

# PRADAN's Sericulture Programme in Bihar and Jharkhand: Impact Assessment

MANU SINHA

*Commissioned by PRADAN to understand the impact of the sericulture programme on primary producers at different levels of the value chain and the value chain itself, this study covered primary producers from five districts (Banka, Godda, Dumka, Saraikela and Bhagalpur) of Bihar and Jharkhand and the key stakeholders from various government and non-government organizations. In this extract, the focus is on the impact on primary producers.*

Initiated in 1987, the tasar programme of PRADAN has, over the years, been extended to every level of the value chain, from seed production to marketing of the fabric. The programme has established institutions at each level of the value chain, to cater to the needs of the participating families at that level and also to provide backward and forward linkages. The achievements of the programme, include, among others, the production of 57 lakh commercial disease-free layings (DFLs) 5.33 lakh basic dfls and 24.90 crore of cocoons (total production of cocoons: 31.5 crore, nucleus cocoon-272 lakh, seed cocoon-386 lakh and commercial cocoon-2492 lakh.) All these production data is between 2004 to 2010. In addition, there have been a number of technical interventions/innovations at different levels of the value chain such as the introduction of improved tasar eggs, (commercial DFLs, basic DFLs and nucleus DFLs) domestication of tasar hot trees and the improvement of reeling machines. There also have been a number of organizational innovations in the value chain such as the setting up of private DFL producers, who can maintain quality levels, and the development of yarn producer organizations at the village level.

PRADAN initiated a tasar sericulture-based livelihood programme after a study of the sub-sector. The key reasons for initiating interventions in this sector are:

1. The chain involves mainly tribal people; therefore, the development of it will benefit these disadvantaged communities.
2. Tasar can be grown on degenerated (waste) land and, thus, does not put pressure on fertile soils.
3. The tasar production cycle is complementary to the growing of main crops and adds to income generation.

4. There is a huge gap between the supply of tasar silk and the demand for it.
5. Tasar requires low investment from producers.

*The programme has established institutions at each level of the value chain, to cater to the needs of the participating families at that level and also to provide backward and forward linkages.*

As a result, it was initiated in the contiguous districts of Godda, Banka and Dumka in the Santhal Parganas region of Bihar. Since 1987, PRADAN has worked on all the components of tasar sericulture. PRADAN adapted and developed technologies best suited to the local conditions; worked out appropriate organization and management systems for different components of the livelihood activity such as plantation, egg production, rearing, yarn production, fabric manufacturing and marketing of cocoons, yarn and fabric; and established linkages with major players in the sector such as the Central Silk Board and its affiliates.

### **INSTITUTIONAL DEVELOPMENT**

PRADAN has established three kinds of institutions at different levels of the value chain. These institutions are the Tasar Vikas Samiti—TVS (the main institution for pre-cocoons is co-operative, that is, an aggregation of TVS), Masuta Producers' Company and Eco-Tasar. A brief about each institution follows.

**Tasar Vikas Samiti:** A TVS has 25–30 members; in many TVSSs, there is more than one grainage. There are about three to four seed crop rearers per grainage. One TVS ensures sufficient seed (DFLs) for all the commercial rearers, locally. It also takes advantage of the bulk buying of inputs and the aggregate selling of the product (cocoon).

### **Masuta Producers Company:**

Masuta buys cocoons from the TVSSs and undertakes reeling and spinning of these cocoons through women's groups, organized as a Mutual Benefit Trust. The reeling takes place at common facility centres whereas the spinning is done

by women at home.

**Eco-Tasar:** Eco-Tasar is a private limited company, with Masuta as a major shareholder. The company has been formed to deal exclusively with marketing the fabric. The company provides a market for the yarn produced at Masuta.

