

Empowering Tribal Women through Vegetable Cultivation: A Case of Institutional Pluralism and Convergence

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Introduction

Empowerment of women is a major social issue which requires attention from all sections of society. The family structure and religion are among the important factors which can play a role in this context. Though the tribal population is an integral part of India's social fabric, it is still far from the mainstream of development. Historically, women in the tribal community played the dominant role in agriculture and all household activities, but never received any recognition. Moreover, they were deprived of education, besides being the victims of child marriage and domestic violence.

It is in this context that we conducted our study, choosing a block in the tribal-dominated district of Hoshangabad, Madhya Pradesh. The district is home to tribal communities such as the Gonds, Baigas, Korkus and Bhils, the majority of whom live in difficult geographies like forests, hills and undulating, inaccessible terrain, far from the cities.

Preliminary investigations about their socio-economic profile revealed that they lived as isolated entities for centuries, largely untouched by the society around them. This seclusion was responsible for slowing down their economic growth. From time to time, several developmental agencies took initiatives to change the fate of the destitute tribal women, but with little success. Gradually, they realized that the convergence of all developmental agencies was required

if the goal of empowering tribal women was to be achieved.

Operational Area Context

The study was conducted in the Kesla block of the district of Hoshangabad, which has been identified as a 'backward region' (Backward Regions Grant Fund [BRGF] district) under the 5th Schedule of the Indian constitution. More than 80% of the people belong to the Scheduled Castes (SC)/ Scheduled Tribes (ST) and have only marginal landholdings. The condition of the women is extremely deplorable. Only 35% cast their vote according to their own choice. They are illiterate and extremely poor, suffer from malnutrition, and are the victims of social oppression at the hands of the dominant social class. Almost half of the women (47%) either do not participate or participate only passively in the *gram sabha*. Nearly three-fourths (68%) either have no assets or no access to assets, making them more or less dependent on their husbands. Cases of extreme gender-based violence, including physical torture, forced labour and restriction on movement, are very common¹. The average size of landholdings in undulating terrain with low water-holding capacity is 1.5 ha. Almost half of the area (40%) is under forest cover. The net sown area is 40% of the total area and 37% of the total area is under irrigation.

1 Survey by Institute of Social Studies Trust, Delhi

The annual rainfall is 1030 mm, just below the national average. The major crops grown are wheat and paddy. The productivity is very low—that of, wheat is 1.5 tonnes per hectare (t/ha) (national average 2.6 t/ha), of paddy, 0.8 t/ha (national average 1.9 t/ha) and soya bean 0.62 t/ha (far lower than the national average of 1.1 t/ha)².

Development Context

The majority of the people in the area (60%) are food-insufficient. There are few employment opportunities due to the undulating, difficult terrain and the absence of industries. Outmoded practices of land husbandry are employed and the farmers rely mostly on rainfed agriculture, which makes for very low productivity. Neither the government, nor any private organization has introduced any systematic institutional mechanisms of investment for the development of resources that would help to economically empower the tribal women. Most people migrate to the nearby cities in the off season. This results in a social vacuum in the community and multiple gender or social problems. On the whole, the population is extremely vulnerable because of its low levels of literacy, awareness and knowledge, and its lack of skills related to modern livelihood opportunities. Moreover, their social morale, degree of self-

² BRGF Document, 2011–12

realization, self-belief, confidence and motivation are very low due to prolonged social oppression.

Methodology

As mentioned earlier, this study was conducted in four villages (Bhargada, Duari, Sadhpura and Chitapura) in Kesla block of Hoshangabad District. They were selected purposively as they are dominated by the tribal community. These villages were chosen also because PRADAN, a non-governmental organization (NGO) which works mostly with the Adivasis, has been implementing interventions in the area for several years. Twenty-five farmers were selected purposively from each village (12 self-help groups [SHGs]). In addition, data were collected from the control group to assess the actual impact of vegetable cultivation on livelihood security. The control group consisted of 40 farmers. Thus, a total of 140 farmers were interviewed for the study. Interviews, focus group discussions and group meetings were conducted to collect data from the tribal women. Secondary data were also collected to supplement the primary information. The key informant method of interview was used for the collection of in-depth information on selected parameters.

