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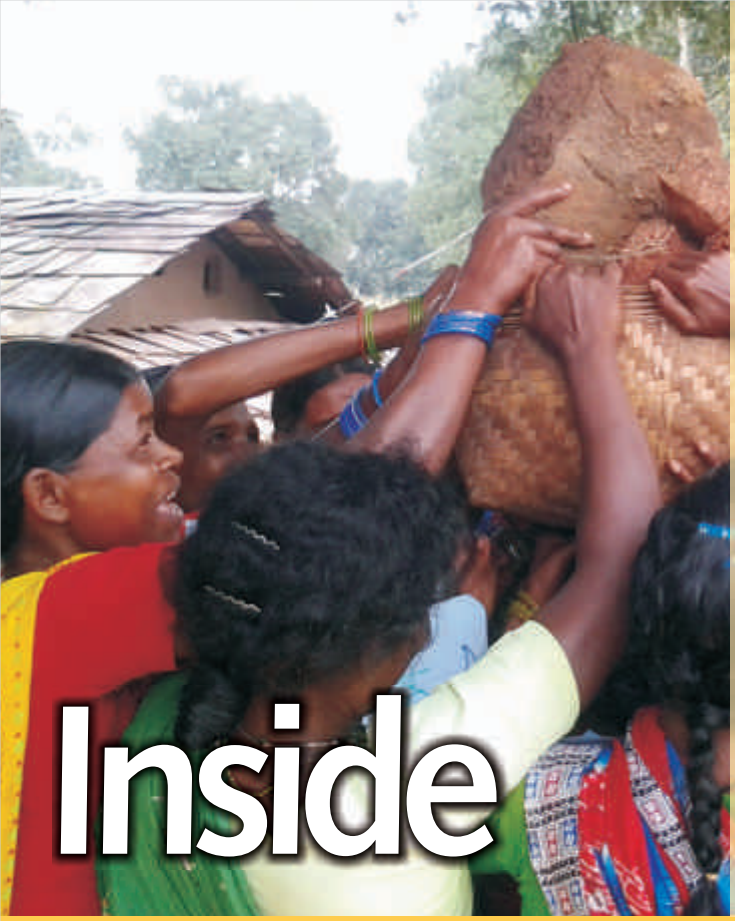

Inside

LEAD: NALANDA DISTRICT–BIHAR—WORLD-RECORD SRI YIELDS 01

M.C. Diwakar, Arvind Kumar, Anil Verma, and Norman Uphoff: Experimenting with SRI cultivation, five farmers of Darveshpura village in Bihar attract considerable attention with their bumper yield; the results indicate a viable alternative to the conventional methods of growing rice and other crops.
M.C. Diwakar is Director of Directorate Rice Research, Patna, Bihar. Arvind Kumar is STA, Directorate Rice Research, Patna, Bihar. Anil Verma works with Pradan and is based in Gaya, Bihar. Norman Uphoff is Professor of Government and International Agriculture, Cornell University, and the Acting Director of the Cornell Institute of Public Affairs. He is based in Ithaca, New York.

FORUM: MGNREGS—FROM DREAM TO REALITY 11

Siraj Dutta: Through exposure to and taking part in the awareness campaign, the people of Kuira realize that they have 'the power, the unity and the right' to decide the type of work that should be undertaken in their village under MGNREGS.
Siraj Dutta is based in Jharkhand

FOCUS: A JOURNEY WITH THE BIRHORS IN HAZARIBAG 17

Sudarshan Thakur and Gyan Prasad Sharma: An invisible community, shunned by the world around it, becomes the focus of intervention, leading to inclusion for the first time and the beginning of change. Lasting social transformation, however, can only come about with long-term empathic engagement.
Sudarshan Thakur and Gyan Prasad Sharma are based in Hazaribagh, Jharkhand.

ANALYSIS: THE WOMEN OF KAZRA-A PERCEPTIBLE CHANGE 27

Binod Raj Dahal: No different from any of the other villages of Godda district, the unique experience of Kazra village in bringing a three-generation-old conflict to a resolution has made it very special.
Binod Raj Dahal is based in Godda, Jharkhand.

PLATFORM: SIPRINGA-A DECADE OF GROWTH AND PROSPERITY 32

Syed Lutfur Rahman: Encouraging farmers to use the SRI method of cultivation and focusing on land and water development, the members of the SHGs bring about socio-economic changes that enable a once-poverty stricken people to become self-sufficient and secure.
Syed Lutfur Rahman is based in Gumla, Jharkhand.

OPINION: FEEDING INDIA'S GROWING BILLIONS 40

B.C. Barah: Ensuring access to quality food by everyone at all times is one of our most challenging tasks, considering that the nation is face-to-face with persistent poverty, hunger and malnutrition and the implications on the nutrition security of the poor. B.C. Barah is NABARD Chair Professor at Indian Agricultural Research Institute and based in New Delhi.

LEGACY: THE WOMEN OF KODERMA AND THEIR ANTI-LIQUOR MOVEMENT 46

Safina Parween, Ranvijay Kumar and Avijit Mallik: Taking responsibility for eradicating the social evil of alcohol abuse by the men-folk of their villages, the women of Koderma demonstrate their strength and determination by uniting in large numbers to voice their opposition to the sale of liquor and by compelling shopkeepers to shut shop and discard their stock. Safina Parween, Ranvijay Kumar and Avijit Mallik are based in Jharkhand.

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Nalanda District–Bihar—World-Record Sri Yields

M.C. DIWAKAR, ARVIND KUMAR, ANIL VERMA, AND NORMAN UPHOFF

Experimenting with SRI cultivation, five farmers of Darveshpura village in Bihar attract considerable attention with their bumper yield; the results indicate a viable alternative to the conventional methods of growing rice and other crops

Initially, Sumant Kumar's bumper yield with SRI—quite an achievement—was met with skepticism; but the yield was properly measured and has now been accepted by the Indian Council for Agricultural Research (ICAR) and was acknowledged and confirmed by the Minister of Agriculture in Parliament on 20 March 2012 (http://www.thehindubusinessline.com/industry-and-economy/agri-biz/article3016481.ece). Four other farmers in the village, also first-time SRI practitioners, achieved paddy yield levels of 18 or 19 tonnes per ha. Sumant Kumar's achievement was not an isolated occurrence; the accomplishment, therefore, deserves attention.

There is an understandable interest in how these production levels were achieved, how they were measured, and what special conditions might have prevailed. This report provides data from the Bihar Department of Agriculture and from Sumant Kumar himself. More scientific evaluations remain to be conducted on the Darveshpura achievement. We present here what was known at the end of the season about the process and the result.

SRI stands for System of Rice Intensification, a set of principles and practices developed in Madagascar for raising the productivity of the seeds, land, labour, capital and water used in paddy production. SRI does this by altering the way that rice plants, soil, water and nutrients are managed. It does not require farmers to acquire new or improved seeds or chemical fertilizers to raise their yield, although in this case, the rice varieties planted were hybrids and there was an integrated nutrient management, which combined organic and inorganic inputs. SRI has been controversial because of some very large increases in yield (more than 20 tonnes per hectare) that were previously reported from Madagascar when all the recommended practices were used simultaneously as prescribed. This report may reduce some of this controversy because the inputs and the outputs of super-yield production are better documented here than before.

DATA GATHERING AND INFORMATION ON THE LOCAL SITUATION

Dr. Kumar, a senior agronomist with the government's Directorate of Rice Development (DRD) in Patna and a co-author of this report, visited the farmers' fields in Darveshpura and other villages in Nalanda and other districts of Bihar when the crops were being cut in the SRI demonstration plots at the end of the 2011 *kharif* season. When verifying facts about rice production in the high-yield SRI demonstration plots, he collected many details; he also talked with the officers of the state Department of Agriculture, regarding the implementation of the SRI demonstrations.

Dr. Kumar observed that, being well-educated, most successful farmers had a good ability for learning and adopting the innovative technology in their fields. Agriculture is their single source of household income; they, therefore, try to utilize the inputs available to them in the best possible way. These farmers used green manuring, particularly *dhaincha* (sesbania), along with vermi-compost and other organic sources of nutrients, and a small amount of chemical fertilizer. No major insect pests or diseases attacked or afflicted these rice fields when the crop grew, possibly a reflection on the suite of crop management practices. More information on the cultivation methods used is discussed here.

Darveshpura village and the SRI demonstration plots are situated on the banks of the Sakri river. The water table in the village is high and soil organic matter has been built up and maintained so that the soil is relatively rich in humus content and its water-retention capacity is good. The soil is largely sandy clay and well-drained, with no water-logging. Soil pH is in the neutral range. Climate and rainfall distribution were better in 2011 than the previous year when much of Bihar experienced serious drought conditions. So, certainly, conditions were favourable.

In the sandy/sandy clay soil of Darveshpura, inter-cultivation (weeding) between rows is easier than in the heavy clay soil where a hard plain impedes water percolation. Using a cono-weeder, a simple hand-implement for weed control, makes these soils more friable and provides aerobic conditions near the root zone. This can increase the extent and activity of soil microbial populations so that soil nutrients become more easily available to the plants. This soil-aerating weeding operation is thought to increase the ability and efficiency in nutrient uptake of plants.

The farmers in this area practise various rotations during a cropping year. The main rotations are: rice/wheat/*moong* (a short-season legume)/*dhaincha* (sesbania) for green manuring, or alternatively, rice/maize/*moong/dhaincha*. Other rotations include: rice/potato/onion; rice/lentil/gram; rice/mustard (*toria*, a rapeseed); groundnut/red gram (*arhar*); maize/red gram inter-cropping; or some other mixed cropping rotation. In a few pockets, a rotation of rice/potato/muskmelon or watermelon is also practised. Sweet potatoes are grown in some villages.

Dr. Kumar and by Anil Verma gathered information on how Sumant Kumar and the other farmers in his village got paddy yields of 18 or 19 tonnes per ha from the department officials, who supervised and measured the yield. Sumant Kumar himself volunteered much of the information. Verma, as team leader of PRADAN, the NGO that introduced SRI in Bihar in the neighbouring Gaya district, helped train officials and technicians in Nalanda district, who in turn trained the farmers there in SRI methods. Like Dr. Kumar and Dr. Diwakar, who as DRD Director had visited the area, Verma

was well-acquainted with local officials and farmers. Having developed a rapport with the locals, they got information from local sources freely and could assess whatever they learned in the light of what else they knew about the area and its agriculture from previous visits.

Tube-well irrigation gave the farmers both the incentive and the capability to apply water sparingly, as is recommended with the SRI practice. Excess water applications cost the farmers more money

The Department of Agriculture officials in the district prepared detailed crop reports of the five very successful farmers and also produced a summary report on the results for 52 additional farmers in Nalanda district, who attained very good-to-excellent SRI results in the 2011 *kharif* season. This information was provided to Prof. Uphoff by Dr. Diwakar. Both had been following the introduction and spread of the SRI in Bihar as well as elsewhere in India. Prof. Uphoff worked with the co-authors to analyze and present this body of data and information to have a better understanding of the 2011 SRI experiences in Darveshpura village because these would be significant for other farmers in India and elsewhere in the world.

TRIPLING OF THE YIELD

The yields that the Darveshpura farmers obtained, using a particular set of SRI-formulated practices, were three times higher than the yields that they achieved using their usual management methods from the same hybrid varieties in the 2011 *kharif* season. This suggests that careful attention should be paid to the differences in crop management between SRI and normal practice. The results from five farmers in a single season do not prove anything scientifically. However, the results point to areas for systematic research that could have substantial payoff for enhancing crop production in economically and environmentally desirable ways.

THE SUCCESSFUL FARMERS

The five farmers—all relatively young, between 30 and 35 years old—are Sumant Kumar, Krishna Kumar, Nitish Kumar, Vijay Kumar and Sanjay Kumar. Their rice crops were cultivated on well-drained upland soils with tube-well irrigation, and all worked closely with the local staff of the Agricultural Technology Management Agency (ATMA) of Nalanda district. Tube-well irrigation gave the farmers both the incentive and the capability to apply water sparingly, as is recommended with the SRI practice. Excess water applications cost the farmers more money, and with tube-wells they can control water applications better than in gravity irrigation schemes.

These five farmers have had 10 years of schooling plus two or three years of additional training beyond matriculation. Their landholdings are medium-sized for the region, five to seven acres (2.0 to 2.8 ha). The size of Sumant's SRI test plot was one acre, from which an area of 50 sq m (10 x 5 m) was demarcated in the middle of the field to calculate the yield. The crop was measured, using the Department of Agriculture's standard methods. The same methods were used for evaluating the yields through conventional agricultural practices on nearby plots. SRI plots of each of the other four farmers also measured one acre each. The area of conventionally grown paddy rice in 2011 was five to seven acres. These are thus farmers with moderate landholdings.

AGRONOMIC INFORMATION

Soils: The soils in the area can be characterized as sandy clay, but no detailed information on the soil chemistry and its physical properties was generated before or during the season.

Neither is information on the biological parameters available, unfortunately. We are trying to get these variables assessed because they could be critical factors in explaining the high yields.

The fertilization practices followed for SRI differed from the usual production practices only in that the latter did not receive the FYM, poultry manure or vermi-compost, prior to transplanting

Cropping system: The cropping pattern of these farmers in the preceding year was a typical rotation common in the area: rice in the previous kharif season (2010), followed by potatoes, and then muskmelon, with *dhaincha* (sesbania) planted as a green manure cover crop before the 2011 main-season rice crop. Interestingly, the previously reported record yield from Madagascar was also attained with a rice/potatoes/legume rotation.

Varieties: Sumant Kumar planted the Bayer hybrid variety Arize 6444 whereas the other four farmers used Syngenta's hybrid 6302. (Information on the varieties planted and resulting yields for another 52 farmers in Nalanda district follows). These are medium-duration varieties with a usual crop cycle of about 150 days but, in this season, Sumant's SRI crop reached maturity in 142 days. This is not unusual for the crop cycle to get reduced in SRI.

Nursery management and seedling age: Upland nurseries of 100 sq m were established with a seed rate of 5 kg per ha for the SRI nursery compared with a usual rate of 35–40 kg per ha. Both the SRI and regular nursery were sown on 20 June 2011, and the seeds for both the nurseries were treated with Carbendazim (2 gm per kg), for protection against seed-borne diseases. The SRI nursery soil was kept moist but not flooded whereas the regular nursery was irrigated with a pump set. Seedlings were removed from the SRI nursery on July 3 whereas those planted for regular rice cropping were taken out on July 15. The seedling ages were thus 12 days and 24 days, respectively.

Land preparation: On May 1 and June 16, the SRI fields were ploughed deep, followed by shallow ploughing on June 21 and June 29, with the puddling of fields on July 2 and July 3, the latter being the day for transplanting. The ploughing operation incorporated the *dhaincha* (sesbania) vegetative material into the soil of both the SRI and the conventional fields.

Soil amendments and crop fertilization: Farmyard manure (FYM) was applied to the SRI fields at the rate of 6 tonnes per ha at the stage of land preparation. Both SRI and the conventional fields received the same amount of inorganic fertilizers, added as basal doses the day before transplanting, that is, on July 2 for the SRI field, and on July 15 for the regular fields. The applications of P and K were, respectively, 80 kg per ha of diammonium phosphate (DAP) and 40 kg per ha of potash. During the season, some N was applied as urea, at a rate of just 40 kg per ha, in split doses on July 18 and August 22, a relatively low rate of N supplementation.

