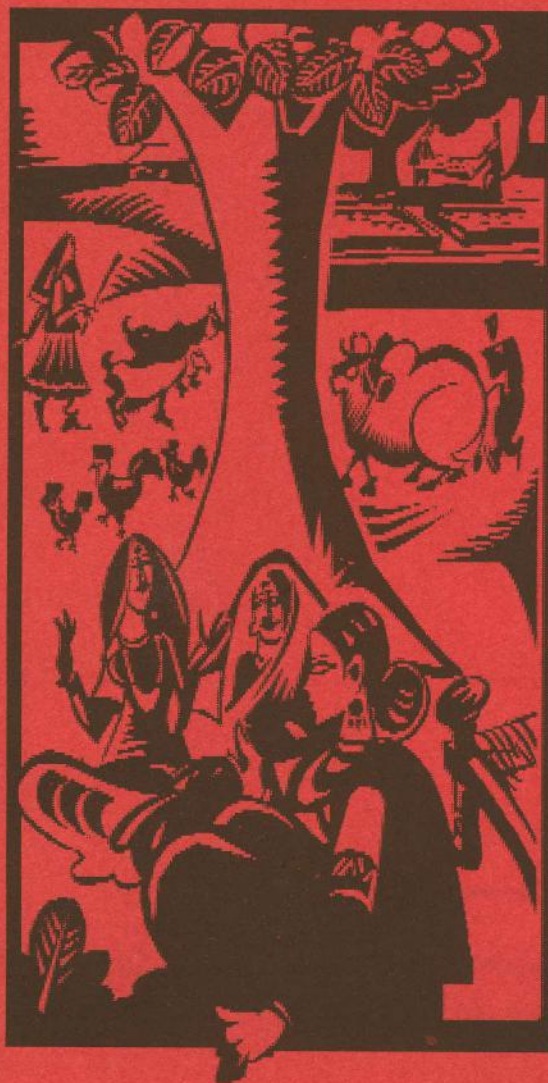


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Lead Article: Fruitful Intervention

1

Nirmal Beura posits that promoting homestead orchards amongst tribal families in Gumla in Jharkhand as part of a combined agriculture, horticulture and forestry programme holds the promise of sustainable livelihoods. Nirmal is based in Gumla.

Showcase: Churning the Earth for Prosperity

8

Jibdas Sahu describes how producing and selling vermicompost became a profitable source of livelihood for women in the Dumka district of Jharkhand. Jibdas is based in Dumka.

Report: Experiences in Micro Insurance for the Poor - I

15

Monika Singh reports on her visits to a number of grassroots organisations that have initiated insurance schemes for the poor with mixed results. Monika is an intern from the School of International Development and Policy Studies in Brandeis University in the US.

Pradan Study: Water Rights and Policies in Jharkhand

21

Videh Upadhyay summarises finding from a Pradan commissioned study on water rights in Jharkhand and finds serious causes for concern because most relevant legislative acts vest sweeping powers to the state without much attention paid to the rights of the indigenous poor and tribal people. The study was supported by the Ministry of Rural Development and the UNDP under the CBPPI (Community based Pro Poor Initiatives) project. Videh is a partner in the Enviro Legal Defence Firm in New Delhi.



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Fruitful Intervention

Promoting homestead orchards amongst tribal families in Gumla in Jharkhand as part of a combined agriculture, horticulture and forestry programme holds the promise of sustainable livelihoods

Nirmal Beura

Gumla is an economically poor district situated on the Chotanagpur plateau of Jharkhand. The terrain is undulating, with alternating hill ranges, uplands and valleys. The altitude of the district varies between 500 and 800 metres from mean sea level.

The district has the distinction of having the highest concentration of scheduled tribes (ST) in the state (70%). Scheduled castes constitute only 5% of the district's population. The population density, at 148 persons per square km, is also the lowest in the state. Khodias, Oraons and Lohras constitute the majority of the ST population. About one-third of the population are Christians and the rest are either Hindus or Sarnas (the original tribal religion).

Gumla is one of the poorest districts in Jharkhand. According to official figures, 73% of the district's population lives below the poverty line (BPL), compared with 62% overall in the state. The level of urbanisation is extremely low in the district with 95% of its population living in villages, compared with 78% in Jharkhand. In terms of access to basic services and infrastructure, Gumla fares badly compared with Jharkhand as a whole, which is itself poorly served.

Workers constitute 49% of the rural population in Gumla. A majority of the workers are farmers. The proportion of agricultural labourers is very low in the district compared with the rest of rural Jharkhand, or for that matter, rural India. It implies that people

generally cultivate their own land, whatever meagre produce that might yield. Women constitute a very significant section of the workforce, being the majority among agricultural labourers.

Marginal Existence

Only about 35% of the total geographical area of the district is under cultivation. Gumla produces only 131 kg of food grain per capita annually. The rest has to be brought in from outside to meet the food requirements of the population. Paddy is the main crop of the district. Small and marginal farmers constitute 70% of the total number of farmers. Landlessness is rare, though land alienation exists due to indebtedness under the informal credit system.

Agriculture is predominantly rain-fed and therefore dependent on the vagaries of the monsoons, particularly the distribution of rainfall. Government records show that only about 5% of the total cultivable area is irrigated. However, this figure includes the command area of defunct schemes as well. Poor rains therefore result in widespread crop failures, leading to distress migration out of the district and the state.

There is a large cattle population in the district, entirely of nondescript breeds. People keep livestock for agriculture work, draught purposes and to meet emergencies. Other important sources of livelihoods are migration to other states, selling firewood collected from local jungles, etc.

Livelihoods of tribal families in Gumla are primarily based on subsistence agriculture and forests. A typical family usually comprises 5 members (husband, wife and 3 children). Occasionally either of the parents stays with them. On an average a tribal family has a landholding of one hectare (ha), a majority of which is marginal uplands (see table 1).

Farmers usually cultivate short duration paddy, finger millets and black gram on these lands. Since there is virtually no irrigation on these marginal lands, they are capable of cultivation only once a year during the monsoons (see table 2).

However, the availability of considerable amounts of marginal lands with these tribal

families provides a good opportunity to develop productive orchards so that a family could achieve round the year employment and income (see table 3). At present, the people derive forest and other tree-dependent incomes from mahua, kusum and ber for lac, tamarind etc. The trees are both on common lands and privately owned.