Interventions in Kesla

PRADAN started functioning in 1987, deploying teams to facilitate rural industrialization and the development of artisans. Its major focus was on agri allied activities—mainly poultry farming and mushroom cultivation. In 1998, an SHG-based approach to mobilization was adopted to create vibrant institutions at the grassroots level for tribal women and help them secure sustainable livelihoods. PRADAN started its intervention in integrated agriculture and natural resource management from 2005 onwards.

The journey of PRADAN was not smooth. The field staff faced strong resistance from the tribal community and the upper-caste communities, besides other obstacles. The impediments are listed below.

1. The tribals felt that their land was not suitable for the cultivation of vegetables
2. The cultivation of vegetables required substantial investment, which the tribal community could not afford.
3. The women had no knowledge of vegetable cultivation.
4. Hidden social and political agendas of the upper-caste communities and panchayats obstructed progress.

5. There was a lack of unity among the villagers.
6. The high level of inter-caste conflict damaged the cause.
7. There were insufficient storage facilities for vegetables.
8. There was no market nearby and the middlemen were unwilling to collect vegetables from such remote villages.
9. The tribals had no knowledge of pest management and soil-testing facilities.
10. Good-quality seeds for vegetables were not available.
11. It was problematic to bring resource persons to these remote villages to provide training.
12. The community's attitude towards development was characterized by indifference and they preferred to adopt a casual approach.

Given this scenario, PRADAN started an intervention focusing on integrated agriculture and natural resource management in 2005. A total of 714 SHGs were formed in 178 villages of two districts, covering 9335 families. PRADAN provided initial support for the formation of an SHG—linking the group with the bank, opening the bank account, maintaining the account of the group, etc. It then unrolled

some livelihood programmes, with the SHG members being given training for farming or any other self-employment activity of their choice. Initially, PRADAN supported the tribals by training them in improved practices of wheat and paddy cultivation, like System of Rice Intensification (SRI), System of Wheat Intensification (SWI), integrated pest management (IPM), integrated nutrient management (INM), line sowing and irrigation management. Later, the NGO realized that rice or wheat cultivation can bring only food sufficiency, without really resulting in economic empowerment of the people. Therefore, it started a campaign for vegetable cultivation to increase economic gain. It arranged for the necessary inputs, like seeds, fertilizers, insecticides and pesticides, by establishing linkages with different institutions. The NGO's staff also conducted varietal demonstrations and crop demonstrations, built greenhouses and polytunnels, etc. to convince the farmers that vegetable cultivation is possible in their area as well. PRADAN then helped the tribal community with collective marketing by developing vegetable production clusters of 6–10 of the surrounding villages, drawing on the experience of the world's largest poultry

PRADAN felt it was necessary to study the impact of multi-institutional interventions on the economic uplift of the tribal community.

cooperative, the Kesla Poultry Sangh (KPS). It introduced the collective procurement of inputs and door-to-door marketing of vegetables. It also established a farmers' collective in Dhodramau. PRADAN not only helped the tribal farmers directly by providing inputs and giving advice, but also helped them access credit from the bank, leveraging additional credit through mainstream linkages with government agencies and departments like the Agricultural Technology Management Agency (ATMA) and Krishi Vigyan Kendra (KVK). It also utilized the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) scheme for the creation of village assets and watershed development or renovation.

Though PRADAN tried overall empowerment of tribal women through commercial cultivation of vegetables, one cannot clearly say how far it managed to change things. For this reason, it was deemed necessary to study the impact of multi-institutional interventions on the economic uplift of the tribal community. This case study was conducted to examine the impact of such a development model on the livelihood security of tribal women.

Interventions of different institutions

Area of intervention	Organization	Intervention
Varieties/seeds	The Syngenta Foundation of India (SFI) provided seeds to PRADAN and selected the beneficiary farmers directly	Supplying the following— Cabbage: BC64, BC 73, BC 76, summer queen, green globe Cauliflower: Pawas, Suhasini, Snow heart, Barsati Okra: OH-016, OH-152 Tomato: Abhinav, Anup, Avinash-2, All-rounder, Rocky, To-1458
Creation of SHGs	PRADAN	Mobilizing farmers, holding meetings, training, linking with banks and providing follow-up support
Pesticides/herbicides	SFI	Supplying Actra, Proclaim, Cigna, Pegasus, Rifit, Gramoxone, Topik
Training and extension activities	PRADAN, ATMA, KVK	Organizing demonstrations and field days, holding meetings and campaigns, providing training on SRI, vermicomposting, IPM, INM, line sowing, irrigation management, etc.
Resource and infrastructural support	Panchayats and state development department	Providing legal or institutional support to villagers, constructing roads, setting up schools and hospitals, and providing <i>panchayats</i> with a building to hold public meetings
Credit support	Commercial and cooperative bank	Extending loans for crops and SHGs, providing <i>kissan</i> credit card, etc.