For organic soil fertilization of the SRI plot, poultry manure was applied on July 2 at a rate of 400 kg per ha, plus 100 kg of vermi-compost and 40 kg per ha of a compound containing phosphorus-solubilizing bacteria (PSB) at the same time. The PSB were expected to make unavailable the P residing within the soil. Also, a micro-nutrient foliar spray of monohydrated zinc sulphate was applied at the rate of 25 kg per ha on *both* SRI and conventional fields on August 22.

The fertilization practices followed for SRI differed from the usual production practices only in that the latter did not receive the FYM, poultry manure or vermi-compost, prior to transplanting. Also, for the conventional crop, the top dressings of urea were made later (July 18 and August 30) as was the ZnCl foliar spray (August 30).

Crop establishment: There was a distinct difference in the age of the seedlings at the time of transplantation in the two fields: 12 days vs 24 days. SRI seedlings were transplanted at 25 x 25 cm distance in a grid pattern, one seedling per hill, giving a plant density of 16 per sq m. Regular-practice seedlings were transplanted 12 days later in a random pattern in the field, with three to five seedlings per hill. The plant population under SRI management was thus much lower than standard crop management practices. With SRI, there was a 75–80 per cent reduction in the number of plants per sq m.

Weed and pest management: Broad-leaf weeds were the main problem of the farmers in this area. In regular fields, a herbicide (2, 4-D), was sprayed to control these, applied at a rate of 1.5 litres per ha. In Sumant Kumar's SRI field, on the other hand, there was no chemical weed control, only soil-aerating cono-weeding done 13 days and 26 days after transplantation. No chemical crop protection measures were taken because there were no insects, pests, diseases or rodents observed in either the SRI or the regular fields.

The regular field was managed with flood irrigation whereas the SRI field was served by sprinkler irrigation. No volumetric measurement was made of the total amount of water used; however, an estimate is that the SRI crop received about one-third as much water during the crop-growing season compared to the flood irrigation for the conventional fields

Water management: This revealed a major difference between the two cropping strategies. The regular field was managed with flood irrigation whereas the SRI field was served by sprinkler irrigation. No volumetric measurement was made of the total amount of water used; however, an estimate is that the SRI crop received about one-third as much water during the crop-growing season compared to the flood irrigation for the conventional fields.

Harvesting: Sumant Kumar's SRI and regular fields were harvested, respectively, on November 10 and November 20, so his SRI crop matured 10 days sooner and in addition had a much higher yield. The SRI crop cycle was 142 days, compared to the usual time for maturity of 150 days (in this case, 152 days for the regular-practice field).

The paddy that was harvested from the 50 sq m crop-cut on the SRI plot weighed 112 kg, representing a wet-rice yield of 22.4 tonnes per ha. The dried weight of the paddy from the harvested area was 100.8 kg, which represents a dried-weight yield of 20.16 tonnes per ha, well above the previously reported world-record yield from China of 19 tonnes per ha.

Other high yields in the village: Four of Sumant's neighbours also got remarkably high yields, using the same methods, although with a different hybrid variety (Syngenta 6302). Their dates for maturity and harvesting were 12 days later than that of Sumant, November 22, reflecting a varietal difference in the crop cycle.

Table 1: Other High Yields in the Village

	Yield from 10 x 5 sq m area (kg)		Yield (t/ha)	
Name	**Wet**	**Dry**	**Wet**	**Dry**
Krishna Kumar	101	90.9	20.2	18.18
Nitish Kumar	98	88.2	19.6	17.64
Vijay Kumar	96	86.4	19.2	17.28
Sanjay Kumar	95	85.5	19.0	17.10

To assess yield stability, these farmers along with Sumant Kumar have been advised to use a similar package of practices with the same hybrids on the same plots in the next kharif season. All agronomic yield-contributing factors will be recorded with the soil testing of nutrients.

DIFFERENTIAL IN YIELD BETWEEN SRI AND REGULAR METHODS

The Department of Agriculture measured the yields attained with the conventional methods for only three of the five farmers. But the differentials are so great, that it is highly unlikely that the differences in the yield can be attributed to measurement errors, and three out of five is a reasonable sample. Further, the same in-field sampling and harvesting methods were used by the same technical personnel for both SRI and the regular crop measurements. So relative (ratio) differences should be reliable, even if any questions are raised about the absolute figures.

The data for Sumant Kumar's farm showed a dry-weight yield of 6.5 tonnes per ha from his regular field with the hybrid variety 6444. For Nitish Kumar, his hybrid yield, using the regular method, was 5.9 tonnes per ha; and for Sanjay Kumar, it was 6.0 tonnes per ha. These yields are only about one-third of the yield measured from the SRI fields of the same farmers. Moreover, they are in line with the hybrid yields achieved by other farmers in the area, which ranged from 5.0 to 6.5 tonnes per ha.

This differential could be attributed in part to the differences in the field conditions and field management; however, the varieties, the farms, and the farmers were all the same. Thus, the soils and genotypes as well as farmer skills were not different in these comparisons. The main influence on the differential yield would be attributable to agronomic practices, which is of significant interest.

DIFFERENCES IN CROP MANAGEMENT

Table 2: The Difference in Practices

Practices	SRI Management	Conventional Management
Nursery management	Moist but well-drained soil	Flooded soil
Nursery seed rate	5 kg/ha	35–40 kg/ha
Plant management:		
a) Age of seedlings	12 days	24 days

Practices	SRI Management	Conventional Management
b) Transplanting	Single seedlings in grid	Random transplanting
c) Planting density	16/sq m	~60-70/sq m
Soil-water management	Sprinkler irrigation	Flooding
Weed management	Soil-aerating weeding	Herbicides
Nutrient management*	More organic soil amendments: farmyard manure and vermi-compost with green manure	Recommended NPK applications, with green manure
*Both fields got PSB applications and micronutrient foliar sprays		

A much smaller plant population, which matured in a shorter time, gave a significantly higher yield. This was associated not just with the reduction in seeds, but also reduced water applications (by as much as two-thirds), and with little reliance on organic nutrient amendments, instead emphasizing organic soil amendments. Two other differences that stand out were the age of the seedlings (for the SRI these were considerably younger) and the method of weed control (the SRI involved active soil aeration). Also differences in nursery management need to be considered, as assessed previously by Mishra and Salokhe *(Experimental Agriculture*, 2008, 44:1, 1–19).

ECONOMIC EVALUATION

A common perception of SRI management has been that it is more labour-intensive. It is true that when the farmers first begin to use these new methods when they are just starting on their learning curve, the work does progress slowly. But the data available from the Department of Agriculture indicate, as seen in other evaluations as well, that when SRI methods, as listed above, are practised over a period of time, there is labour-saving in most of the cultivation operations.

Nursery: A DRR assessment in Bihar showed that with SRI, given its great reduction in the nursery area and the much lower seed rate, there is a saving of 40 man-hours per ha for nursery management. Another 50 man-hours per ha are saved for the pulling out and transporting of seedling bundles from the nursery area to the main field.

Transplanting: Due to the more widely spaced transplanting and much lower numbers of plants, fewer labourers were required for SRI methodology. Farmers report that 50–60 women labourers were needed for the conventional transplanting methods whereas only 25–30 labourers were needed for SRI.

Weeding: Once the skill is acquired in using the cono-weeder, weed control operations also require less labour, compared with the usual hand weeding. Moreover, this becomes a less laborious process than the manual removal of weeds.

Reduced costs of labour with SRI as compared to the conventional method of rice-growing are given in the table on the next page.

Table 3: Reduced Costs of Labour with SRI as compared to Conventional Method of Growing Rice

	SRI (Rs/ha)	Conventional (Rs/ha)	Savings (Rs/ha)	Reduction (%)
Nursery	1,200	1,800	600	33
Transplanting	2,390	2,895	505	17
Weeding	2,600	4,405	1,805	41
growing	**6,190**	**9,100**	**2,910**	**32**

The results showed that SRI reduces labour for these major operations by 32 per cent in the sampled farms.

On the other hand, more labour is needed to manage the water applications, according to the SRI principle of keeping the paddy soil moist but not continuously saturated. But the higher cost of labour for irrigation is offset by the reduced cost for the water itself. The harvesting is also more expensive because the yield is much higher, but this added cost is compensated for, several times over, by a higher production and the resulting greater income. The cost per kilogramme of paddy produced is much lower with the SRI management, giving the farmers more income.

VARIETAL DIFFERENCES

From the Agriculture Department data for 57 farmers in Nalanda district, where crop-cut estimates of yield were made for farmers using the SRI methods, we can report on the differences in average yields for a number of different varieties, as shown in table 4. The average SRI yield for the whole set of farmers was 9.34 tonnes per ha. These results are very encouraging for SRI production methods and also for hybrid varieties. With a larger number of farmers, the average yield of Arize 6444 is less than that of Syngenta 6032, which underscores that the growing environment, including the soil biota, has as much or more impact on results than simply the genotype involved. This also suggests that farmer differences are important in accounting for the yield outcomes.

Table 4: Varietal Differences

Variety	No. of farmers	Average SRI yield (t/ha)
Syngenta 6032	4	17.85
Arise 6444	8	12.82
Loknath 505	1	12.75
Pusa 44	39	7.90
Dhaniya 775	3	7.66
VNR	1	7.62
Basmati Kohinoor	1	6.75
All varieties	**57**	**9.34**

OBSERVATIONS

The experiences of Sumant Kumar and his neighbouring farmers give strong support to the recommendations that derive from the work with rice and with farmers in Madagascar by Fr. Henri de Laulanié.

- Manage a smaller nursery carefully, with a lower seed density and with aerobic soil conditions.
- Transplant young seedlings singly, carefully and with wide spacing.
- Apply only as much water as the plant needs for its growth.
- Control weeds with soil-aerating weeding.
- Enhance organic matter in the soil as much as possible.

What has not been assessed in Darveshpura is what effect, if any, these practices may have had on the soil biota: the massive and complex populations of bacteria, fungi, protozoa and other larger organisms like mites and earthworms that inhabit the soil, which has favourable conditions. These diverse organisms are known to have many beneficial effects on plant growth and to be promoted in aerobic soil with abundant organic matter.

In this situation, therefore, the soil biota possibly played some role, perhaps an intermediary one, in producing healthy and more productive rice plants. That as many as five farmers in fairly close proximity achieved such super-yields lends some weight to this hypothesis and raises the possibility that soils in Darveshpura have some particularly beneficial species or associations of soil organisms. This seems to be supported by experience in this village with the potato crop last year (see box).

The results from the past kharif *season in Nalanda district show that improvements in the genotype can make a significant contribution to raising the paddy yield, but that changes in management practices, providing plants with optimum growing conditions, can have an even greater impact*

The results from the past *kharif* season in Nalanda district show that improvements in the genotype can make a significant contribution to raising the paddy yield, but that changes in management practices, providing plants with optimum growing conditions, can have an even greater impact. What is little understood is what impact the altered practices have upon organisms in the soil, which can provide a multiplicity of services and benefits, including nutrient cycling, nitrogen fixation, phosphorus solubilization, phytohormone production especially to promote root growth, beneficial to the soil biota as well as to the plant, protection against various pathogens and induced systemic resistance to support plant health. Much research and evaluation remains to be done but the Darveshpura results may support a paradigm shift for agriculture that focuses upon life in the soil rather than the inorganic amendments now favoured, often to the detriment of the soil biota.

We have encouraged Indian colleagues with expertise in soil microbiology to conduct some studies of the soils in this village, but that work remains to be done. Already, the paddy results from the 2011 *kharif* season in Bihar should remove any remaining reservations about utilizing SRI ideas and methods on a broader scale, making appropriate adaptations to local conditions, which is, in fact, part of the SRI methodology.

WORLD-RECORD YIELDS IN DARVESHPURA FOR POTATO PRODUCTION

There are reports from Darveshpura that some potato farmers were able, this past year, to produce potatoes weighing as much as 800–1,000 gm, that is, up to 1 kg each (http://www.indianexpress.com/news/After-paddy-feat--a-Nalanda-village-looks-at-potato/904362/).

One farmer—also called Nitish Kumar—in the village produced a world-record yield of almost 73 tons/ha, far surpassing the previous record yield of 45 tons/ha reported from The Netherlands (http://www.dailypioneer.com/home/online-channel/dont-miss-it/49620-Bihar-farmer-sets-world-record-in-potato-production.html).

From Verma's discussions with the farmer, we know that the potato production methods featured were:

- Extracting the eyes, treating them with a chemical solution and sprouting them before planting them.
- Wider spacing between plants than normal.
- Good pulverization of the soil, so that the roots could grow easily.
- Use of both organic and inorganic fertilizers (vermi-compost, poultry compost, NPK).
- Inter-cultivating between rows and plants two times, thereby helping to loosen the surface soil.

These practices contributed to having a well-aerated, organically-rich environment around the roots, with room for both roots and canopies to grow. The soil is also relatively rich in silicon, which is an element often neglected. Like other farmers in the village, Kumar has been influenced by new knowledge coming in from the SRI training, and his practices represent an adaptation of the agro-ecological principles.

In many villages in Bihar, farmers have begun adapting these principles, to improve the production of crops such as mustard, tomatoes, chillies and brinjals. The Bihar Rural Livelihoods Promotion Society (BRLPS), working with NGOs such as PRADAN, supports such innovations under the rubric of the System of Crop Intensification (SCI) or the System of Root Intensification, a new kind of 'SRI'.

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MGNREGS—From Dream to Reality

SIRAJ DUTTA

Through exposure to and taking part in the awareness campaign, the people of Kuira realize that they have 'the power, the unity and the right', to decide the type of work that should be undertaken in their village under MGNREGS

There are two major components of MGNREGS—wage generation and asset creation. These, along with strengthening of democracy at the grass-roots, have great importance and significance in the lives of the people. The opportunity offered by the MGNREGS for creating land and water assets in a village is vast, especially because there is no financial or physical restriction in the Act on the asset creation plans of villages and *panchayats.*

The present state of the MGNREGS, however, is not very encouraging in Jharkhand, specifically in the district of West Singhbhum. Even after five years of its inception, the schemes under MGNREGA are still entangled in a web of corruption and lack of awareness, technical capabilities and accountability at all levels. Contractors and middlemen still rule the roost. Even though the scope for land and water asset development is immense, the potential remains untapped because the complete process is still District Rural Development Agency (DRDA)-driven. The poor quality of the assets created due to lack of technical capabilities of all actors, that is, the mates, *rozgar sewaks, panchayat sewaks* and Junior Engineers, working at the grass-roots level is another major worry.

One of the biggest challenges to the success of MGNREGS is making the process of the schemes participatory and demand-driven. All the stakeholders such as the local bureaucracy and the *panchayati raj* institutions (PRIs) require an orientation in the concept of a demand-driven participatory plan. The PRI, the bureaucracy and the villagers need to develop a better understanding of the process for an effective implementation of schemes. The system suffers from a serious lack of accountability at all levels. One of the ways to rectify this is to involve the relevant institutions at the grass-roots level in the monitoring process. It is also important to strengthen the institution of the *gram sabha*. A bottom-up pressure is required, to increase accountability.

