation camps were organized by GSSs in the Revati and Saryu clusters on 15th March and 20th March respectively. The objective was to share knowledge, motivate people for developmental initiatives and felicitation of selected institutions and individuals for their special efforts. In the Revati cluster block-level officials from agriculture and animal husbandry department also attended the camp.

Awareness and Felicitation Camp at Revati Valley

Awareness and Felicitation Camp at Saryu Valley

I.1c Capacity Building

Various capacity building activities were undertaken in the three valleys. These are described below.

(i) Orientation of *Aam Sabhas* and GSSs: Summary Village Livelihood Plans (VLPs) in Hindi along with proposed activities and budget details were given to GSS members. They were then explained at the *Aam Sabha* meetings in the presence of GSSs. After the orientation, GSSs were asked to fix the priorities of interventions in consultation with *Aam Sabhas* and thereafter approach the concerned PO for phase wise release of funds.

Handing over of village plans after Orientation of GSS members

(ii) Farmers' Training in SCI and Vegetables Cultivation: Training sessions on crop intensification techniques to improve farm yields of kidney beans (rajma), finger millet (mandwa) and paddy (unirrigated) were conducted by PSI's subject experts in all three

clusters at the beginning of the *kharif* season. The training included seed treatment method, recommendations for spacing of crops under different conditions, and preparation of manure (*panchgavya*). Another round of training was conducted for the *rabi* season. Similarly, in all the three clusters the farmers were trained in seed sowing of vegetables like green peas and onions.

(iii) Study Tour of Farmers: Twenty six farmers from the three clusters visited the Yamuna valley in Uttarkashi district. They belonged to BPPL households and were selected on the basis of their interest in vegetable and spice cultivation. The farmers were introduced to the marketing of crops by farmers' federations. The three days' tour included a visit to the vegetable *mandi* in Dehradun, where they studied the marketing of vegetables. The exposure succeeded in encouraging the farmers to add some commercial farming to sustenance farming.

Interactive Session in Farmers' Uttarakhand Tour

(iv) Tour to Ralegan Sidhi: An exposure tour to Ralegan Sidhi was organized for 19 members of GSSs of Madhu Ganga and Revati valleys in September 2015 to showcase the self-reliant efforts of Ralegan Sidhi village. Interactions with Shri Anna Hazare helped GSS members in developing clarity about prioritizing actions for bringing about social changes in villages. Important issues discussed included water resources management, education, alcohol abuse, voluntary labor, i.e., *shramdan*. They also visited Nigoj village, as another example of sustainable rural development. The tour enhanced the self-confidence of the GSS members in bringing about developmental changes in their villages based on principles of democracy, equity, sustainability and self-empowerment.

Interaction with Shri Anna Hazare at Ralegan Sidhi

(v) Poultry Rearing: Training for kuroiler rearing was imparted to 28 beneficiaries (10 in Madhu Ganga, 12 in Revati and 6 in Saryu valleys). This included issues like construction of poultry sheds and raising chicks including process of feeding. Materials required for construction like cement, iron railing, bricks, and tin sheds were also provided to the trained beneficiaries. Each shed can house a maximum of 50 chicks.

(vi) Other Capacity Building Activities: Two training courses on **bee keeping** were organized in Revati valley for 32 farmers. The training was provided by a resource person from Devalsari Environmental Protection Group, Tehri Garhwal.

In Revati valley PSI's accounts personnel taught the GSS members how to maintain project **accounts**.

In Madhu Ganga valley Mr. Pitambar Chandola, a resource person, trained four local youths in various practical aspects of **trekking**

A two days' training program on **gender** related issues was organized in Bageshwar for the LDT members (10 persons) of the three partner organizations. The key resource person for this training was Ms Kanchan Bhandari of Vimarsh.

Training of GSS members on Accounts Keeping

I.1.d Livelihoods Development Activities

Livelihoods development activities included household level farm and off farm based interventions besides common property resource based activities like springs' rejuvenation and irrigation works, etc. These are described below.

(I) On Farm Livelihood Activities

(i) Poly-tunnels: Poly-tunnels were introduced in the program villages exclusively for BPPL households, as a potential source of income from vegetables cultivation. Poly-tunnels provide a suitable environment for growing vegetable saplings. About 3500 saplings could be raised inside the initial model of a poly-tunnel that was designed by PSI. The cost of each poly-tunnel was about Rs. 5,400 of which about Rs. 1,100 was a beneficiary contribution in the form of labor for construction and bamboo as material. Between April and December 2015, 144 poly-tunnels were constructed (47 in Madhu Ganga, 47 in Revati and 50 in Saryu valleys).

Poly tunnel of Devi Dutt, Saling Udiyar

After a review in October 2015 a new poly-tunnel design was introduced by PSI. The new model is smaller (8 feet x 3 feet) with a capacity of raising about 2,000 saplings. The

advantage of this model is that it can be shifted from one spot to another. Its cost is Rs.2,800 including Rs. 200 as beneficiary contribution in the form of labour. 136 poly-tunnels (54 in Madhu Ganga, 50 in Revati and 32 in Saryu valleys) were established over the rest of the year.

(ii) Vermi-compost Pits: Construction of vermi-compost pits was promoted to organically improve soil fertility and increase production of vegetables and spices. Trained LDTs and progressive farmers facilitated the construction of vermi-compost pits. A total of 595 vermi-compost pits (57 percent belonging to BPPL farmers) have been constructed in the three clusters. Out of the above, construction of 168 vermi-compost pits in Madhu Ganga valley was supported through convergence with Uttarakhand Organic Commodity Board, Dehradun.

Vermi-compost pit in Revati cluster

Table 5: Details of Vermi-compost Pits

Cluster	Total Number of Vermi-Compost Pits	Vermi-Compost Pits of BPPL Framers	Filled Vermi-Compost Pits
Madhu Ganga	168	-	168
Revati	207	179	197
Saryu	220	162	195
Total	**595**	**341**	**560**

(iii) Vegetables Cultivation: There is almost no vegetables or spices cultivation in the selected clusters due to lack of easy access to markets. By forming FIGs in each cluster, this difficulty has been greatly eased. Given the income generation potential, especially of spices, it was decided during the preparation of the LDPs to introduce vegetables and spices cultivation in all the three clusters.

Seedlings grown in poly-tunnels were transplanted in fields by the poly-tunnel owners as well as other farmers. The vegetables planted in the first season (Kharif 2015) were tomato, capsicum, brinjal, pumpkin and cabbage. In the three clusters 261 farmers (71 percent BPPL farmers) put 3.3 ha under vegetable cultivation. In the first phase, the volume of vegetables for sale was not high. Therefore it was decided that most of the surplus would be sold in the local markets. Sixty farmers reported sales of about 85 quintals of vegetables and earned a net income of Rs. 1,92,670. In the second season (Rabi 2015) onion and pea were the main crops. Altogether in the three clusters 6.5 ha were cultivated (onion – 4.9 ha and pea -1.6 ha).

Table 6a: Details of Vegetable Cultivation in Kharif 2015

Cluster	Number of Farmers	BPPL Farmers	Total Area (ha)	Total Production (Q)	Total Sale (Q)	Net Income* (Rs.)
Madhu Ganga	152	92	1.54	48	26.63	59,895
Revati	64	57	1.06	83	42.20	1,05,375
Saryu	45	36	0.74	13.7	16.00	27,400
Total	**261**	**185**	**3.34**	**144.7**	**84.83**	**1,92,670**

* Sixty farmers only

Table 6b: Details of Vegetable Cultivation in Rabi 2015

Cluster	Onion			Pea		
	Total Farmers	BPPL Farmers	Area (ha)	Total Farmers	BPPL Farmers	Area (ha)
Madhu Ganga	173	110	2.8	52	38	0.30
Revati	187	162	1.5	78	59	0.47
Saryu	51	37	0.60	72	47	0.81
Total	**411**	**309**	**4.9**	**202**	**144**	**1.58**

Cultivation of Brinjals and Tomato in Revati valley

Harvested Cabbage

Most farmers have so far adopted vegetable cultivation on small parcels of land (less than 100 sq. m.). Availability of quality seeds of local variety is a big problem being faced by the farmers. In the coming seasons, with timely availability of seeds and seedlings and growing experiences of production, the number of farmers is expected to increase steadily. PSI's agriculture team is developing a marketing strategy to sell larger volumes.

(iv) Spices Cultivation: Considering the income potential of spices, in kharif 2015 turmeric and ginger were cultivated, especially by BPPL farmers. In Madhu Ganga valley 64 farmers grew turmeric while 193 framers grew ginger altogether in the three clusters. The total production amounted to 61.4 Q, to be used mostly for self -consumption and for seeds for next year. In *Rabi* 2015**,** 181 farmers grew garlic in about 1.36 ha.

Spice cultivation: Kharif 2015

Table 7: Status of Spice cultivation in 2015-16

Cluster	Kharif				Rabi		
	Number of Farmers		Area	Total Production (Q)	Number of Farmers		Area (Ha)
	Total	BPPL			Total	BPPL	
Madhu Ganga	64	39	1.04	22.40	58	42	0.44
Revati	68	68	0.46	17.32	85	62	0.53
Saryu	80	62	0.52	21.70	38	20	0.39
Total	**212**	**169**	**2.02**	**61.42**	**181**	**124**	**1.36**

(v) System of Crop Intensification (SCI): For Rabi 2014-15, SWI crop cutting exercises in plots selected on the basis of observations showed average grain yield increases of 32 per cent in Saryu, 66 per cent in Revati, and 117 per cent in Madhu Ganga valleys.

In Kharif 2015, SCI coverage under different crops (paddy, kidney beans and finger millet) was 14 ha, 4.7 ha and 2.7 ha in Madhu Ganga, Revati and Saryu valleys respectively. SCI principles (with seed treatment, line sowing, and use of organic manure) applied for the first time in un-irrigated paddy with 41 farmers in Madhu Ganga valley yielded 20 per cent increment in grain production as compared to conventional method. The incremental SCI grain yields ranged from 10 to 35 per cent in the different valleys.

Table 8: Number of farmers practicing SCI (Kharif 2015)

Cluster	Crop	Total SCI Farmers	Area (ha)	Per cent Increase in Grain Yields
Madhu Ganga	Paddy (un- irrigated)	42	0.5	20
	Kidney beans	361	8.3	30
	Finger Millet	239	5.2	10
	Total	**642**	**14**	
Revati	Paddy (transplanted)	57	0.4	22
	Kidney beans	95	2.5	25
	Finger Millet	89	1.8	9
	Total	**241**	**4.7**	
Saryu	Paddy (transplanted)	52	0.6	35
	Kidney beans	65	1.2	21
	Finger Millet	47	0.9	20
	Total	**164**	**2.7**	

(II) Off-Farm Livelihood Activities

(i) Poultry: Kuroiler rearing could be a very good source of income for villagers, especially for those with very small land holdings. During the year, 15 masons were trained to build poultry sheds. More BPPL households got interested in poultry keeping. By the end of the year 158 poultry sheds were constructed. A set of 25 chicks per beneficiary was transferred in phases with the completion of the poultry sheds.

A Poultry Unit in Madhu Ganga Valley

The performance of 25 chicks per shed that were provided to poultry beneficiaries last year was analyzed in terms of income generation which indicated earnings ranging from Rs. 2,100 to Rs. 5,500 per unit over a period of eight months.

Table 9: Status of Poultry Rearing

Cluster	Participating Households	BPPL Households
Madhu Ganga	58	47
Revati	54	46
Saryu	46	42
Total	**158**	**135**

(ii) **Dairy:** For the initiation of dairy activity, a meeting was organized of MMDs in Madhu Ganga valley with the officials from livestock department of Rudraprayag district. In conjunction with napier grass plantation, two villages of Madhu Ganga valley were linked to *Anchal Dairy* in February 2016. The collected milk from the two villages is transported to Mansoona (local market) where it is sold at the rate of Rs. 24/litre, due to its low fat content. Nineteen families sell an average of about 32 litres per day. Efforts are being made to mobilize households in Revati valley also for milk sales.

(III) Natural Resource Based Activities

(i) **Fodder Promotion:** In order to improve fodder availability for cattle, plantation of fodder trees on community lands and slips of Napier grass on private field bunds was done in all the valleys in August 2015. For fodder tree plantation, nurseries were raised by BPPL households and women's groups. Village level institutions particularly MSSs and MMDs were involved in community fodder tree plantation. Monitoring of tree plantations in November-December 2015 indicated more than 60 per cent survival. Gap filling activities will be undertaken during the 2016 monsoon season along with additional area coverage.