Holistic Intervention

It is evident that we need to intervene in all land types to make an impact at the family level. There is need to improve the productivity of food grains, especially paddy, in the lowlands (*khet*). Our intention would be to optimally engage family resources (labour and capital) to produce enough food grains for household consumption and to generate some surplus. The focus of this intervention will be

Table 1: Landholding Pattern

Type of Land	Status	Landholding (ha)	Crops
Uplands	Marginally cultivated, fallow	0.4	Upland paddy, finger millet
Medium uplands	Embanked and terraced	0.2	Black gram, groundnut
Medium land	Embanked and terraced	0.2	Medium duration paddy
Lowland	Water availability	0.1	Long duration paddy
Homestead	Shared irrigation	Small piece	Potato, onion

Table 2: Productivity and Income from Land

Crop	Acreage (ha)	Productivity Q/ha	Produce (kg)	Rate Rs/kg	Income (Rs)	Remarks
Upland paddy	0.2	16	240	4	960	Consumption purposes
Finger millet	0.2	14	280	4	1,120	Drought proof
Black gram	0.2	5	100	11	1,100	Rainfall dependent
Groundnut	0.1	10	100	14	1,400	Cash income, intensive practices
Medium duration paddy	0.2	30	600	4	2,400	Rainfall dependent
Long duration paddy	0.1	40	800	4	3,200	Consumption
Total					10,180	

Table 3: Status of Natural Resources and the Scope for Improvement

Uplands	No embankments or terraces, marginally cultivated, often remain fallow. In various stages of degradation, with occasional presence of bushes or stubbles of trees.	Almost all categories of families have some lands. Poorer families have about 0.4 ha	With proper land development measures, on site water harvesting and irrigation development, these could be brought under orchards, fodder & vegetable cultivation. Some of these lands near settlements can be converted into homesteads.
Homestead lands	These are also uplands often used for vegetable cultivation for household consumption. Some families might have wells used as sources of drinking water as well for irrigation for vegetable cultivation	All categories families have such lands. The poorer would have a smaller piece.	Several neighbouring families may get together to share a well to intensify homestead farming. Community managed lift irrigation systems may also provide water. Quality of lands can be improved through manure application. Necessary fencing is to be done. Cash crops including mulberry sericulture may be undertaken.
Medium uplands	Embanked and terraced. Upland paddy in the monsoon is the sole crop, which suffers the most during drought.	0.2 ha on an average. Almost all families hold such land.	On site water harvesting to increase soil moisture, reaching water through lift irrigation where possible, paddy improvement interventions, post-paddy vegetables (early Rabi), etc.
Medium lands with terracing and embankments	Without irrigation support people grow only monsoon paddy.	Poorer families on an average would have 0.2 ha of such land.	Could be converted into double cropped lands with water harvesting, storage structures and irrigation development.
Low lands		Poorer families on an average would have 0.1 ha of such lands.	Embankment plantations can be introduced.
Soil quality needs to be improved through organic means in all types of land			

to decrease land for paddy cultivation as well as to free labour from a consumption mode of cultivation to a remunerative one.

Uplands are available in plenty in this area

and local markets are available for selling crops cultivated during the Kharif season. Therefore all tribal households focus exclusively on cultivating paddy during the Kharif season. We need to focus on irrigation (in

some cases only as a backup) to reduce the vulnerability of the crop from erratic rainfall. The families need to be assured of producing at least the annual household food grain requirement.

We also need to explore ways to reduce the demand on manual labour and look at ways of mechanisation. For instance, the drudgery of certain activities like threshing needs to be minimised. We have to develop irrigation sources like seepage tanks, ponds and wells. We need innovative irrigation strategies in the lowlands so that each family has access to irrigation on at least half an acre of land. We could also promote the use of high yielding varieties of various crops.

In the uplands there is need to find areas of intervention to strengthen the traditional crops that are useful for both consumption and sale. The cultivation practices of finger millets, groundnut and black gram needs to be strengthened. We may then gradually focus on generating income in the Kharif season from chilli, tomato and other creeper crops.

We need to devise ways to bring more area under cultivation and improve homestead lands so that the families could cultivate vegetables during the Rabi and summer seasons. We could also promote homestead orchards simultaneously so that vegetable cultivation and fruit orchards develop together.

All this requires focussed investments in irrigation development as well as working with the families in motivational and psychological aspects. If we are able to achieve this properly, participant families will remain engaged throughout the year and generate some surplus income at the same time.

Homestead Orchards

Baari-baagan-khet (local name for homestead, orchards and lowlands) is an agro-based activity supported with improved agriculture for the socio-economic rehabilitation of the rural poor. These activities have proven their worth in providing gainful self-employment to poor rural families on their wastelands, marginal lands and good lands. The objectives of promoting homestead orchards are:

- Stopping distress migration;
- Regenerating degraded natural resources held by households;
- Ensuring sustained income from these resources, and
- Ensuring families are able to work on their own land throughout the year.

The homestead orchard programme is based on a farming system approach that includes horticulture and forestry; intercrops for food and cash income, and intensive cultivation of cash crops on small plots. It considers the family as a unit and builds on the resources that the family already possesses. The components of the homestead orchard programme are:

- Development of marginal lands through soil and water conservation;
- Planting fruit and forest trees;
- Cultivating suitable intercrops both for food and cash incomes;
- Cultivating short-term cash crops on small plots in an intensive manner;
- Introducing improved varieties and production techniques for traditional and cash crops;
- Developing appropriate irrigation structures for all the 3 types of land, and
- Better using marginal uplands for vegetable cultivation to earn income according to market demand and seasonality.

The family is at the centre of this pro-

gramme. The intensive regeneration and utilisation of land and water resources will help to generate self-employment opportunities for a household throughout the year. The components are need-based and tailor-made to ensure that the family will be rehabilitated by the end of a gestation period of 7 years.

At the end of this period, the horticulture and forestry plantations would become productive and the income from these resources and from agriculture would help a family to rise above the poverty line on a sustainable basis.

Holistic Initiative

In this programme, intercropping in the homestead orchards, both for traditional and cash crops, will also be a critical component. This is expected to ensure and sustain the farmer's interests. In the long run these homestead orchards would become productive assets, providing full-time employment (and sufficient income) for the family round the year. We look at this programme not only as a horticultural initiative but as a holistic initiative, keeping in mind a family's overall needs and requirements.

We expect that due to this intervention families would end up strengthening their asset base and eliminate the need to migrate for up to 6 months to faraway cities in search of wage labour. After a family joins the programme, migration would be reduced because self-employment would be available locally round the year.

In addition, there would be intangible benefits in the form of family welfare, and improved nutrition and health. Basic services on health through community workers and service providers would also be added to

the programme according to the needs of the area.

Proposed Activities

Under the programme, each participant family would take up intensive land development and plantation work on 0.5 to 1 acre (0.2 to 0.4 ha) of wasteland or marginal land belonging to it in order to convert it into a productive forestry plantation and orchard (see table 4 on page 6).

The work to be done on the homestead orchard plots will involve land shaping through raised embankments, trenches, digging and filling of pits, fencing, plantation of fruit and forestry saplings, water resource development or any other suitable means, intercropping, follow-up care of plantations, etc. The forest species planted on the boundaries of the plantation would serve as a windbreak for the fruit trees and also provide a source of timber, fodder and firewood.

The species to be planted will be chosen according to their suitability to the project area, their income-generation potential and the preference of the participant family. Among fruit trees, we propose a combination of mango, leechi, guava and amla (60 trees per acre). Among forestry trees, subabul, teak, acasia, gamhar, sishum and bamboo have been found to be popular among the families. The saplings have to be provided with critical watering in the initial years to ensure proper growth.

Plantation Unit

Keeping in mind local conditions, we have considered an average unit size of 0.4 ha, which will be shared by 2 families. Each unit could consist of 20 mango trees at 10 m X 10 m spacing and 40 amla trees at 7 m X 7 m spacing. The unit will also allow for space for

intercrops in the initial years.

Alternatively, if it is raised only as an intensive orchard, the number of fruit trees would go up to 80 in a very close spacing. The selection will depend upon the agro-climatic and soil conditions and the preference of participant families. This design needs to be further developed with help from technical resource agencies.