The PRIs in the districts are still in their nascent phase. It is the right time to involve them in the process and provide the necessary training and orientation to set up a sustainable system around the MGNREGS-INRM convergence.

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MAJOR PROCESS ENGAGEMENT AND INTERVENTIONS

Kuira, a revenue village of Jaipur *panchayat* comprises 428 households spread over five hamlets. The village is predominantly tribal. Migration levels are at about 40 per cent per household. As of today, there are 14 Self Help Groups (SHGs) in the village. The process of strengthening PRIs was started with hamlet-level meetings and formation of SHGs.

It was followed by the formation of a Project Execution Committee (PEC). The body comprises representatives from all the hamlets. Concept seeding and selection of representatives in the *tola sabhas* were followed by a *gram sabha* meeting. The PEC was finalized in the *gram sabha*. The awareness level of the people about MGNREGA was found to be abysmal. The villagers were not even aware of their basic entitlements under the Act. Such a lack of awareness helped middlemen exploit labourers. The job cards of the labourers were misused by middle-men.

A mass awareness programme was started in the village. A group of villagers was trained about MGNREGA, and they acted as resource persons for bringing awareness in the village about this government Act. This was followed by a natural resource management (NRM) exposure visit of PEC members to the Tonto watershed. The members were then given technical training on NRM technologies and the participatory planning process.

Once the shortcomings and gaps were identified by PRADAN, an initiative was taken to launch a pilot project. The focus of the project in the village of Kuira was to work on the identified gaps/issues. The emphasis was to set up a sustainable process of the MGNREGS-INRM convergence through the *panchayat* and the *gram sabha* in the tribal-dominated village at Hatgamaria block, keeping in mind many issues, amongst which were:

- Participatory planning missing
- Not demand-driven
- Durable and productive assets not being created
- Gap between the available resources and the assets created
- Major gap in awareness level of people
- Lack of accountability at the grass-roots level
- Poor technical capability of Block Extension Workers (BEWs)
- Lack of motivation and vision amongst the PRI representatives

The PEC of Kuira prepared a comprehensive NRM-based plan of the village. The planning process took two months because it involved transecting all the plots with the names of the landowners. An extensive transect of the village was done by the PEC members, along with the landowners. Planning was done for long-term patch treatment. The assets to be created under the MGNREGS, along with wage labour generation, would lead to the creation of a model for the entire district and the state.

The comprehensive plan comprises 42 Water Harvesting Tanks, 181 'five per cent models', 61 seepage tanks, 11 homestead wells, and 10 acres of 30 X 40 model and plantation. The total estimate presented was Rs. 8,330,770. The plan was approved by the *gram sabha*. The total number of beneficiaries, on the basis of the land document, was 92; at the village level, the numbers were around 150. The complete implementation would result in the creation of approximately 55,000 person-days of work.

The most important link in the process is the panchayat. *The* panchayat *has to be built up, to ensure the replication and sustainability of the model.*

The plan was submitted to the block office by the villagers. The estimates were verified by the Junior Engineer, the Assistant Engineer and the Executive Engineer for technical sanction of the plan. It was followed by an administrative sanction by the DRDA and the District Collector. To help the block and the PRI representatives gain a better understanding about INRM-based and MNREGA-funded activities, an exposure visit to Mednipur, West Bengal, was organized. The team included the block *pramukh,* the *up-pramukh,* the *panchayat mukhiya,* the *panchayat samiti sadasya*, the block rozgar sewak, the village PEC and the SHG representatives. The focus of the exposure was on the implementation and supervision process set up under MGNREGS in some *panchayats* of Mednipur.

The main focus was to establish the following process of implementation:

- SHGs were to be involved in the monitoring and implementation process. A representative of the SHG would be made the mate, and some of the other members of the SHG would distribute the work among themselves. The mate would receive the supervision cost, and the SHG members would divide it among themselves, according to individual responsibility. The experience of implementation and monitoring through mates in the *gram sabha* has, however, not been very encouraging. Corrupt practices, it was found, start at this level because there is least accountability here.
- The work would be done on piece-rate basis, as defined in the Schedule Of Rate.
- The village PEC would be involved in planning, work selection and general monitoring of the schemes.
- A block monitoring committee would be formed, comprising SHG and PRI representatives, and block officials, who would monitor the implementation of the schemes. It would also ensure that the local bureaucracy and the PRIs are aware of the realities at the grass roots.

A series of meetings and visits with the *panchayat mukhiya* and the *pramukh* took place. The PRI representatives need intensive capacity building in the field of NRM, participatory planning and MGNREGA. The *panchayat* has to be built up, to ensure the replication and sustainability of the model. The most important link in the process is the *panchayat*. PRADAN can help in this direction. Work started on 4 June 2011 in the presence of the Development Commissioner, the Deputy Development Commissioner and the Block District Officer along with PRI representatives. Till date, 36 structures have been completed at an expenditure of over Rs 3.5 lakhs. The created structures are being used.

KUIRA NOW: THE CHANGES

Effective planning and monitoring by the villagers at the *panchayat* level have ensured the completion of several useful public works in Kuira, a quick payment of wages and a substantial fall in distress migration from the village. Nirasho Gope, a landless labourer, and her daughter have worked for 70 days under MGNREGS this year. At one time, Nirasho used to detest working under MGNREGS because payments were always delayed. Now, her top priority is to finish her 100 days, which is her right under the Act. The Rs 8,400 she has earned thus far have helped her family steer clear of the abject poverty cycle. Like Nirasho, there are many people in Kuira, who see the scheme as a way to earn money and improve the conditions in their village. Although the present state of the MGNREGS, a massive social welfare scheme from the government, is not very encouraging in Jharkhand, a slow and steady revolution has been taking place in the tribal village at Kuira.

Corruption in the MGNREGA implementation is a stark reality in Jharkhand. The lack of accountability at all levels of governance and implementation has resulted in so much cynicism that people have stopped questioning the system. Years of exploitation of tribals have taken away their voice. Middlemen (*bichaulias*) are an integral part of the system and everyone, including the people of Kuira, have become used to the nexus of middle-men and corrupt bureaucrats. They believed that the work would never be completed and that they would not get their wages on time. They also knew that to get any work they had to hand over their job cards to the middlemen. No one questioned the latter and the mates about the discrepancies in wages or the lack of worksite facilities. "*Narega toh marega*," was how they dismissed the scheme. To them, it was just another government scheme for the creation of large ponds, wells and *kuccha* roads.

However, now the people see the picture differently. An understanding of the Act, the development schemes and the processes involved has helped them access and use MGNREGS in a better way. They are now aware that the MGNREGA aims at making the creation of assets demand-driven and at strengthening decentralization. The *gram panchayat* is the pivotal body for implementation at the village level. But things are not happening as per the Act. Through exposure to and taking part in the designed awareness campaign (rallies, posters, *tola sabhas*, village level meetings, etc.), the people of Kuira realized that they have 'the power, the unity and the right', to decide the type of work that should be undertaken in their village under the MGNREGS. Participatory planning by the people around the available land and water resources has led to the formation of a comprehensive village-level plan and to the realization of benefits of group work.

RESULTS AND IMPACT

The villagers of Kuira have come a long way since then. Indeed, now the equations have completely changed in the village. People have the confidence, to seek accountability from the system. If the workers do not get entitlements such as a first-aid kit at the worksite, they confront the mate or the *rozgar sewak*. Similarly, if there is a delay in issuing cheques by the *panchayat*, the mates immediately ask the *mukhiya* for reasons. All the mates are questioned about expenditure and the progress of work at the monthly *gram sabha* meetings. "*Na lok sabha, na rajya sabha, sabse upar hai gram sabha*!" says the village *dakua*, Arjun Pan, at the start of every *gram sabha* meeting.

It has become obvious that one of the major reasons for the poor state of the MGNREGS in Jharkhand was the absence of strong *gram sabhas*. Now, a *gram sabha* at Kuira is attended by a large audience of labourers, mates, landowners and other villagers. The extension workers and the PRI representatives also attend meetings. The mates maintain ledgers, to track the weekly expenditure of the MGNREGS works, and present work and financial reports to everyone present at the meeting. Strong monitoring and supervision by the *gram sabha* has ensured optimum utilization of funds at the grass-roots level.

Kuira is the only village in West Singhbhum that boasts a series of completed MGNREGS works whereas the expenditure vs completion ratio is pretty skewed for the district as a whole. Withdrawing wages from the bank has been a new experience for many men and women here, giving them a sense of empowerment and confidence that no one can take their entitlement away from them.

Kuira is showing the way to *panchayats* and villages that complain of the small number of labourers at the MGNREGS works. A hundred or so people have been working on various schemes, on a regular basis, in the village. The local bureaucracy and the PRI representatives have worked hard to mobilize people and create awareness about the scheme. It is not uncommon to see the BDO, the *mukhiya* and the *rozgar sewak* conducting regular *tola sabhas* here about the MGNREGS.

Kuira is the only village in West Singhbhum that boasts a series of completed MGNREGS works whereas the expenditure vs completion ratio is pretty skewed for the district as a whole, (in the last five years, only 40 per cent of all the works have been completed, using 70 per cent of the sanctioned funds). The completion of most of the water-harvesting structures exists only on paper. In Kuira, on the other hand, 90 per cent of the water-harvesting structures started after the monsoons last year have been completed. The key has been a healthy collaboration between the local bureaucracy, the PRI and the villagers. A strong platform for the three has been built, which meets weekly to ensure smooth implementation.

Steady work and regular payments have helped reduce distress migration. There has, in fact, been an almost 40 per cent drop in the number of people migrating to cities in search of work. "If we keep getting regular work and payment in the village, why would we go outside for work? I used to migrate to Chhattisgarh for work in the tower line. But now I can earn Rs 12,000 in the village itself," says Chunnu Pan, who works at one of the many MGNREGS worksites in Kuira.

Earlier, middlemen used to withdraw money from the bank and distribute it to the workers as wages after taking their share. Many labourers did not even know about the existence of these bank accounts. Embezzlement has been a critical issue in the MGNREGS implementation. Although recently, the district has allowed cash payments for all *panchayats* that are at a distance of 3 km or more from the nearest bank or post office to avoid delays, the people of Kuira prefer payment through banks. Withdrawing wages from the bank has been a new experience for many men and women here, giving them a sense of empowerment and confidence that no one can take their entitlement away from them.

Surja Purti, a physically-challenged man, had lost all hope of getting unskilled work in the village. After becoming aware of his rights

under the MGNREGA, he wrote out a job application and asked the *panchayat* for work. He was given the task of providing drinking water to workers, and monitoring the on-site crèche. He became the first disabled man in the entire block to have asked for work under the MGNREGA, and to get it. The villagers have now started viewing the MGNREGS as a rights-based government scheme, not just another asset-creation scheme. Workers get in touch with mates or the *rozgar sewak* and demand work. A comprehensive shelf of work ensures that everyone gets something when they need it.

The MGNREGS has traditionally been male-dominated, with local contractors and *bichaulias* ruling the system. For the first time in this district, the SHGs have been involved in the implementation and the supervision of schemes in Kuira (they are implemented by SHG representatives, who have been selected as mates by the *gram sabha*). This was a totally new concept in West Singhbhum district, causing immediate unrest among the male mates and the *bichaulias*. Despite repeated attempts to intimidate the women mates, however, the SHGs and villagers remained united. Now, thanks to tremendous improvements in the quality and timeliness of implementation, the middlemen have been driven out of the system.

The implementation of MGNREGS depends greatly on extension workers like the *rozgar sewaks*. An area of concern in West Singhbhum was the irresponsible attitude of many extension workers to their duties. Today, the people of Kuira are aware of each person's role and responsibilities. This has brought about an upward pressure on the system to deliver. It is not uncommon to see the *rozgar sewak* of this *panchayat* busy at the worksite, issuing job cards to new labourers. In the words of the *rozgar sewak*: "*Agar sarkari tantra zameeni star par kaam kare, toh koi bhi kaam ho sakta hai.*" (If the government worked at the grass root, then any work can be done).

Kuira has also streamlined the muster-roll wage workflow. The women mates measure the work at the end of each day, filling in the daily measuring book and the muster roll. At the end of the sixth day, they complete the muster roll and get it signed by the workers at the worksite itself or in a public place such as a school. This is then submitted to the *rozgar sewak*, who checks it and forwards it to the *panchayat mukhiya*/secretary, the next day. A cheque is issued the very same day and deposited at the local bank. The labourers get their wages at the bank within 10–12 days. The impact of the MGNREGA in Kuira can be seen at multiple levels, the most important being the safety net it provides to wage labourers. The scheme has helped many families tide over the lean agricultural season. And distress migration, which is at its peak at this time, has visibly reduced. A major focus of the Act is the creation of land-based assets for families and the village. As village plans are made taking an INRM approach, the structures created will help harvest rainwater and check soil erosion. Families will be able to shift from mono-cropping to double-cropping, along with crop diversification. Other major visible benefits have been the empowerment of villagers and the strengthening of the *gram sabha*.

Kuira has demonstrated that a healthy collaboration between the bureaucracy, the PRI and aware citizens around the MGNREGA can turn the fortunes of a village around. If Kuira can do it, other villages in Jharkhand and the rest of the country surely can.

A Journey with the Birhors in Hazaribag

SUDARSHAN THAKUR AND GYAN PRASAD SHARMA

An invisible community, shunned by the world around it, becomes the focus of intervention, leading to inclusion for the first time and the beginning of change. Lasting social transformation, however, can only come about with long-term empathic engagement

Birhor literally means the forest man. The word 'Birhor' is derived by combining two Mundari terms— 'Bir', meaning forest and 'Hor', meaning man. Birhors belong to one of the 75 Primitive Tribal Groups (PTG) listed by the Government of India. They belong to the Proto-Australoid stock and, linguistically, they originate from the Austro-Asiatic group. The Birhors believe that they are the descendents of the Sun and that they are related to the Kharwar tribe that also descended from the Sun.

According to the 1991 Census, the population of the Birhors in Jharkhand is 8,038 and they live mainly in Palamu, Garhwa, Singhbhum, Giridih, Lohardaga, Ranchi, Hazaribag and Gumla. Only 15 per cent of them are literate. Traditionally, they are a food gathering and hunting community and their economic activities have been closely linked with the forest. Rope making, by collecting the *bauhinia* creeper has been their major source of income. Their economic activities are, however, undergoing a change. Driven by survival strategies, they are pursuing whatever activities are immediately available. The degradation of forests has affected their traditional economy and has introduced a certain level of instability.

The Birhors are nomads, who move from one jungle to the other, practising shifting cultivation; when the food supply of a particular forest is exhausted, they move to another forest. The Birhor settlement is known as a *tanda*, which comprises several huts. The huts are conical in shape and are erected with the help of leaves and branches. The houses of the more settled Birhors are made of mud walls, bamboo and wood, thatched with *phus* (grass and straw) or handmade tiles, which they have learnt to make from their neighbours.