Table 10: Details of Fodder tree and Napier Grass Plantation

Cluster	Fodder Trees Planted	Area Planted (ha)	Per cent Survival (as in Nov 15)	Napier Grass Slips Planted	Per cent Survival (as in Nov 15)
Madhu Ganga	8,993	9.0	65	24,720	60
Revati	5,730	7.5	72	9,450	70
Saryu	4,537	6.0	70	6,765	65
Total	**19,260**	**22.5**		**40,935**	

Plantation Activity in Madhu Ganga Valley

Plantation Activity in Revati Valley

(ii) Springs Recharge: Spring recharge work (including trenching and plantation activities) was done at one location each in Revati and Saryu valleys.

At the Raja source in village Sama (Revati valley), 98 trenches were dug in the recharge zone in July 2015, followed by plantation of about 450 napier grass slips on the bunds of trenches and 350 fodder plants in the treated area. Increased water flow resulting from these activities is expected to augment water availability for 20 households of Loharkuda hamlet of Sama village, especially during the lean season of the year.

Treatment of catchment of Raja source in Village Sama, Revati Valley

Banse tok (hamlet) of Sumgarh village (Saryu valley) faced acute shortage of drinking water due to drying off a local spring due to the construction of a hydro electric project tunnel. Spring-shed development activities were initiated here by the concerned MSS. It involved digging of 87 trenches, followed by plantation of about 650 napier grass slips on the bunds of trenches and 1013 fodder plants in the treatment area.

Spring recharge work in Banse hamlet of Sumgarh village, Saryu Valley

The discharge of these sources is being regularly monitored to study the impact of the spring-shed development activities.

(IV) Engineering Works

Under engineering works, activities like irrigation works, drinking water schemes, diversion drains, retaining/protection walls have been proposed. During the year, one irrigation tank of Badeth village and a diversion drain of Siri village in Revati valley

were completed. In Saryu valley, construction of two public bathrooms in Suding village and a deep infiltration well in Chaurasthal village had been completed.

Irrigation Tank, Badeth village (Revati Valley)

Deep Infiltration Well of Chaurasthal in Saryu Valley

(V) Livelihood Activities under Convergence Funding:

Apart from the livelihoods activities supported by Axis Bank Foundation and Star India, other activities have been planned to be done under convergence with other agencies, mostly through government programs. These mainly include activities like footpaths, retaining walls, check dams, diversion drains, foot over bridge, bath rooms, drinking water schemes, and vermi-compost pits (in Madhu Ganga valley only). The *Aam Sabhas* have discussed the proposed activities at the Gram Sabha meetings, and have submitted them for approval by the concerned Gram Panchayats, and in turn at the block and district level. Some of these activities have already received approval and have been also initiated.

Table 11: Works completed under Convergence

Cluster	Name of Activity	Department/ Scheme	Cost (in lakhs)
Madhu Ganga	Vermi-Compost Pits	Uttarakhand Organic Commodity Board (UOCB)	6
Revati	CC footpaths, Retaining Walls, Check Dams	MGNREGA, BDC	8
Saryu	CC footpath, Gabion/ Retaining walls, Domestic water tank and pipe line	MGNREGA, Zilla Panchayat, Jal Sansthan	17.3

In addition to the above mentioned activities, 800 kg of seeds of vegetables (tomato, capsicum, cabbage and pea) and spices (ginger, turmeric and garlic) have also been distributed to farmers in Revati and Saryu valleys through the Uttarakhand Decentralized Watershed Development Porgramme (GRAMYA).

(VI) Village Libraries

One village library was established in each of the valleys. Books on inspiring stories, history, general knowledge, geography, culture and environment were donated by PSI's library. In Madhu Ganga cluster, the local partner organization MVDA is already working on girls' education. The library was established in Raon basti of Raonlenk village where MVDA's education center was running already. In Revati and Saryu valleys, village libraries were established in Burmola and Saling villages respectively. Boys and girls have become members in these libraries and books are issued to them on a weekly basis. In future, village level resource centres will be established in the valleys which would also have computer and internet facilities.

Village Library of Raonlenk in Madhu Ganga Valley

(VII) Program Monitoring

All through the year, the POs and LDTs organized internal monitoring of the program activities and provided valuable inputs to the communities at the A*am Sabha* meetings. Senior colleagues from PSI also make regular field visits for monitoring the program and guide the LDTs.

Review meetings with POs are organized every quarter. In addition, progress of the project is also reviewed in monthly review meetings with PSI's program team as well as at the Core group meetings of PSI.

Discussions with GSS members post- monitoring of plantation areas in Saryu valley

I.2 Workshop and Meetings

During the year, various workshops and meetings on relevant subjects were organized or attended by the NRM team. They are briefly described below.

a) National and State Level Training Workshops on IPPE –II

Five NRM team members attended the national level training workshop on Intensive Participatory Planning Exercise (IPPE) –II organized by Ministry of Rural Development Department at Raipur (Chattisgarh) from 28th July to 1st August, 2015. Later these delegates

conducted State level ToT on IPPE for Project Officers and Block Development Officers in the states of Himachal Pradesh (7-10 September, 2015 in , Shimla), Uttarakhand (19th-21st September, 2015 in Dehradun) and Madhya Pradesh (28th September-1st October, 2015 at Navgaon, Chattarpur). It helped the states in rolling out IPPE-II at the district and block levels by creating a pool of resource persons. The cadre of trained resource teams in turn undertook ToTs for Block planning team members to roll out IPPE-II at the ground level.

b) Workshop on Local Seeds' Promotion, Conservation and Production

On 19th August, 2015 a one day workshop on Local Seeds' Promotion, Conservation and Production was organized by the NRM team for developing a better understanding of the relevance of local seeds and their exchange and other issues related to organic farming. The concept of a seed bank and its advantages was also discussed at length. At the workshop, Dr. Suman Sahai spoke about the Gene Campaign and raised various issues related to seed conservation and production. A total of 23 participants including researchers, activists, farmers and civil society organizations attended the above workshop.

c) National Workshop on Community Managed Water Resource Development

A national workshop on community managed water resources development for enhancing livelihoods was organized in December 2015 in Ahmedabad by Water Management Forum, AKRSP, and Development Support Centre (DSC). About 100 participants from nine states attended the above workshop in which different success stories from fields were shared by representatives of selected resource agencies and Community Based Organizations (CBOs). Mr. Puran Bartwal from PSI attended the workshop. He also shared PSI's experiences of participatory ground water management from Himachal Pradesh and fluoride mitigation works of Dhar, MP.

Workshop on Community Managed Water Resource Development at Ahmadabad

d) Workshop on Rethinking Development

A 10 days' training workshop on "Rethinking Development" was organized by Sambhavna Institute, Palampur in Kandbari, Himachal Pradesh, from 21st to 30th December 2015. The objective was to rethink development and to really understand how this term has evolved and what impacts it has on us. Among the 28 participants at the workshop were Ruchi Uniyal and Tavish Malik from PSI.

e) Community Level Consultations on National Forest Policy

The Centre for Policy Research at IIFM Bhopal sought PSI's support for organizing community consultations in the Himalayan region for receiving inputs on formulating the National Forest

Policy. PSI organized two community level consultations at Bhanwali (Nainital district) and the second one at Gairsain (Chamoli district). A total of 63 participants including members of Van Panchayats, village level institutions, Panchayati Raj Institutions, voluntary organizations researchers and media representatives attended these consultations.

Mr. Puran Bartwal of PSI explained the background and objectives of the consultation to the participants. The various recommendations were recorded and shared with Centre for Policy Research.

f) Ecotourism in Uttarakhand: Responding to Environmental and Social Changes

A workshop on "Ecotourism in Uttarakhand: Responding to Environmental and Social Changes' was jointly organized by Wildlife Institute of India (WII), Dehradun; University of Montana, USA; and Uttarakhand's Forest Department in March 2016. Mr. Puran Bartwal represented PSI at this workshop. The discussions and contacts developed at the workshop will be useful in formulating CB- Ecotourism activities at the Institute.

I.3 Others

The Secretariat of National Consortium on SRI (NCS) is located at PSI. The National Consortium on SRI (NCS) is a coalition of practitioners, scientists, policy makers, resource institutions and social workers. Its mission is to spread SRI on a large scale in India. Its members have voluntarily come together to advance the science, practice and policy measures of SRI. A brochure on System of Rice Intensification (SRI) was published by PSI during the year.

I.4 Remarks

Implementation of livelihoods development plans as part of Uttarakhand Flood Disaster's response was the major exercise done in 2015-16. The main responsibility for implementation of the plans was given to Gram Swaraj Samitis (GSSs) and funds were transferred to GSS accounts.

The first challenge was to establish the GSSs in the program villages and thereafter ensure operation of the designed process. LDT members extended regular support to GSSs for ensuring the process of generation of proposals from the Aam Sabhas and release of funds to the GSSs.

A second challenge was of placing orders by the GSSs to the suppliers of various materials for different activities like poultry sheds, pipelines for irrigation schemes, etc. The POs and PSI had to facilitate such purchases.

Vegetables and spices cultivation for the market was done for the first time in most of the villages. Due to small landholdings, uncertainties related to market, the threat of wild animals, distant and scattered location of plots, and limited water availability, most farmers adopted vegetable cultivation only on small plots. Linking BPPL farmers to vegetable and spice cultivation will continue to be a major challenge. In Kharif 2015, though 260 farmers (71 percent BPPL) grew vegetables in 3.3 ha, only about 60 farmers were able to sell them. About 20 Q of vegetables were consumed by the growers while as much as 21 Q were wasted due to diseases, insects and rotting. In future, specific vegetables and spices need to be promoted according to local agro-ecological conditions as well as market demands. Crop protection measures like IPM and IPN will have to be introduced for reducing wastage.

Under the System of Crop Intensification, the crop cutting results for wheat, kidney beans and un-irrigated paddy are very encouraging. Farmers are willing to increase coverage under SCI in the coming seasons. The challenge in upscaling of SCI is lack of access to appropriate seed drills to ensure regular spacing among seed. Seed banks need to be established in the villages to ensure access to better quality seeds. Farmers need to be mobilized for preparing and applying organic manure like *panchgabya*, and undertake regular weeding in SCI fields to ensure higher grain yields. Instead of diversification of SCI activities, concentrated efforts need to be made in the valleys for promoting specific crops based on local conditions and selected trials.

Under off farm livelihood activities, poultry farming has generated excitement particularly among the dalit families. It is a good source of income for the landless households or households with very small land holdings. The growth of the birds supplied to the beneficiaries has been found to be proper in all the three valleys and the initial returns are encouraging. The challenges ahead are to (i) establish mother units within each clusters so as to ensure regular supply of chicks, (ii) ensure supply of quality poultry feed locally, and (iii) establish an effective marketing system for the sale of eggs and chicken. Poultry farmers' groups will be formed in the coming year and their capacity building will be undertaken to address the above issues.

Dairy activity has taken off successfully in two villages of Madhu Ganga valley but is facing teething troubles in Revati valley. More households need to be encouraged to contribute milk to the collection centers, for which availability of good quality fodder has to be ensured.

The MSSs need to be encouraged to take charge of the community plantations and ensure proper care and maintenance of the saplings. Regular gap filling exercises need to be undertaken in the coming seasons through raising local nurseries. Additional plantation areas are also being identified in the concerned villages in consultation with MSSs so that the women's work load for fodder collection can be reduced while milk production is enhanced.

Progress of engineering activities has been slow. More efforts will be put by PSI's senior colleagues to provide technical guidance to the communities for completion of the ongoing and remaining activities. Most of the drinking water schemes and soil and water conservation works had been allotted under convergence activities. These activities have largely been passed by the concerned Gram Sabhas and forwarded to the blocks for approval. The progress of activities

under convergence was satisfactory in Revati and Saryu valleys. The GSSs will be provided additional support by the concerned POs and PSI's team for obtaining approvals at the block and district levels.

The biggest challenge was to ensure coverage of BPPL households under different livelihood activities. Data collected from different valleys shows that about 90 percent of BPPL households have been covered under various livelihood activities like vegetables and spices cultivation, poultry rearing, and napier plantation. A strategy will be developed to cover the remaining BPPL households under other livelihood activities like goatry, ringaal work, bee keeping etc.