The fruit trees will be chosen based on local suitability. Thus, the mango varieties chosen would be for both pickling and pulping. Potential varieties are Amrapalli, Langdi, Kesar, Rajapuri, Malda, etc. Each homestead orchard will have a border plantation of 400 to 800 forestry trees. These will be based on technical considerations and farmer choice

and could consist of teak, bamboo, neem, gamhar, acacia and seesum. In addition, since this area is naturally suited to lac insects, border plantations of ber would be a very good income source.

In addition to these activities on the homestead orchard plot, participants will be provided improved seeds and techniques for traditional crops such as paddy, pigeon pea, horse gram, vegetable and cash crops such as tomato, turmeric and ginger appropriate to the local context. The focus of the programme in initial years will be taking up as much intercrops as possible. Small-scale irrigation arrangements will be made both to provide protective cover to the tree crops as well as to cultivate small plots of winter crops such as vegetables.

Table 4: Activities for Homestead Orchard Programme

Land Development	Raised embankments, land levelling
Water Resource Development	Lifting harvested water using diesel or other fuel powered irrigation pumps to the orchard plots, construction of low cost check dams to harvest post-monsoon flows, development of ponds, tanks and dug wells
Plantation	Fencing, digging pits, filling pits with soil and manure, raising nurseries of fruit and forest trees, plantation of saplings, transplantation of grafts
Post Plantation Activities	Aftercare practices such as weeding, basin preparation, mulching, pruning, etc., protective watering of plants, plant protection through pest management and control
Soil Improvement Activities	Inter-cultivation and harrowing, soil improvement through green manures, composting, raising intercrops such as vegetables, fodder, oil seeds, tuber crops, etc.
Training	Functional training of participants for the above activities, training of field functionaries, building a cadre of extension agents and service providers
Intervention in Agriculture	Promotion of improved techniques and high yielding varieties, promotion of paddy seed entrepreneurs, marketing arrangement for vegetables, fruits, etc.

Table 5: Profile of Programme Area

Block	Area (sq km)	Forest (%)	Cultivable (%)	Population per sq km	ST (%)	SC (%)	Cultivators* (%)	Agricultural labourers* (%)
Palkot	575	27	55	123	59	8	70	18
Raidih	515	36	55	121	64	3	79	12
Gumla	522	11	76	241	63	4	67	19
Ghaghra	534	16	66	164	74	2	68	22

*Among total workers

In addition to the diversification in cultivation, farmers will be trained in skills such as nursery raising and grafting of fruit trees. This would enable them to take up income-generation activities at their homesteads for easy accessibility and production of good grafts in the local area for other families.

The farmers would also be trained in improved husbandry practices in respect to traditional crops such as paddy and finger millets and in the appropriate use of improved farm implements available on rent. These in turn would help to improve farm productivity.

Coverage

The homestead orchard programme is planned in 4 blocks of Palkot, Raidih, Gumla and Ghaghra in Gumla district, which pan out on the 4 sides of the district headquarters. The features of the 4 blocks are no different from the rest of the district (see table 5). A significant part of the blocks are covered with forests and population density is low.

The participating families are resource poor categories, identified by the government as below the poverty line with land and mainly rural tribal families. In order to ensure the active participation of families in programme implementation, field level imple-

mentation is to be organised through informal groups of the participating families. In future, two formal cooperatives will be formed for trading, processing and marketing. Pradan will provide technical, managerial and marketing support to the participants after the project period to ensure sustainability.

Since there is a strong technology component in this horticulture programme, it is necessary to collaborate with resource agencies for guidance and support. Our principal collaborator will be the Horticulture and Agro-Forestry Research Programme (HARP) based in Palandu in Ranchi.

Present a New Idea for Peer Review

Pradan has always been in the forefront in innovating on new ideas that could be implemented at the grassroots. *Concept Papers* in NewsReach are a way to share and air new untested ideas to solicit peer feedback. If you have a new idea you would like to test before implementing, send us a 2,000 word *Concept Paper*. If you have experience or views on any *Concept Paper* that would help the author, email us at newsreach@pradan.net.

Churning the Earth for Prosperity

Producing and selling vermicompost has become a profitable source of livelihood for women in the Dumka district of Jharkhand

Jibdas Sahu

The year 2004 was a very good year for 55-year-old Paro Devi, a member of the Maa Laxmi Mahila Mandal, a self-help group (SHG) promoted by Pradan in Dumka district of Jharkhand. She presented a bicycle and a silver chain to her son and a silver necklace and earrings to her daughter-in-law. She was also able to repay Rs 1,100 of the Rs 1,700 loan she had taken for her son's wedding, besides purchasing enough rice so that her family does not go hungry. She paid tuition fees for her 2 grandsons and bought them books, besides going on a pilgrimage herself. She has also purchased a goat. And she has done all this with her own earnings.

Fifty-year old Basanti Devi, a member of the Ma Saraswati Mahila Mandal, also had a very good year. She bought rice for the year without borrowing and was able to spend on healthcare for her husband and a grandson. She bought books and garments for all her grandchildren and gave a facelift to her house by putting shingles on the roof. She also bought a pig and later sold it at a profit.

Jasomati Devi, SHG member from the Mirdha community, has a similar happy tale to narrate. She spent around Rs 1,000 for medical treatment of her 5 grandchildren, Rs 500 for herself and Rs 300 for her son. She repaid some of her loans to the SHG, and was still able to buy sufficient rice and groceries for the family. She also treated herself to a silver necklace.

All these women, living in villages in Dumka, have succeeded in making a difference in their lives by producing and selling organic

fertiliser. Paro Devi sold about 52,000 earthworms and 15 quintals of vermicompost and earned about Rs 20,000. She used 4.5 quintals of vermicompost in her agricultural land for growing potato and mustard. If the business continues to do well, she plans to put tiles on her house and build a room within a year for her youngest married son.

Basanti Devi earned around Rs 22,000 by producing vermicompost. She has now decided to purchase a pump to irrigate her vegetable patch. Jasomati Devi sold around 65,000 earthworms and 7.5 quintals of vermicompost and earned a neat profit. As for the future, she plans to purchase 2 bullocks. She also plans to buy gold earrings for herself if she can earn more from this activity.

Organic Benefit

All these women say that after they started earning from vermicompost and vermiculture, they always have some money in hand and do not have to borrow. They naturally feel very happy about it. Their living standards have improved and they now have more peace of mind.

Most farmers in Dumka are small and marginal farmers. They are not only unable to afford chemical fertilisers in adequate amounts but also resist its use as they believe it will harm their land. Vermicompost is an easy and economic alternative to chemical fertilisers for these farmers. Besides being cheaper, organic manures such as vermicompost do not have adverse effects on soil and plants.

Vermicompost, the casting (excreta) of

earthworms, is a rich and balanced source of essential plant nutrients. First, organic waste (dung and farm waste) is allowed to decompose for about 2 weeks. Earthworms then consume this partly decomposed matter and, through their metabolic activity, transform it into an organic manure known as vermicompost.

The manure may be applied to fields and the nutrients (such as nitrogen) available in it are immediately available to plants for uptake. It is thus an eco-friendly alternative to commonly available chemical fertilisers.

We have observed that in the Santal Parganas region of Jharkhand, of which Dumka is a part, 70-80% of rural households own 3-5 cattle. Thus the daily output of cow dung is around 15-25 kg, translating into an annual availability of about 70 quintals per family. Except during the agricultural season, most of this cowdung is lost through wind and rain erosion from the fields or grazing lands due to the prevalent practice of free grazing.