The economy of the Birhor tribe largely depends on forest resources, labour and agriculture. For the Birhors, the forest is the main source of food and income and their agricultural land is divided into two major types—*tanr* and *don*. The degradation of the forest, coupled with restrictions placed on their access to the forests, has forced them out of their traditional occupation although many of them are still engaged in rope making. The forest resources for the most part gathered by them are from the *bauhinia* creeper that grows copiously in these regions. Numerous kinds of ropes and rope-products are made from the bark (*chhakkam*) of these creepers. Various other minor forest products are procured and exchanged in the neighbouring communities. With the introduction of forest laws, their access to these resources has also severely diminished. A major shift occurred in the workforce structure and the importance of the traditional occupation of rope making declined because they could no longer call the forests their own. The intensity of the change in the workforce structure of these people has been greater in the post-independence period.

However, a sizeable segment of agricultural labour are reverting to their traditional occupation of forest gathering and their share, therefore, declining whereas the share of workers in forestry and related activities has increased. This clearly indicates that either they could not adjust to agricultural labour or that the opportunities to work as agricultural labour have declined. Their labour is now being used for timber felling and forest management.

Thus, with the introduction of various forest laws, the change in the means of livelihood among the Birhors did see a significant shift of workforce engaged in traditional activities to the agricultural sector. Although people moved to a settled form of cultivation as farmers or agricultural labourers, the supply of labour force, in general, also saw a significant increase.

SITUATION OF BIRHORS IN JHARKHAND

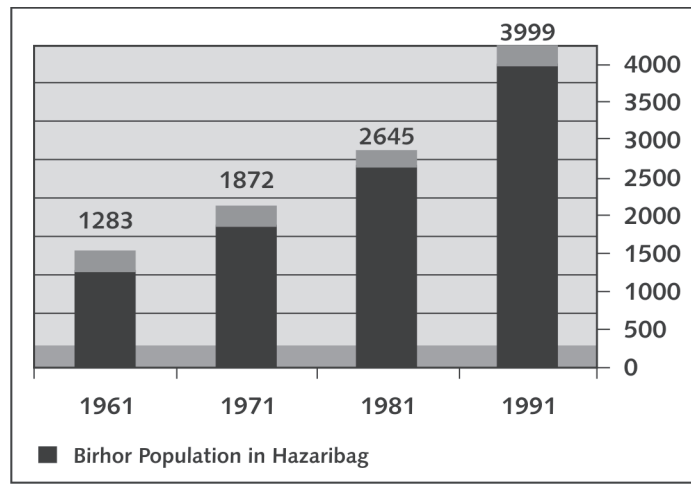
Table 1: Distribution of Birhor Workers by Industrial Categories in Jharkhand (Per Cent)

Category	1961	1971	1981	1991
Cultivators	19.67	16.36	11.99	43.1
Agricultural labourers	12.16	31.25	23.13	30.74
Livestock, fishing, etc	6.22	9.02	15.97	4.19
Mining and quarrying	—	—	—	1.08
Household industry (rope making)	53.51	37.49	36.18	11.3
Other than household industry	2.00	5.43	9.44	7.23
Construction	—	—	0.11	0.15
Trade and commerce	—	—	0.21	0.33
Transport storage and communications	—	—	0.21	0.30
Other services	6.44	0.22	2.71	1.57

Source: Computed by the author from the Census of India Special Tables for Scheduled Tribes for respective years.

With the degradation of forests, the Birhors have become deprived of their traditional sources of livelihood, resulting in instability in their economic activities. They have been continuously moving in and out of their traditional economic activities. Although the alternative economic activity for them has been agriculture, ignorance of agricultural practices and the low quality of the land have been the major hindrances in their adopting it. Studies suggest that they have not been able to adapt to agriculture and have gone back to rope making. Insecure livelihoods have compelled them to move out of the district to where there is scope for occupation. In Jharkhand, the commonly held view is that the population of the Birhors has been diminishing but, in fact, their population is being redistributed as a result of the dismantling of their traditional modes of economy, according to Ayon Sarkar and Vijayta Mahendru in their 'A Study on the Santhal and Birhor Tribes of Jharkhand'.

Fig. 1: Birhors: Population Growth

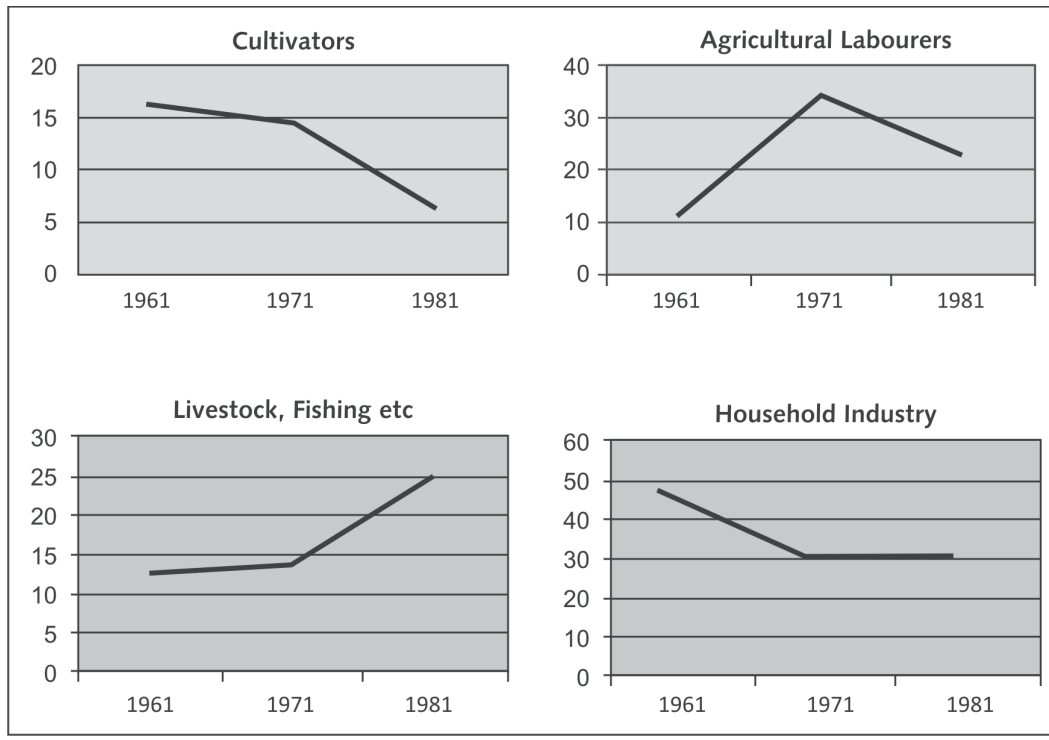


Source: Census of India, Bihar: Special Tables for ST of Respective Years

DISTRIBUTION OF BIRHOR WORKERS BY INDUSTRIAL CATEGORY (PER CENT) IN HAZARIBAG

Hazaribag is considered one of the oldest habitations of the Birhors and, over the years, this area is where their population has increased marginally. Since independence, a significant change has been observed in the economic activities of this tribe. They are now involved in various industrial activities as shown in Figure 1. The tribal population of Hazaribag, as well as Jharkhand, has consistently experienced a slower increase in population than the non-tribal groups during the entire post-independence period. This is in sharp contrast to the tribal population growth (both in relative and absolute terms) in many other states (especially outside eastern India), as well as at an aggregate all-India level. Although the tribal population as a whole has been experiencing a slower rate of growth, the population of a number of smaller tribal groups is reported to be stagnating or declining. In this context, the study of the population dynamics of the Birhors would be interesting and would verify such arguments and throw light on some of the influencing factors.

Fig. 2: Birhors: Occupation



Source: Computed by the author based on Census of India: Bihar, Special Tables for Scheduled Tribes for the Respective Census Years

PRADAN'S INTERVENTIONS IN HAZARIBAG

PRADAN initiated work in this area in 1992, with a focus to improve the socio-economic life of the poor. Promotion of Women's Self Help Groups (SHGs) became the first area of focus because this would bring both the social and economic issues on to a single platform. The women, considered the most disadvantaged section of the society, started organizing themselves to address poverty and other social evils. In 1992, PRADAN actively participated in pioneering the SHG-Bank linkage model within the framework of the NABARD-RBI guidelines for financing SHGs. In due course, the SHGs gained a legitimate space in the system and began to receive mainstream bank finance. The SHGs were a vehicle of empowerment and mutual support, thus enhancing the self-image and confidence of the members. The need for collectivization is not only restricted to the group level but it is also demonstrated at the *panchayat* level, in the form of clusters, and at the district level in the form of federations. These collectives give the members significant recognition in society and there is a visible movement towards newer ways of living.

Today, PRADAN is working in five blocks of the district, that is, Padma, Barhi, Barkatha, Churchu and Chouparan with 13,546 families organized into 932 women's SHGs. These groups have weekly meetings in their own hamlet and have an accountant to maintain the books of accounts. There are around 67

SHG clusters at the *panchayat* level. Through these SHGs, the women find an opportunity to express their needs, not only as members but also as representatives of a primary group.

PRADAN later initiated a livelihoods promotion initiative, with an objective to enhance the food sufficiency of a family and at the same time ensure vibrancy in the village economy through regular cash flow. The SHG members are today linked to various financial institutions for credit and government agencies for grants so that they can take up different livelihood and income-generation activities. PRADAN also developed a few livelihood prototypes suitable to the community in this area.

NAWAGARH—THE VILLAGE

Nawagarh is a small village under Rampur *panchayat* of Chouparan block in Hazaribag district, Jharkhand. As per the 2001 Census, the village had 117 households with a total population of 649 with a sex ratio of 1041 males to 1000 females. Of the total population, 175 persons belong to the Scheduled Caste (SC) community with a sex ratio of 966 males to 1000 females. The population of the Scheduled Tribe (ST) community is 42 with a sex ratio of 1625 males to 1000 females. Of the 94 ha of the total land in the village, 69.47 ha is forested with almost 74 per cent forest coverage.The Bihrors, who belong to the ST category, dwell against the backdrop of the forest at the extreme border of the village, out of main settlement of the village. The dwellings of the Birhors go unnoticed because their habitation is not connected to the road and one has to cross vast stretches of fallow and forest lands and ponds to reach where they stay.

There are 32 Birhors in Nawagarh; their number has decreased by 10 since the 2001 Census, mainly due to migration and a very low rate of life expectancy. The main factors for the latter are a lack of a nutritious diet and a disease-prone environment.

The main occupation of these people in the village is rope making, hunting small animals such as rabbits, gathering firewood and *datwans* (wood of *neem* and *babool* traditionally used for cleaning teeth), collecting medicinal herbs and selling them in the local markets. The only literate person in the community is Birju Birhor, who is now a tractor driver; the other Birhors look up to him for advice and guidance. Until a few months ago, there were 10 to 12 small hutments (difficult for a full grown person to enter), in the fringe stretches of the forest. These small conical-shaped hutments, eight feet in diameter and a height of five to six feet and an entrance with a height of two or three feet were the only rooms where the families used to sleep, cook, eat and keep their belongings, including a pair of goats. Now, there are well-built concrete two-room houses for the 12 families of Birhors; the journey has been splendid and satisfying.

This journey started in 2008 when PRADAN began working in the village as a watershed project with financial help from Damodar Valley Corporation (DVC). As per the project, PRADAN formed a Village Development Committee (VDC), representing people of all castes, categories and hamlets. But the poorest of the poor still seemed to get left out because PRADAN was unaware of the existence of the Birhors in the village and the people of Nawagarh never mentioned them. The planning exercise went on and many plans were discussed to improve the land and water situation of the village—an earthen check dam, a homestead well and others. When moving through the village, one of PRADAN's professionals happened to came across the dwellings of these lesser known people. The issue was raised in the VDC

meeting of Nawagarh. At first the VDC did not show much interest because the Birhors were not treated as fellow villagers. The arguments that they put forward were, "The Birhor keep changing their place and, a few years ago, the community settled here, but they don't have their own land. No one can keep track of them because the families of the Birhors never stay in one place permanently." But there were a few people in the VDC—Kameshwar Bhuiyan and Sanichar Singh, the Secretary and the President of the VDC—who had other plans in mind. They strongly advocated a need to do something for the Birhors because they were the most deprived of all. PRADAN, with the help of the Nawagarh VDC, included a residence for the Birhors in the annual implementation plan of the village.

A day-long meeting was conducted with all the Birhors to identify what their idea of a home was. We, as part of the PRADAN team working in the area, used chart papers and drawing pens, to create a first sketch of the building, with inputs from both men and women. The drawing was made, based on their perception of a dream home, and estimates prepared. The proposal was then sanctioned by DVC but the path was not smooth for the VDC and PRADAN. The first hurdle that came up was that the Birhors did not own the land on which they lived. After detailed discussions, it was decided to approach the block office of Chouparan to allot some government land to them so that the construction could begin. Within a month, the block and circle office allotted land to 12 families—1.12 acres almost 10 decimals for each of the 12 families at the same place. But the people from 'Thakur *tola*', a hamlet in the village, were against the idea because the place was the main grazing land for their cattle and some of the land had been encroached upon to grow pulses. There was strong opposition to the project. The Birhors were threatened, and bricks and other construction material was stolen.

The role of the block office was commendable in this situation. The Block Development Officer (BDO) took personal interest and encouraged the VDC to go ahead with the project. He warned the troublemakers that anyone who interfered with the proceedings would be prosecuted. The VDC, with the guidance of Sanichar Singh and Kameshwar Bhuiyan and with active support from the SHG members in the village, completed the process of land allotment and demarcation by mid-2010.

The allotment of land to the Birhor families was not the end but the beginning of the empowering process that PRADAN and the VDC initiated. With the onset of the monsoon, the construction of the houses was supposed to be halted. But the Nawagarh VDC and the Block Level Coordination Committee (BLCC), formed by PRADAN, comprising the watershed villages of the Chouparan block, pressed hard to go ahead with the plan. The plan was that everyone carry on work until the task is finished. It was an unarticulated assertion that the first to be benefitted should be those who have never been benefitted. The most striking part of all was the inclusion of the Birhor people—Birju Birhor, Pahari Birhor and Santosh Birhor, in the process. The Birhors began to attend the VDC and the BLCC meetings; they became a part of the process of forwarding the applications to the block and circle offices and approaching the BLC to press for the demand that their houses be constructed. There was a ray of hope in the tribe—a people who did not have anything to lose had started to think of property and had begun to dream of well-constructed houses; they began to recognize and assert their rights to live as humans, which the earlier generations of Birhors had never aspired to.

The happiness and excitement of the people inspired PRADAN even more to bring them into the mainstream of society. An SHG was formed, comprising Birhor women; it started meeting once a week. The other SHGs and the older SHG members helped these women make a start.

There was a ray of hope in the tribe—a people who did not have anything to lose had started to think of property and had begun to dream of well-constructed houses; they began to recognize and assert their rights to live as humans, which the earlier generations of Birhors had never aspired

In the latter half of 2010, construction work on the land started, which the Birhor people could now call their own. One thing was clear—treating the Birhors as beneficiaries would not empower them in the long run, as had been seen in various programmes run amongst other communities. So PRADAN and the VDC decided to conduct a meeting with the Birhor people, to formalize a plan for the construction of their houses. As per the project outline, they were meant to bear 10 per cent of the total cost; it was clear that they could not afford to do that. But the proposal was put forward that they would be paid to construct the houses and that they would contribute a percentage of their earnings towards the building cost of the houses. It took two to three months to convince the Birhor people to contribute; a change from a receiver to a partner in the development.