### **FINDINGS AND ANALYSIS**

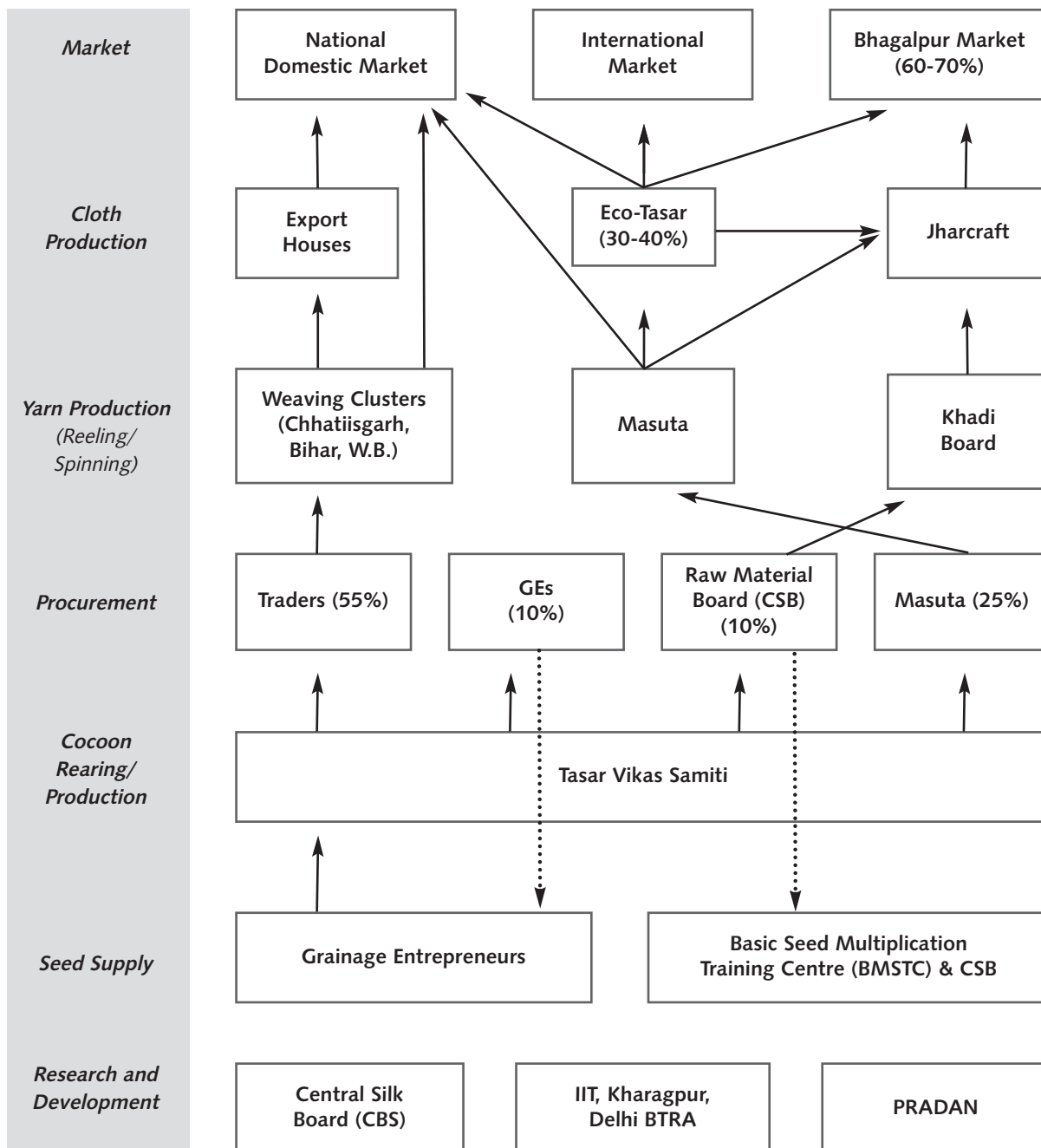
The findings of the study and its analysis have been presented objective-wise. The first sub-section deals with the socio-economic impact of the sericulture programme on the participating families, at different levels of the value chain. The impact has been captured, on selected indicators, across families participating at different levels of the value chain. The second sub-section deals with the impact of the programme on the value chain and the sub-sector as a whole. As PRADAN's intervention has mainly been in the pre-cocoon stage and reeling/spinning in the post-cocoon stage, the socio-economic impact covers the two stages in detail. PRADAN's initiative has also, to an extent, affected the weavers.

#### **A. STATUS OF NON-PARTICIPATING FAMILIES**

##### **Family Size and Landholding**

A majority of the non-participating families (that is, about 82 per cent) have a family

### Indicative Value Chain of Tasar after PRADAN'S Intervention



size of less than seven members per family. Banka district has a substantial number of non-participating families, with five to seven members per family. Godda district has the most non-participating families, with eight to ten members per family. In total, about 9 per cent of the non-participating families have more than 10 members per family. In terms of landholding, Ninety per cent of the non-participating families belong to the marginal or small farmer categories. Only 2 per cent are landless and the remaining are medium to large farmers. Their primary source of livelihood across the four districts was agriculture, wage labour and Non Timber Forest Produce (NTFP). Overall, agriculture is the primary source of livelihood for 53 per cent of the families, wage labour for 40 per cent and NTFP for 7 per cent.