We have calculated that in the Dumka district alone about 5 lakh tonnes of cow dung can be transformed into about 1.7 lakh tonnes of vermicompost in a year. This projection excludes other farm wastes and dry leaves of privately owned trees like palash, jackfruit, mango, mahua, etc., besides leaves shed by forest trees.

Promoting Vermiculture

Given this scenario, our Dumka team decided to promote the use of vermicompost in our project area. There are many advantages of using vermicompost (see box 1). Our objectives of promoting vermicompost are:

- To help women set up micro-enterprises based on vermiculture technology in rural areas to improve their economic and social status;

Box 1: Advantages of Vermicompost

- Providing job opportunities for women and unemployed people
- Recycling of organic wastes
- Enhancing sustainability in the crop production system
- Producing energy rich resources
- Reducing environmental pollution
- Improving the soil pH (vermicompost acts as a buffering agent)
- Improving the percolation property of clay soils (from the compost's granular nature)
- Improving water-retaining capacity of sandy soils
- Releasing exchangeable and available forms of nutrients
- Increasing oxidizable carbon levels and improving the base exchange capacity of the soil
- Improving nitrate and phosphate levels
- Encouraging plant root system growth
- Creating a substitute protein in poultry and fish feed

- To improve soil fertility and food productivity through the recycling of the organic materials and wastes, and
- To use vermicompost as an alternative to chemical fertilisers.

There are 3,200 species of earthworms found in nature. For vermicomposting, the best results are obtained with 2 exotic species, *Eisenia foetida* (red worm) and *Eudrilus eugeniae*. They breed very fast and rapidly convert biomass into casts. Endemic species (found naturally in India) like *Perionyx excavatus* and *Perionyx sansibaricus* are also suitable but

have lower breeding and conversion rates.

For vermicomposting we require a container of 1 metre x 1 metre x 0.3 metre (depth). Such a container would hold about 30-40 kg of feeding materials for the worms. We require 1,000 - 1,500 earthworms to process the partly decomposed matter. The moisture content of the material should be between 40% and 50%. The pH of the bed should be as close to 6.5 as possible, with 7 and 6 being the upper and lower pH limits. The temperature in the pit should be between 200 C and 300 C and mean humidity 55%. The container has to be kept out of rain.

Conversion Dynamics

Earthworms feed on the partly decomposed wastes or cow dung or organic matter. The excreta it produces is known as vermicompost. By this process, the carbon nitrogen ratio goes far below 20:1 and the nitrogen is converted into available form for plant uptake. In case of organic waste, a minimum 14 days is required to transform it into a form by microorganisms present in soil that can be consumed by earthworms.

The earthworms live in the deeper layers of the material. They actively feed and deposit granular castings on the surface. The worms are allowed to feed on the material until it is converted into a highly granular mass. The worms feed on the biomass, assimilate 5%-10% of it for their growth and excrete the rest in the form of nutrient-rich casts.

Generally speaking, 2 kg of earthworms will recycle 1 kg of organic waste in 24 hours. In ideal conditions of comfort and moist food, the herd is capable of recycling their own weight in wastes every 24 hours.

It takes earthworms 7 weeks to reach adulthood. From the 8th week they produce cocoons. One mature worm can produce 2 cocoons every week. Each cocoon produces 4 young worms after an incubation period of 5-10 days, depending on quality of feed and ambient conditions. The resulting increase is about 1,200-1,500 worms in a year.

The lifespan of earthworms is 1 to 1.5 years and on an average a worm consumes 1 gram per day during its lifecycle. Thus, a single worm can produce almost 200 grams of compost in its life (if the conversion ratio is considered to be 3:1). During this period, a worm can produce 65 eggs and thus can produce 260 worms (as 4 worms emerge from one egg).

An earthworm starts feeding on the upper layer in the container and gradually works downwards. When all the feed is exhausted, the bottom 6 inches of compost along with the worms and eggs is considered as vermiculture, while the upper layers (free of worms and cocoons) are considered as vermicompost.

One feeding cycle is completed within 45 to 60 days when the bed size is 10 feet by 2 feet by 2 feet and there are 1,000 earthworms. The cycle extends up to 75 days during winter when the worms consume less.

When worms from one area are introduced in a new area with a different microclimate, it takes a little more time to complete the first cycle because they need to absorb the shock of relocation and acclimatise. However, the second cycle would be completed in 30 days, and the population of worms rises to thrice as much as the number at inoculation.

The breeding period of earthworms is

between August and November. During this period a single bed of worms is capable of producing enough culture of 10 more beds in each feeding cycle. April to July is a non-breeding period.

Process in First Cycle

The partly decomposed cow dung along with farm wastes are placed in 2 rows to form two compost beds of 10 feet x 2 feet x 2 feet set 2 feet apart. Before placing the worms, the ground is sprinkled with 4-5 buckets of water to make the soil moist and compact.

To avoid too much compactness, the material is placed gently on the beds. The pit area is best thatched and fenced. This would provide shade and darkness and protect the worms from poultry and pigs. The pits need to be watered daily for 5 days to keep the material cool and prevent heat generation due to fermentation.

After 5 days 25-35 kg of vermiculture is placed in the pits on top of the partly decomposed matter. The beds are covered

with single layered gunny bags. The pits have to be sprinkled with water in such a manner that the beds do not dry up. Care has to be taken so that water does not run on the ground.

The pits face attack from ants in the initial days. They are also vulnerable to attack from moles, rats and termites from time to time. These problems can be tackled by spraying a mixture of neem oil with water (1 litre of oil in 20 litre of water), spraying an extract of neem leaves (500 gm in 8 litre of water) and by placing ratttraps at appropriate places.

The compost also needs to be harvested at the correct time. Usually it is harvested too late. To avoid this we took technical assistance from experts from a local NGO.

We started this activity on November 23, 2003 (see box 2) with the expert knowledge and vermiculture (40 kg) from Rajasthan Gosewa Sangh (RGS). On November 24 we organised a training camp on bed preparation and inoculation of culture. Several members from

Box 2: Initiating the Activity

Village	Block	No of SHGs involved	No of members involved	No of beds	Date of inoculation	Expected Yield	
						Vermicompost (Quintal)	Vermiculture (bed equivalent)
Gandhrakpur	Shikaripara	1	1	1	25/11/03	2	7
Gandrakpur	Shikaripara	3	4	5	04/12/03	10	35
Bhilaigarh, Saraidaha, Kalhajore	Shikaripara	3	3	4	18/12/03	14	28
Gandhrakpur	Shikaripara		1	1	26/01/03	2	7
Saharitola, Bajrisol	Kathikund	2	2	2	16/12/03	4	14
Total		9	11	13		32	91

Pradan-promoted SHGs participated. We did our first inoculation and prepared 5 more beds on November 25. Ramful Saini of RGS facilitated the initiation.

On December 3 we inoculated those 5 beds with help from Ramful Saini. On the next day we arranged another vermicompost preparation exercise for SHG members from nearby villages.

In the third round, we made 6 beds with culture purchased from a NGO based at Deoghar with technical support of Ramful Saini. Another bed was inoculated on January 26, 2004 and a culture bank was prepared from which another 4 beds have been inoculated.

In the second cycle, we changed the size of bed to 10 feet x 4 feet x 1 foot. We have not adhered strictly to this size, which depends on the availability of the space. Also, before placing the feeding material (partly decomposed cow dung, organic wastes, etc.) we are now placing branches of bamboo, dry leaves or straw or any wastes and then the cow dung slurry.