A detailed plan was chalked out for the construction and the roles of the different people involved—PRADAN, the VDC, the SHG and the Birhors themselves—were defined. It was decided that a meeting would take place once a week at the site, in which the Birhor people, with the help of Sanichar Singh and Kameshwar Bhuiyan, would monitor the progress. At each meeting, the Birhors were encouraged to put forward their views and if there was anything of concern, that must be considered and attended to. It yielded results because the Birhors started taking an active part in the construction.

A monitoring committee was formed amidst the Birhor people, under Pahari Birhor, to look at the developments in the construction work. The Birhor families agreed to work in the construction and to contribute Rs 30 from each day's wages that they earned. They also contributed a few days' wages during the foundation of the building. Strikingly enough, the hired mason from the neighbouring village also decided to take Rs 130 instead of Rs 150. Other workers also charged less in comparison to the wage rate at that time. Brick kiln owners, cement suppliers also decreased their rate from the market rate. It seemed as if every individual was contributing and propelling enough energy to take this project forward.

Initially, nine houses were to be built, comprising one room and a verandah; the main living room was to be made of RCC, whereas the verandah was to be built with a slanting tin roof from the allotted DVC fund (Rs 3.85 lakhs) for the construction. While the work was in progress, someone from the village told the Birhors that the houses would collapse because the walls were only five inches thick. "Have you seen any house in the village that has a five-inch wall?" The Birhors then said, "*Ee gharwa to gir jaito, hamni sab ekra mai nahi rahbo*. (These houses will collapse, we will not live here)." On demand from the tribals, the thickness of the wall was changed to 10 inches, even though this would create havoc with the finances. To keep the project within the budget, it was then decided to erect one

single house of nine rooms, which would have an outside wall of ten inch thickness and the inner walls would be of five inch thickness.

In addition, there was the problem of constantly rising prices of everything from cement, sand, bricks, labour force, etc., because of the high rate of inflation. The budget was eroding fast. All these issues were discussed with the Birhors. Money was transferred from PRADAN's account to the account of the VDC, Nawagarh. The signatories of the VDC were responsible for the transactions, with consent from the VDC members. Each week, the VDC would sit with the Birhors, to discuss the expenses as well as make detailed plans of the activities. Accounts were maintained at two levels; one by the accountant appointed by the VDC and the other in PRADAN's books of accounts. Realizing the amount of effort and expenses being put in, the Birhors agreed to increase their contribution from 10 per cent to 20 per cent and during the last stage, they even contributed 40 per cent of their total labour. The budgeted amount was still inadequate and after discussions with the DVC officials, an additional Rs two lakhs was sanctioned.

The sense of participation and contribution of the people of the area for the Birhors was so strong that even the masons and others persons working there contributed a portion of their earnings. These contributions offset, to some extent, the erosion of the budget. The amount contributed by the Birhors stands at Rs 59,770 (approximately 30 per cent of the wages that they had earned) and an additional Rs 25,000 was saved by reducing the wages and waivers offered by the suppliers The total amount came to approximately Rs 85,000. Although this was not a very high amount, it was very meaningful for the success of the project.

The people of the settlement needed a source of fresh water because they would otherwise have to go to nearby villages where they were being harassed and would have to wait till the last to fill water. The DVC officials were informed of the situation. And because government sanctions take time, PRADAN invested another Rs 25,000 to install a tube well. After five to six months, the DVC also installed a tube well there. The Birhors now have two tube wells for their fresh water needs. PRADAN even created a lavatory for them, but it remains unused till date. Originally, the model was designed keeping in mind a small settlement that would have all the facilities and amenities and this included a common lavatory and bathroom for 12 families. Later, it was realized that the concept of a common latrine did not work.

In January 2010, three families that had abandoned the place during the initial phase of construction, returned with the hope of being accommodated as well. Pahari Birhor voiced the desire to have a similar accommodation facility. PRADAN began to explore the possibility of constructing more houses but in May 2010, a cyclone from the Bay of Bengal hit the village causing extensive and severe structural damage to the verandah. The result was horrifying. All the Birhors moved back to their huts saying, "*Tut jaito, nahin rehbo*. (We will not live in houses that collapse.)" To restore confidence and rebuild the structure was very difficult; but after a full day of discussions with the Birhors, they finally agreed to move back into the houses. The next challenge was the budget. Sir Ratan Tata Trust (SRTT) sanctioned a budget of Rs 5.30 lakhs under its innovation fund to build an additional room, in place of the verandah, and three new houses for the new families. The additional rooms for each of the three families and additional rooms in place of the verandah were erected, keeping in mind

the forest stretches in front of the construction. The fund was also used to give the residential colony a comprehensive shape, with an arable landscape in front, a boundary of trenche, to recharge the water level as well as to demarcate their landscape.

PRADAN encourage the VDC, Nawagarh, and the villagers to treat the Birhors as their fellow denizens, thereby creating a space for the tribals to exercise their choice and strength to improve the quality of their lives. Nawagarh, which had a tendency to overlook the existence of the Birhors, has now started to include them in their village-level meetings. After the allotment of land in their names, not only the villagers, but the politicians have also started taking an interest in them. For instance, in the last *panchayat* elections, the Birhors were invited by the contenders to the public meetings. People started taking an interest in their well-being as well, and there are instances where the villagers have helped them access medical facilities at the primary health centre in the village.

PRADAN could not have erected the buildings without the support of the VDC. The GM land alloted to them was being used by the villagers as a grazing ground; the VDC had intervened to convince the villagers to make this happen for the benefit of the Birhors. The VDC also played an active role in negotiating the prices of inputs from the suppliers and in convincing masons and the labour to work at lower wages to cut down the expenses.

The change in the lives of the Birhors is amazing. Once fearful of living in erected houses, the tribals now live with pride in their well-constructed RCC houses. Since last year, they have also taken to vegetable cultivation and five families are cultivating tomato, chilly and brinjal in their small piece of land.

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There are cases where the Birhors have abandoned their dwellings erected by the government. One such example is the Birhor colony of Kewal village in Barhi block. From the beginning, PRADAN was clear that if the homes are constructed without involving the Birhors in the process, it would face the same fate. It took PRADAN and the VDC a lot of energy to include the Birhors in the entire process: site selection, design and layout, forwarding applications to the block office for land allotment and monitoring the progress of work on a regular basis. It required frequent interaction with the Birhor families to make it happen.

Each of the 12 families got 10 decimals of land and PRADAN thought of utilizing the small piece of land available to each of the families, to inculcate the habit of farming, especially vegetables, to address the nutritional needs of the people. These families get rice from the PDS but vegetables were rare in their diet. At hamlet-level meetings with the Birhors, PRADAN continuously discussed the nutrition needs of a human being and also tried to show them how other people in the village cultivate vegetables. Some Birhor families, which used to work as agricultural labour, were asked if they would like to change their lives by becoming cultivators. The change would not be major from an economic point of view, but they would be able to maintain a good nutrituous diet. At first they hesitated, but Pahari Birhor and his wife Arti Devi began cultivating tomato, brinjal and chilly and soon the others joined in.

Almost all the families have tasted tomato chutney to their satisfaction. There are smiles on the faces of the new cultivators (the first farmers in their generation) such as Birju Birhor, Pahari Birhor, Santosh Birhor, Lambu Birhor and Brahmadev Birhor. Arti Birhor can usually be seen watering her vegetable farm whereas earlier most of her time was spent at home, either making ropes or looking after her small piece of farm land.

The quality of life of the Birhors is witnessing change. Many issues, regarding health and life expectancy of the community, come up when working with the Birhors

The quality of life of the Birhors is witnessing change. Many issues, regarding health and life expectancy of the community, come up when working with the Birhors. Even if they suffer from serious diseases, they never go to the hospitals or the primary health centres, owing to a lack of money and the fear of facing others. We noticed that in spite of the literacy programme launched by the government, the children of the Birhors and even the adults fear to go to school. When asked, Santosh's son, Manish, remarked, "*Dusra bacha log maar ke bhaga dete hain* (Other children beat us out of the school.)" The food they take is nutrient deficient. It only comprises rice and some forest herbs. They hunt small rabbits and other small animals but they rarely consume the meat; instead, they sell it for the cash they need. The community is out of the mainstream and there has been no effort made until now to include them in society's fold. An occasional distribution of blankets is not going to help communities such as the Birhors to come out of the trap that they have fallen into. Concerted long-term engagement is required to bring about transformational change.

The Women of Kazra–A Perceptible Change

BINOD RAJ DAHAL

No different from any of the other villages of Godda district, the unique experience of Kazra village in bringing a three-generation-old conflict to a resolution has made it very special

It was one of the worst land disputes between two families that the area has witnessed. It remained unresolved for over 50 years, and despite all attempts at arriving at a settlement, it became increasingly bitter over the years. The longer it dragged, the more was the value of the land and the more persistent the families became to hold on to their demands, incurring huge expenses in the process. Every means, including the *panchayat* and the *gram sabha* by the elders and the socially respected people of the village, was employed to bring the warring descendants to a meeting ground. Even a court battle that lasted almost four decades did not deliver justice to the families involved.

The long and complex saga involving anger, humiliation, hatred and ego clashes had very little hope of being resolved, especially at the village level. But it was resolved… and that too by none other than the local SHG! It is against the backdrop of making seemingly impossible things possible that we describe the changes that took place in the village of Kazra.

Kazra is one of the villages where PRADAN, an NGO working in the field of empowering villagers through livelihood generation activities, began its work in the 1990s. The setting up of SHGs was still a new concept in rural development. On 21 March 1996, two SHGs were set up in the area. Both the groups preferred the name Ganga, therefore, they named themselves Ganga A and Ganga B. The villagers themselves have had no difficulties in identifying their groups and the members have developed a strong bond with each other. Original members such as Hemanti Devi, Dulari Devi and Parmila Devi have continued to work in the groups and have now become block-level SHG leaders and represent their SHGs/clusters, in both the federation and block-level agriculture *samitis*. They work hard tirelessly and take advantage of all the opportunities they come across.

Parmila Devi was a newly-wed daughter-in-law of the village when she first became a member of the SHG. She was very shy and did not take part in any of the interactions that were held in the village in those early days. Now, however, she is one of the front-runners, not only actively engaged in her own SHG, which has become very vibrant, but also always striving to bring the other women of the village into the SHG fold. She has promoted two other SHGs in her own village, one in 2008 and another in 2009, as well as a few in other nearby villages.

The reason behind the higher savings in some of the SHGs is due to a higher level of trust in the internal transactions and credibility among members of the group. The regular savings and the fulfillment of loan requirements (borrowing and repayments) of both the members and the groups, in this context, are highly noteworthy and are reflected in their financial records

Of the 56 households in this village under the Pasai *panchayat*, 46 are already enrolled in SHGs. Besides the older SHGs, Bajrangwali Mahila Mandal (MM) was established in 2008 with 10 members and Belbharni MM with 10 members in 2009. Following the very stringent, self-regulatory system of the SHG norms, the members have been conducting weekly meetings right from the beginning and, of the planned 52 meetings in a year, at least 45 meetings have taken place.

The financial records of the four SHGs in the village show that Ganga A has a cumulative savings of Rs 85,000, whereas Ganga B has Rs 1.10 lakhs. The two groups started saving Rs 2 per member per week until 1999 and then increased it to Rs 5 per member per week until 2005 and then to Rs 10 per member per week. The amount, though quite high, should have been higher as per the calculations. The other two groups—Belbharni with savings of around Rs 11,000 and Bajranwali with Rs 35,000—have more than the average saving rate. The reason behind the higher savings in some of the SHGs is due to a higher level of trust in the internal transactions and credibility among members of the group. The regular savings and the fulfillment of loan requirements (borrowing and repayments) of both the members and the groups, in this context, are highly noteworthy and are reflected in their financial records. Higher savings have led them to invest in mutual funds and also in the post office savings, with guidance from the promoters of the groups. They are now ready to reap the harvest of high returns on what they invested in 2006.

With substantial savings and a good savings-to-credit ratio, almost all the members were able to draw loans from within the SHG. The older two groups have taken loans from the bank more than four times. Ganga A and B were also linked to SGSY (Swarnajayanti Grameen Swarojgar Yojana), in which BPL groups with at least 70 per cent of the SHG members can be supported by the government scheme with a subsidy-cum-loan component. Once the loan is repaid, the subsidy was deposited in a group account. They are now planning a second linkage for a higher loan-cum-subsidy project for their paddy business. Since the block recognizes the paddy business with a higher subsidy, they members are confident about doing so and plan to link up with the scheme. The government will support the group through a maximum subsidy of Rs 1.25 lakhs, with an equivalent amount in loan from the bank for a larger intervention by members, to generate better and sustainable livelihoods. Very popular in the block is the business of procuring paddy, converting it into puffed rice and selling it at the *hatia* or *bazaar*,

this is recognized as an income generating activity under the SGSY scheme. The risk in this business is very low and the community does not hesitate to take it up as a project. Ganga A and B have applied for the project—the second linkage.

An application for this has been deposited in the block office. However, the internal loan transactions of the SHGs were so good that members felt confident about accessing the loan from the group and using it both for the *kharif* and the *rabi* seasons. Moreover, the intervention by PRADAN, (the SRI paddy and vegetable cultivation of tomato, brinjal, mustard, peas) helped convert the non-producers village/community into producers. Since 2005–06, PRADAN began to introduce scientific ways of agriculture in the village. With the introduction of SRI, PRADAN also introduced improved paddy technologies (seed treatment, year-wise change of seeds, transplanting in line with proper spacing, weeding, transplanting of two seedling per hillock in case of improved paddy and using disease control and management practices). These practices were adopted by all the SHG families—*rabi* vegetables include peas, beans, cabbage, cauliflowers, chillies and potato, and the villagers have been able to harvest a substantial yield, fetching an average Rs 5,000 per *katta* (about 3 decimals of land). If a family cultivates 5 *kattas* of land, it earns around Rs 20–25,000 in one season.

The villagers have overcome the food security crisis they faced a few years earlier and now have surplus food, with extra cash income from their land. Large-scale migration to other parts of the country for work is now almost non-existent in this village and people are happy being associated with agriculture.

Besides ensuring that the SHG norms are in operation and that financial transactions are conducted, the women of this village spoke of their vision for the village. They discussed issues such as educating their children, enhancing the dignity of women, better housing and better lives

The families of the area have two or three buffaloes, and generating dairy products from the large number of livestock is a popular occupation. Those who have no buffaloes are engaged in making *khuwa* (sweets made of milk). Being economically more stable and having the resources and opportunities at hand have made the villagers more ambitious about developing their village further.