#### **MIGRATION AND FOOD SECURITY**

The dependence on wage labour among the control families was found to be high with large-scale migration. About 71 per cent of the families migrate for more than three months in a year and 39 per cent for more than six months. Only 16 per cent do not migrate at all whereas 7 per cent migrate for more than 10 months every year. Families migrate to the nearest commercial centres such as Deoghar and Patna, and to as far as Delhi, Mumbai and Kolkata. The average annual savings during migration for these families, given that they have to pay for food, lodging, travel, miscellaneous expenses and the lean period, is between Rs 1,000 and 2,000. About 60 per cent of them save less than Rs 2,000 and about 34 per cent save more than Rs 2,500 during migration. About 35 per cent have food security for less than six months and 33 per cent have surplus in terms of food security. The remaining families have food security in the range of seven to twelve months.

#### **DEBT AND CREDIT**

About 70 per cent of the non-participating families had taken loans some time in the past. Of these, only 16 per cent repaid the loan in full whereas 66 per cent repaid it partially. The remaining 19 per cent could not repay the loan. Of the total number of families that had taken a loan, about 37 per cent had mortgaged their land. Of this, only 13 per cent recovered their land, 81 per cent recovered their land partially and 6 per cent could not recover their land at all. This subsection discusses the source of credit for both production and consumption. The source of credit for the non-participating families is primarily the moneylender followed by the Self Help Group (SHG). The interest rates charged by the moneylenders usually range from 3 to 5 per cent per month. Only 14 per cent of the families said they did not require loans.

#### **B. STATUS OF PRIVATE GRAINEURS**

Private graineurs across the four districts mainly belong to Scheduled Tribes (STs). In Dumka and Godda, and Saraikella, all the private graineurs belong to STs. Banka district has a small proportion of private graineurs, who belong to the OBC and the General categories.

#### **FAMILY SIZE AND LANDHOLDING**

Most of the participating families (that is, about 74 per cent) were found to have family sizes of less than seven members. Banka district has a substantial number of participating families, with eight to ten members per family. Dumka district has a majority of participating families, with five to seven members per family. In total, about 6 per cent of the participating families were found to have more than 10 members per family. In terms of landholding, 33 per cent of the private graineurs are marginal farmers,

26 per cent small farmers, 33 per cent are medium farmers and the remaining seven per cent are large farmers. Saraikela district has only marginal and small farmers as private graineurs whereas Godda district has medium and large farmers as graineurs. The primary sources of livelihood for the participating families, across the four programme districts, are agriculture and NTFP.

Agriculture is the primary source of livelihood for most of the private graineurs. For some families, NTFP/ sericulture has become the main source of livelihood.

#### **STATUS OF PRODUCTION AND EARNING**

About 74 per cent of the graineurs have been running the grainery for less than 10 years, 63 per cent for less than seven years and 19 per cent for less than four years. Only 7 per cent of them have been running the grainery for more than 10 years. The grainery needs to be run for about two months that includes procurement of seed cocoons to the production and disposal of DFLs. A majority of the private graineurs (63 per cent) earned an income ranging from Rs 10,000 to 30,000. A loss was registered by 4 per cent of the graineurs and an equal percentage of graineurs earned an income of more than Rs 40,000. The main expenses for private graineurs are the procuring of the basic seeds, cocoons labour charges and chemicals. Thirty per cent of the graineurs undertook seed rearing all by themselves in the last season. Only 15 per cent of the graineurs were involved only in grainage activity. This implies that sericulture has provided primary producers with multiple sources of livelihood and income. Most of the graineurs said that

*Thirty per cent of the graineurs undertook seed rearing all by themselves in the last season. Only 15 per cent of the graineurs were involved only in grainage activity. This implies that sericulture has provided primary producers with multiple sources of livelihood and income.*

during the period of their engagement in tasar activities, they would otherwise have been engaged in agriculture, labour and/or domestic work. The opportunity cost for this is between Rs 500 and 3,000 with an average opportunity cost of about Rs 1,500.