These are removed after every 3 cycles by which time these also will be converted into vermicompost. These basically help in aeration in the lower part of materials. Many of the producers have started producing vermicompost in balcony or outhouses.

Popular Activity

By June 2004, the activity has spread to 8 villages in 2 blocks. Twenty families from 16 SHGs are engaged in this activity. Total numbers of beds have risen to 45 and we have a stock of worms for another 35 beds that can be immediately delivered. We have already purchased 8 quintals of vermicompost from

the producers in a central location at the rate of Rs 2 per kg. We have also been able to evolve a standard practice regarding this activity (see box 3).

Three groups from 3 villages of Dumka and Shikaripara blocks came for an exposure visit in these villages. We arranged for another exposure visit where another 30 members from 4 SHGs in our adjoining Godda project area came Gandhrakpur village of Shikaripara block and learned about this activity and its costs economics.

A demand for 30,000 worms had been generated from women SHG members from our Godda project area and 20,000 worms were supplied for 20 beds. The popularity of this activity is increasing by the day in this area. The women are so interested that they have started producing it in the courtyards of their houses.

The economics of this activity is extremely favourable (see box 4 on page 14). Some of the producers have earned Rs 2,800 by selling vermicompost and worms within 5 months. The average earning from 2 beds is around Rs 2,000 (vermicompost and vermiculture).

Benefits So Far

Families with little landholding now have an opportunity to earn from selling the vermicompost. Landless families who have cattle have taken this up as an enterprise for that provides a continuous source of income.

Many families have used the compost in different crops like paddy, maize and vegetables, saved expenditure on fertilisers and have been able to obtain good yields. Farmers are encouraged by the fact that

Box 3: Standard Practices

- Collect 70 baskets of partly decomposed (at least 15 days old) cow dung together with organic wastes, leaves, etc. in a place and water it continuously for about 5-7 days to prevent heat generation due to fermentation so that the mixture remains moist and cool and.

- Prepare 2 slightly raised beds with the help of bamboo and sticks (or other available wood). Keep 2 feet space between the beds

for free movement during watering. Spread some neem leaves (as precautionary measure against red ants) on the beds and place banana leaves and a layer of straw wastes or leaves. Sprinkle water on it to make the material moist. Smear these materials with cow dung slurry. Now place 35 baskets of moist mixtures on it. Inoculate each bed by adding 1,000 worms over the entire bed and cover with single layered, water-soaked gunny bags.

- Beds can also be made on the ground. In such cases it is important to spray cattle urine on the soil before placing the decomposed matter in each cycle to avoid red ant attacks. One could also opt for a concrete structure.

- Thatch the shed to provide shade and darkness. Make a fence of palm or date palm leaves or other available material or by thin wall around the area (keeping 2 feet space for free movement). It would provide darkness and protect the worms from poultry birds, pigs etc.

- Sprinkle water daily in summer, on alternate days in winter and every fifth day in the rainy season. The quantity of water would be such that neither the bed gets dry nor the water flows from the bed.

- It takes around 35- 45 days to turn the material in to vermicompost. Cease watering 5-7 days before it is converted into vermicompost. Turn the lower materials up. The completed vermicompost does not have smell of the dung and becomes loose and breaks when pressed by the hand.

- Collect prepared vermicompost in a shady place (no direct sunlight), separate the worms and shift them on to another partly decomposed bed. Sieve the compost and pack prepared vermicompost (having 20% moisture content) in a sack. Store the bags in a room to maintain the moisture content.

- Transfer the left-out pupa (eggs) to the fresh beds.

Place: Preferably under a tree with a shed

Size of shed: 14 feet x 14 feet x 6 feet (L x B x H)

Bed size: 10 feet x 4 feet x 1 foot

Number of beds: 2

Number of earthworms: 2,000 (1,000 for each bed)

Quantity of cow dung mixture: 70 baskets (about 15 kg per basket)

using vermicompost ensures good soil health and results in better quality vegetables. This activity has helped many families to opt for vegetable cultivation as it reduced the

dependency on extra investment in the form of monetary inputs. For early adopters it became a major source of earning by selling earthworms to later adopters.

Other forms of benefits include getting back mortgaged lands, sending children to schools, investing in healthcare, purchasing rice in crisis periods and saving interest on loans, and creating productive assets like purchasing goats and pigs as well as getting tractor driving licenses for sons in some cases.

Present Status

Till date 488 families from 55 villages are producing vermicompost in 3 blocks in our Dumka project area. Interested villagers from our Godda and Deoghar project areas in Jharkhand and Keonjhar project area in Orissa have come for exposure visits and have purchased earthworms to start their own activity.

We have been also able to sell 90 quintals of vermicompost to our Jamshedpur and Godda

Box 4: Money from Earthworms

Investment: 2,000 worms @ Rs 200 / 1,000 worms = Rs 400

Returns

First Cycle:

3.5 quintals of compost @ Rs.2.75 per kg = Rs 962.50

Earthworms for extra 4 beds = Rs 800

Total return = Rs 1,762

Net profit = Rs 1,362.50

Second cycle onwards:

Net Profit = Rs 1,762.50

If a family were able to generate 5 cycles in a year and sell all the worms, it would earn around Rs 8,400 [Rs 1,362.50 + (Rs 1,762.50 x 4)]. The earning would vary depending upon the sale of worms, number of beds and number of cycles in a year.

teams. We now have a pool of service providers who are now experts in vermicompost preparation. We also have a large stock of worms. We have decentralised stock centres to store the vermicompost.

Way Ahead

We are now planning to form co-operatives that will purchase the product, store it and sell it to tasar plantation growers. In the meantime we would have been able to establish linkages to other markets.

We expect to cover 2,000 families through this income-generating activity in our project area alone. This year itself (2004) we would reach around 1,000 families in our project area and can extend support to other locations.

We are not complacent about our success and are now looking at improving and fine-tuning the technology. These include:

- Finding consumption and conversion rates by using different quantities of worms in different season;
- Finding its breeding pattern to have a clearer picture on availability of worms and predict in advance in order to supply to others, and
- Finding the composition of compost using different proportions of leaf and cow dung, and comparing it with other forms of manures and fertilisers in relation to nutrient content and effect on crop, soil and weed control.

Experiences in Micro Insurance for the Poor - I

The first part of a report on visits to 3 grassroots organisations who have initiated insurance schemes for the poor with mixed results

Monika Singh

Vulnerability has been explained as the risk of experiencing poverty in its various dimensions (Duggal, Ananth and Saboo, 2002: 5-6). They further explain it as the probability of being exposed to other risks such as violence, crime and natural disasters. Duggal adds that vulnerability is predominantly economic. Unstable livelihoods make a household more vulnerable. And increased vulnerability drains resources and erodes the capacity to earn a regular livelihood.

According to Sinha (2002) workers in India are in a vast majority. Workers in the unorganised sector constitute 92% of the majority. Women workers are also part of this informal sector and represent the majority of the workforce. Work in the unorganised sector is laborious with long working hours.

A majority of these workers live in small mud huts with large families. As they are in the unorganised sector, they are not employed on regular basis, which means they have no regular income. Also, they are not linked with formal markets and therefore have low bargaining power. They end up borrowing from moneylenders or traders, which further weakens their bargaining positions. Moreover, poor working conditions of women in the informal sector lead to numerous occupational hazards and make them vulnerable to many diseases (Sinha, 2002:9-12).