During this period, the NRM has developed and submitted two new proposals for financial support. The proposal on "Cluster Approach for Production, Processing and Marketing of Pulses for Livelihood Development" was submitted to the Integrated Livelihood Support Program (ILSP) Government. of Uttarakhand and another proposal on "Agri–Business Support Organization (ABSO)" under Uttarakhand Decentralized Watershed Development Program (UDWDP)–II was submitted to the Project Director, Watershed Management, UDWDP –II, Kumaon Region, Haldwani.

I.4 Financial Statement

NRM Group's Financial Statement (2015-16)

S. No.	Project	Funding Partner	Opening Balance (Rs.)	Income (Rs.)	Utilization (Rs.)	Balance (Rs.)
1	Uttarakhand Flood Disaster	Individual Donations	24,248,424.36	8,69,600.00	25,88,540.00	22,529,484.36
2	Uttarakhand Flood Disaster	Star-TV	34,180,636.11	1,922,830.00	7,976,514.90	28,126,951.21
3	Uttarakhand Flood Disaster	Axis bank	(1,176,225.24)	8,897,244.00	4,462,035.12	3,258,983.64
4	Uttarakhand Flood Disaster	IIT-UK	460,357.05	Nil	64,916.00	395,441.05
5	WUR	RRA-Hivos, ICCO, WU & OXFAM	203,951.00	42,523.00	102,199.00	144,275.00
6	WSRP	Stoop Consultant	225,372.00	10,696.00	197,781.00	38,287.00
	Total		**58,142,515.28**	**11,742,893.00**	**15,391,986.02**	**54,493,422.26**

II. ENVIRONMENTAL QUALITY MONITORING

PSI's Environmental Quality Monitoring Group (EQMG) monitors environmental quality, pollution levels and their impacts. It builds the capacities of voluntary organizations (VOs) and communities to gather and interpret pollution data and plan for mitigating pollution-related problems. It also assesses the environmental impact of developmental projects. It operates a well-equipped laboratory in Dehradun.

In 2015-16, EQMG's major activities revolved around its Participatory Groundwater Management (PGWM) program. The group organized two state level advocacy workshops in Guwahati and Bhopal and one orientation workshop for the Land Resources Department (Nagaland) officers to promote PGWM. It successfully completed the second phase of its ongoing program supporting communities in fluorosis affected villages of district Dhar (M.P.) to access safe drinking water. The group was also engaged in providing various support services to other organizations.

II.1 Participatory Ground Water Management (PGWM)

PGWM is a collaborative programme between Arghyam and five non-government organizations to develop and promote models of sustainable and equitable use of groundwater resources. In the Himalayan region PSI is responsible for promoting PGWM practices using a three-pronged approach – Training, Action Research & Advocacy. PSI has demonstrated programmatic interventions at Thanakasoga panchayat in Sirmour district (H.P.), its action research location. Details of the activities undertaken in 2015-16 are elaborated below.

Training & Capacity Building

During 2015-16, two region specific training workshops were organized at Dehradun (June 9-23, 2015) and Byrnihat, Meghalaya (February 16-27, 2016) for 43 participants from Uttarakhand, Himachal Pradesh, Darjeeling, Manipur, Mizoram, Assam. Nagaland, Meghalaya, Madhya Pradesh and Uttar Pradesh. The participants included government officers, community-based workers, students and activists. The objective was to create a pool of trained persons working on GW resources in the Himalayan region.

The training course focused on the fundamental concepts of Himalayan hydrogeology, geological and hydro-geological mapping, GW management, designing watershed development plans, drainage analysis, measuring springs discharge and water quality. It included classroom and lab sessions plus field exposure. The training helped the participants to conceptualize ways for the conservation, sustainable and equitable use of GW by involving the local communities.

Action Research

Springs in the Himalayan region represent a typology of 'mountain aquifers' with a large degree of variability and complexity due to the geology, terrain and hydrological factors. The study of springs and mountain aquifers is important for planning springshed treatment measures to enhance springs discharge and water quality. To demonstrate the application of PGWM principles PSI began an Action Research (AR) project in Thanakasoga gram panchayat in 2011. The objective in 2015-16 was to deepen and strengthen the practice of PGWM. The major activities included facilitating communities to maintain recharge areas, clean their baoris, regularly measure rainfall and discharge and monitor water quality. PSI undertook data analysis and pilots on SWI (system of wheat intensification) and SCI (system of crop intensification) techniques.

Monthly discharge measurements were carried out for all the 12 *baoris* in the five villages (Luhali, Dhyali, Thanakasoga, Dandor & Sattarbhado) of Thanakasoga GP. The vegetative and engineering treatments in the recharge areas of five selected baoris led to a significant increase in their discharge. The hydrograph of Luhali village baoris given below clearly indicates this result. Baoris B-1, B-2 and B-3 in Luhali have different recharge areas. Interventions carried out for B-3 resulted in increasing its discharge whereas no significant increase was observed in the case of B-1 & B-2 where no interventions were carried out.

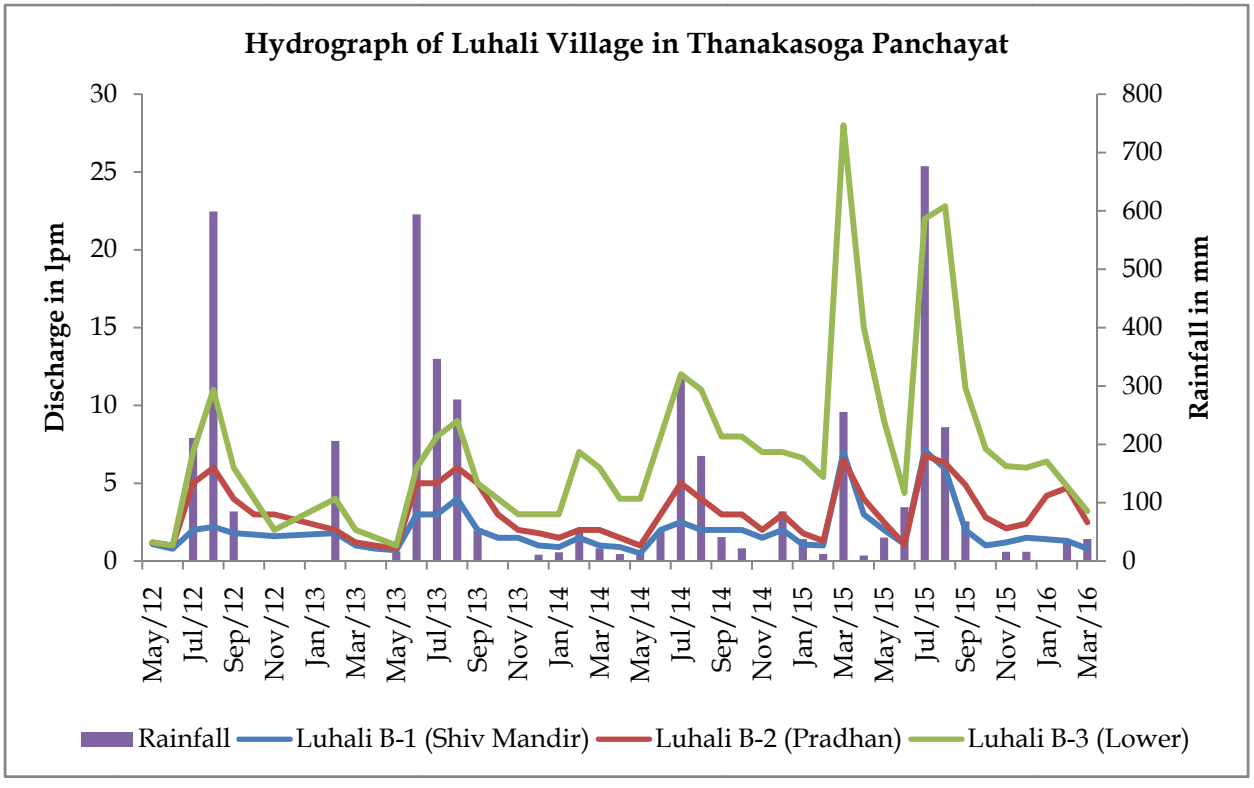
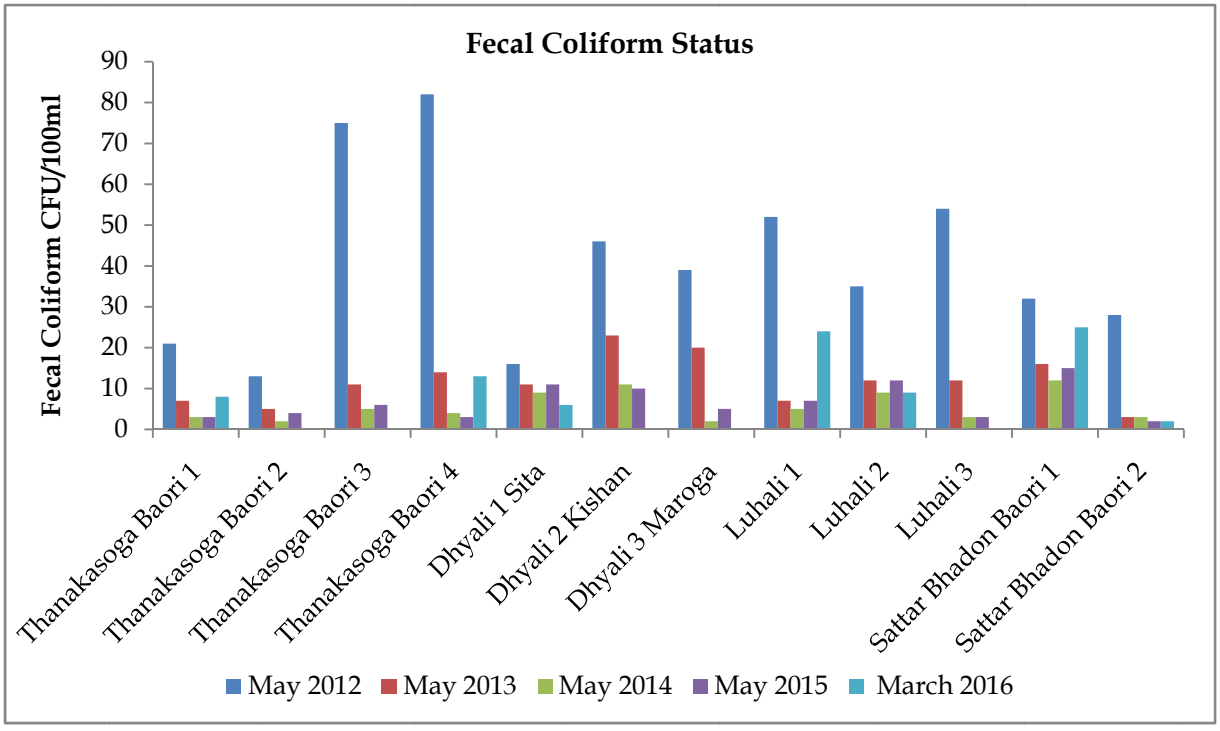


Table 12: Changes in Discharge of Baoris Treated Since 2013

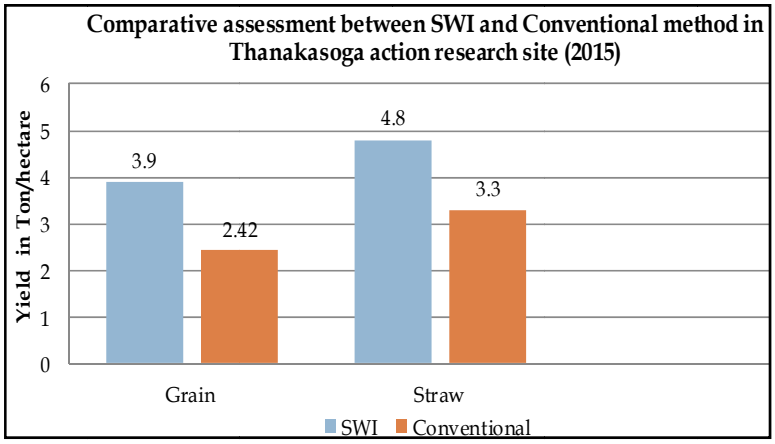
S. No.	Name of Source	Discharge in LPM			
		May 2012	May 2013	May 2014	May 2015
1	Thankasoga Boari-1	2.2	2.25	5	6
2	Thankasoga Boari-2	0.5	0.5	2	3.5
3	Dhayli Boari-Sita	6	7.5	11	15
4	Dhayli Boari-Kishan	2	2	4	6
5	Luhali Boari-2	1	1	4	9

Water quality of all the 12 baoris in Thanakasoga GP was also monitored. While the pH, EC, chloride, nitrate and hardness values were within permissible limits, iron and fecal coliform values were above limits at a few locations. But within a year, due to increased discharge and the consequent dilution effect, the iron values fell within the standard limit of 0.3 mg/l.