#### **UTILIZATION OF EARNING AND ASSETS CREATION**

As discussed earlier, the earning from the vocation comes the primary income besides providing a local source of livelihood for participating families. For a majority of the families (67 per cent), the key area of impact of the vocation has been on assets creation at the household level. About a quarter of the families also think that the primary impact of the vocation has been in providing an assured source of livelihood and, therefore, in reducing migration. A small fraction of the farmers think that the impact has been on making participating families debt-free and increasing the food security in the region. The participating families utilize the earnings from the vocation, according to their priorities or needs. About 50 per cent of the families utilized the earnings to buy food grains, and for health, education and home maintenance. A quarter of the participating families utilized the available money for repaying their loans whereas 48 per cent of them put their money in savings. About 78 per cent of the families invested the money in assets creation. The assets bought were based on individual family requirements. The priority area of spending has been on buying motor pumps for irrigation because agriculture is still considered to be the main source of livelihood in the area. About 22 per cent of the families invested their money in vehicles or animal/

livestock procurement. The participating families were found to be very sure of the earnings from the enterprise. They seem to have gained confidence in their vocation and are thinking beyond mere subsistence. When asked what they would do with the earnings during the coming year, most of them responded that they wanted to buy productive assets, to further strengthen their livelihoods. Savings and education were found to be the second most important areas in which they wanted to utilize their earnings.

### **DEBT AND CREDIT**

About 81 per cent of the current private graineurs were under debt before they took up the activity. Of these, about 30 per cent of them had mortgaged their land to take the loan. At present, 93 per cent of the families have completely repaid their loans whereas the remaining 7 per cent have partially repaid their loans. All the families have regained possession of their lands. For most families, getting their land back was a priority. Some of the families, as discussed earlier, utilized their earnings to buy land.

The sources for credit in the 'before' situation were moneylenders and banks. The moneylender provides loans at rates as high as 5–10 per cent per month and with many other conditions stipulated whereas loans from banks are for very specific purposes. Applying for and getting a loan from the bank is a lengthy process. About 24 per cent of the families did not require a loan. Now, a major source of loans is the SHG. There is substantial decrease in the number of families taking loans from the local moneylender. Conversely, there is a considerable increase in the number of families taking loans from SHG.

*All the participating families were found to be food secure, with 74 per cent of the families registering a surplus.*

### **MIGRATION AND FOOD SECURITY**

There was large-scale migration among the current private graineurs before they started the grainage. Those residing in Saraikela and

Godda districts migrated to the nearby areas or to Mizoram. From Banka district, people migrated mainly to cities such as Patna, Delhi or Kolkata. Similarly, people from Dumka district went mainly to the northeastern states, West Bengal and the coal mines in the adjoining region. The average annual savings during migration for the families, given that they had to pay for the food, lodging, travel, miscellaneous expenses and the lean period, is between Rs 1,500 and 2,000. The average annual savings from migration in Banka and Dumka districts is more than double the savings in the Godda and Saraikela districts. Given the above situation, only about 33 per cent of the current private graineurs did not migrate in the 'before' situation. After they started grainages in their homes, all the families associated with the enterprise do not migrate now. The food security of the families has also improved. About 34 per cent of the families are now food secure for less than six months and about 37 per cent are food secure for as long as seven to nine months.

Most of the families said that they would first buy food grain supply for the entire year and then think of spending the money elsewhere. Hence, all the participating families were found to be food secure, with 74 per cent of the families registering a surplus.

### **IMPACT ON WOMEN**

Women are usually engaged in cleaning the premises of private grainages. This has to be

done regularly, to reduce any chances of infection to the grainery. About 56 per cent of the women said that their workload has increased and 40 per cent of them said that it has remained the same. The women of the participating families think that the income should primarily be utilized for health/education, savings and house repairs. Only 5 per cent of them thought that food and 2 per cent of them thought that repayment of the loan were priorities. This indicates a sufficiency of basic needs in the households. All the women surveyed said that they wanted to continue with the vocation, primarily because it provides economic stability and they can work from home. During meetings with members in the Inarabaran cluster of Katoriya block, the farmers said that the moneylenders usually charge up to 10 per cent interest per month, depending on the economic condition of the family. Usually, one has to pay Rs 150 for a loan of Rs 100 at the end of two months. For a loan of more than Rs 5000, they have to mortgage their assets as collateral.

### **C. SEED REARERS**

A detailed analysis of the impact on the families participating in seed rearing is not being presented because the majority of seed rearers also participate in the grainage activity and/or the commercial rearing activity. This mix of vocations has a strong influence on the family. A majority of the seed rearers began rearing four to ten years ago. Only seed rearers in Banka have been rearing seeds for more than 10 years. The average income across the four districts varies between Rs 4,300 and 10,000, annually. The average income of seed rearers in Godda and Dumka districts was low at Rs 4,840 and 4,313, respectively, whereas the figures for Banka and Saraikela were Rs 10,077 and 7,300, approximately.