Results and Discussion

Socio-economic profile of respondents

The majority (60%) of the respondents were from the Gond community, followed by the Korku community (37%). The remaining 3% were from the Baiga community. Most of the respondents were above 40 years of age, barring 20%, who were newly married tribal women below the age of 30 years. As for educational status, 60% of the respondents had never been to school, 36% had studied till the primary level and a mere 4% had attended school up to a higher level. None of them had college or university education. All the respondents were dependent primarily on agriculture for their livelihood. Almost one-third (31%) had taken up poultry farming as a secondary occupation and 48% worked as labourers to supplement their farming activities

Communication pattern

Traditionally, women in tribal societies have not been allowed to make contact with people from the outside world. Activities like marketing, purchasing inputs and making bank transactions, which require social communication, are performed mainly by the males. However, the women were involved in all types of labour-intensive work,

like preparing the fields, cutting crops, sowing and irrigation. All the respondents reported that they had not received information on improved agricultural practices from any development agency, such as the Agricultural Development Officer, KVK and ATMA. Only 16% of the respondents listened to radio programmes regularly, and a mere 6% were lucky enough to be able to watch television programmes.

The communication behaviour of the women changed entirely once they joined the SHG. The members of the group now began to move around freely, be it to different places in general, institutions like the bank, the state development department, the PRADAN office, *panchayat* meetings, the police station or the neighbouring cities, like Kesla, Hoshangabad and Beetul, to market their vegetables.

Impact of vegetable cultivation

The focus of this research was to answer the question of how introducing the tribal community to vegetable cultivation helped to reshape the village economy and aided in the overall empowerment of tribal women. The case study attempted to explore the multiple impact of vegetable cultivation on the livelihood of the tribals and the specific mechanisms used by PRADAN to reshape the economy, i.e. engaging women in successful means of livelihood.

Change in Cropping Pattern

Season	Crops grown		Nature of changes
	2005	2013	
Kharif	Rice	Rice, maize, brinjal, chilli, bottle gourd, cucumber	The cropping pattern has changed from cereal to mixed (cereal + vegetable) cropping.
Rabi	Wheat, <i>kodu</i> , <i>kotku</i>	Wheat, chickpea, tomato, cabbage, cauliflower, carrot, radish, pea, okra	Traditional crops like <i>kodu</i> and <i>kotku</i> have been replaced by wheat and vegetables.
Summer	—	Tomato, brinjal, chilli, bottle gourd, cucumber, ridge gourd, pumpkin, okra	Fallow land is converted to productive land through vegetable cultivation.

Change in cropping pattern, practices and cropping intensity

The cropping pattern of the tribal community was dominated mainly by wheat and chickpea in the *rabi* season. In the forest area, the members of the community grew *segun*, *mohua*, species of bamboo and the *tundu* plant. However, they have started growing a few vegetables as well in the last five years, both in and around their villages. These include chilli, cabbage, cauliflower, tomato, brinjal and okra. Moreover, there

has been a shift from traditional methods of cultivation to methods using advanced technology. The farmers are now practicing line sowing of vegetables, drip irrigation and the furrow method of sowing. They have become familiar with plastic tunnels, nursery bed raising, the use of polyhouses, IPM, INM, etc. In practicing the new techniques, the farmers adopt a group approach. The use of inputs like fertilizers, pesticides, green manure and vermicompost has enriched the agricultural land. The cropping intensity has also gone up as farmers

are now growing both summer vegetables and rabi vegetables, besides kharif rice and rabi wheat. Ninety per cent of the farmers in the area have begun using certified High-Yield Variety (HYV) seeds instead of traditional seeds.