In February 2012, I spent some time with the villagers of Kazra to discuss the status of the SHGs and village development. The 24 women present were very positive and, despite their busy schedules, were willing to actively voice their concerns. Unlike in many other villages, almost all of them spoke in the meeting. Besides ensuring that the SHG norms are in operation and that financial transactions are conducted, the women of this village spoke of their vision for the village. They discussed issues such as educating their children, enhancing the dignity of women, better housing and better lives. These women are clearly aware of their rights and entitlements. Hemanti Devi is the accountant of the group as well as the *anganwadi* teacher; Parmila Devi of another SHG is the *sevika* or the assistant in the *anganwadi*. Both of them, who operate the *anganwadi* school, have a deep understanding of the problems of the members and their families. They are able to take care of the children with a positive attitude, ensuring that the children get the education, meals and vaccinations, as per the norms. The *anganwadi* staff gathers information from the block offices and shares it with the members of the SHGs. Special care is taken of the girl child as well as lactating mothers at this centre. The quality and quantity of meals for the children

and the other government facilities that this centre is meant to provide reach the villages as expected. The school runs regularly with minimum absenteeism and the members know about the quality of the education in their village school and they also monitor the quality of the teachers. They expect a certain outcome after children have attended the school for a period of time. For instance, if a six-year-old has been attending school for almost six months and is not able to write his name or cannot count, they assess the teacher and, if necessary, lodge a complaint.

Panchayat elections were held in Jharkhand for the first time in 32 years and *panchayati raj* institutions (PRI) are now in operation. The SHGs invited their *mukhiya*, the elected CEO of the *panchyat*, to the cluster meetings and discussed what can be done in their village at length. The *panchayat* is putting pressure on the mukhiya to take part in the *gram sabha* and through her, influence larger development decisions. Usually, in the villages in Godda, very few people attend the meetings of the *gram sabha* and decisions are taken by a few select people and not shared with the common people *(aam admi)*. But the women of Kazra have begun to attend the *gram sabha* in large numbers, raising their collective voice and demanding that plans that benefit more people and not just some privileged few are put into effect. These women have a vision for the future and are able to clearly spell it out. Speaking in unison and in large numbers, they are ready to take the struggle further, if needed. Their confidence and their intensity are highly creditable. Their participation in the overall development is a role model of women's unity.

A UNIQUE EXPERIENCE OF SOCIAL RESOLUTION

The changes that have taken place are crucial—the improvement in the adoption of agricultural practices, has led to greater yields and greater financial well-being. There is, however, much scope for further development. These women have become powerful through their unity; there is, therefore, the possibility of further intervention in social issues. My hunger to explore these possibilities led me to the long pending court case and the unresolved land dispute discussed earlier. It was finally resolved through mediation by the women of the SHGs, a few months ago.

The two families involved were highly regarded, privileged due to their economic and caste status. Even today, the title of 'Singh' is superior to any other in the village. The families have been locked in this land dispute since 1963, over three generations. Large sums of money have been spent and assets mortgaged; yet the litigation continues. No solution has been found, even by the courts in Dumka. Many attempts were made to resolve the case in the village *panchayat* but in vain. SHG members from these families were not willing to take on the men folk, who gave no importance to their women. However, the women of these families had voiced their concerns over the issue at the SHG meetings. They were quite upset that the dispute had lasted for so long and that both the parties were wasting time and money in litigation. Another concern was that due to this case, peace in the village could not be restored. Senior members of the SHGs, who had attended many training programmes and forums, and were in contact with the outside world, thought they needed to address social issues in their respective villages.

The exposure to the outside world had made the women of the village aware of the inequality that women face in their homes. They began to view situations differently and also realized that this inequality had an impact on their lives, leading to a deep desire for change. They recognized the fact that if

they wanted to bring about a change in the status of women in the families and in the village, they had to act collectively. Attending meetings and participating in forums helped them gain confidence and enhanced their capability to do things differently. The women of Kazra were considered to be forward looking and active members at all levels, from the SHGs and clusters to the SHG federation; they wanted to prove that they could be the leaders of change. The case gave them the opportunity they were looking for. Their level of confidence because of their experience and exposure was high. They were aware of the unlimited possibilities for change through this social platform of SHGs. They knew they had the potential to change their society with better norms, values and justice.

Meanwhile, the men of the village observed the women working and developing their SHGs over the years. They began to trust their women to look beyond the family confines. They gradually began to rely on their women as they watched them take decisions on social issues such as domestic violence and abandonment of women. They began to see their women in a positive light, realizing that the outcome of every intervention that they had made at the household level had had a positive result.

An attempt was made to resolve the long-standing dispute by inviting many people from within and around the villages of the *panchayat*. When initially the efforts did not yield results, the villagers and the women did not get discouraged; instead they took it up as a challenge and became even more determined to resolve the issue.

Women from both the families were members of the SHGs. Parmila Devi had been a member of one of the older groups for 14 years and she had helped to promote another group for the villagers who had been left out. A woman from the rival family was a member of the newly formed group. In the weekly interactions of the SHG meetings, the two women decided not to bring up the dispute and instead focus on SHG-related operations only. Their weekly interactions, instead, allowed them to get to know and understand each other, and helped them later to intervene in the dispute. When discussing issues such as saving money, taking loans, repaying loans and attendance, therefore, they interacted at another level, where the mind was peaceful and they were working for the benefit of both. It helped them, they later shared, to shed their hatred towards each other and develop a positive perception of each other. The discussions and the high values the groups held over two years resulted in a change in their mindsets. In this nurturing environment, the women of both sides took the initiative and called for meetings between the families. Having seen them at work and acknowledging the fair decisions they had made in many cases at the village level, the families in conflict agreed to meet one more time, this time with the women as mediators.

This resulted in the decision to divide the disputed land between the families in a 3:2 ratio. This was acceptable to both the families and the villagers present welcomed the very wise decision and decided to finalize the agreement legally at the final appearance in court on 13 June 2011. Both families have now started exchanging pleasantries and are a support system to each other.

This event is a lesson for millions of others, involved in long-term litigation cases with no resolution in sight. The need of the hour is, perhaps, to make programmes more inclusive by mobilizing women to work with local issues, in which outside agencies are unable to help.

Sipringa: A Decade of Growth and Prosperity

SYED LUTFUR RAHMAN

Encouraging farmers to use the SRI method of cultivation and focussing on land and water development, the members of the SHGs bring about socio-economic changes that enable a once-poverty stricken people to become self-sufficient and secure

Sipringa is a remote village situated 22 km away from the district headquarters of Gumla in Jharkhand. Connectivity to the village is very limited. The village comprises about 60 families belonging to the Scheduled Castes (SCs), Scheduled Tribes (STs) and Other Backward Castes (OBCs). The people of the village are mostly farmers and jungle dwellers and only a few of them work as blacksmiths, carpenters and shopkeepers in the local *haats* (small weekly markets).

The landscape of the village is undulating and can be categorized as lowlands, medium lowland, upland, homesteads and fallows in the foothills for grazing. On an average, one family has 0.75 to one acre of medium lowland, one acre of upland and about 0.1 acre of homestead.

THE SOCIO-ECONOMIC SCENARIO OF SIPRINGA BEFORE PRADAN INTERVENED

To understand the past situation of Sipringa, we asked the villagers to share what they remembered of the earlier Sipringa. Families struggled to get two meals a day. Shivnath da, an aged farmer of the village, told us that families with children were forced to send one or two of their children to landlords, who employed them as household workers or farm labour and, in return, the family would get 500–1,000 kg of paddy at the end of the year. This contract labour system is locally known as *dhangad rakhna.* The farmers were dependent on the landlords (*ganju*) for cash and food, but because the interest rates at which they borrowed money were very high, the families invariably fell into a debt trap with these landlords. Selling firewood (those who had a bicycle) was one way of earning cash and food. The villagers also resorted to distress migration. At least one person from a family would migrate for work after the *kharif* paddy transplantation. Some families even told stories about how they ate some tubers from the forest for breakfast and lunch, in the absence of their staple food—paddy.The farmers grew 16 crops simultaneously to make ends meet. Of those crops, paddy, millets, pulses and oilseeds were grown by all. These crops, however, were rain-fed and productivity was very low.

STAGE-WISE INTERVENTION BY PRADAN

A. Promotion of Self Help Groups (SHGs)

PRADAN organized community meetings in Sipringa village, to interact with the people and discuss the issues, their concerns and the opportunities available for them. The concept of SHGs was shared with the villagers. They were told that an SHG comprises representatives of 15–20 families of similar socio-economic conditions living in close proximity, who voluntarily saved some money on a weekly basis and who also worked at solving the problems of the village. After two or three meetings with the villagers to convince them to form their own SHGs, they agreed. Three SHGs were formed in the village by 2002, and the villagers started saving Rs 5 per member, per meeting. By the time the groups were six months old, they had savings of Rs 2000. PRADAN then introduced them to an 'internal loaning process', in which the SHGs began lending money to families within the village. This experience was quite new and exciting for the community. Each family managed to save money, take loans at low interest rates and also shared their issues within the village.

B. Introducing the System of Rice Intensification (SRI) and improved varieties of paddy for increasing yields

The fertile lowlands of the village were owned by the landlord and only the less fertile medium lowlands belonged to the villagers. And the combination of low fertile land and low yielding variety of seeds with traditional practices of cultivation had resulted in low yields; hence, the poverty in the village. PRADAN intervened by encouraging and facilitating the farmers to grow improved varieties of paddy (Lalat, Khandgiri), using the SRI method. It was a huge success. The paddy yield increased to twice as much; the farmers had yields of 2,000 kg (2MT/acre) of paddy from one acre of land. Within the first year, 25 families became food sufficient and had food for the whole year. For the first time in the village, farmers earned Rs 5,000 on an average by selling vegetables such as tomato and chillies. From 2003–06, PRADAN worked on food sufficiency and small-scale vegetable farming.

By 2006, almost 80 per cent of the families were food sufficient and another seven families were doing vegetable farming and earning Rs 4,000–5,000 annually. All the families have adopted improved paddy production systems.

FOCUS ON LAND AND WATER DEVELOPMENT

Despite these changes, the community was still dependent on rainwater for farming and not much had happened for land and water development. In 2007, PRADAN started focusing on this area. Proposals were developed, with the support of the SHGs, for the construction of irrigation infrastructure in the village. SHGs have had a vital role to play in analysing the land-water situation of the village and then planning the activities based on need, effectiveness, etc. The broad steps that were followed were (i) planning for different irrigation structures (ii) submitting plans to the block office and the DRDA by the SHG (iii) implementing the project iv) providing support in crop production and (iv) submitting bills and vouchers for the work done. These efforts led to the sanctioning of two projects. The SHGs were able to draw funds from the Tribal Welfare Commission to construct an irrigation well and a River Lift Irrigation system. The villagers have now started working on the utilization of fallow lands by planting mango

orchards, under MGNREGS. Almost 25 acres of land has been brought under irrigation. Some of the families have started growing a wheat crop after the paddy crop The cash earning of the families have improved. They have started earning Rs 5,000, on an average, by growing vegetables in irrigated areas and homestead lands. Sixteen families have planted mangoes in fallow uplands on approximately 6 acres of land. They also began to grow inter-crops in the mango orchards and earned some additional cash.

2008: THE CHANGING LOCAL SOCIO-ECONOMIC SCENARIO BRINGS AND THE NEW DEVELOPMENT CHALLENGES

By the end of 2008, 80 per cent of the families were growing improved paddy, 10 families were doing intensive vegetable farming and 16 families had planted mango orchards. The entire village was growing crops on their own land and generating revenues up to Rs 6,000 a year plus food sufficiency for the entire year. The SHGs became quite strong financially and socially. In Raidih block, almost 50 villages reached a similar kind of growth as Sipringa. PRADAN had an outreach of 3,000 families by 2009. Approximately, 60 per cent of the families were food sufficient and almost 500–600 families had begun to grow vegetables intensively. The local *haats* were filled with vegetables and sometimes the prices were quite low due to the high supply. There was an imbalance in the demand and supply conditions of the local *haats.*

THE RAIDIH WEEKLY MARKET

The Raidih weekly market is in the centre of the Raidih block. It is a small market where farmers from all areas of Raidih come to sell their produce of vegetables, rice, forest products and to purchase clothes, fish, chicken and household items. The average transaction is almost fixed because the buyers and sellers are mostly from the nearby villages. It operates smoothly, everyone being aware of the trends and the transactions. In September 2009, the entire market place was filled with ripe tomatoes and the farmers helplessly waited for buyers. There were almost 10–15 MT of tomatoes in the market whereas on a regular basis only one MT of tomato is sold in that market. The prices came down to Rs 0.50/kg; this was traumatic for the farmers, many of whom could not even sell the tomatoes; they simply dumped them in the marketplace. This incident recurred the following two or three market days and in other nearby villages as well. The farmers were upset and began to lose faith in vegetable farming. Some of the farmers began exploring new ways of marketing by sending the produce to the *mandis* of Ranchi and Rourkela.

PROMOTION OF A VEGETABLE PRODUCTION CLUSTER

Carrying this learning forward, PRADAN promoted a sustainable vegetable production cluster. The focus on production alone, possibly, was not going to help the community. An integrated network of the whole value chain of vegetables and fruits needed to be created to sustain vegetable farming for small farmers. In Sipringa, 10 farmers had prior experience in producing vegetables. During the *kharif* season of 2010, PRADAN promoted a Vegetable Production Cluster there. There were a few considerations for taking up large-scale vegetable farming in Sipringa.

- All the families would take part in the year-round vegetable farming: All the families have some uplands suitable for vegetable production. Seeing that agriculture has the maximum potential as a source of revenue generation, efforts were made to encourage vegetable farming.

- Families would have access to regional markets for selling vegetables in wholesale: When all the families participate in vegetable farming, there is need for market linkages, otherwise there will be a glut in the local market, resulting in the prices crashing and small farmers incurring huge losses.
- An entrepreneurial system for input-output marketing will be established: Given the remote location of the village, businessmen from Gumla or Ranchi will be less inclined to procure the produce, especially because the connecting roads are poor. Someone from the village, therefore, will have to collect the vegetables and contact the commission agents in cities such as Ranchi, Rourkela and Ambikapur. Involving the youth in developing linkages is of huge importance.