In such vulnerable conditions they are susceptible to health problems, accidents, man-made problems, crop failures and natural calamities. To cope up with shocks, poor people use self-insurance mechanisms. They borrow money from self-help groups (SHGs)

and from family and friends. They also deplete their assets such as savings and consumer durables or by pledging land titles and mortgaging assets. They are also highly susceptible to risk, as they do not have social security (Cohen and Sebstad, 2003).

On brighter side, many non-government organisations (NGOs) are trying to build a safety network for them through micro-insurance. First of all, it is necessary to understand that insurance is different from savings and credit. Insurance protects people from unexpected losses by compensating their losses, where the resources are pooled out from many.

Understanding Micro Insurance

Insurance refers to a financial service that, through pooling of the individual contributions of a larger group, provides partial or full compensation for losses experienced by any group member that result from specified causes or events (USAID MBP'S Virtual Conference on Micro insurance; Week 1 Briefing Paper).

It is also defined as "the pooling of risk whereby losses of few persons are shared by a larger number of persons, all of whom are exposed to the same kind of risk" (Friend's of Women's World Banking, 2001).

Insurance may be considered to be "a social device which aims at reducing the uncertainty of loss, or risk, through combination of a large number of similar uncertainties, and through distribution of burden of loss, if any, generally by the use of funds accumulated in advance" (Ray 1998: 3).

It may be useful here to differentiate a little between insurance in general and micro-insurance (MI). MI is insurance as applied in the context of the poor, whose realities are markedly different from those of the better-off sections. This is particularly stark in case of the very poor for whom sometimes the only source of livelihoods is labour. For such families sometime health hazards (that keep a family member from earning and drains the other family members' income) becomes more critical than death itself. In such families an untimely death of a cow would be as shocking as the untimely demise of an earning member.

If looked at dispassionately one would say that livestock insurance in such poor families is as important as life insurance. This is where normal insurance, which differentiates between (human) life insurance and non-(human) life insurance, differs. This becomes clearer when we compare general finance with microfinance. In microfinance we do not differentiate between consumption and investment purposes, whereas they are not the same in normal finance parlance.

In order to get a good picture of micro insurance, I visited 3 NGOs working in various fields of development. The organisations are Chaitanya in Pune, SEWA in Ahmedabad and Seva Mandir in Udaipur. The purpose of my visit was to study

- Their overall insurance programme;
- How organisations assess communities' risk and identify the need of insurance;
- The process of implementing the insurance programme;
- The impact of the insurance programme on the community;
- The communities' understanding about insurance, and
- Hurdles faced in implementing the insurance programme.

In this report I have presented three different insurance programmes. Each programme is about different NGOs and briefly about their work insurance program and how did they identify the need of insurance.

Micro Insurance in Chaitanya

Chaitanya is a NGO working for women's empowerment. Established in 1993, Chaitanya has been actively promoting and strengthening SHGs since the past 10 years in the tribal areas of Pune District of Maharashtra. Presently, they are working with 479 SHGs in 91 villages and 34 clusters with 7,520 members.

According to Chaitanya, a health programme was started when they identified the problem through the credit behaviour of their SHGs members, their own experience with the community and the purpose of loan taken by members. Health expenditure formed a major part of the expenses in poor households. The issue required addressing as members lacked information on health issues and lacked access to health services.

Chaitanya took the initiative by starting a basic health programme funded by GTZ of Germany. Their objective was to spread health awareness among SHG members. The focus was on training in reproductive and child health.

Some incidents that happened to SHGs members made them realise that some form of insurance was required. In one incident, a member who took a loan expired and the group was unable to recover the money from her family. The federation of SHG members known as Grameen Mahila Swayamsiddha Sangha attempted to address the need for loan security by approaching The New India Assurance Company.

New India Assurance initially provided accident insurance and insurance of livestock and loss of assets. The SHG federation played the role of an agent in this regard. Individual members paid an annual premium of Rs 60, which entitled them to death claim of Rs 25,000 and loss of limb claim of Rs 10,000.

Once the insurance company made this product available it was up to individual members whether they opted for it or not. In some places it worked well. The objective of this insurance was to recover money from SHGs members who had taken a loan and were not able to repay. For instance, if a member who had taken a loan died, the insurance company repaid the loan taken from the SHG. The major gain from this experience was that the communities understood the concept of insurance and they realised the need for such security.

Chaitanya also facilitated a health insurance project where United India Insurance Company Ltd designed the product. The salient features of this product were:

- Premium was set at Rs 105 for individuals, Rs 130 for couples (husband and wife) and Rs 145 for husband, wife and child. The premium increased as more members of a family were included.
- The claim amounts for accidental death, loss of limb and hospitalisation were Rs 15,000, Rs 10,000 and Rs 5,000, respectively.

In this case the SHG federation plays the role of an agent. SHG representatives are trained and provided with information about the insurance product. Later the other members are informed and made aware of the insurance product by these trained representatives.

People who have benefited by the insurance are satisfied. Others who were not able to

claim insurance for unexpected losses do not find it worthwhile. In villages where the insurance products have been around for some time, the people understand the need for it and are willing to accept products that are useful to them.

In some places SHG members have definitely become more aware and capable enough to negotiate independently with the insurance companies. For instance, people in one of the villages are trying to convince insurance companies to build a common place for them in the village instead of providing any other bonus or incentive if a sufficiently large number of people buy a policy.

Hurdles on the Way

There is however still some problems that act as hurdles in smooth functioning of Insurance schemes. These include:

- *Awareness*: People are not aware of documents required needed for claim settlement. This is because either the SHG representatives have not been trained properly or they were inattentive during the trainings. They are therefore not able to enjoy the benefits of these policies because they are sometimes uninformed about various rules and policies. Also, people are not aware of the various kinds of insurance. There is also a feeling among them that the premium should be paid back to them if they are not able to claim any benefit.
- *Manpower*: Number of staff who are dealing with insurance is inadequate, which affects the delivery of services.
- *Preconceived notions*: A few tribal communities think that insurance is only for rich people.
- *Past experience*: Due to some past negative experiences some women do not trust private companies, which leaves the NGO with very few choices.

Chaitanya is therefore working on modifying insurance policies in order to properly cater to the needs of people. A staff member said, "Chaitanya realises that high cost of premium and non-effective services can be a big disadvantage for any insurance scheme."

Micro Insurance in Seva Mandir

Seva Mandir is an Udaipur-based NGO working in 5 blocks of Udaipur district. During the early years of its formation, Seva Mandir was focusing on awareness on rights and adult education for marginalized people. In the mid 80s they developed a health programme and a women's development programme. They also undertook to rehabilitate the land base on which poor people's livelihoods were dependent.

Seva Mandir works towards 3 goals. They are:

- Strengthening sustainable livelihoods of village communities;
- Building local capabilities to achieve well-being in terms of health, education and gender relation, and
- Creating autonomous village level institutions and supporting organic leadership.

Since 1984 Seva Mandir has been working in the field of health for rural and tribal communities. Initially they focused on sanitation, hygiene and health education. Later they started working on maternal and child health. The health issues identified by Seva Mandir are hygiene; maternal and child health; malnourishment among children, and Awareness on sexually transmitted diseases, AIDS and malaria.