Increase in knowledge

A short test was conducted to assess the impact of the training on the farmers' knowledge of vegetable cultivation. The test consisted of five multiple-choice questions and one open ended question. The questions were framed with the help of PRADAN officials as well as farmers, so that they would be applicable to the area where farmers had received group training.

Table 3 shows that 79% of the women from the SHG knew the name of the tomato variety they were growing, whereas only 34% of the farmers from the control group knew the name of the variety being cultivated. The proportion of SHG members (88%) who knew about the optimum date for sowing brinjal was high, compared to those who were not members. Sixty-seven per cent of women from the SHG answered the question on the recommended dose of fertilizer for cabbage correctly, as against 11% from the control group. However, the proportion of SHG members with a good knowledge of IPM (48%) and the water stress-resistant variety of tomato (39%) was low.

Overall, the farmers had a good knowledge of different aspects of vegetable cultivation, but they were not very well-informed about a few new and complex matters, like IPM, INM and the water stress-resistant variety of tomato. Therefore, training should emphasize these complex and technical issues.

Skills and capacities

Various skill development programmes were introduced as part of the interventions. Table 4 shows that the majority of the farmers (42%) had learnt and practised the techniques of nursery bed preparation for vegetable cultivation. Almost half of the respondents (45%) had some difficulty learning and practising it, while 36% had mastered it and could practise it efficiently. New skills related to building greenhouses and polytunnels had been acquired and were being put to use by 13% and 33% of the farmers, respectively. Less than one third of the beneficiaries had mastered the skills required for practising IPM and INM (27% and 14%, respectively). The acquisition of skills related to modern irrigation techniques, like drip and sprinkler irrigation, helped to save water in areas with a shortage of water. Training the tribal community in how to sort and grade vegetables and the utilization of this knowledge (68%) paved the way for the practice of commercial agriculture. Thirty-six per cent of the farmers learnt how to

Knowledge level of women (treatment group, n=100 and control group, n=40)

Sl No.	Question	Treatment group (SHG members)	Control group (Non-members)
1	Which of the following is a variety of tomato in your area?	79	44
2	Which of the following is the optimum date for sowing brinjal?	88	32
3	Which among the following is the critical stage for irrigating the chilli field?	74	27
4	Which of the following is the recommended dose of fertilizer for cabbage?	67	11
5	Do you know about IPM? If so, then describe it.	48	14
6	Which of the following varieties of tomato is grown under conditions of water stress in your area?	39	7

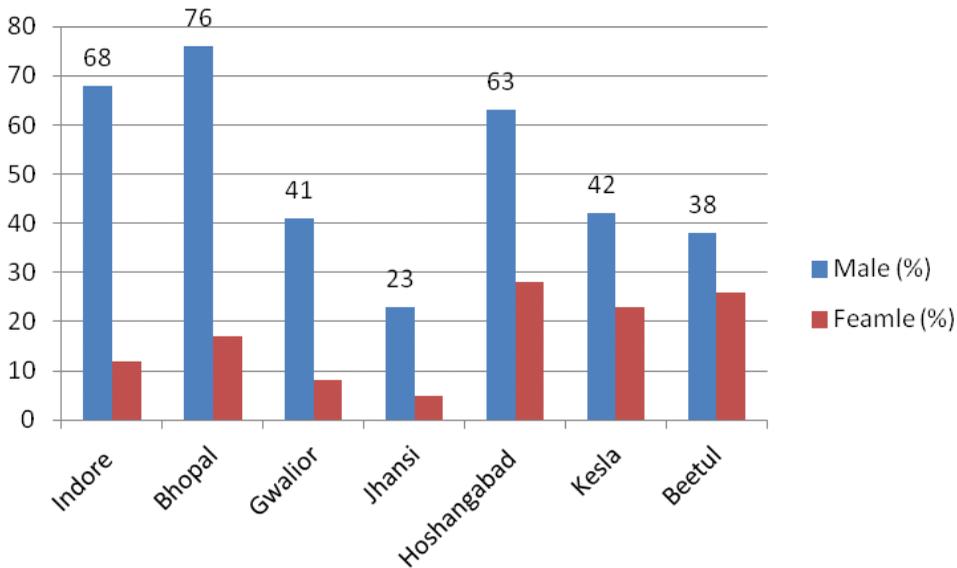
use new machinery, like seed drills, zero tillers and knapsack sprayers, introducing mechanization to the area. However, 58% reported that they were finding it difficult to use some of the new machinery, and sought more training and guidance from the NGO. Twenty-four per cent of the farmers reported that they had learnt and were using the methods of staking for tomato and brinjal, and air layering for bitter gourd, bottle gourd, etc. The farmers reported that their marketing skills had improved. The training had made them better

equipped to persuade and impress the consumer, and their bargaining power had increased. The soft skills they had learnt, like conducting meetings, record-keeping and book-keeping, had helped them feel like empowered and vibrant women who were capable of fighting for their rights at any forum.