EXECUTION OF A VEGETABLE PRODUCTION CLUSTER IN SIPRINGA

The key interventions were:

- *Common nursery in a net house:* A low-cost net house, in which all the families have their own beds, was constructed by the villagers. This helps in disease control, peer learning among farmers and getting the produce at the same time for the ease of marketing.
- *Uniformity in production practices:* A standard package of practices for crops was to be followed by all the farmers to enhance their crop yields.
- *Micro-nutrient application (zinc, boron, magnesium, calcium, etc.):* All the farmers were to follow this practice, to enhance soil fertility and sustainability.
- *Establishing market linkage through entrepreneur promotion:* Local youths were encouraged to engage in marketing the produce. Three young adults came forward. They were trained in marketing and given exposure to the regional markets and are now independently handling the marketing of vegetables for the village.
- *Drawing support from government for infrastructure and land and water development.*

Table 1: Intensive Vegetable Farming for 2010–13—Income Data

Year	Families	Crops Taken	Total Crop Area in Acres	Total Income in Lakhs
2010–11	40	Tomato, cabbage, cauliflower, peas	11.5	5.25
2011–12	50	Same as above	20.0	7.55
2012–13	50	Tomato and chillies	20.0 during *kharif*	Still to come

Table 2: Farmer-wise Production and Income data (2011)

No.	Name of Farmer	Tomato		Cabbage		Green pea		Cauliflower		NET IN-COME
		Area (Acre)	In-come	Area (Acre)	In-come	Area (Acre)	In-come	Area (Acre)	In-come	
1	Prem Singh	0.25	12,619	0	0	0.15	15,000	0.15	5,000	32,619
2	Lalit Kumar Sahi	0.25	15,630	0.10	696	0.15	8,615	0.15	10,655	35,596
3	Sunil Kujur	0.25	12,308	0.20	6,228	0.15	6,235	0.15	8,520	33,291
4	Lal Munda	0.25	15,000	0.15	4,000	0.15	300	0.15	5,000	24,300
5	Devnari Pahan	0.35	17,000	0.20	10,000	0.15	5,000	0.15	2,000	34,000
6	Harak Nath Singh	0.25	3,000	0.10	2,000	0	0	0	0	5,000
7	Jitnath Ram	0.25	5,000	0	0	0	0	0.20	6,000	11,000
8	Malo Singh	0.25	9,000	0.40	4,000	0		0.25	5,000	18,000
9	Sibnath Singh	0.25	6,000	0.10	3,000	0.20	8,000	0.15	2,000	19,000
10	Bhukhan Singh	0.25	12,000	0.10	2,000	0.10	2,000	0.10	600	16,600
11	Dhanaswar Singh	0.25	5,500	0	0	0.10	2,000	0.10	635	8,135
12	Bhado Singh	0.25	15,230	0.10	838	0.10	8,920	0.15	5,225	30,213
13	Madhu Singh	0.25	5,620	0.10	2,000	0.15	530	0.10	860	9,010
14	Mangal Ram	0.25	12,260	0.15	6,260	0.15	7,260	0.15	6,520	32,300
15	Lalu Singh	0.25	8,325	0.15	2,950	0.20	9,725	0.15	7,550	28,550
16	Krishna Pahan	0.50	35,950	0.25	10,250	0.15	500	0.25	8,620	55,320
17	Ghandhana Singh	0.25	12,650	0	0	0.20	8,150	0.15	5,620	26,420
18	Krishana Ram	0.25	7,250	0.10	7,120	0.25	9,560	0.15	5,320	29,250
19	Firu Ram	0.25	9,820	0.20	9,560	0.25	6,970	0.15	3,250	29,600
20	Erik Khakha	0.25	8,540	0	0	0.25	7,250	0.20	6,230	22,020
	Total	**5.35**	**2,28,702**	**2.4**	**70,902**	**2.85**	**0,06,015**	**3**	**94,605**	**5,00,224**

IMPACT OF PROMOTING A VEGETABLE PRODUCTION CLUSTER

- Per family income has increased from Rs 5, 000 to Rs 25, 000 from an average 0.4 acres to 1 acre of upland in two seasons.
- Collective action became possible for all the steps in vegetable production as well as in marketing.
- Strong linkages have been established with both Input and Output market stakeholders.
- Farmers are now behaving as farmers with the younger generation taking over the marketing; earlier farming and marketing, both were being done by the farmer. Marketing is now done through aggregating the produce in the village and an entrepreneur takes it to the market and brings the farmers their share of the profit. A huge increase in production has had a great impact on the farmers and now they are investing more in agriculture. About 50 families now have knapsack sprayers, five families have purchased extra land for cultivation and one power tiller has been purchased for the village.
- There has been a change in the investment pattern the family investment in vegetables has gone up from Rs 500 to Rs 4,700. They are even paying and reviewing their service providers, both for production and marketing.
- There has been a visible shift in livelihoods. Shivnath Singh was a village-level carpenter, who earned approximately Rs 5,000 annually from his work. He is now fully engaged in agriculture and earns more than Rs 15,000 per annum. Bhagwat Singh another farmer in the village has also changed from carpentry to agriculture and earns more than Rs 20,000 per annum.
- Linkages with the government and other stakeholders have been established. The SHGs have been able to mobilize funds for infrastructure development from the district administration. This year, they have constructed three river lifts, one grading and sorting centre, with 1,000 crates from the Integrated Action Plan (IAP) fund through the support of DRDA. They have mobilized a bank loan of Rs 8 lakhs for investments in agriculture from Punjab National Bank.
- A change in lifestyle of the people is coming about. People are investing in assets such as televisions, motorbikes and mobile phones, etc. A change in their dressing style and in their home decoration can also be noticed.
- The growth of village Sipringa is impacting other nearby villages. The other villagers are also becoming interested in round-the-year vegetable production.

SHGS ANCHOR THE CHANGES IN SOCIO-ECONOMIC CONDITIONS OF THE VILLAGE

In 2002, three SHGs were formed in Sipringa, the Sant Monica Mahila Mandal, the Sita Sumon Mahila Mandal and Saraswati Mahila Mandal. These groups act as a platform to discuss the village-level, socio-economic issues and look for ways to solve the issues. SHGs have increased the participation of women in village-level decisions, the establishing of

linkages with different stakeholders and the strengthening of women leaders working for the community. As the SHGs continue their good work, there have been many visits from the representatives of DRDA, Gumla, to the village. This has resulted in enhanced support from the government to the village. In 2011–12, the village was able to mobilize Rs 14.95 lakhs from the IAP fund for irrigation infrastructure and the construction of a vegetable grading and sorting centre. The SHG has become the main forum where grass-roots development workers come and discuss government schemes as well as schemes from private companies, insurance agents, etc., with *anganwadi* workers, Bank staff and *gram sewaks*.

KEY MILESTONES OF THE SHGS

- Formed in 2002
- All three groups are linked to different nationalized banks since 2004. They have voluntary savings of Rs 1.5 lakhs.
- Formulation and successful implementation of the MGNREGA-based horticulture plantation with 16 families.
- Accessing loans from the Punjab National Bank for agriculture and successfully managing these loans for agriculture production. The three SHGs have mobilized Rs 8 lakhs.
- Project implementation under the IAP in constructing a vegetable grading and sorting centre as well as a river-based micro-lift irrigation system.
- Execution of a productivity enhancement project with ICRISAT from 2009.

PUSPA KUJUR: AN ENTREPRENEUR

Puspa Kujur is a member of the Sant Monica Mahila Mandal. Her family includes herself, her husband Abraham Kujur, four sons and a daughter. She has 2.5 acres of paddy land and 1.25 acres of uplands. She had hardly been able to feed her family till 2002 because the paddy yields were low and life was quite challenging for her. She is the pioneer of the SRI demonstration in the village. In the very first year, she covered all her lands with the SRI paddy. She was able to harvest three times higher yields that year. Her family now has food sufficiency for the whole year and surplus food grain stored for another year from the same piece of land. She has also started growing mangoes and vegetables in her uplands since 2007. She has irrigation support from a well constructed by Sant Monica Mahila Mandal. In 2012, she sold mangoes worth Rs 40,000 and, in 2011–12, vegetables worth Rs 50,000. Her annual incomes have grown from Rs 5,000 per annum to Rs 80,000–1, 00,000 per annum. Her daughter is studying to be a nurse in a private institute in Patna; all five children are now literate. Her husband, Abraham, has supported her in all the changes that she has made so far. Abraham also works as a Community Service Provider. He has developed a strong understanding of agriculture-based technologies and is a valuable resource in the village. The family is now planning to start a seed and fertilizer shop. This family is an inspiration to all the families of Sipringa.

OVERALL IMPACT AFTER 10 YEARS OF PRADAN ENGAGEMENT IN THE VILLAGE

Life in Sipringa is much better compared to what it was 10 years ago. Passing by the village you see that the uplands are filled with seasonal vegetables and mango orchards, with the families working hard on their land. The children go to schools and colleges to Gumla. Lack of irrigation is no more a barrier for good production for these farmers. Starvation is no longer an issue and migration from the village has stabilized, with the youth of the village taking an active part in agriculture.

Feeding India's Growing Billions

B.C. BARAH

Ensuring access to quality food by everyone at all times is one of our most challenging tasks, considering that the nation is face-to-face with persistent poverty, hunger and malnutrition and the implications of these on the nutrition security of the poor

India faces two major challenges in its food management system—one on the supply side, including risk and variability of food production, and the other is access to quality food by everyone at all times (defined as food security). In addition to unabated population growth, food production has been fluctuating greatly over the decades (Figure 1—all figures compiled by the author). The incremental production/supply of home-grown food since 2010 has reached 28 million tonnes of food grain, which is the level it was at in the 1980s. In contrast, it was a total of 44 million tonnes in the decade of 2000–10. Can such a variable production feed 182 million new consumers as well as satisfy the food needs of the existing billion plus population? Or will it lead to unsustainable food production and growing food insecurity?

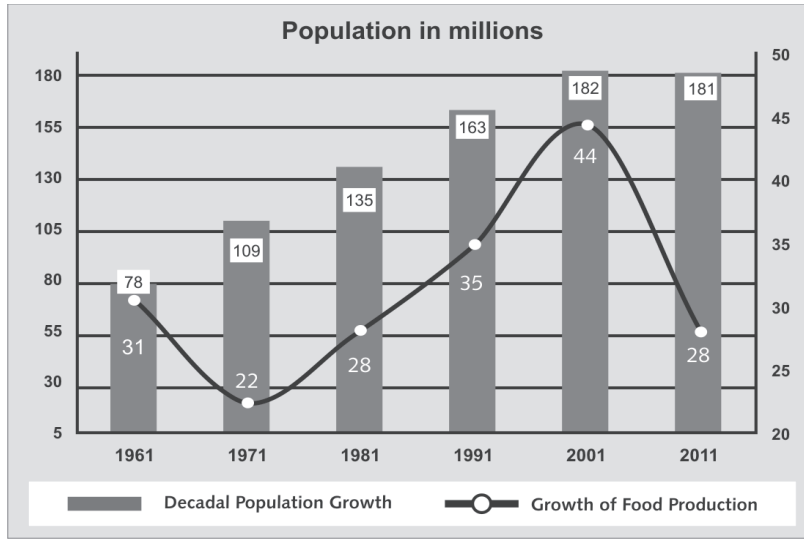
RICE AS A CRUCIAL INGREDIENT OF THE FOOD BASKET

Rice is the most important staple food in India. This single crop occupies the highest area, covering 45 million ha, with a production of 95 million tonnes in 2010 (second only to China). At the global level, rice is the staple food for more than half the world's population and around two billion people in Asia rely on it for 60 to 70 per cent of their daily calorie intake. Over 90 per cent of the present production and consumption of rice occurs in Asia; two-thirds of it in just three countries (China, India and Indonesia). Most of the rice cultivated in Asia is rain-fed (60 per cent in India), where crop production depends on the vagaries of an erratic monsoon and leads to the endangering of household food security.

A back-of-the-envelope calculation shows that, in India, the per capita annual availability of rice reached a low of 64 kg in 2008 (Figure 2). According to the National Sample Survey Organization, a standard person requires 84 kg per year, which means that India is at least 20 kg short of its basic food needs. To meet the massive food requirement and reduce this gap, food production has to 'more than double' in the next two decades.

Food production is also highly vulnerable to crop failure due to climatic aberrations. India experienced a drastic reduction of nearly 13 million tonnes in food production due to a severe drought in 2009. This situation assumes greater importance because the states known to be the food bowl of India, particularly Punjab, are diversifying their cropping patterns in favour of horticulture crops and drastically reducing the area under rice and wheat, on the pretext of climate change. It will be a herculean task to meet India's huge food requirement from a thin world rice trade of 25 million tonnes. Under these circumstances, can the resource-poor, rain-fed areas compensate the food deficit?

Fig. 1: Decadal Growth in Population and Food in India



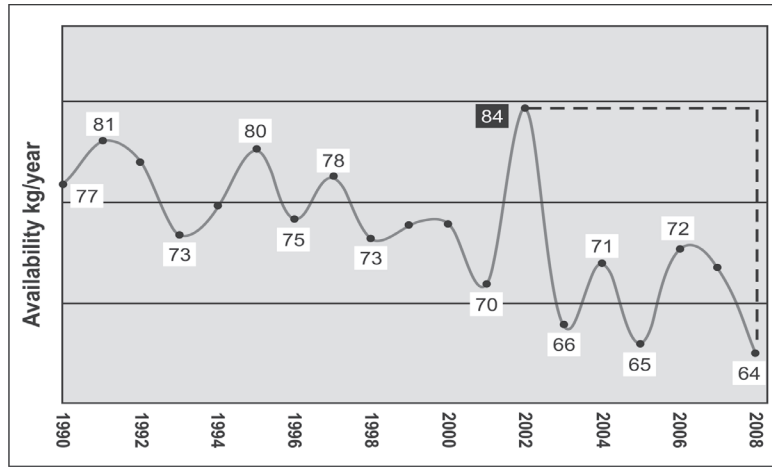
Agriculture in India, particularly its rain-fed rice production system, is characterized by:

- High dependence on the vagaries of the monsoon.
- Increasing threats due to biotic and abiotic stresses and climate change, putting tremendous strain on the food system and resulting in a more risky production system.
- Predominance of small and marginal farmers (with operational holdings of less than 2 ha), which account for as much as 84 per cent of the total farmers in the country. A vast majority of these farmers are not only resource poor but also commonly subjected to under-investment in agriculture, making resource use inefficient. This has almost invariably resulted in poor performance of the staple food—rice—and its growth has decelerated.
- Most of these farmers, moreover, are basically producer-consumers; due to low productivity, they are vulnerable to poverty and malnutrition, leading to food and nutrition insecurity.
- They are also unable to benefit from the emerging market system.

Rain-fed areas (nearly 60 per cent of total planted area under rice) have ample untapped potential and under-utilized natural resources; thus there is scope for increasing production and bridging the yield gap. The factors that are inhibiting production need to be identified carefully and the problem addressed with appropriate strategy. Modernizing systems, to enable increase in production through technological solutions, is the second-best solution to household food security.

History shows us that the spread of the Green Revolution has been iniquitous and limited to rice and wheat only, and that too in irrigated tracts only. The Green Revolution was backed by a supportive nation-wide preparation in infrastructure building, high yielding modern varieties, institutional reforms and matching policies on the institutional side. A moot point in the circumstance is why such a supportive strategy would not work in today's context of stagnating yields and severe ecological crises. Punjab, which contributes significantly to India's food pool, is now facing serious ecological problems, in which three-fourths of the 137 blocks of the state confront an acute shortage of groundwater. The state government and Planning Commission are jointly considering ways to wean farmers away from rice to save water, as an ameliorating measure. Sustaining productivity gains in the existing system is not going to come easily even as the government is contemplating shifting the emphasis to the eastern region of the country for increased production. Can this 'look-east' policy shift be of any help? A carefully charted strategy is needed within a historical perspective of the production system.