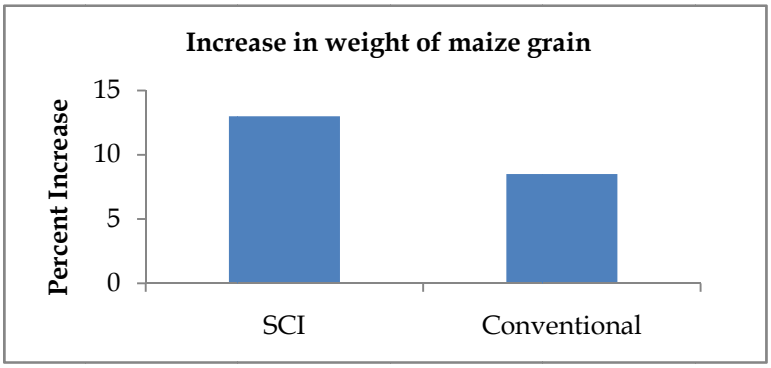
Presence of fecal coliforms at some sites was due to open defecation by the local people and their livestock in the recharge areas. But as seen in the chart below, the concentration of fecal coliform reduced with time due to social fencing of the recharge areas by the communities to prevent open defecation and animal grazing therein.



To extend water use PSI introduced the water-saving system of crop intensification, first for wheat (7.5 ha) and then for potato and garlic (2.9 ha) in some villages during 2014-15. The trials were carried out by 33 farmers in Thanakasoga, Luhali and Dhyali villages. The average productivity of irrigated wheat went up from 2.42 ton/ha to 3.9 tons/ha, an increase of 62 percent in grain yields. The straw yield increased from 3.3 ton/ha to 4.8 ton/ha, about 69 percent. Potato and garlic also showed improved production.

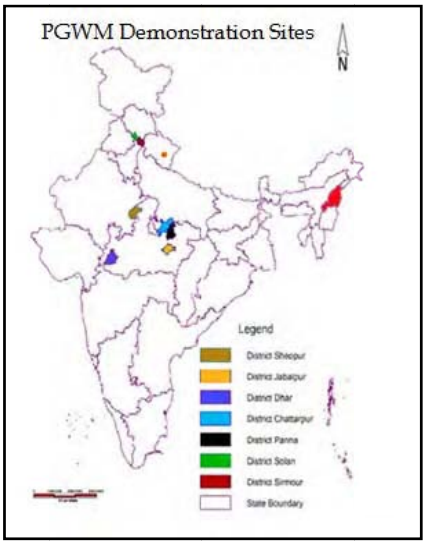


The increase in production encouraged more farmers (54 out of 65) to adopt the SWI technique in 2015-16. In 2016 the SCI method has also been used for maize in 6.67 hectare area. Trials have also been done for tomato, chilli and ginger. It is now well-known that SCI is a climate change resilient method. Hence the extension of this method can improve the conservation of water and food security.



Besides the above, PSI has included the PGWM concept and practices in its other major programmes which are in geologically different locations and have groundwater quantity and quality related problems. These areas are Dhar district in Madhya Pradesh and Bageshwar district in Uttarakhand. The major activities in Dhar include mobilizing communities to

abandon fluoride contaminated water sources and sharing safe drinking water. In Bageshwar district, spring recharge work has been carried out in Revati and Saryu river valleys.



Advocacy

The advocacy component in the PGWM programme aims to document and disseminate knowledge and information on PGWM and hydrogeology to extend its practice in other government programmes and academia. In this context PSI organized two advocacy workshops in Guwahati (23-24 April, 2015) and Bhopal (18th November 2015) and one orientation cum training workshop in Nagaland (30th Oct. – 6th Nov. 2015).

The Guwahati workshop was attended by 46 participants representing the Soil and Water Conservation Department, Meghalaya; Meghalaya Water Foundation; Land Resource Department, Nagaland; Forest Department, Nagaland; IWMP Meghalaya and civil society organizations from various Northeast states.

The objective of the Bhopal workshop was to explore possibilities of working with the concerned government departments on fluorosis mitigation using the concept of PGWM. It was attended by 70 persons representing PHED Bhopal and other fluorosis affected districts in M.P., M.P. Health Department, CGWB regional office, UNICEF and local NGOs.

Seventy eight participants attended the orientation workshop in Nagaland and 47 government officials attended the training workshop. The participants mainly included the Land Resources Department, Public Health Engineering Dept. (PHED), Soil & Water Conservation Dept., Geology & Mining Dept., Irrigation & Flood Control Dept., SLNAs; Manipur, Arunachal & Mizoram and VOs.

The Nagaland outreach has led to PSI supporting the Nagaland Land Resources Department to initiate springshed development pilots at 11 locations in the state. The department is also planning to expand the work to 50 locations. Dialogues are underway with PHED Bhopal for formation of a state Resource Centre comprising of PHED, civil society, research organizations and donor agencies to look into the fluorosis issue on a continuing basis. There are possibilities of developing a pilot programme on fluorosis mitigation at a block level with the combined efforts of PHED, PSI and the local communities.

In 2015-16 PSI introduced a new approach for extending the practice of PGWM to an industrial area. For this purpose it has selected the Baddi-Barotiwala-Nalagarh area (BBN) which is the largest industrial belt in Himachal Pradesh. Industrial water demand has heavily depleted the local GW table. Simultaneously the discharge of polluted effluents has severely contaminated the local R. Sirsa.

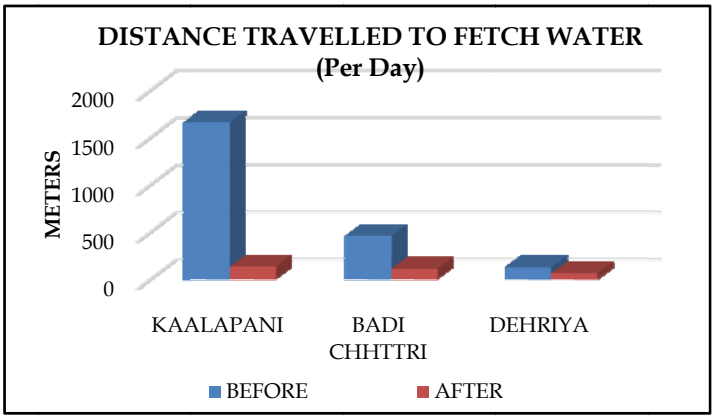
PSI carried out a preliminary study of this area in collaboration with Him Dhara, a local organization. The study included preparing an inventory of the major industrial discharges into the Sirsa river and assessing the pollution load from a few industries.

Toxic hotspots in BBN area

II.2 Safe Drinking Water Supply in Dhar District (M.P.)

PSI is working in the fluorosis affected villages of Dhar district since 2013 to provide safe drinking water to the affected communities, based on the principles of PGWM with the support of Frank Water, a British donor agency.

Household surveys to assess the impact in Kaalapani, Badichettri and Daheriya villages of phase-I of the programme, showed that the distance travelled per day to fetch safe drinking water had reduced significantly in all the three villages, thereby reducing the drudgery of the local women. With clean drinking water available, they are suffering less from waterborne diseases and are spending less on medication. There are some positive behavioural changes as well because of awareness. People have become more conscious about hygiene. They use soap for washing hands after defecation and feel the need of having toilets at home.



In 2015-16, PSI began a second phase (phase-II) with additional funding support from Frank Water. In three

Drinking water supply tank in Bankpura village

new villages, Bankpura, Banjari and Chotichettri the interventions made by PSI have led to improved availability of safe drinking water without the use of chemical-based and cost-intensive defluoridation units. PSI's interventions involve studies of the local hydrogeology, groundwater quality monitoring and strong community mobilization. It has resulted in the sharing of fluoride-safe groundwater by the communities, preparation of O&M plans and monthly payments. The entire system is operated and managed by the affected communities. The initiative has set a successful example of decentralized groundwater management in this fluorosis affected region. Frank Water has shown keen interest to further scale up the programme in the same district.

II.3 Piloting PGWM in Jabalpur District Through the Neeranchal-IWMP Programme

The Neeranchal National Watershed Development Programme is piloting PGWM in 18 districts of different states over a period of five years with the support of UNDP. It aims to positively influence Integrated Watershed Management Programme (IWMP) outcomes by providing technical and financial support to concerned organizations. PSI has been asked to develop community capacity to equitably and sustainably manage groundwater in Jabalpur district (M.P.).

PSI is following the PGWM approach to ensure safe and sustained drinking water supply, enhanced food security and income generation opportunities for the targeted watershed communities. As a first step it has prepared a detailed situation analysis report to document the current use of groundwater resources in the selected watersheds and assess the extent of problems related to its exploitation and contamination. The program's key outputs are expected in the form of:

- Enhanced knowledge of groundwater resources in the selected communities.
- Development of community-led groundwater mapping, monitoring and protocols for GW management.
- Enhanced capacities of IWMP implementers and communities for improved GW management

II.4 Extending PGWM in Sheopur and Udaipur districts

PSI is supporting BRLF funded VOS to demonstrate PGWM activities in pilot villages of Sheopur district (M.P.) and Udaipur district (Rajasthan).

Due to inadequate water supply, despite rivers like Chambal, Seep and Kuno flowing through Sheopur district, most of the domestic, industrial and irrigation water requirements are met

from groundwater. Almost the entire district of Udaipur is facing GW scarcity. Dug wells and shallow tube wells go dry during the summer season in most of the district.

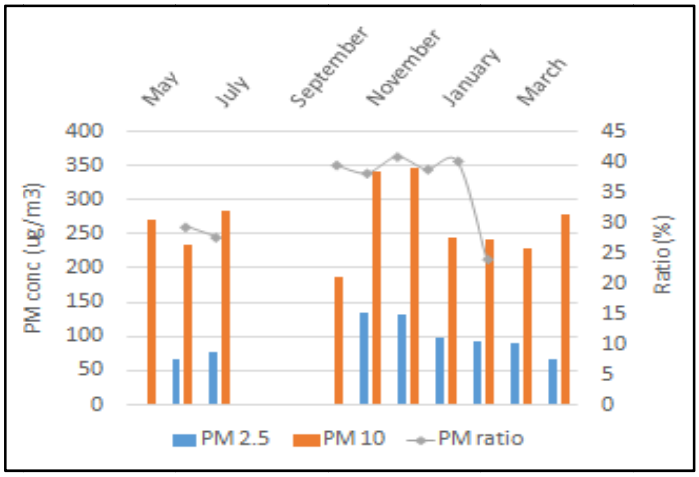
PSI's PGWM team will train the local BRLF partners in the basics of hydrogeology, geological and aquifer mapping in pilot villages, integrating hydrogeological information in watershed development planning and implementation of the PGWM approach in a multi-year program. **In March 2016 t**he PGWM team visited Chakrampur village in Sheopur district to prepare an inventory of groundwater sources and to map the rock exposures. It also interacted with the villagers to collect other relevant information.

Interaction with Chakrampur village community

II.5 Other Activities

(i) Water quality monitoring: 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 2015-16, 355 drinking water samples were tested in the lab. Most of the samples came from local institutions like Lal Bahadur Shastri National Academy of Administration, NEER Foundation, CEDAR, Doon School, etc. The group sold 80 water testing kits.

(ii) Air Quality Monitoring : From May 2015 onwards, EQMG initiated the monitoring of air pollution levels (PM 2.5 and PM 10) at the construction site of Ansal API, Greater NOIDA for measuring the efficacy of pollution control measures taken as per the Environmental Management Plan. The above study was financially supported by Chawla Techno Const. Pvt. Ltd work.