Skills Acquired by Tribal Women (n=100)

Skill acquired	Fully learnt and practising efficiently	Learnt and practising with some difficulty	Learnt but not practising
Nursery bed preparation	42	38	20
Polyhouse	36	45	19
Greenhouse	13	27	60
Polytunnel	33	46	21
Integrated pest management	27	35	38
Integrated nutrient management	14	38	48
Modern irrigation techniques like drip irrigation, sprinkler irrigation, etc.	37	43	20
Sorting and grading of vegetables	68	30	2
Operating seed drills, knapsack sprayers, etc.	36	58	6
Staking and building layering structure	24	36	40
Marketing and selling skills	54	23	23
Soft skills, like conducting meetings, book-keeping, etc.	74	16	20

Migration pattern



Migration

Earlier, the entire farming system was dominated by cereal farming, which was quite insufficient for the livelihood of the people. As a result, poverty and malnutrition were quite rampant and the inhabitants of the region had to struggle much harder for their livelihood than the population in the other regions of Madhya Pradesh. The adverse conditions led to a high rate of migration to the cities nearby.

The farmers used to go to cities like Indore and Bhopal to work in the fields of big farmers. By way of wages, they used to get wheat (4 qt), which was used for home consumption for entire year. The migration pattern of 2005 is presented in Figure 1, which shows that the majority of

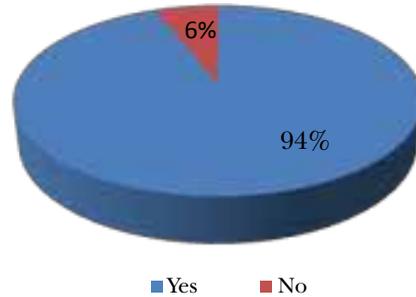
the respondents (76%) went to Bhopal in search of employment as daily wage labourers in construction work, agriculture, as cleaners, etc. It may be noted that while women migrated to cities nearby, like Kesla, Hoshangabad and Beetul, men migrated to far-off cities, like Indore, Bhopal and Gwalior.

The fact that most migration is caused by economic factors suggests that it can be reversed with the help of continued interventions to strengthen the population's livelihoods. In this case, the introduction of vegetable cultivation by PRADAN has motivated almost all the households of the village to continue practising agriculture and this, in turn, has reduced the migration of the youth to different cities and towns.

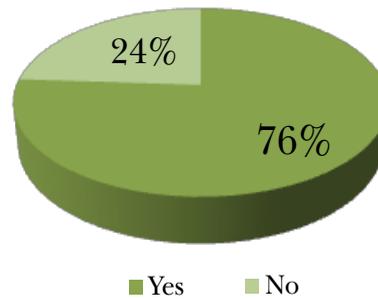
Food and nutritional security

The seasonal variation in income used to have an impact on the food intake of the farmers. Almost 30% of the respondents agreed that there was such a variation in their food intake before they started cultivating vegetables. Among the non-beneficiary families, 87% reported that at present they still face seasonal variations. Before the intervention, the beneficiaries had reported that they did not have sufficient food round the year. They had to supplement their incomes by working as daily labourers for a minimum of two to three months. Some of them migrated to other states during these months, together with their families. However, as a result of the interventions of PRADAN and its sister institutions, the availability of vegetables has increased round the year. In the case of certain communities, milk and milk products have also entered the food basket of the beneficiaries. The availability and consumption of vegetables has helped to ensure the nutritional security of the people. In order to get quantitative responses, we asked the respondents how many meals they had had in the last week. Almost 94% of the beneficiaries responded that they had had three meals a day in the preceding week. The corresponding percentage for the non-beneficiaries was approximately 76. The stark difference between the beneficiary and non-beneficiary villages reflects

Food security of SHG members & Food security of non-SHG members



Food availability among non-SHG members



the impact of vegetable cultivation on the food and nutritional security of women.

