

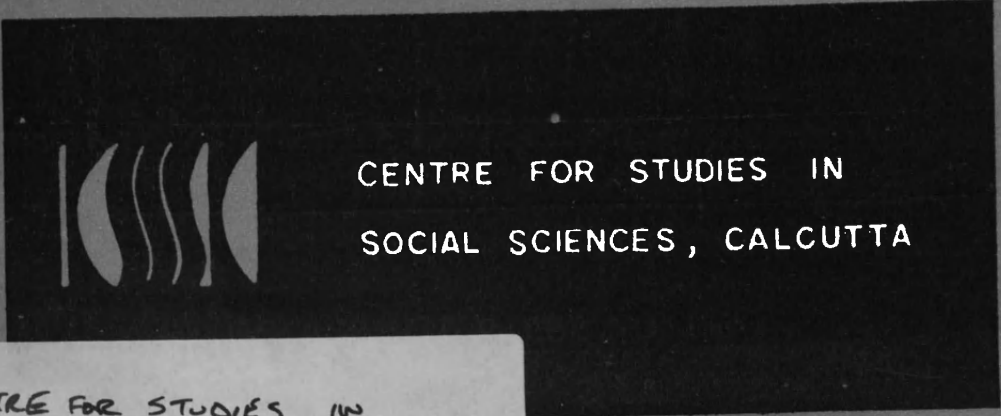
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**DEVELOPMENT AND WOMEN : SOME EXPERIENCE OF
THE MULBERRY SILK PRODUCTION IN WEST BENGAL**

DEBDAS BANERJEE

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DEVELOPMENT AND WOMEN: SOME EXPERIENCE
OF THE MULBERRY SILK PRODUCTION
IN WEST BENGAL

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JULY 1992

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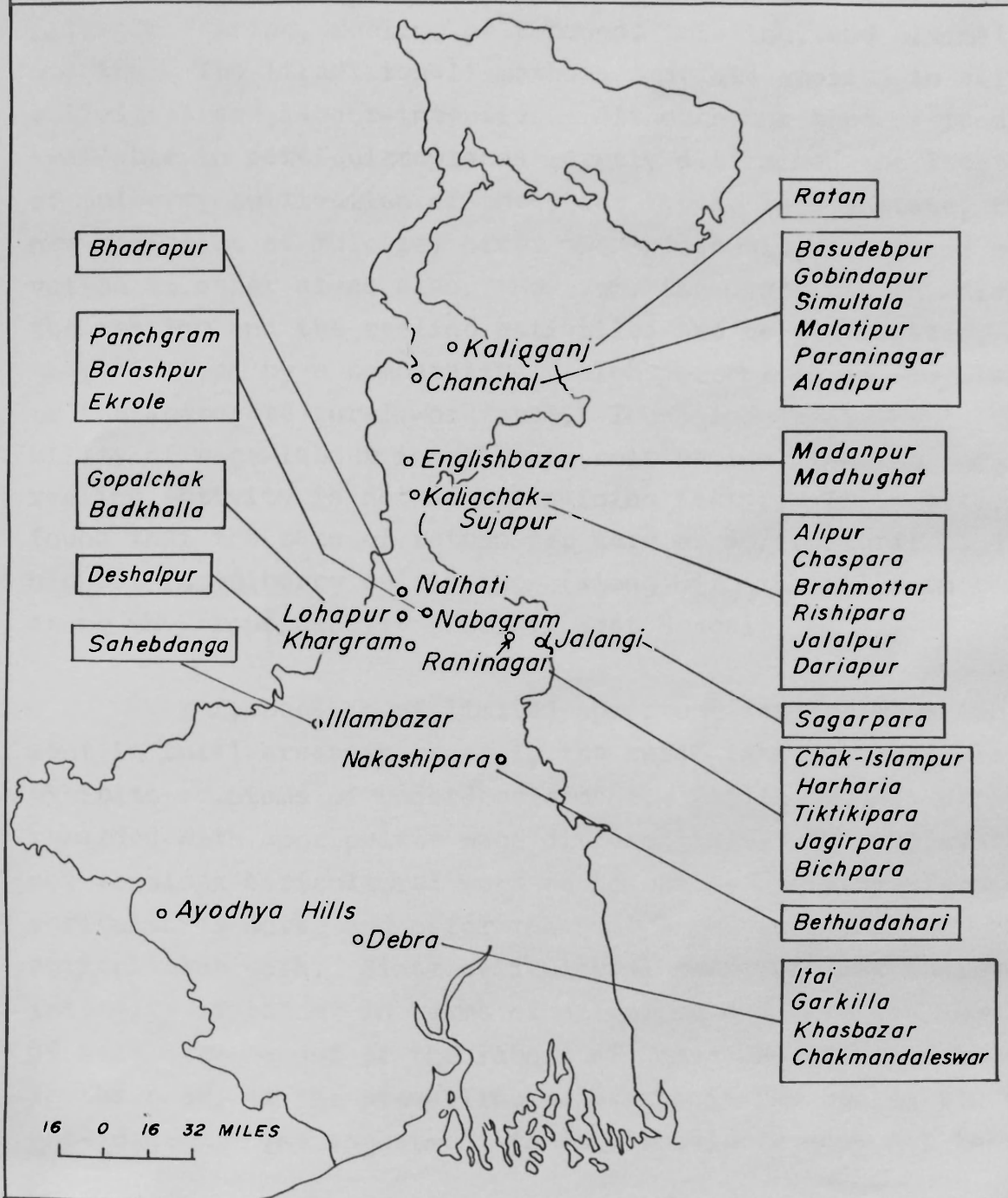