(iii) Extending technical support to Springs Initiative Partners: PSI is a member of Springs Initiative, an association of NGOs, communities and government agencies working to remedy the problem of drying springs in various parts of India. PSI participated in workshops organized by Springs Initiative partners in 2015-16.

In January 2016 PSI trained the field staff of CHAI (Community, Health and Advancement Initiative) in Darjeeling in water quality testing, data interpretation, mountain aquifers and springs, springshed planning, recharge area demarcation and spring water management. Forty participants attended the training workshop. CHAI plans to undertake springs recharge in Darjeeling district.

(iv) Extension Activities

Fluorosis Mitigation: GW in many villages of Sonebhadra district in U.P. has severe fluoride contamination due to coal mining, thermal power stations and industrial units. Banwasi Sewa Ashram (BSA) in Govindpur, near the industrial town of Renukoot, has identified several cases of fluorosis in the region. PSI addressed a large gathering organized by BSA to discuss this issue along with the growing problem of air pollution in the region and prepare the local communities to demand remedial actions the concerned units and government departments.

Jal Chaupal in U.P.: Many regions in Uttar Pradesh and Madhya Pradesh are affected by the problem of geogenic contaminants like fluoride and arsenic in drinking water. There is, however, a communication gap between official remedial programs and the local organizations and other institutions working to mitigate the problem. The Fluoride Knowledge and Action Network (FKAN), a network of VOs working on the issue, formed a local people's forum called Jal Chaupal to fill the gap and exchange information to develop a common policy and action approach to mitigate groundwater contamination. Following the successful Bhopal workshop highlighting PSI's successes in fluorosis mitigation in Dhar district FKAN organized Jal Chaupal-UP in January 2016 in Lucknow to discuss about groundwater quality issues in Uttar Pradesh. In this meeting, PSI shared its experiences related to fluorosis mitigation in Dhar.

Central Ground Water Board (CGWB) Workshop: PSI presented a case study on community participation in GW management at the Bhujal Manthan organized by CGWB in Kurukshetra. The case study was based on its community-based fluorosis mitigation and GW management in Dhar district.

Springshed Development: The Kathmandu-based International Centre for Integrated Mountain Development (ICIMOD) conducted the Himalayan Springs Stakeholders Dialogue in November 2015 in Gangtok, Sikkim in collaboration with various Indian and Nepali organizations. The objective was to frame common approaches for springshed management research. PSI presented details of the process and methodology of PGWM and its related activities in the field. It stressed on the need for an improved community understanding of hydrogeology and united action as the basis for sustainable efforts.

BRLF Training Workshop: BRLF organized a training workshop to train its partner organizations from 7 states in the concept of PGWM. The training was provided by PGWM

partners, including PSI, in water quality monitoring, the need for PGWM and community involvement in such programmes.

(v) Miscellanea

Training New Team Members: In 2015-16 four EQMG colleagues, Ankit Saxena, Yashpaul, Vargish Bamola and Malvika Bhatt underwent training in geohydrology at ACWADAM in Pune.

Yamkeshwar Recce Survey: Yamkeshwar in Pauri Garhwal, is Uttarakhand's poorest developmental block. Much of its poverty can be traced to low annual rainfall and mismanagement of water supply by the government agencies. PSI's PGWM team visited a few villages in Yamkeshwar block to explore the potential of PGWM to resolve some of the local water problems. The team has identified some locations for implementing PGWM here. Funds are being sought to develop an implementation program.

Knowledge & Information Dissemination: Besides the above efforts several case studies based on PSI's successes in Dhar district were prepared, primarily for dissemination through the internet. These included:

- http://www.indiawaterportal.org/articles/using-community-support-battle-fluoride-contamination
- http://www.indiawaterportal.org/articles/how-bandu-singh-recovered-hope
- http://hindi.indiawaterportal.org/node/49601
- http://hindi.indiawaterportal.org/node/49600
- http://hindi.indiawaterportal.org/node/49598
- http://www.indiawaterportal.org/articles/why-did-urmila-have-suffer

Advocating Citizen's Role in Smart City Planning: EQMG continued to associate itself with local public interest activities in Dehra Doon during 2015-16. In November 2015 the Uttarakhand Government published a smart city proposal which involved about converting a 2000 acre tea garden area into a commercial hub. PSI prepared a scientific rebuttal of the proposal and along with other active NGOs in Dehradun successfully argued against it (See http://www.indiawaterportal.org/articles/development-or-drastic-ecological-changes-where-dehradun-headed). The campaign involving several meetings with MDDA (Mussoorie Dehradun Development Authority) officials, an agitation, an intervention by the state governor and the preparation of an alternative proposal led to a complete revamp of the original state proposal.

Analysis

During the review period PSI has emerged as a leading proponent for PGWM and springshed development in India's Himalayan region. PSI's PGWM team has been trained in hydrogeology and supported by ACWADAM. This has helped build the team's confidence in training and field work. The Institute has extended PGWM practice to all its other NRM and livelihoods development programs, even beyond the Himalayan region. Consequently it is now approached by several government and non-government organizations to provide technical

support in community based groundwater management work. PSI is actively working now to establish new collaborations and expand this work in the North Eastern region, particularly in Nagaland and Meghalaya.

In view of the rapid growth of urban centres in India's Himalayan mountain districts, in March 2015 PSI filed a small research grant proposal with Arghyam on Groundwater Sanitation (GW-SAN) nexus to study contamination pathways in Almora town, where about 50 springs are still heavily used by the local populace. The study will recommend practices to protect groundwater resources in the study area from growing contamination. These recommendations will be relevant for other similar Himalayan hydro-geological regions as well.

PSI's study in the Baddi-Barotiwala-Nalagarh area will be used to initiate a dialogue between the communities affected by industrial exploitation and pollution of groundwater and the industries with the help of CII (Northern Region). Should it succeed, it will become a pioneering study.

PSI's community based fluorosis mitigation programme in Dhar district has attracted interest because of its simplicity, economy and sustainable potential. It also an empowering approach since it unites the affected communities. From a three village pilot it has extended to nine villages covering over 800 households. Frank Water has indicated interest in funding expansion of this work.

Though funding for EQMG's work is adequate and stable, finding competent colleagues over the long haul is difficult. In-house training requires a lot of time from the seniors. PSI may shift its search for long term colleagues to young people from communities where it is working already.

II.6 Financial Statement

EQMG Group's Financial Statement (2015-2016)

S. No.	Project	Funding Partner	Opening Balance (Rs.)	Income (Rs.)	Utilization (Rs.)	Balance (Rs.)
1	Frank Water	Frank Water	1,641,449.36	13,93,800.00	21,87,128.00	8,48,121.36
2	PGWM-II	Arghyam	2,748,236.00	23,34,894.00	39,49,756.00	11,33,374.00
3	GGET	Guru Ganga Envirotech Trust	(63163)	Nil	Nil	(63163)
4	GGET	Guru Ganga Envirotech Trust	28,244.00	Nil	53,868.00	(25,624)
5	UNDP	United Nation Development Programme	301,456.90	301,456.00	5,22,479.00	80,433.90
6	WWF-India	WWF-India	268,097.00	2,55,200.00	1,04,422.00	4,18,875.00
7	BLRF	ACWADAM	Nil	4,56,897.00	1,25,443.00	3,31,454.00
8	CTC	Chawla Techno Const. Pvt. Ltd.	Nil	6,05,000.00	2,18,201.00	3,86,799.00
	Total		**49,24,320.26**	**53,47,247.00**	**71,61,297.00**	**31,10,270.26**

III. INNOVATIVE PROJECTS

The Innovative Projects (IP) Group launched a Gram Swaraj Abhiyan program in 6 panchayats (20 villages) covering 2300 households of Chattarpur and Panna districts with the financial support of Tata Education Trust, Mumbai.

Gram Swaraj Abhiyan is a poverty eradication and drought mitigation program to enable and empower communities in Bundelkhand to initiate self-reliant development in a sustainable and socially just manner. It combines self-help with improved governance and convergence of funds from government schemes. The major objectives of the programme are to: (1) ensure food and livelihood security through increased productivity of natural, human and social capital in Bundelkhand, (2) prepare villagers for planned economic development through a process of micro-planning, (3) build village institutions which will sustain self-reliant development and good governance, and (4) use Information Technology (IT) for better planning, monitoring and effective utilization of development funds.

In addition to the Gram Swaraj Abhiyan program, PSI's GIS lab is operated by the IP group which has developed a web-based Village Information System for various states like Uttarakhand, Himachal Pradesh and their Bundelkhand region, providing a wide range of information relating to demography, infrastructure and natural resources in visual and data form.

III.1 Gram Swaraj Abhiyan

In 2015-16 the focus of the Gram Swaraj Abhiyan in Bundelkhand was on strengthening and supporting the established VLIs in the 10 villages of Panna district for better implementation and monitoring of development activities. The emphasis was on implementation of low-cost livelihood enhancement techniques like SCI, vegetable cultivation, fodder development, agro-forestry, etc. along with construction of farm ponds and earthen dams, and convergence through various government schemes. The details are discussed below.

a) Village Level Institutions

During the year, Gram Swaraj Samitis (GSSs) were established in all the 10 villages of Panna district (including two hamlets of Bilpura and Sonmaukala). The main functions of GSSs are – organizing regular *Aam Sabha* meetings, execution of decisions taken by *Aam Sabhas*, implementation and monitoring of the developmental activities in a village, maintaining accountability and transparency etc. The implementation of all physical works is done through the GSSs. Similarly, women's organizations (MMDs) have been established in all the 10 villages. Regular meetings are being held by *Sahayaks* and *Lok Sevikas* for discussing the problems faced

by women. The main concerns raised by many MMDs are regarding health and education. A few exemplary initiatives on such issues have been taken up by many MMDs.

Eight new SCGs (Savings and Credit Groups) have been formed in 5 villages linking 106 members to the groups. Their total savings on March 2016 amounted to Rs. 42,450. The women have started inter-loaning among themselves, mainly for seasonal needs like seeds, fertilizers, medicines etc. thus breaking the vicious cycle of "debt" from local Sahukars.

b) Agronomic and Vegetative Interventions

(i) System of Crop Intensification (SCI): SCI was introduced in all villages for the Kharif and Rabi seasons for productivity enhancement.

In Rabi 2014-15, 3.7 ha were sown by 125 farmers in the villages of Panna. The crop cutting results showed 30 to 50 per cent grain yield enhancement in wheat. Gram productivity increased by 47 per cent but there was not much productivity gain in the case of mustard. The agricultural expert (from ATMA, Umaria) was of the opinion that Mustard RP09 is a five months' variety and the poor results was mainly because of late sowing. Moreover unseasonal rainfall in March'15 affected the flowering of RP09 and hence the yields were very low.

Wheat Harvested by Women Farmers

Table 13a: Productivity Comparisons – Conventional vs SCI Wheat (Rabi 2014)

Parameter	Lokwan Variety: Standard Method			Sujata Variety: Jacob's Method		
	Conv.	SCI	% Increment	Conv.	SCI	% Increment
Grain Productivity in T/ha	2.2	2.9	32%	1	1.5	51%
Straw Productivity in T/ha	2.6	3.3	24%	1.8	2.3	27%

Table 13b: Productivity Comparisons - Conventional vs SCI Gram (Rabi 2014)

Parameter	Conventional	SCI	% Increment
Grain Productivity in T/ha	1.46	2.14	47%
Straw Productivity in T/ha	1.25	1.41	13%

Table 13c: Productivity Comparisons - Conventional vs SCI Mustard (Rabi 2014)

Parameter	Conventional (Pbold variety)	SCI (RP09 Variety)	% Increment
Grain Productivity in T/ha	1.05	1.23	17%

In Kharif 2015-16, 408 plots over 32.53 ha were covered under SCI by 260 farmers in the villages of Panna.

Table 14: No. of SCI plots in Kharif 2015

Paddy (Transplanted)	Paddy (Direct Seeded)	Maize	Urad	Total
155 plots (18.88 ha)	71 plots (4.26 ha)	138 plots (8.05 ha)	44 plots (1.34 ha)	408 plots (32.5 ha)

The crop cutting results show that there is more than 45 per cent, 55 per cent and 44 per cent grain yield increase through SCI in case of paddy, maize and urad respectively. Farmers were invited to the crop cutting sites so that they could witness the potential of SCI techniques. They appreciated the productivity enhancement.