Institutional Impacts

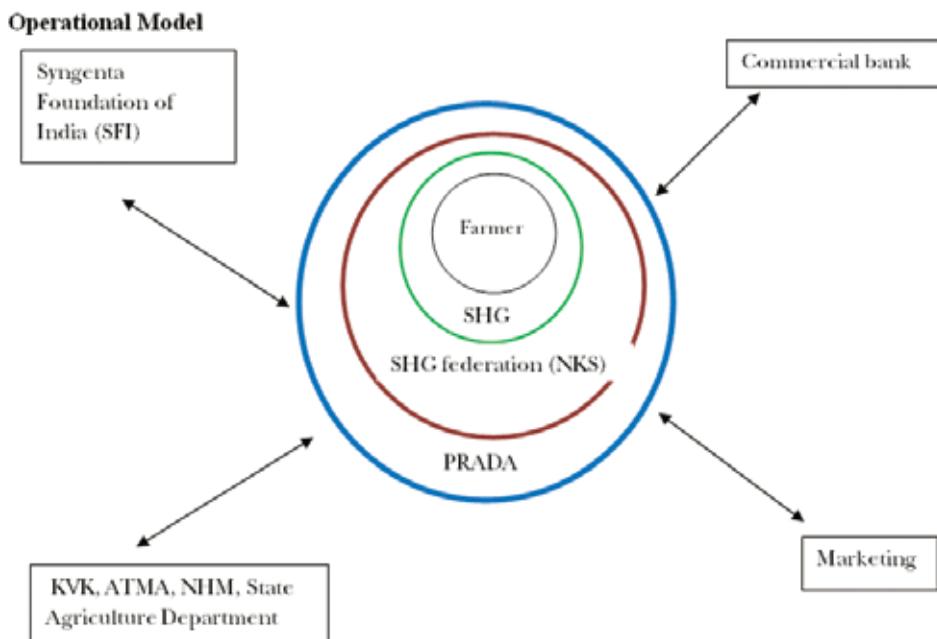
The major social impact of the intervention has been the creation of new institutions and the establishment of linkages with these for the overall empowerment of the tribal women. The cluster approach to vegetable cultivation for the development of livelihoods

has resulted in the creation of numerous women's SHGs in the villages. All members of the SHGs were required to be women and to belong to the SCs/STs. After an SHG had functioned successfully for three years, it was linked to the commercial bank to start its own venture or create livelihood opportunities. Technological support was provided both by private institutions like the SFI and government agencies, such as ATMA, ICAR and Krishi Vigyan Kendra. The SHGs were also linked with market agencies, middlemen and input dealers for commercial vegetable cultivation to augment their income from vegetable cultivation.

It was realized that for the farmers to be able to fight for their rights and sustain their efforts, they required a strong institution which would help them take care of themselves even after PRADAN or the SFI withdrew their support. So, the Narmada Krishi Sangh (NKS), a federation of SHGs, was created. Now the NKS arranges for all the inputs required for growing different vegetables and the inputs are procured at a minimal cost. It also sells the farmers' produce collectively to maximize profit.

On the basis of the case study, we have conceptualized an operational model which can be replicated in other states as well.

Institutional linkage model



Cultural Impact

The beneficiaries reported that the major socio-cultural impact of the interventions is an increase in their prestige and the recognition they receive, these being a product of their ability to earn more. They are now treated with greater respect by those belonging to the upper castes. More than three-quarters (84%) of the women reported that the additional income from vegetable cultivation has enabled them to spend more on their children's

education, while 81% said the same with respect to their children's healthcare (81%). All respondents agreed unanimously that the community's food habits have undergone a sea change since the introduction of vegetable cultivation. Earlier, they consumed mostly *Kodu* and *Kutki* with *chana dal*, but now they have all kinds of vegetables. Vegetables like capsicum, bottle gourd, okra and cabbage were not common earlier, but now these form a part of their diet.