### **IMPACT ON WOMEN**

About 80 per cent of the women said that their workload had increased as a result of the activity, primarily because they had to help their husbands with the rearing activity especially in managing tasar insects. However, almost all of them said that they would like to continue seed rearing because it provides a good income in a short span of time.

### **D. COMMERCIAL REARERS**

Commercial rearers across the four districts belong mainly to STs. In Banka district, there are substantial number of persons belonging to OBCs as well.

### **FAMILY SIZE AND LANDHOLDING**

Most of the participating families (about 74 per cent) had a family size of less than seven members per family. Banka district has a substantial number of them with eight to ten members per family. Dumka district has a majority of participating families, with five to seven members per family. In total, about 6 per cent of the participating families were found to have more than 10 members per family. About half of the participating families are marginal farmers whereas the remaining are small and medium farmers. There is a negligible proportion of landless farmers and a very small proportion of large farmers engaged in the activity. The primary sources of livelihood for the participating families, across the four programme districts, are agriculture primarily and then wage labour and NTFP.

### **E. TRADITIONAL REARERS**

Traditional rearers of cocoons were found only in the Masaliya block of Dumka district. As a result, very few of them are covered under the study. Of the traditional rearers, 75 per cent were from STs and the remaining

from OBCs. All of them were marginal farmers, with less than seven members. Agriculture and allied activities, NTFP and wage labour are the main sources of livelihood.

Half the traditional rearers surveyed were more than a decade old in the trade whereas the remaining half were less than three years old in the vocation (these include the youth of the community, who have adopted traditional methods of cocoon rearing). Their engagement with the activity is for about two to three months in a year, beginning June/July. Domestic and agricultural work gets affected because of this involvement. The average income for the traditional rearers is about Rs 4,200 and varies from Rs 800 to 11,000 per year. Earnings from the vocation were utilized mainly for food, home maintenance, health, loan repayment and some savings. There were small investments in assets creation as well. Twenty-five per cent of the families invested in bicycles whereas another 25 per cent invested in livestock. About 50 per cent of the families said that they had taken loans from the moneylender without mortgaging their land. At present, they have no outstanding loans. Fifty per cent of the families said that they take loans from the moneylender whereas the others said that they do not need to take any loan. About 50 per cent of the traditional rearers said that they migrate for one to three months whereas the remaining said that they do not migrate at all. The average annual income from migration is less than Rs 10,000 for the participating families. The food security among the traditional rearing families was

*The commercial rearers said that they prefer rearing because it is low risk, there is no need to migrate, in a short time the returns are good, and they get to stay at home and take care of the domestic needs. The key area of impact of the vocation for most of the participating families is an assured livelihood and the ability to repay debts.*

found to be about seven to nine months.

#### **STATUS OF PRODUCTION AND EARNING**

About 93 per cent of the families have started rearing cocoons commercially within the last 10 years. Of them, 64 per cent started rearing in the last seven years. The net income of the participating families varied between Rs 5,000 and Rs 20,000. About 6 per cent of them reported a net income of more than Rs 20,000. The major expense in commercial rearing is with respect to purchase of DFLs and chemicals (pesticides), and labour. Eighty per cent of the families engaged in commercial rearing were involved in one activity only. Ten per cent of the families also engaged in seed rearing, 6 per cent in grainage and 2 per cent in reeling/spinning. Most of the commercial rearers said that during the months when the cocoons are reared, they were earlier engaged in agriculture, labour and/or domestic work. The opportunity cost for the period ranges from Rs 1,500 to 5,000, with an average opportunity cost of about Rs 3,000. The commercial rearers said that they prefer rearing because it is low risk, there is no need to migrate, in a short time the returns are good, and they get to stay at home and take care of domestic needs. The key area of impact of the vocation for most of the participating families is an assured livelihood and the ability to repay debts. A quarter of the families also said that the income has helped in the creation of assets. A small proportion of the families mentioned that there has been a reduction in migration and an increase in food security.