Table 15: Productivity Comparisons - Conventional vs SCI (Kharif 2015)

Parameter	Conventional	SCI	% Increment
Paddy			
Grain Productivity in T/ha	2.5	3.7	46 %
Straw Productivity in T/ha	4.2	5.3	26 %
Maize			
Grain Productivity in T/ha	2.17	3.38	56 %
Straw Productivity in T/ha	19.18	25.69	34 %
Urad			
Grain Productivity in T/ha	0.2	0.29	44 %
Straw Productivity in T/ha	5.85	9.17	57 %

Encouraged by the results of previous seasons, in Rabi 2015-16, 493 plots over 52.3 ha area were covered under SCI by 385 farmers in the Panna villages.

Table 16: No. of SCI plots in Rabi 2015

Wheat	Mustard	Gram	Total
141 plots (10.66 ha)	83 plots (3.15 ha)	269 plots (38.45 ha)	493 plots (52.3 ha)

(i) **Kitchen Garden:** There is lot of potential in kitchen garden vegetable cultivation. It can contribute to improving the villagers' health, especially women. Vegetable seed kits were introduced in the villages to promote kitchen gardening. A total of 418 farmers participated in the kitchen garden programme. The average value from the kitchen garden is about Rs. 3620/family. The overall response to vegetable kits has

Vegetable Seed Kit for Kitchen Gardening

been very good. Seed banks have been established in all the 10 villages with the help of MMDs for the purpose of kitchen gardening. In the coming kharif of 2016, farmers can get seeds from their seed banks itself.

(ii) Vegetable Cultivation: 79 farmers undertook vegetable cultivation on a large scale on 5.73 hectares. Out of these 24 farmers managed to sell the produce commercially. A market study and planning exercise was also done for these farmers by Mr. Kuldeep Uniyal, vegetable marketing specialist from PSI to explore the possibility of collective sale of produce in the future. Presently Farmers' Interest Groups (FIGs) are being made to facilitate this.

Vegetable cultivation by SCI method

(iii) Mandap Kheti: 20 farmers were selected for the Mandap Kheti model of vegetable farming. This is basically a three tier model of farming in which a wooden structure is made (in the form of a Mandap) which allows for some shade and can be used for not only vegetable cultivation but also crops underneath. The aim of Mandap Kheti is to protect crops from frost and sun stroke and from water scarcity.

Mandap Kheti for Vegetable Cultivation

Nine nurseries were also established for plantation of Aonla and Bamboo under agro-forestry efforts.

c) Physical Works

Seed money has been granted by the Trust to initiate some soil-water conservation activities and water harvesting structures. The main activities identified by villagers are construction of new or repair of earthen check dams, farm ponds, field bunds, and recharge area treatments for drinking water sources.

Farm Pond

GSSs formed in different villages facilitated the implementation of various physical structures with the help of village engineers. Formats for muster roll, measurement book, payment etc. were prepared and VEs and members of GSSs were trained to fill them. Farm pond construction has been completed by 51 beneficiaries and is in progress for another 35 households. Construction of new and repair of earthen check dams has also been initiated in five villages.

Table 17: Status of Physical Interventions as on March 2016

Activity	Completed	In progress	Yet to be Started	Number of Beneficiaries (households)
Farm Ponds	51	35	7	93
Earthen Check Dams (ECDs) – new and repair	4	2	3	248
Drinking Water Wells - new and repair	0	2	0	72
Recharge Area Treatment Works	1	1	1	
Field Bunds	-	-	45	45

d) Income Generation Activities

The following income generation activities were initiated.

(i) Aonla Collection: The GSS members created market linkages with traders in Katni for selling of aonla. During the aonla season, the advantage in terms of monetary benefit was almost 20%-30% more than in earlier years. In December 2015, around 180 households sold aonla for a total income of Rs. 3,60,000. Encouraged by the profits, the MMDs of the villages have decided to collect more aonla in the coming season and later sell it at a higher margin.

(ii) Weekly Markets (*Haat*): The thought behind establishing a weekly *haat* bazar was to provide a platform for farmers to sell their products in locally, especially vegetables from the kitchen garden and also have a place where they could shop for their daily necessities. The *haat* was launched on 10th November 2015 in Siharan for 10 villages. It was

inaugurated by Mr. Prahlad Lodhi, Zilha Parishad (ZP) member, and has been held regularly till now every Tuesday. It is being run by the Roshni Mahila Mangal Dal and Haat Bazar Samiti. It has given impetus to many farmers to try vegetable cultivation. Households also saved money that they had to spend earlier on traveling to Mohandra market. Some farmers reported weekly incomes ranging from Rs. 100 to Rs. 2000 by selling vegetables at the *haat*.

Weekly Haat Bazar by MMDs

e) Capacity Building

Various capacity building activities were undertaken for the concerned farming communities as well as the program staff, some of which are described below.

(i) **Earthen Check Dams:** Mr. Rajesh Kumar, subject matter expert conducted training on design and construction of earthen dams for PSI's and village engineers. Site visits were also made during the training to address specific issues pertaining to new & repair works.

(ii) **Agriculture and Allied Activities:** Based on the previous years' experiences, modifications were suggested during training for SWI and other SCI crops. Apart from training and demonstrations on SCI, numerous training/demonstrations for preparation of nurseries, kitchen garden, Matka khad, Panchgabya, and heap composting etc. were held in the different villages. Field support was also extended in the villages wherever required.

(iii) **Income Generation Activities:** Training and exposure visits were especially organized for women members of SHGs and MMDs for mahua collection.

(iv) **Water and Soil Quality Testing:** Water quality training was conducted by Mr. Ankit Saxena and Mr.Yashpala Rana for PSI's engineers, Sahayaks, MTs and VEs of both Panna and Chhatarpur clusters. All the 12 parameters necessary for drinking water quality like faecal coliform, hardness, chloride, pH, were demonstrated in this training. A total of four quality tests were planned for the months of April, July, October and January. Training for soil testing (for organic material, nitrogen, potash, phosphorous, and alkalinity) was also covered along with water quality. Subsequently farms were selected for soil testing.

Table 18: Capacity Building Activities

S. No.	Topic	Dates	Number of Participants
1	Livelihood Planning Orientation	1st March 2015	18
2	Government Schemes	28-30th April 2015	28
3	Accounts	6th -7th October 2015	46
4	Health	20th -22nd November	41
5	Earthen Check Dam	26th - 28th December 2015	21
6	Kitchen Garden Exposure	10th -20th January 2016	-
7	SCI Exposure	10th -20th February 2016	-
8	Mahua exposure visit	26th February 2016	-
9	Agro-Forestry	1st March' 16	14
10	Water and Soil Quality Testing	4th -9th March 2016	18

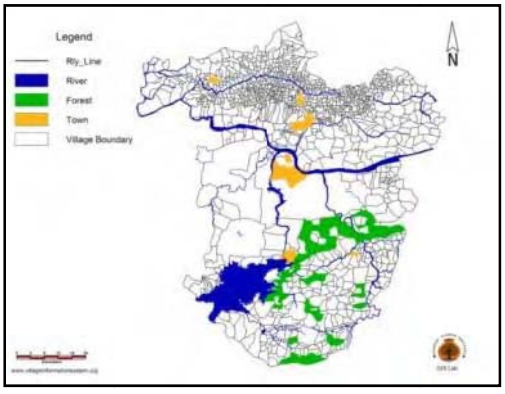
f) Social Mobilization

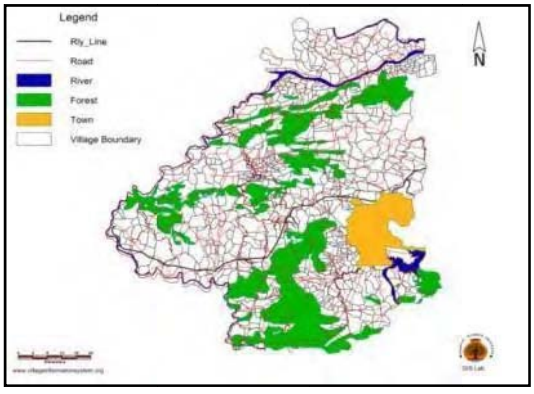
On 15th March 2015, a 'Women's Empowerment Day' was held at Kheha-Siharan to motivate MMD members and felicitate progressive farmers. 230 women and 150 men from 10 villages participated in this program. The program started with a swaraj rally taken out by MMD members. The inauguration was done by MLA Sri Mukesh Nayak. The MMDs presented a cultural program and shared various social actions initiated by them like liquor prohibition, etc.

III.1 GIS

In 2015-16, the GIS lab completed the digitization of Nagaland and Mizoram states. This involved processes like image registration and attachment of secondary data of census 2011 along with the village location. Work for the Arunachal Pradesh is in progress. During the year, the lab also facilitated the work related to other projects at PSI by preparing various maps. Given below are some examples of maps prepared by PSI's GIS team.

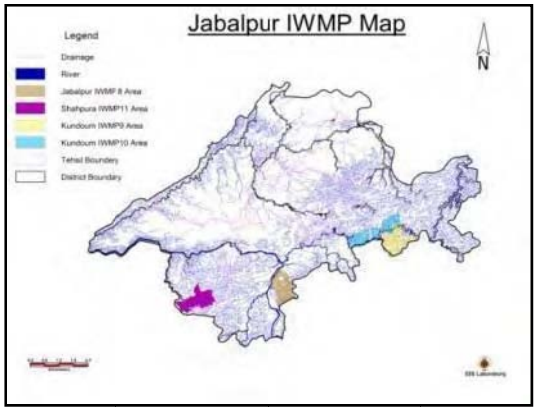
(i) Digitized base maps of Sonebhadra (UP) and Singrauli (MP) districts showing village boundaries, drainage system, roads and towns for studying environmental impacts.

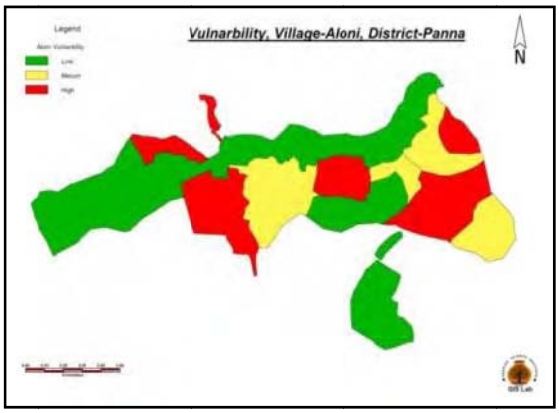




(ii) A digitized map of Jabalpur district of Madhya Pradesh for selecting watersheds to pilot PGWM in the Neeranchal supported IWMP program.

(iii) Thematic maps of 10 villages of Panna district of Madhya Pradesh for initiating cluster level planning methodology under NMSA.





III.3 Remarks

Initially the resistance to change within the village communities had led to slow progress of program activities. A lot of effort was required for breaking myths, changing perceptions and transforming attitudes. Even during the planning phase, there were high expectations from the communities that the program team would bring in funds for implementation of the VDPs. Persuading the village communities to mobilize government resources, often due to them as entitlements, for implementation of the VDPs was a major challenge faced by the program team.

Differential strategies were employed including recruitment of local women as lok sevikas to mobilize communities' participation in the villages. Overtime, the participation of women in MMD meetings has increased. There are various instances of exemplary mobilization by women in some of the villages. Field support provided by local youth as Master Trainers, Village Level Resource Persons and Village Engineers has proved to be very effective in implementation of the agricultural, vegetative and engineering interventions.

The seed money from the Trust is being used for demonstrating effectiveness of rain water harvesting structures and soil-water conservation works. For up-scaling of various activities, funds will have to be sought from other sources. The *Aam Sabhas* and *Gram Sabhas* need further strengthening to increase the participation of villagers, so that villagers can get their entitlements. The communities have already come forward to extend their own contribution in terms of '*shramdaan*'. This has been their first step towards self-reliant development.

Communities have begun to mobilize external resources for various development projects like the construction of roads, repairing school buildings, defunct hand-pumps etc.

SCI is a package of several practices – like seed preparation, spacing, weeding, organic farming etc. Farmers' adaptability in the villages varied and depended on their capacity and ability for carrying out time bound activities especially under rain-fed conditions in the *Kharif* season. Farmers should be given flexibility about adoption of practices without compromising on two main principles – reduced plant density and weeding to decrease the competition with weeds. The initial successful demonstrations of SCI have however mobilized farmers to increase area under SCI significantly. More time will be required to gradually take agriculture to advance stage with establishment of integrated farming systems to address issue of unstable livelihoods.