Cultural impacts (n=100)

Sl. No.	Area of impact	Type of impact	%
1	Prestige and recognition	The farmers' prestige and the recognition given to them have increased due to the rise in their income from wheat cultivation.	68
2	Capacity to spend on children's education	The farmers can now dream of investing in their children's education, something which was unthinkable earlier.	84
3	Ability to spend on health of family members	The farmers are able to meet their emergency medical expenses out of the income they earn from farming activities and from the savings of SHG funds.	81
4	Change in food habits	Earlier, the members of the tribe used to regularly consume black <i>rotis</i> made of <i>kodu</i> and <i>kotki</i> . This was tasty as well as good for the health. Traditionally, they offered <i>rotis</i> made of wheat only to guests or had them on special occasions. Many consumed such <i>rotis</i> with <i>mahua</i> flower juice, i.e. wine.	100
5	Status of women in the family	The status of women in the family has improved.	73

The impact of vegetable cultivation is evident even in the attitude and mindset of the tribal women. They not only cultivate vegetables, but also do not hesitate to fight various social evils, such as rape, alcoholism and oppression by the upper castes, under the Narmada Mahila Sangh, a federation of tribal women which fights against all types of social injustice.

Economic Impact

Impact on income

Earlier, the tribal women grew only wheat in the *rabi* season, paddy (in the lower land) in the *kharif* season and maize, to some extent. However,

these cereals were consumed mostly by the farmers themselves. As a result, they did not earn much from agriculture and had to sell *mahua* fruit, *mahua* wine and *tendu* leaves to meet their requirement for cash. This income did not suffice to finance their children's education, healthcare needs, requirements of clothing and expenditure on festivals. Vegetable cultivation has helped them solve this problem to a large extent. On an average, a farmer owning 0.6 acres of land earns Rs 12,900 (in one season). The farmers are, therefore, convinced that cultivating vegetables is far more profitable than growing traditional cereals.

Income from vegetable cultivation (n=100)

Crops	Area	Production (qt)	Cost (only external cost) (Rs)	Income (Rs)	Net profit (Rs)
Paddy	1 acre	6-7	3000-4000	7000	3000-4000
Wheat	1 acre	8-10	10000-12000	13000-15000	3000-5000
Chilli	10 decimel	2	1800	4000	2200
Brinjal	10 decimel	2	1500	4500	3000
Tomato	10 decimel	1	1300	3000	1700
Cabbage	10 decimel	8	1500	5000	3500
Okra	10 decimel	1	1000	2000	1000
Field pea	10 decimel	1	1000	2500	1500

Creation of new assets

The farmers were encouraged to use more land for the cultivation of vegetables. The additional income from vegetable cultivation was used for purchasing different assets.

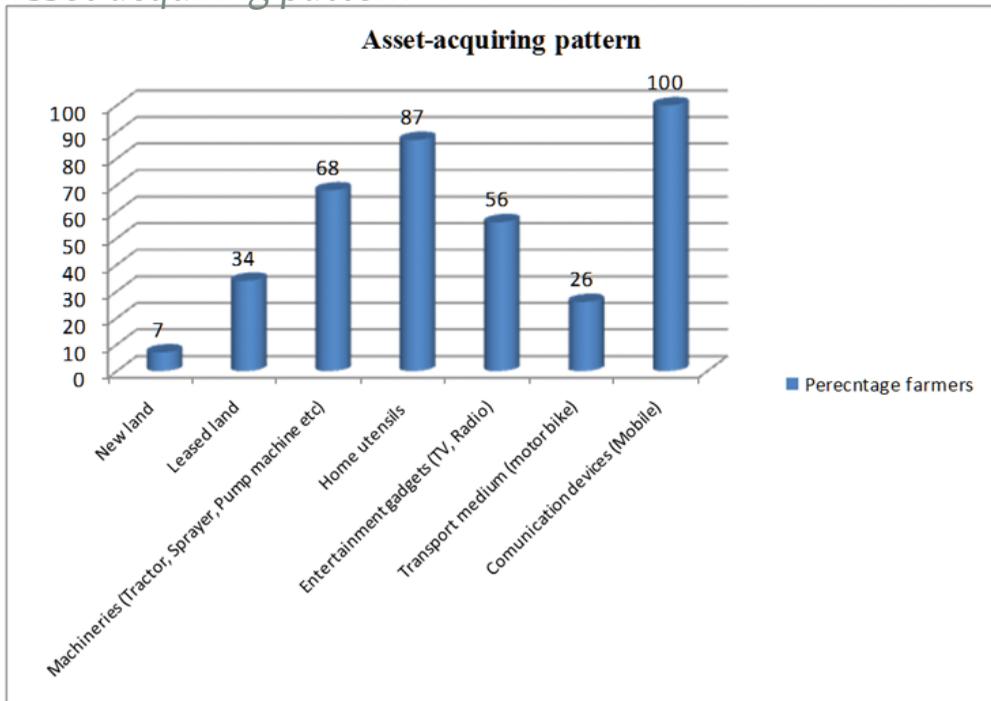
From the Figure below, it is clear that 7% of the farmers purchased new land for vegetable cultivation, while 34% took land on lease for this purpose. New machinery, like tractors, sprayers, pump machinery and seed drillers, was purchased by 68% of the farmers. The majority of the respondents (87%) are now able to buy the necessary utensils for their kitchens and have adopted more sophisticated living standards. Television and radio sets have been purchased by 56% of the respondents, and about a quarter