A majority of the participating families have utilized this income primarily for food, assets, loan repayment, health and education. About a quarter of the families put some earnings into savings and about the same number put some earnings into home maintenance. A small proportion of the families organized a marriage with the income earned. About 26 per cent of the families invested in buying livestock/animal (bullocks) whereas a small proportion invested in purchasing cycles, motor pumps, TVs/radios or a new piece of land. About 5 per cent of the families utilized the income to pay for mortgaged land. In terms of utilization of future earnings, a majority of the participating families plan to invest in a house/assets creation, followed by the education of their children and savings for the future. About 2 per cent of the families plan to utilize their earnings for loan repayment and 8 per cent for marriage. Only 1 per cent of the participating families are planning to put their income into buying food items.

#### **DEBT AND CREDIT**

About 84 per cent of the participating families were under debt in the 'before' situation. Of these, about 37 per cent had mortgaged their land to take loans. At present, 72 per cent of the families have repaid their loans whereas the remaining 24 per cent have partially repaid their loans. Seventy-seven per cent of the families have freed their land whereas 21 per cent have partially done so. For most of the families, getting their land back was a priority. The source for credit in the 'before' situation for participating families was the moneylender. The interest rate charged by the moneylenders is about 5 per cent per month, with conditions attached. About 24 per cent of the families did not require to take loans. At present, the major source of loans is still the moneylender; however, the

percentage of families availing of loans from them has come down to 54 per cent. There is substantial increase in the families taking loans from SHG. In addition, there is a change in the percentage of families not taking loans. The same has grown from 4 per cent in the 'before' situation to 10 per cent currently. About 50 per cent of the families in Sadalpur village, Saraiyahaat block, Dumka district, are involved in tasar rearing. The participating families think that their credit-worthiness has increased. Now, they are known as tasar farmers and, therefore, people believe that they have money. An example they quote is about the local medical practitioners (generally quacks). Earlier, the farmers had to go and look for doctors during the rainy season when it is common to fall ill. However, the situation has changed. Doctors are now willing to come home to the villagers, including homes in the forest area, and treat the patients, giving injections or setting up an intravenous drip, if need be.

#### **MIGRATION AND FOOD SECURITY**

There was large-scale migration among the participating families in the 'before' situation. Only 46 per cent of the families did not migrate then. In most of the tribal villages, where the community was secure about their basic needs because of tasar intervention, the families wanted to send their children to good schools. In areas, where there were missionary schools, the families preferred them over government schools and were willing to pay a higher fee. The average annual savings during migration for the families, given that they had to pay for the food, lodging, travel, miscellaneous expenses and the lean period, is between Rs 1,500 and Rs 2,000. The average annual savings from migration in Banka and Dumka districts is more than double the savings in Godda and Saraikele districts. Given the above situation,

only about 46 per cent of the current commercial rearers did not migrate in the 'before' situation. Currently, 84 per cent families do not migrate. Only 1–2 per cent of the families still migrate for a varied period. Food security among the participating families in the 'before' situation was such that about 59 per cent of the families were food secure for less than six months and about 20 per cent were food secure for seven to nine months. Only 1 per cent of the families had surplus in terms of food. Currently, 31 per cent of the families are food secure for less than six months and 10 per cent are food secure for seven to nine months. About 29 per cent of the families are food secure for almost a year whereas 31 per cent families have surplus food. In Banka, the participating families were found to be happy to be participating in commercial rearing. This was mainly because although the paddy crop had been lost during the season because of poor rainfall, the families were food secure due to the income from tasar rearing. Another reason for their happiness was their confidence in the vocation because they knew that the tasar crop, if taken with the scientific package of practices, would never fail completely.

### **IMPACT ON WOMEN**

Women usually have to help their male family members to manage the rearing process. In addition, because the male members stay in the forest for the entire rearing season, women have to take food and other necessary items to them. About 65 per cent of the women said that their workload had increased whereas about 31 per cent said that it had decreased. The women of the participating families thought that the extra income generated should primarily be utilized in savings, health/education and house repairs.

In addition, a few women thought that the income should be utilized to repay loans and buy assets. This indicates a move towards sufficiency, in terms of the basic needs of the households for a majority of the families. Of the women surveyed, 98 per cent said that they wanted to continue with the vocation, primarily because it provides economic stability and they can work from home.

### **F. REELERS AND SPINNERS**

The reelers are mainly from the OBC and SC categories, with a small proportion of them being from the the ST and General categories. As far as spinners are concerned, there is an almost equal participation of families from the SC, the ST and the OBC categories. Most of the women participating as reelers have a family size of less than seven members whereas about 14 per cent have a family size of more than 10 members. With regard to spinners, the family size, for 70 per cent of the participants, is less than seven members whereas there are no spinners with a family size of more than 10 members. A majority of the women participating in reeling and spinning belong to marginal farmer families. Only a few participants belong to the small and medium farmer families.