It provides health services that include intensive health campaign; health awareness meetings; medical camps, and referral health services. They have 2 health centres in Kherwara and Jhadol blocks of Udaipur. The

Kojwada referral health centre in Kherwara provides indoor and outdoor treatment. Services like X-ray and body fluid tests are also available.

Assessing Insurance Needs

Seva Mandir's experiences in working with rural communities impelled them to conduct a study on health issues. The study, conducted in 3 blocks of Udaipur district, found that a major portion of poor people's household income is spent on healthcare. It also found that although the poor spend a lot of money in treating various diseases, the treatment often remained incomplete. The main reason they discontinued treatment midway was that could not, beyond a point, afford it.

The poor often resorted to treatment by quacks because their services were easily available and the fees could be paid in instalments. Not surprisingly, the study found that these quacks were unable to treat bigger health problems.

Although there were primary health centres (PHCs) in some villages, these centres were not equipped to tackle all kinds of health problems. Also, the PHC doctors were mostly unavailable and only a pharmacist was present at these centres. As a result, people had to go to Udaipur city for serious health problems. Often they could not afford to go there and thus left the disease untreated.

Seva Mandir developed a health programme for the marginalized people after understanding and identifying the needs of the communities. The programme, implemented from May 1, 2004 in the area around Kojawara Hospital, was able to reach 401 people in 13 villages.

The communities living in the area around the hospital are mostly Patels, Muslims and tribals, who were already availing the services of the hospital. The main focus of this insurance programme was tribals and other marginalized groups, most of whom work as daily labourers in marble mines or agricultural fields. The relatively prosperous Patel community was not included in this programme.

Health Insurance

Buying the insurance product entails paying an annual premium set at Rs 50 for men and Rs 40 for women and children. The reason for the differential rates was to ensure the participation of women and children in the health insurance programme. The policy is valid only for individuals. Policyholders are issued an identity card, which enables them to treatment at the Kojawara hospital only for Rs 20. All other costs are covered by the insurance policy. Once Rs 20 has been paid for a visit, patients can return for more visits within a week without paying anything more.

The insurance policy provides an annual cover of Rs 2,000, which covers cost of medicines, tests or any other medical costs. The policy expires after a year with an option for renewal. This scheme is valid for treatment only at the Kojawara Hospital.

For this scheme village health workers (VHWs) have been working as agents. They receive Rs 5 as commission for every policy. The VHWs are local village people with some basic education. Seva Mandir is the custodian of the premium after paying the commission to VHWs. The basic fee of Rs 20 is kept by the hospital. The rest of the money owed by the insured member (with a limit of Rs 2,000) is then covered by Seva Mandir. The financial system will be further fine-tuned when the mid-term appraisal of the programme is

undertaken around December 2004.

The Kojwara hospital is well equipped including 11 beds, X-Ray room, laboratory, mess and other facilities. People from 15 neighbouring villages are able to access this hospital. The hospital also has computerised a patient registration system through which they keep track of the insured and uninsured patients, and disease and costs of treatment profiles. It also keeps track of medicine stocks (including date of expiry), the kind of medicine a patient has received and in what quantities. Records of the disease a patient is suffering from, the number of visits by the patient and the tests conducted are also maintained.

Impact

Health insurance is a new concept for the local people. Therefore Seva Mandir discussed this scheme with local leaders because it was important to convince the leaders who are the representative of the communities. With the help of community leaders and VHWs, Seva Mandir was able to take this insurance programme to the people.

There are many people who want to participate in this scheme but given the limited resources Seva Mandir has limited the number of members for the first phase. It will be scaled up once the midterm appraisal is done and the policy is readjusted accordingly.

The impact of this programme is positive but coverage is limited at this pilot stage. There are more people visiting the hospital every day and most of them are revisiting. Those who are revisiting are insured. Lots of them come for orthopaedic treatment, others are for malaria and other diseases that occur due to malnutrition and non-hygienic conditions. People are now more health conscious than before.

During my visit to Kojawara Hospital, I observed a few incidences that threw light on the condition of the people and the impact of the programme. A widow who was suffering from malformation of bones was almost at death's bed before she was insured. Her relatives used to carry her to the hospital because she could not even walk. She was almost paralysed. She was unable to afford the expensive medicines her treatment required. When this insurance scheme was introduced, the doctor recommended her to get insured. She did so and today she visits the doctor by herself without any support. Her condition is improving.

From this instance we can infer that once medical treatment becomes affordable, patients are keener to get treated. More and more people want to get enrolled in this scheme because they find it beneficial and affordable.

Limitations

I found that the people still do not trust the treatment to some extent. For instance, if the doctors just prescribe pills and no injections, they think they are not being properly treated. They also do not trust generic drugs, which are the most cost-effective. They rather put their trust on branded drugs.

Keeping in mind such prevalent notions about medical treatment, Seva Mandir charges Rs 20 for visiting a physician. Since people generally think the free medicines are worthless, the payment of this small fee reassures them to some extent.

According to Seva Mandir staff the issue of cost-effective treatment has to be sorted out since the covered amount of Rs 2,000 goes into just buying expensive medicines. The other major issue is again regarding cost.

The scheme assumes that if each member visits the hospital 0.45 times a year, the scheme breaks even. If they access the hospital more than that, which is the scenario at present, there would be a deficit that has to be covered by Seva Mandir. This does not seem viable in the long term when the scheme covers more numbers of people (Seva Mandir's report on *Health Insurance Programme for Kojawara Hospital*).

This health insurance scheme in its present form is more of a subsidised programme, which if expanded, will require more funds. Hence Seva Mandir would need to raise more funds to sustain this programme.

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To be concluded

Water Rights and Policies in Jharkhand

A Pradan commissioned study on water rights in Jharkhand finds serious causes for concern because most relevant legislative acts vest sweeping powers to the state without much attention paid to the rights of the indigenous poor and tribal people. The study was supported by the Ministry of Rural Development and the UNDP under the CBPPI (Community based Pro Poor Initiatives) project

Videh Upadhyay

The Union Ministry of Rural Development and the UNDP had asked Pradan to organise a study on pro-poor laws and policies in Jharkhand. Pradan in turn contracted a team of researchers to undertake different aspects of this multidimensional study.

The study was co-ordinated by Nandini Sundar from the Centre for the Study of Law and Governance at JNU and Nivedita Narain of Pradan. The researchers included Carol Upadhyay (land), Sudha Vasan (forests), Videh Upadhyay (water), Ramesh Sharan (land alienation), Nitya Rao (Santhal land rights), Ajitha Susan George (mining), and Nandini Sundar (PESA and overview), with Madhu Sarin as the overall advisor.

The researchers decided to focus on natural resource management and the functioning of PESA (Panchayat Extension to Scheduled Areas Act, 1996). The research involved:

- A study of all the different rules, laws, policies, regulations that govern particular sectors;
- An attempt to understand the manner in which they make it difficult for the poor to gain access to resources or control their own lives, and
- Suggestions on the ways in which people can assert their rights within the current framework or the point at which they need to mobilise against existing laws.

Issues of Water

The report on water rights and policies reviews some major policy and legal developments, including the most critical concerns on water rights, in the larger national context. It is followed by discussion on the emerging policy context for water resources development in Jharkhand. The report then attempts to analyse all the applicable specific state legislations. This is followed by a discussion on Sairati settlements including Jalkars and the role of the higher courts in ascertaining their nature.

A separate section discusses the water user groups that have been created in the state and the need to place them within the existing formal policy and legal map. This is followed by some specific case studies from the villages that point at the issues relating to development of ponds, tanks and other water structures in the state.