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ABSTRACT

Economic development (measured in terms of the growth of income) otherwise retrograde the status of the self-employed women. Within the household, in particular, the intrafamilial distribution of work-load while gets further skewed with the expanded scale of operation the autonomy of the women becomes more ambiguous. On the other hand, in general, the duality between developed and backward labour processes takes on a gender-face. As the backward sectors increasingly become marginalised in the course of development women monopolise those spheres of economic activity. But, as usual, the 'market' proliferates intermediaries, and the women are subjected to extreme exploitation.

LOCATION OF THE STUDIED SERICULTURE AREAS IN WEST BENGAL



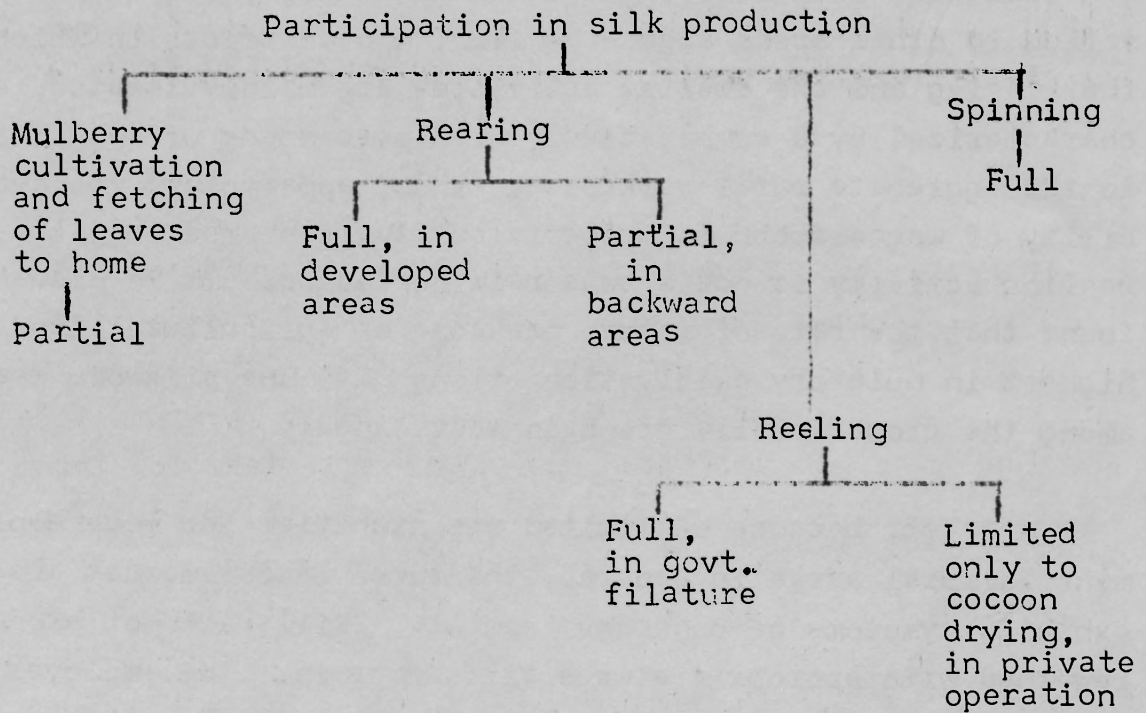
I. Introduction

Silk is produced in several stages such as mulberry cultivation, silkworm rearing, reeling of cocoons, twisting, and ultimately weaving. The 'traditional' methods that are applied in all the activities are labour-intensive. Although the type of lands available in particular places largely determined the location of mulberry cultivation of the older types. In the state, the new varieties of mulberry offer the opportunity to extend cultivation to other areas also. However, the districts in which the rearing and the reeling activities are mainly located, are characterized by a comparatively high percentage of wage-labour to the aggregate rural workforce. Thus, apparently, the availability of wage-labour in mulberry cultivation, rearing, or reeling activity is not a constraining factor. It is also found that the rate of return per acre of agricultural land is highest in mulberry cultivation (along with the silkworm rearing) among the crops usually grown in West Bengal.