(26%) have purchased motorcycles. All respondents reported that they have mobile phones, which they use very frequently to contact the input agency, marketing agency and staff of the NGO.

Reduced dependency on moneylender

Most members of the tribal communities are credit-constrained, which is a major reason for the lack of economic opportunities and social development. SHGs have allowed the beneficiaries to pool their resources and access credit at a much lower interest rate than that demanded by moneylenders, who not only charge exorbitant interest rates but also exploit the poor and marginal

Asset-acquiring pattern



farmers. The SHG approach has helped to reduce the farmers' dependence on moneylenders.

Factors Critical to Success

The in-depth discussions with the farmers and officials of all the institutions identified the following factors as being critical to the sustainability of this model.

- 1) The philanthropic philosophy of PRADAN and its determination to serve the tribal community
- 2) The deployment of a group of young dedicated field staff and community service providers from the villages
- 3) The attempts to explain the concept of SHGs to the farmers and convince them that they can benefit from them
- 4) The technological and financial support from the SFI and its sister institutions
- 5) Building strong linkage among all stakeholders
- 6) Forming a federation of SHGs—a major factor behind the success of the model
- 7) The cooperation of the panchayats
- 8) The will of the tribal women to break the shackles of poverty
- 9) The visible benefits of vegetable cultivation, in the form of more cash and assets
- 10) Continuous persuasion, training and support by PRADAN

Strategy

The women were still facing some problems and the main strategies suggested to solve these, as mentioned by the respondents, were as follows.

1. Subsidy on major inputs like seeds, fertilizers and petrol would lower the cost of cultivation. Purchasing in bulk through the SHG federation would also help to some extent.
2. Constructing different water management structures in the fields could solve the problem of irrigation, and training the women in water harvesting could solve the problem of water stress.
3. Training the farmers in IPM would be useful as they could then manage the insect and pest problem by mechanical, cultural and biological methods.
4. The farmers could be motivated to approach a government department to have their soil tested and PRADAN could also

set up a soil testing facility for the convenience of the farmers.

5. The MNREGA scheme could be linked with farm operation to solve the labour problem in the area through the intervention of PRADAN and the Panchyats.
6. Building small low-cost structures for the storage of vegetables, with locally available raw material, would be useful.

Conclusion

The results of the work done by PRADAN have been positive. The introduction of different interventions has led to an increase in livelihood opportunities for the people. There has been a reduction in seasonal variations in income and consumption, and this has brought stability in the lives of the beneficiaries. Entrepreneurial capabilities have been developed among the beneficiaries and they have started taking steps towards self-sustenance. They spend the surplus from their increased income on the education of their children, better healthcare for their families and the creation of assets. Since the intervention was launched, the assets of the beneficiaries have increased substantially. These include not only fixed assets like land, but also movable assets like home accessories, motorcycles and farm equipment. The interventions have had a considerable impact

on the beneficiaries' income and food security, besides leading to occupational diversification and helping to strengthen people's institutions. From the study, it can be concluded that the convergence of different development institutes and their synergistic action helped to enhance the livelihood security of the tribal women. The case study highlighted the need for a group approach to farmers with small holdings. The concept of forming federations of SHGs involved in a particular enterprise, like the KPS and NKS, was proven to be a sustainable model for livelihood security, as well as the overall empowerment of tribal women.

Reference:

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