The report then shifts the focus to the urban poor, especially on the question of availability of water supply to slum dwelling communities in some of the towns in Jharkhand. Finally, it discusses interstate water issues including dams and displacement with the help of some specific case studies. The report ends with certain conclusions and recommendations on the overall analysis on water rights and policies in Jharkhand that are briefly presented below.

Critical Tasks for Water Users Associations

The State Water Resources Department has planned a major programme the Gram Bhagirathi Yojana (GBY) for development of minor irrigation in the entire State. The institutional mechanism envisaged for the scheme includes creation of high-powered bodies at the district and state levels in the forms of the District Level Review Committee (DLRC) and State Level Review Committee (SLRC), respectively.

Notably, the GBY also intends to introduce participatory irrigation management (PIM) in all its schemes. The state government intends to soon introduce a new law enabling PIM that provides a legal basis for water users associations (WUAs) all across the state.

However, how exactly are these WUAs going to be working with the DLRC and SLRC to give effect to the spirit of PIM needs to be thought through. Besides, the ownership, planning and management of minor water bodies (including for irrigation) are to be with the Panchayat Raj Institutions (PRIs) in all the scheduled areas of the state under the Jharkhand Panchayat Raj Act, 2001. The role of the WUAs and its inter-institutional linkages with the panchayats at the village, block and district levels (both for the GBY and otherwise) needs to be urgently ascertained.

PIM and Absence of Water Rights

There are indications that the proposed legislative scheme intended to provide a legal basis to the WUAs in the state would be opting for more or less the same institutional structure that has been brought in force by some of the other states in India through

specific legislations creating WUAs.

A striking aspect of India's PIM programme is the little attention that is given to water rights. It has meant that the government's rights to water are unchallenged while its obligation to deliver water to WUAs (in canal systems) is rarely legally binding. This continues to be the position under the existing irrigation laws applicable in Jharkhand as seen in the next points.

State Ownership and Control

Apart from extensive ownership rights, the Bihar Irrigation Act of 1997 vests all irrigation works with the state. The Act allows the canal officer, under certain circumstances, to stop water to any channel or to any person, and allows no claims against the state for loss due to failure or stoppage of water. The government has sole right to fix rates and terms for the supply of water.

Sweeping Powers to Officials

A closer analysis of irrigation laws in force in Jharkhand reveals that various state officials are vested with sweeping powers. For instance, Section 3 of the Bihar Emergency Cultivation and Irrigation Act of 1955 empowers the collector to settle any such cultivable land 'that was lying fallow continuously for a period of 2 years, on account of the inability or negligence of the occupier to cultivate the same with a person who has in his opinion, the means to cultivate it and is willing to do so.' It is not clear what recourse one has if one disagrees with his opinion.

The Act also provides for the collector to prepare an irrigation scheme for natural streams, rivers and canals as well as to override the record of rights if she thinks certain lands must be irrigated.

Similarly, under the Land Acquisition for Irrigation under the Bihar Public Irrigation Works Act of 1939, any land, which, in the opinion of the provincial government, is necessary to be acquired for any sanctioned work under this Act, shall be deemed to be for a public purpose within the meaning of the Land Acquisition Act of 1894. These powers go against the spirit of both the recent trends for a decentralised people-oriented water management policy and those of participatory irrigation management

Whose Ownership?

The Jharkhand Panchayati Raj Act of 2001 vests the ownership rights over minor water bodies in PRIs. This is surely a positive step. However, this provision for ownership conflicts with Section 3 of the Bihar Irrigation Act of 1997, which vests 'all rights in the water of any river, natural stream or natural drainage channel, natural lake or natural collection of water' in the state government. 'Natural collection of water' could include minor water bodies.

Rural Water Supply

There have been some inappropriate government interventions in making water-harvesting structures in the past. More recently there are examples of schemes for making of ponds with the help of hurriedly created committees at the village level. All the efforts thus far for augmenting rural water supply seem to be scheme driven and have not been institutionalised and integrated in an appropriate legal framework.

The coming of the new Panchayat Raj Act and the launch of the new scheme of Swajaldhara for a decentralised demand-driven and people-oriented water management regime provide an opportunity in this

regard. Although Swajaldhara has been formally launched in the state late last year (2003), the institutional mechanism envisaged by the scheme - having a village level water supply committee as its cornerstone - has its grey areas. In particular, the linkage of the committee with the village level *gram sabha* (village council) and the *gram panchayat* need to be made clear before the coming of the formal panchayats following the impending panchayat elections in the state.

Water for the Urban Poor

Access to water for the urban poor living in towns and cities of Jharkhand is also a major issue that needs to be addressed. Failure to supply potable water, especially in slum areas of major towns in the state, raises critical questions on water rights. The municipal bodies in Jharkhand operate as per the provisions of the Bihar and Orissa Municipal Act of 1922, which is largely seen as an outdated law, especially after the enactment of 74th amendment of the Constitution of India.

Interstate Disputes

The Bihar Reorganization Act of 2000 (Sections 78 and 79) provide for the constitution of a water management board, which is empowered to regulate the supply of water and Power from certain projects to neighbouring states like Uttar Pradesh, Madhya Pradesh and Bihar. Surprisingly, even after 3 years of passing of this Act, neither the central nor the state government has sought to amend this provision to provide representation to West Bengal in the water management board, especially when there are live interstate water disputes between Jharkhand and West Bengal.

News and Events

● Pradan's Raigarh team received an award in January from NABARD for linking a large number of Pradan-promoted SHGs with mainstream banks. Congratulations.

● Pradan field teams promoting poultry met on January 4-5, 2005 in Sidhi in Madhya Pradesh to discuss common issues faced by Pradan-promoted poultry cooperatives. The participants discussed the formation of a company that would provide strategic support to poultry cooperatives during lean times and also act a channel for marketing. The company may also get into running a hatchery and producing chicken feed. Anuradha Desai of Venkateswara hatchery was consulted in this regard.

● Pradan's Governing Board met on January 8, 2005.

● Pradan's Executive Committee met on January 5-7, 2005.

● We welcome Archana Singh and Sameer Kumar back to Pradan. They joined in January 2005 and will initiate work in Amarpur block of Dindori district in Madhya Pradesh. We wish them good luck and success.

● Twenty-two apprentices and executives participated in second phase of the Process Awareness and Sensitivity module. Ramesh Galhoda and Deepankar Roy were resource persons for the event.

● The second phase of the recently introduced livelihood training was held during January 15-22, 2005. Nineteen Pradan

professionals attended the workshop. Dr Sanjeev Phansalkar was the resource person for the event along with internal resource persons including Dinabandhu Karmakar and D Narendranath.

● A training programme on gender, poverty and development was held during January 4-7, 2005 at Kesla in Madhya Pradesh. Abha Bhaiya from Jagori and Jui Gupta were resource persons. Fifteen Pradan professionals participated.

● The Delhi Sustainable Development Summit, organised by The Energy Research Institute (TERI), was held in New Delhi on February 3-5, 2005. TERI also organised a stakeholders meeting on February 2, 2005 as a curtain raiser to the Summit. Achintya Ghosh from Pradan attended the meeting. Avijit Choudhury made a presentation on Pradan's work on integrated natural resource management in Purulia district of West Bengal in a sperate meeting on interstate water issues held before the Summit.

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