Community-led strategies for enhancing productivity of natural resources and innovative livelihood opportunities need to be promoted including value addition for local NTFPs, agro-improvising forestry/horticultural systems and agricultural yields, value addition in agricultural production (e.g. vegetable farming and marketing of produce), and livestock rearing. Efforts need to be focused on community-led natural resource management for arresting forest degradation, and promoting soil and water conservation to revive local natural resources.

The implementation of remaining physical works, strengthening of the established VLIs for liaison with government programs and ensuring quality implementation of works, diversifying livelihood interventions and enhancing the productivity of agriculture will be the main focus of the programme in the coming year in these villages. Much greater and long term hand holding support is required to ensure sustainability of the social processes that have been started.

III.4 Financial Statement

IP Group's Financial Statement (2015-16)

S. No.	Project	Funding Partner	Opening Balance (Rs.)	Income (Rs.)	Utilization (Rs.)	Balance (Rs.)
1	Natural Resource Management through Community Mobilization in Bundelkhand region of M.P.	Tata Education Trust	2,436,049.12	6,553,354.00	6,946,318.90	2,043,084.22
	Total		**2,436,049.12**	**6,553,354.00**	**6,946,318.90**	**2,043,084.22**

IV. OTHER PROJECTS & ACTIVITIES

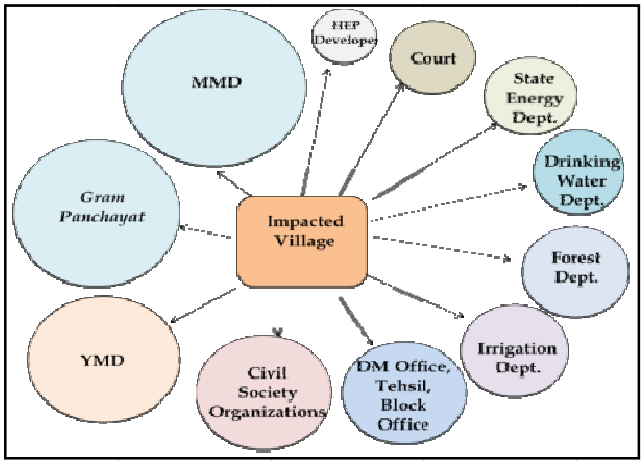
IV.1 Hi-Nex

HI-NEX project was initiated in January 2015. Supported by the Water, Land and Ecosystems (WLE) program of the International Water Management Institute (IWMI) and the Consultative Group for International Agricultural Research (CGIAR), the research project is led by the University of Arizona (USA). PSI is one of the project partners along with Kumaun University, University of Delhi and International Centre for Integrated Mountain Development (ICIMOD). The aim of this project is to strengthen synergies and minimize tradeoffs between hydropower and irrigation systems to improve gendered livelihoods and enhance ecosystem services in Uttarakhand.

After discussions with the subject matter experts during the inception workshop held in February 2015, two sub-basins, Bhilangana in Garhwal and Saryu in Kumaon, were selected for the research study. PSI is leading the irrigation based agriculture and livelihoods study component for the Bhilangana sub-basin in the Garhwal region. Three run-of-the-river type small hydropower projects on Bhilangana River namely Agunda Thati (3 MW), Bhilangana III, Ghuttu (24 MW); and Bhilangana, Ghansali (22.5 MW) were considered for detailed study. Besides these sites, a 30 km stretch of Bhilangana River, upstream of the confluence of Bhilangana and Bhagirathi rivers impacted by the Tehri Dam reservoir was also selected, but had to be dropped later on due to financial cuts.

The research methodology included assessment of Livelihood and gender impacts through:

- Rapid rural appraisals, focus group discussions, and household surveys (25 per cent stratified sampling)
- Mapping livelihood impacts on cadastral maps
- Review of project related documents, Detailed Project Reports, village agreements, and writ petitions



In addition to the above benefits sharing analysis was undertaken through stakeholder mapping and community focus group meetings. For detailed livelihood impact assessment, seven impacted villages and three non-impacted villages were considered on the right and left bank of the river for the different hydro-power projects, based on their location on the slope and the range of impacts.

Salient Features of Selected Hydropower Projects			
Features	**Agunda Thati**	**Bhilangana**	**Bhilangana III**
Installed Capacity (MW)	3 (2*1.5 MW)	22.5 (3*7.5 MW)	24 (3*8 MW)
Power Generated	Min: 0.5; Max: 3.0	Min: 3.0; Max: 24.0	Min: 7.0 Max: 27.0
Proposed Start & Completion Date	2005-2009	2005-2007	2007-2009
Estimated Cost (Crores) excluding transmission lines	18	112	165
Actual Cost (Crores)	32	~200	305
Length of power channel/tunnel (metres)	1500	2480	2500
Impacted Villages Selected	Chani	Phalenda, Raunsal, Saruna	Devling, Niswalibhat Gaon, Chakar Gaon
Control Villages Selected	Srikot, Gonfal	Thayeli	Gawana Talla

A project review meeting of all the partners was held at Delhi on 4-5 December, 2015. The main research findings of the study which were shared are:

- Hydropower development, even run-of-the-river systems, have impacts on local irrigation systems, in terms of water timing, location, and volumes available.
- Local communities claim that much of the negative impacts of HEP projects (landslides, muck dumping, and other ecosystem-service impacts) have been overlooked by developers.
- The number of hours spent by women in collecting water, fodder, and firewood has increased due to a reduction in spring flows and the irrigated area.
- Presence of fish in river Bhilangana has reduced and local fish species are disappearing.
- Reduced agricultural produce due to HEPs has affected the livelihoods of farming, scheduled caste and poorer households the most.
- The developers' list of hydropower benefits does not match the community members' perceptions of benefits
- Presently HEP projects under 25 MW are exempted from requirements of EIA, limiting the potential formal avenues to analyze tradeoffs between hydropower development and associated socio-environmental impacts.
- 2015 Hydropower Policy waive off the need of a clearance from Irrigation and Fisheries Departments for projects <25 MW, potentially limiting opportunities to foster synergistic planning between hydropower and irrigation

A stakeholders' workshop was organized at Dehradun on 1st March 2016, where research findings were shared with representatives of different government departments (UREDA, UJVNL, PTCUL, Forest and Irrigation), non-government institutions (TERI, ICIMOD, CEDAR, Jansamarth) and other subject matter experts. Some of the distinguish participants who attended the meeting include Dr. Uma Kant Panwar (Energy Secretary, UKD), Mr. Jai Raj (PCCF, UKD), Mr. D.P. Jugran, (CE-Irrigation, UKD), Ms. Vibha Puri Das, Dr. R.S. Tolia, (Integrated Mountain Initiative) and Shri Bihari Lal (LJVB, Budhakedar). The following policy recommendations were made at this workshop:

- Even projects < 25 MW should include environmental impact assessment (EIA) and social impact assessment (SIA), providing opportunities for local communities to participate in project planning/decision-making.
- Mediated negotiations between HEP developers, irrigation department and local communities can help ensure irrigation water needs.
- Lift irrigation powered by local electricity supply from hydropower can enhance local irrigation potential and community benefits.
- Establishment of Grievance Redressal Mechanism can provide opportunities for negotiated settlements of disputes benefiting local people, clarify HEP developers' responsibilities, and reduce the gestation period of projects.

Policy level changes are urgently required for reduced impacts and more equitable and just development in hydropower project areas.

IV.2 Internship at PSI

Each year, PSI hosts a large number of interns. Our internship program generates valuable benefits for both the interns and us. It not only provides the interns an opportunity to develop new skills and gain exposure to field work but also provides us short-term assistance and their fresh outlook about our ongoing projects leading to new ideas and creative solutions. Being an Institute which also works for social upliftment, we consider hosting interns as a good way to give back to the next generation of socially concerned people.

This year PSI hosted 23 interns from reputed institutes like Azim Premji Foundation; GBPSSI, Allahabad; Amsterdam University, The Netherlands; IRMA, Anand; and Dhirubhai Ambani Institute of Information and Communication Technology, Gandhinagar.

IV.3 Financial Statement

Other Projects (2015-16)

S. No.	Project	Funding Partner	Opening Balance (Rs.)	Income (Rs.)	Utilization (Rs.)	Balance (Rs.)
1	Hi-Nex	University of Arizona	(334,575.00)	1,314,167.00	1,134,542.00	(154,950.00)
2	WF	Winterline Foundation	173,323.00	Nil	Nil	173,323.00
	Total		**(161,252.00)**	**1,314,167.00**	**1,134,542.00**	**18,373**

V. CAMPUS BUILDING

In March 2016 PSI initiated the construction of its campus building.Earlier it had sought the services of M/s P. Jain & Co., a Dehra Dun based firm of architects for designing the campus building. The building will have three floors with a total area of 1425 sq.m., designed to accommodate upto 72 persons apart from space for an environmental quality testing lab, a large library, a conference hall and a meeting room, two guest rooms and two dormitories for interns and trainees. It would also have features of green building like rain water harvesting tank, passive solar devices, recycling of waste water, part power generation from photovoltaics. The estimated cost of the proposed building is Rs. 4.20 cr. PSI's Chairperson Dr. K.S. Chawla, who also heads CTC PVt. Ltd., a construction company based in New Delhi is supervising the building construction.

PSI's proposed main building - side view

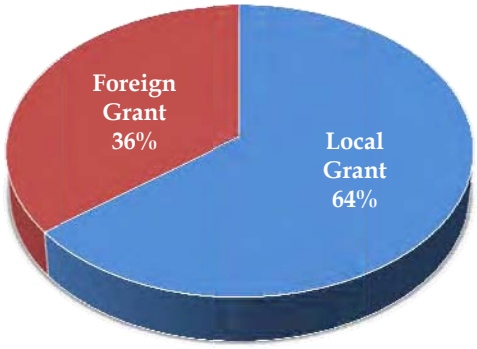
The campus architectural plan was finally approved by the Mussoorie Dehradun Development Authority (MDDA) in February 2016. The foundation stone of building was laid on March 14, 2016. The Chief Guest for the event was Ms. Radha Bhatt, Chairperson, Gandhi Peace Foundation (GPF), New Delhi. Apart from PSI's staff, other persons present were Dr. K.S. Chawla, Ms. Jo Chopra and Ms. Sumita Nanda (Latika Roy Memorial Foundation, Dehra Dun), Ms. Bharti Jain & Ms. Sangeeta Yadav (M/s P. Jain & Co., Dehra Dun) and Mr. Rajesh Kumar (Kutir Construction Pvt. Ltd., Dehra Dun).

VI. FINANCIAL REPORT

PSI's balance sheet and consolidated income and expenditure account for 2015-2016, ending March 31, 2016 are attached as Annexures 1a and 1b.

During the year the Institute generated grants worth Rs. 2,16,87,005 and donations worth Rs. 44,89,417.77. Other receipts from consultancies, sale of products and publications amounted to Rs. 83,04,252. Adding the opening balance and other incomes the total income for 2015-2016 amounted to Rs 9,98,22,307.43. The Institute spent Rs. 3,68,769,85.48, leaving a balance of Rs. 6,29,45,321.95. Donation worth Rs. 28,96,605.77 was exclusively received towards Campus Fund. With unutilized grants carried forward amounting to Rs. 5,96,65,149.74, the surplus transferred to the capital fund is Rs. 3,83,566.44.

The pie-charts below show the sourcing of income from local grants and foreign grants for 2015-2016 & the previous year.



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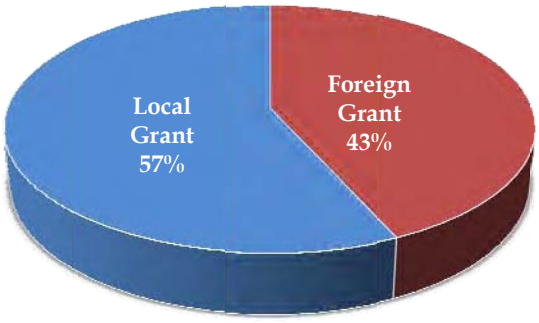

2015-16

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

Indian: Tata Education Trust, Axis Bank Foundation, Arghyam , UNDP, Chawla Techno. Const. Pvt. Ltd. and ACWADAM.