### **PRIMARY SOURCE OF INCOME AND STATUS OF PRODUCTION**

Agriculture is one of the primary sources of income for both the reelers and the spinners. Wage labour is the primary source of income for a substantially large number of reelers compared to the spinners. A majority of the spinners have been engaged in the activity for less than three years and the remaining for four to seven years. A majority of the reelers have been engaged in the activity for four to seven years and the remaining for less than three years. A majority of the participating

women earn between Rs 1,000 and 2,000 a month. Approximately, 84 per cent of the reelers are only engaged in reeling whereas this is true for only 50 per cent of the spinners. About 30 per cent of the spinners are also engaged in commercial rearing in addition to 10 per cent each in grainage and seed rearing. Only 5 per cent of the reeler families are also engaged in grainage and 11 per cent in commercial rearing. Most of the participating members in both the vocations say that earlier they would have been engaged in agriculture, wage labour and NTFP collection activities. However, they do not think that the opportunity costs are very high and they take a break from these vocations during the peak agriculture season. The vocation provides a regular source of livelihood and income locally through the year; the key area of impact for them, therefore, has been an assured livelihood option. The vocation has contributed in a small way to other areas as well. As discussed earlier, the income from reeling and spinning is regular; it is utilized for monthly expenses at the household level, primarily for food, health and education. A small proportion of the families utilize their earnings for home maintenance, loan repayment and savings. In terms of assets creation, some reeler and spinner families purchase bicycles, recover mortgaged land, buy TVs/radios and livestock, etc.

#### **DEBT AND CREDIT**

About 93 per cent of the reelers and 80 per cent of the spinners were under debt in the 'before' situation. Of these, about 70–75 per cent from both the groups have completely repaid their loans. The remaining have partially paid the loans or are yet to start repaying the loan. About 63 and 70 per cent of the families from the reelers and spinners, respectively, had mortgaged their land to take

loans, and 80 and 72 per cent of the families from each group, respectively, have got back their land. This sub-section discusses the source of credit for both production and consumption purposes. The sources of credit in the 'before' situation for the participating families were moneylenders, or *mahajans*, and the SHG. There has been a slight decrease in reelers taking loans from *mahajans* and, consequently, a slight increase in their accessing loans from SHG and banks. There is a slight decrease in the number of families taking any loans. There is a substantial decrease in the spinner families accessing loans from *mahajans*. As a result, there are about 25 families that are now in the 'need not take loans' category. Friends and relatives have a negligible role in providing credit.

#### **MIGRATION AND FOOD SECURITY**

About 49 per cent of the families participating in reeling and 60 per cent of the families participating in spinning used to migrate in the 'before' situation. Given that it had to pay for the food, lodging, travel, miscellaneous expenses and the lean period, the average annual savings during migration for a family comes to between Rs 1,000 and 1,500. There is substantial change in the percentage of the participating families, who do not migrate any more, as compared to the 'before' situation. About 91 per cent of the reeler families do not migrate now as compared to 51 per cent of the families in the 'before' situation. Now only 9 per cent families migrate for various periods. None of the participating spinner families migrate now as compared to 40 per cent families in the 'before' situation. There is greater food security among the participating families in both the groups. Against the 86 per cent reeler families, who had food security of less than six months, only 2 per cent of the families fall into that category now.

Seventy-seven per cent of the families are food secure for more than 10 months. As against 80 per cent of the reeler families, who were food secure for less than six months, only 10 per cent families now remain in that category with about 70 per cent families reporting food security for more than 10 months.

### **IMPACT ON WOMEN**

All the work in reeling and in spinning is done by women. It can be at one place and the women can decide the time. About 47 per cent of the reelers and 70 per cent of the spinners said that their workload has remained the same or has decreased. The women from both the groups think that the income from this activity should primarily be utilized for food, health/education and maintenance of the house and assets creation. A few women felt that the income must be utilized for repayment of loans or for savings. Because it provides economic stability and because they can work from home, all the women surveyed said that they wanted to continue with the vocation.