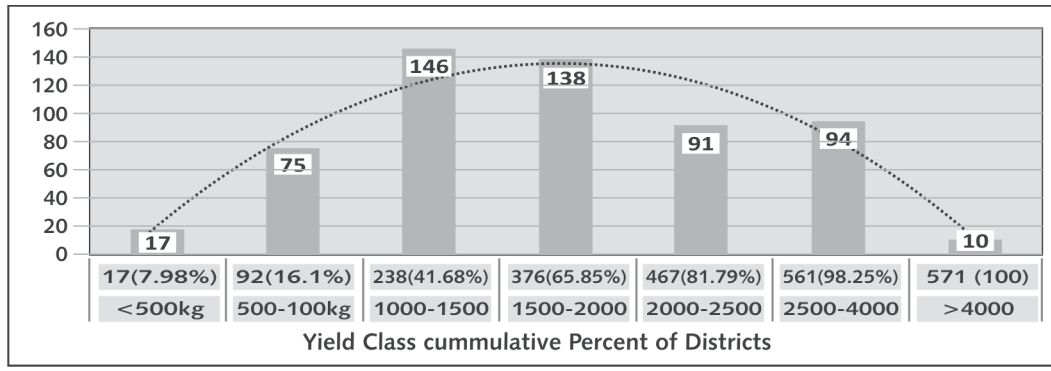
Fig. 2: Long term Trends in Per Capita Availability of Rice in India (Kg/Year)



A long-term series analysis shows that the performance of 571 rice growing districts is precarious; there are wide inter-regional and inter-district disparities in rice productivity, which is particularly skewed towards rain-fed areas, where productivity is also persistently low (Figure 3). That the average productivity is less than 2 tonnes per ha in as many as two-thirds of India's rice districts (376 districts), which is less than the national average of 2.2 tonnes per ha (Figure 3), is alarming. The urgent need today is to prioritize an actionable strategy for productivity enhancement and bridging the yield gap in targeted districts and regions.

Fig. 3: Performances of Rice Districts by Productivity Classes in India

(No. of Districts)



It is a point to be noted that the household food security (rather than National Food Security) is more crucial among the small farmers because most of them, including the poor, are deprived of access to food technology knowledge empowerment, institutional infrastructure and support. This implies that the issues of inter-regional disparities in yield and yield gap need to be addressed at the macro- as well as micro-level planning.

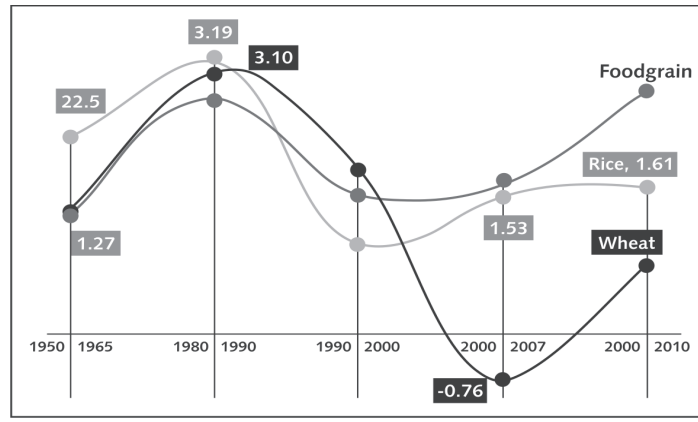
The picture is equally distressing when we look at productivity growth dynamics. Productivity growth reached over three per cent in the 1970s and 1980s but hovered around one per cent in the 1990s, and remained unaltered thereafter (Figures 4 and 5). The year-on-year growth pattern during the past decade is even more disappointing. The fluctuation in production has been lessening over the years but overall production is at a level of low growth. The situation has become alarming as the cost of production has increased whereas productivity has declined. As farmers adopt input-intensive modern agricultural technologies, they suffer from several externalities due to the indiscriminate use of agro-chemicals and galloping price escalation. As a result, farm income erodes, soil degrades, water levels get stressed and biodiversity gets depleted, making production unsustainable.

On the whole, two important policy signals come out of the above analysis. First, there is an uneven production of rice in the spatio-temporal space, signifying regional disparity, and second, despite bumper harvests, there is an inequitable access to food for the people (who deserve it most), endangering household food security. Persistent poverty and incidence of hunger and malnutrition remain crucial concerns. These indicate direct implications on poverty and nutrition security of the poor. A calculation based on the recent round of NSSO consumption data shows that most of India's population (nearly 720 million) needs food security coverage.

Strategies for achieving sustainable food security

- *An effective food management system and procurement policy (public distribution system—PDS).* This has been the most talked-about subject because farmers are unable to market their produce on the one hand and food-grain is rotting in the government godowns on the other hand. A user friendly, equitable and reformed PDS is needed.
- *Identification of food security needs and people below the poverty line (BPL).* This

Fig. 4: Performances of Rice Districts by Productivity Classes in India
(No. of Districts)



has been debated intensely for a long time due to the lack of a comprehensive method of measurement. The rural poverty head count ratio was 41.8 per cent, 25.7 per cent for urban areas, and 37.2 per cent all-India in 2004–05. The Planning Commission updated the poverty lines for 2009–10, as per the recommendations of the Tendulkar Committee. The poverty line at the all-India level was estimated at MPCE of 673 for rural areas and 860 for urban areas. Thus, the reduced head count ratio is estimated at 29.8 per cent at the all-India level, 33.8 per cent in rural areas and 20.9 per cent in urban areas. However, the consensus on the number of households to be included in the priority list at the state level is yet to be fixed. Rather than sticking to a controversial single-factor, consumption-expenditure-based measure of poverty, Rajesh Shukla in his article 'The Great Poverty Debate' in *Inclusion* (Jan–Mar 2012) suggested a comprehensive measure of effective, multi-dimensional poverty. We need to arrive at a consensus and agreed systematic methodology, which is easy to comprehend by the common man at large.

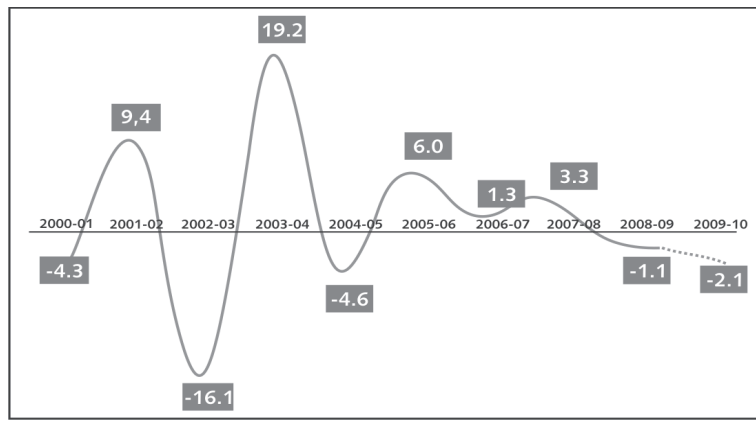
- *Increased investment in agriculture and a performance indicator that can be monitored easily.* Studies show that investment in agriculture lagged behind (at less than half a per cent of the agricultural GDP) for a long time. In its response, the government earmarked reasonable investments for the sector in recent years; the achievements, however, instead of showing improvement, remain unchanged. This calls for strict monitoring and accountability.
- *Sustainable food production and conservation of natural resources.* Available evidence indicates that the practice of System of Rice Intensification (SRI) provides scope for enhancing productivity to break the yield barrier of smallholder farms. The novelty is that the SRI produces more rice with less input while conserving precious water and other re-

sources, which is an important pre-requisite for climate-smart agriculture. The SRI is a pro-poor option for household food security. It is satisfying to note that it has already gained popularity among millions of farmers; yet it has many more miles to go.

- *Farmer-friendly agricultural research and development (R&D) systems and eco-friendly technology practices.* The impact of a large number of modern varieties developed by the agricultural R&D system has been very minimal at the farmers' field level. Barely a fraction of these have reached their target, due to the lack of an effective transfer of technology policy. An innovative institutional framework for the transfer of technology is needed.

The Food and Agriculture Organization (FAO) of the United Nations has proposed an interesting alternative that needs to be considered as part of the policy options. It suggests: (i) identifying the high food-stress regions and districts across the country and (ii) a composite index of 'spread of agriculture', 'agricultural (cereal) productivity', 'irrigation intensity', 'presence of agricultural markets' and 'social practices' that influence local-area food production and markets.

Fig. 5: Trends in Growth Rate (%) of Rice Yield (GOI 2010)



The most debated National Food Security Bill focuses on issues of measuring food needs and on identifying the number of BPL people at the state level. In order to bring unanimity in using acceptable measuring tools, it is essential to identify a flexible set of variables that predicts their impact on a household's expenditure. Using appropriate statistical models, an extended index of livelihood may be calculated by assigning scores, which are unique to each household but differ according to the socio-economic and environmental characteristics of a region, state or district. Such indices may be used to identify the target households.

Thus a win-win solution for food security of a billion plus population is to integrate both the supply-side and demand-side requirements in the advancement of agro-ecological innovation systems.

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The Women of Koderma and their Anti-liquor Movement

SAFINA PARWEEN, RANVIJAY KUMAR AND AVIJIT MALLIK

Taking responsibility for eradicating the social evil of alcohol abuse by the men-folk of their villages, the women of Koderma demonstrate their strength and determination by uniting in large numbers to voice their opposition to the sale of liquor and by compelling shopkeepers to shut shop and discard their stock

Most of the women members of the Damodar Mahila Mandal Sangh (DMMS) Self Help Group (SHG) in Koderma wanted to eradicate the evil of drinking among the villagers. To create awareness amongst the villagers about alcohol abuse, the women organized an anti-alcohol rally in their block on 23 June 2012.

The women faced many problems because the men were habituated to drinking alcohol and they, the women, were the ones who suffered the most; they were at a loss about how to lessen or eradicate this problem. During the cluster trainings, the SHG members blamed alcohol for their problems and decided to raise a voice against it. Every member knew that this would be a tough task and would lead to disrespect and even harm from the men-folk and society.

At first, many SHG members tried to make their husbands quit drinking. Only some succeeded over a period of two months. They then began to protest against the liquor vendors who, they felt, were also to blame. The agitation against the sellers of alcohol increased day by day. Finally, during the General Body meeting of the SHG of Jainagar, held on 18 June 2012, the leaders of the federation placed on the agenda that strong action should be taken against those selling alcohol otherwise the movement against alcohol would lose its momentum. This led to the preparation of an action plan in which it was decided that a rally would be organized on 23 June 2012. The villages chosen for the rally were Garhai, Garaindih, Nayi Tand and Behradih. The dates for rallies in other villages were to be decided later by the General Body, depending upon the success of the first rally. Four persons took the responsibility of drafting letters and informing the administration (the SP, the SDO and the women's police station). Others took the responsibility of informing all the SHG members and of bringing them to the venue (Birsa Chowk) on time. The people from PRADAN took the responsibility of preparing slogans, placards, arranging the sound system and inviting the media.

On D-day, nearly 700 SHG members from Jainagar and Koderma blocks reached Birsa Chowk as scheduled despite the rain. The enthusiasm of the SHG members could be seen in their eyes and their body language. With their heads held high, posters and sticks in their hands, the women moved forward in a disciplined manner, shouting slogans at the top of their voices. The rally stopped near each alcohol vendor's shop and warned him and his staff to stop selling liquor at once, otherwise the women of DMMS would not spare him the next time. By the time the women reached Garaindih, the number of women increased to more than 1,000.

At one stage, when the women warned a family against selling liquor, the man became angry and began abusing the members of the DMMS. The women again told him to close his shop but he kept shouting. His brother came forward and took him away and locked him inside the house and asked for forgiveness. He said that he would not let his brother spoil the lives of others by selling liquor but the vendor's wife shouted at the women to mind their own business and move away from their house. Meanwhile, the man somehow climbed onto the roof of his house with stones and started throwing them at the women. Some of the women got hurt and began to throw stones back at him. The man finding himself helpless and becoming more angry, began throwing the '*khaphra*' (tiles) from the roof at the women and, in this process, hit his own brother so hard on the head that he began to bleed. The women brought the man down from the rooftop, asked him to apologize to the women whom he had hurt, but he refused. The women then called the SP and handed the man over to him. The news of this incident spread quickly and in the nearby villages, people began to hide their liquor containers. The rally continued forward, warning people—both the ones who drank and those who sold alcohol.

In Behradih, when the women warned shopkeeper, he denied that he ever sold liquor. Many of the women in the movement were from this village and the nearby area; they urged him to start another business but he denied outright that he sold liquor. He challenged the women to search his shop and house if they didn't believe him. The women took him up on it and began to search his shop and house and came out with two large containers full of liquor which they poured on the road and then rejoiced in their victory.

After warning the liquor vendor sternly, they moved forward and reached the highway in Kamedih, which is believed to have the largest number of liquor stalls, many of them with licenses to sell liquor. Many men were gathered outside the shops to oppose the women but to their dismay, the women greatly outnumbered the men. They not only warned the vendors but also broke the locks of two liquor shops, brought out all the liquor and poured it on the road while the men looked on stunned. Some of the men tried to quarrel and argue but failed in the face of the women's determination.

In other shops, the women went inside and brought out all the liquor they could find and poured it on the ground and warned the vendors not to open their shops again. The women also forced the licensed liquor shop to down its shutters and told the owner to move his shop elsewhere.

The women who had been hurt during the stone throwing action at Garaindih went to the police station and filed an FIR against the man.

The result: one couldn't have expected a better movement from the women of the

DMMS. The movement showed the strength that women can exercise when they unite. Each and every member participating in the movement gave her best and made the men more careful of their actions.

The next day, the friends of the man from Garaindih went to Gauri *didi*, Champa *didi*, Baswa didi, Parwati *didi*, Triveniji and others and requested them to withdraw the FIR so that the man could be released. The women refused. The men threatened to harm them if they didn't take back the FIR. The vendors whose liquor was destroyed came together and threatened the women of the DMMS that they would file a counter FIR against them. At the time of writing this article, the women of the DMMS are being abused and threatened, which has created some disturbance among the women members and their families. On the other hand, they are ready to face any problem.

Four days after the movement, there is a buzz amongst the villagers about the movement and the power that the women have displayed. Many villagers have come forward to support the women in this movement. The women from all over Jainagar and other parts of Koderma are asking for support to start such a movement in their villages as well. The women who once believed that they could not handle such issues are now convinced and believe that they can eradicate liquor from all the villages in which DMMS is present.

In several regions of rural India, women are relatively disadvantaged. They are restricted in their physical mobility, their public role is minimal and access to information is limited. In such a context, SHGs provide a platform that allows women to meet regularly and discuss the problems they face in their daily lives. We provide evidence that the SHG members have undertaken collective action to solve these problems. These actions include manual interventions, campaigns in the village or visits to a government officer to seek solutions.

Pradan is a voluntary organization registered in Delhi under the Societies Registration Act. Pradan works through small teams of professionals in selected villages across eight states. The focus of Pradan's work is to promote and strengthen livelihoods for the rural poor. It involves organizing the poor, enhancing their capabilities, introducing ways to improve their income and linking them to banks, markets and other economic services. The professionals work directly with the poor, using their knowledge and skills to help remove poverty. News*R*each, Pradan's monthly journal is a forum for sharing the thoughts and experiences of these professionals working in remote and far-flung areas in the field. News*R*each helps them to reach out and connect with each other, the development fraternity and the outside world.

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