Foreign: Frank Water, University of Arizona, HIVOS and Axis Bank Foundation.

VII. EXECUTIVE BOARD 2015-16

Dr. K.S. Chawla	Chairperson	Geotechnical Engineer
Mr. A.K. Roy	Treasurer	Chemical Engineer
Dr. Kshama Metre	Member	Medical Practitioner
Dr. Navin Juyal	Member	Scientist
Ms. Vibha Puri Das	Member	Political Scientist
Ms. Tinni Sawhney	Member	Rural Management
Dr. Debashish Sen	Director (Ex-Officio)	Scientist

VIII. PSI STAFF 2015-16

S. No.	Name	Date of Joining	Date of Leaving
1	Shrishtee Bajpai	22.06.2015	23.11.2015
2	Vargish Bamola	04.01.2016	
3	Bhupendra Bartwal	01.11.2013	
4	Puran Bartwal	03.01.2011	
5	Malavika Bhatt	03.12.2014	
6	Ravi Chopra	27.06.1988	
7	D.N.Dwivedi	17.08.1998	
8	Anil Gautam	01.03. 2002	
9	Sreedip Ghosh	16.03.2016	
10	Vishal Gupta	16.12. 2011	
11	Pushpa Juyal	21.12.1992	
12	Surendra Kaintura	01.10. 2012	
13	Neha Khandekar	01.03. 2014	
14	Ranjana Khare	01.12. 2011	
15	Ozair Khan	11.11.2014	31.07.2015
16	Hriday Khattry	18.08.2014	

17	Manoj Kumar	10.07. 2006	
18	Ravinder Kumar	01.02. 2014	
19	Darshan Lal	01.06. 2013	
20	Mohd. Tavish Malik	12.01. 2015	
21	Poonam Mall	05.06. 2014	
22	Vivek Kumar Mishra	22.06.2015	30.09.2015
23	Raman Mishra	01.10.2015	
24	Vinod Niranjan	15.01.2014	
25	Vishal Patel	18.11.2015	
26	Anchal Prajapati	18.04. 2013	
27	R.S. Prasad	01.11.1994	
28	Puja S. Raghuvanshi	01.11. 2013	
29	Surender Singh Rana	01.06. 2012	
30	Ramesh Rawat	16.09. 2004	
31	Dinesh Raturi	15.04.2015	
32	Subhash Rawat	01.06. 2002	
33	Seema Ravandale	05.03. 2012	30.06.2015
34	Amogh Sahaje	02.07.2014	30.04.2015
35	Ankit Saxena	05.06.2014	
36	Debashish Sen	01.03.1988	
37	Anita D. Sharma	02.07. 2012	
38	Devansh Sharma	01.03.2016	
39	Dinesh Sharma	02.10.1997	
40	Rajesh K. Sharma	20.08.1998	
41	Sunesh Sharma	01.04. 2011	
42	Mahendra Singh	01.01. 2008	
43	Vikram Singh	01.02. 2000	
44	Yashpaul Singh	03.01. 2011	
45	C. Tripathi	15.06.1988	
46	Khrolhieve-u-Tushah	15.06.2015	
47	Kuldeep Uniyal	09.03.2015	
48	Ruchi Uniyal	11.09.2015	29.02.2016
49	Ravish Raj Yadav	05.06.2014	

PEOPLES' SCIENCE INSTITUTE

E-92, PANCHSHEEL PARK NEW DELHI-110 016

BALANCE SHEET AS AT 31st MARCH, 2016

S.NO.	PARTICULARS	Notes	FOREIGN FUND	LOCAL FUND	TOTAL AS AT 31.03.2016	TOTAL AS AT 31.03.2015
I	**CAPITAL AND LIABILITIES**					
	CAPITAL FUND					
	ENDOWMENT FUND		597,837.00	-	597,837.00	597,837.00
	Add: During the year		-	-	-	-
	Closing Balance		**597,837.00**	-	**597,837.00**	**597,837.00**
	CAMPUS FUND					
	Opening Balance		9,485,133.00	7,172,000.00	16,657,133.00	13,657,133.00
	Add: Donation for Campus Fund		2,896,605.77	-	2,896,605.77	-
	Add: Transfer from General Fund		-	-	-	3,000,000.00
	Closing Balance		**12,381,738.77**	**7,172,000.00**	**19,553,738.77**	**16,657,133.00**
	GENERAL FUND					
	Opening Balance		1,875,001.46	(64,964.49)	1,810,036.97	905,512.99
	Add: Excess of Income over expenditure		370,709.94	12,856.50	383,566.44	904,523.98
	Closing Balance		**2,245,711.40**	**(52,107.99)**	**2,193,603.41**	**1,810,036.97**
	GRANTS (to the extent unutilised) Receivable / Unutilised (Net)		30,368,185.25	29,296,964.49	59,665,149.74	65,341,632.66
	PROVISION for GRATUITY		1,000,000.00	-	1,000,000.00	-
	CURRENT LIABILITIES					
	OTHER CURRENT LIABILITIES	1	214,888.00	184,001.00	398,889.00	751,247.00
	TOTAL		**46,808,360.42**	**36,600,857.50**	**83,409,217.92**	**85,157,886.63**
II	**ASSETS**					
	Non-Current Assets					
	FIXED ASSETS					
	TANGIBLE ASSETS					
	less Depreciation	2	3,975,206.45	2,219,598.85	6,194,805.30	4,716,198.80
	NON CURRENT INVESTMENTS	3	36,613,013.00	24,447,025.00	61,060,038.00	72,723,620.00
	CURRENT ASSETS					
	Trade Receivable	4	-	56,345.00	56,345.00	40,650.00
	Security Deposits	5	-	185,391.00	185,391.00	181,180.00
	CASH AND CASH EQUIVALENTS	6	2,395,889.97	6,325,940.65	8,721,830.62	3,763,604.83
	OTHER CURRENT ASSETS	7	3,824,251.00	3,366,557.00	7,190,808.00	3,732,633.00
	NOTES TO THE ACCOUNTS	8				
	TOTAL		**46,808,360.42**	**36,600,857.50**	**83,409,217.92**	**85,157,886.63**

"As per our seperate report of even date attached herewith"

For S.M.S ARYA & CO.
Chartered Accountants
002509N
New Delhi

SUDHIR ARYA
FCA, CIA (USA)

Date: 19th September,2016
Place: New Delhi

For PEOPLES' SCIENCE INSTITUTE

DEBASHISH SEN
Director

KANWARJIT S. CHAWLA
President

A.K.Roy
Board Member

PEOPLES' SCIENCE INSTITUTE
E-57, PANCHSHEEL PARK ,NEW DELHI- 110016

CONSOLIDATED INCOME AND EXPENDITURE ACCOUNT FOR THE PERIOD ENDED 31st MARCH, 2016

PARTICULARS	Local Fund AS AT 31-3-2016	Foreign Fund AS AT 31-3-2016	Total Amount AS AT 31-3-2016	Total Amount AS AT 31-3-2015
INCOME				
Grant Unutilized	**31,331,492.41**	**34,010,140.25**	**65,341,632.66**	**68,427,642.71**
Grants received	12,297,037.00	9,389,968.00	21,687,005.00	14,378,175.05
Donations	859,001.00	3,630,416.77	4,489,417.77	2,574,875.00
Environmental Education Programme	548,512.00	-	548,512.00	3,948,284.00
Environmental Services	255,200.00	-	255,200.00	2,462,650.00
Water Sampling & Kits	659,363.00	-	659,363.00	291,715.00
Publications, Posters & Maps Receipts	1,710.00	-	1,710.00	8,780.00
Interest on Income Tax Refund	23,669.00	-	23,669.00	14,440.00
Interest from Bank	2,169,979.00	3,241,192.00	5,411,171.00	6,394,091.00
Hostel Receipts	34,000.00	-	34,000.00	52,950.00
Misc. Receipt	143,262.00	-	143,262.00	76,905.00
Travel,Board & Lodge reimbursement	107,587.00	10,696.00	118,283.00	-
Project Closed	-	-	-	741,041.59
Overhead Transferred to General Fund	592,192.00	516,890.00	1,109,082.00	775,968.57
TOTAL (A)	**49,023,004.41**	**50,799,303.02**	**99,822,307.43**	**100,146,917.92**
EXPENSES				
Books & Periodicals	33,399.00	10,641.00	44,040.00	40,085.00
Travel Cost	2,468,514.00	1,951,625.00	4,420,139.00	3,592,231.00
Grant to Other Organization	533,988.00	3,505,838.00	4,039,826.00	2,556,966.00
Honoraria/Consultancy	1,999,120.00	609,080.00	2,608,200.00	1,994,627.00
Lab Expenses	407,029.00	18,358.00	425,387.00	424,825.00
Meeting/ conference/ Workshop	664,363.00	227,729.00	892,092.00	338,626.00
Relief & Community Development Work	3,192,555.00	2,164,538.00	5,357,093.00	2,334,050.00
Training Expenses	978,734.00	24,628.00	1,003,362.00	3,012,898.00
Salaries	6,284,652.00	5,014,960.00	11,299,612.00	9,522,944.00
PF Employer's Contribution	359,860.00	313,770.00	673,630.00	492,126.00
Staff Welfare	54,897.00	53,040.00	107,937.00	105,104.00
Audit Expenses	23,751.00	35,021.00	58,773.00	61,077.00
Annual Maintenance Charges	3,435.00	-	3,435.00	-
Bank Charges	9,875.42	7,439.06	17,314.48	10,284.12

PARTICULARS	Local Fund AS AT 31-3-2016	Foreign Fund AS AT 31-3-2016	Total Amount AS AT 31-3-2016	Total Amount AS AT 31-3-2015
Computer Maintenance	64,249.00	29,420.00	93,669.00	73,558.00
Gratuity	-	1,000,000.00	1,000,000.00	35,983.00
Hospitality Expenses	-	-	-	-
Internet & Data Usage	15,646.00	16,480.00	32,126.00	25,252.00
Insurance	43,016.00	2,549.00	45,565.00	4,788.00
Local Conveyance	25,968.00	5,208.00	31,176.00	96,747.00
Misc Expenses	94,576.00	62,178.00	156,754.00	99,563.00
Office Maintenance	104,764.00	52,355.00	157,119.00	87,188.00
Postage & Courier	12,927.00	2,983.00	15,910.00	12,981.00
Printing & Stationery	86,386.00	34,851.00	121,237.00	288,611.00
Professional Charges	143,680.00	125,198.00	268,878.00	156,713.00
Rent	701,092.00	781,162.00	1,482,254.00	1,319,644.00
Repair & Maintenance	34,547.00	12,900.00	47,447.00	117,766.00
Server & Website Expenses	6,000.00	-	6,000.00	6,000.00
Staff Recruitment	25,600.00	-	25,600.00	-
Telephone & Fax	123,027.00	37,075.00	160,102.00	166,808.00
Vehicle Running & Maintenance	148,373.00	33,542.00	181,915.00	132,327.00
Water & Electricity Charges	76,842.00	30,314.00	107,156.00	100,192.00
Water Kit Cost	6,132.00	-	6,132.00	116,951.00
Overhead Transferred to General Fund	325,392.00	783,690.00	1,109,082.00	775,968.57
Project Closed	-	-	-	741,041.59
Depreciation	660,793.00	217,230.00	878,023.00	173,600.00
TOTAL (B)	**19,713,183.42**	**17,163,802.06**	**36,876,985.48**	**29,017,526.28**
Balance (A-B)	**29,309,820.99**	**33,635,500.96**	**62,945,321.95**	**71,129,391.64**
Less : Grant Refunded			-	1,883,235.00
Donation for Campus Fund	-	2,806,605.77	2,806,605.77	-
Transferred to Campus Fund	-	-	-	3,000,000.00
Unutilised Grants Carried Forward to Balance Sheet	**29,296,964.49**	**30,368,185.25**	**59,665,149.74**	**65,341,632.66**
Surplus/Deficit transferred to Capital Fund	**12,856.50**	**370,709.94**	**383,566.44**	**904,523.98**

For S.M. VARMA & CO.
Chartered Accountants
SUDHIR VARMA
FCA (CA, USA)
Date: 19th September 2016
Place: New Delhi

For PEOPLES' SCIENCE INSTITUTE

DEBASHISH SEN
Director

KANWARJIT S. CHAWLA
President

A.K Roy
Board Member