### **G. IMPACT ON THE VALUE CHAIN AND THE SUB SECTOR**

The discussions with the different agencies point to varied perceptions of the impact of PRADAN's sericulture programme. About half the graineurs have established grainages of between 20,000 and 30,000 cocoons. About one-fifth of the graineurs have established grainages of more than 30,000 cocoons. A small percentage of the graineurs established grainages of less than 10,000 cocoons in the last season. Given the size of the grainages established, a majority of the graineurs produce between 4,100 and 8,000 DFLs. About one-fifth of the graineurs produce packets of 81 to 120 DFLs. Commercial rearers (about 81 per cent) procure DFLs from

private graineurs. Only 11 per cent of the graineurs procure them from a government agency. All the graineurs said that they were able to sell all the DFLs produced.

About 63 per cent of the graineurs said that the payment for the DFL is done immediately. Another 22 per cent said that the payments are made within a short span of time. The remaining 15 per cent said that the payments are made in parts, some immediately and the remaining after the harvest of cocoons. Almost all the graineurs (96 per cent) said that they got good rates for their produce and were confident that all their produce (DFLs) would be sold even if they were to increase their production. They said they have complete knowledge of grainages and that they follow the guidelines properly. About 98 per cent of the commercial rearers said that they bought the DFLs from private graineurs during the last season. The remaining said that they procure them from the government agencies. All the rearers said that they prefer to buy DFLs from the private graineurs and only go to the government agency if DFLs are not available with private graineurs. Seventy-six per cent of the rearers said that they buy from the private graineurs because of the quality, 21 per cent said because of easy availability and another 3 per cent gave reasons such as timely availability and credit facility.

There has been a major change in the production of cocoons from DFLs. This is primarily due to better quality DFLs and the adoption of a scientific package of practices by the rearers. All the rearers said that they were satisfied with the price of the DFLs. In the 'before' situation, about 96 per cent of the rearers produced less than 3,000 cocoons per 100 DFLs. In the 'after' situation, 79 per cent of the rearers produced more than 3,000

cocoons per 100 DFLs. About 53 per cent of the rearers achieved a production of more than 5,000 cocoons per 100 DFLs. Ninety-seven per cent of the commercial rearers said that they have complete technical knowledge about rearing; 90 per cent of the rearers said that they follow each technical aspect explained to them whereas 8 per cent said that they take care of the technical aspects partially. In terms of selling of cocoons, 98 per cent of the rearers said that they were able to sell all their produce. The remaining rearers were able to sell their produce partially. The major buyers of cocoons for the majority of the rearers were Masuta and traders.

### CONCLUSION

The tasar programme is a good example of value chain integration and has been developed systematically over the years from interventions at the pre-cocoon and at the post-cocoon stages. The programme has faced many challenges—from taking tasar production to non-traditional areas to local seed production and developing local centres for yarn production. The programme also needs to be acknowledged for the self-sustainable institutions developed along the value chain, whether it is the TVS, Masuta Trust or Eco-Tasar. The success of the programme has improved the livelihoods of the participating families. The families participating as private graineurs, seed rearers and commercial rearers have benefited by the primary income from the vocation. Reelers and spinners benefit from a regular source of income every month, which they earn working locally/at home in their spare time. A substantial number of families participate in more than one vocation, thereby increasing their income from the value chain. The weavers, although not direct beneficiaries of the programme, benefit through the additional source of work orders; also, the

yarn provided by Eco-Tasar reduces their need for working capital.

The additional income of the family has had several direct and indirect impacts on its well-being. After taking care of the basic needs such as food and house repairs, the next target for a family is to repay loans and free their mortgaged land. This is followed by investments for creating assets, savings, marriage and education. The utilization of income, as discussed before, has direct relation to the amount of income and the felt need of the family. There has been a substantial increase in food security because of the programme and an appreciable decrease in migration. In addition to this, there has also been assets creation at the household level. The programme has helped them pay off their debts, increase their creditability and improve access to cheaper and fair credit sources. The programme has also had a very positive impact on the value chain and the sub-sector. The programme has ensured backward and forward linkages, at each level of the chain. In doing so, the programme has also impacted the value chain in other parts of the country (such as Andhra Pradesh).

In terms of the impact of the programme on the sub-sector, primarily a demonstration model has been developed. In addition to this, the programme has developed replicable models, has fine-tuned technology, developed improved prototypes and developed capacities of human resource to take it further. Given the programme and its impact, the model needs to be replicated in other regions that have similar potential. The study would like to recommend that the programme should initiate work with the weaving community because the handloom sector is facing tough competition from power looms.