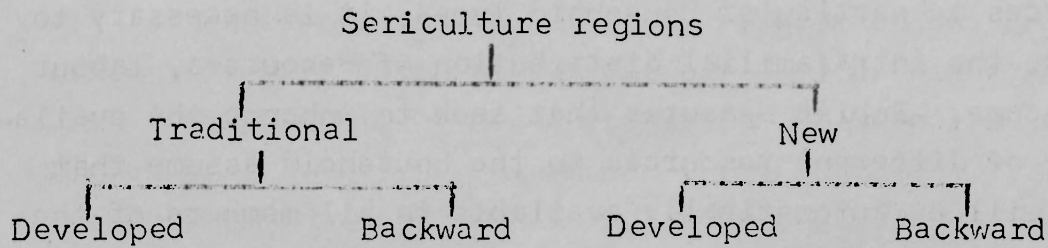
Yet, because of limited opportunities for wage employment in rural areas in general, the rural labour market also exhibits symptoms of underdevelopment. Skills are not properly rewarded with appropriate wage differentials. The employers do not consider sericultural work as something different from other agricultural work, and offer the same wages as obtain for the agricultural work. Since sericultural work requires a higher intensity of labour in terms of attention and care the supply of male wage-labour or the labour of women who are used to work in the open, at the prevailing wage-rate is far behind the ex ante demand. The adjustment to this imbalance does not take

place through a rise in wages. Instead traders and big producers are able to exploit the low-wage labour of women who traditionally do not work outside their homes.

The degree of participation of the women in the different activities, however, varies, which may be categorised in the following way :



The intensity of work, particularly for the self-employed, however, varies according to the conditions of reproduction of silkworms in different regions. The sericultural regions may be classified in the following way :



The 'traditional' areas, in contrast to the 'new' areas, are those in which the cultivation has been carried on for long time. However, not all of them exhibit symptoms of development. The economic condition of the cultivator-cum-rearers in the traditional areas has not improved compared with their counterparts in other areas. The method of cultivation/rearing is, in turn, influenced by the poor conditions of living of the rearers in the traditional yet backward areas. The loss of crop due to disease and other causes connected with unscientific practices is relatively high in the latter areas. On the other hand, alternative avenues of employment of land and labour do not yet match sericulture, in terms of income. In contrast, the area that is being classified as developed, be it new or traditional, demarcates itself not only by the improved method of sericulture but also by other relatively profitable ways of land-utilization as well as the utilization of household-labour. Moreover, sericulture is not substituted by other economic activities, in those regions. Rather, the general improved conditions of reproduction provide 'external economies' to sericulture, so far as the household, the main agent of development, is concerned.

In order to find out how women are affected by market involvement or by public measures aimed at providing more

resources to particular household types, it is necessary to analyse the intrafamilial distribution of resources, labour and income. Public measures that seek to enhance the availability of different resources to the household assume that these will be automatically available to all members of the household. The idea behind such a view is that the household, as an operational unit, is concerned with activities like production, consumption, etc., while the family exists in symbols, values and meanings only. However, the presumed increased production may, in fact, imprint upon the women, so to say, the observations of rituals, customs, etc., more rigorously. Further, the larger is the size of the family more would be the domestic work-load of the women and, quite likely, less equal would be the intrafamilial distribution of the benefits of the 'additional' economic work and, in turn, may end up in decreased productivity of the household. Thus, since large scale unemployment and underemployment pervade the rural society, and the market 'institution' is yet to mature there the economic and non-economic forms of existence intermingles with one another. The way the underdeveloped forms of 'market' differentiates the households, the women within the family gets differentiated likewise. If we distinguish the 'formal' sector from the 'informal' sector in terms of the degree of 'closeness' to the market, and, pari passu, the public development agencies we find that the women are engaged in various informal activities that are heavy on toil, low on returns, while men are in the formal sector. Notions of appropriate work for women vary between activities in silk production. However, it is interesting to study the determinants of those notions.

A married woman of a sericulturist family narrates: "Before marriage I used to be treated very badly in the family discrimination in the distribution of food articles was extreme.... I was hardly a member of the family now, I distribute the food articles I feel I have a position in this family ' To this woman, it is the relative autonomy which carries significance. But, do the women incur an additional cost in gaining that relative autonomy ? should the cost be measured in terms of the comparative length of the work-time vis-a-vis the leisure-time, in a day ? Or, would it be appropriate to measure in terms of the intensity of labour? Or else, would the marriage-dowry be considered as the cost ? And, what is the cost when viewed against the onus still imposed on women of preserving certain traditional values as the essential constituent of a traditional, male dominated family ?

The status of the women changes along with the general level of technological conditions of reproduction. Technological development stamps some processes as backward. Moreover, in terms of the income per hour, the backward processes fall behind the advanced sector. As a result, in regions where the general economic conditions are relatively better the opportunity cost of male-labour is also high in the backward 'processes'. Men move on to the relatively advanced sector while the backward sector becomes almost the autonomous domain of the women. The duality of the backward and advanced sectors, if we define the sectors in such way, is further reinforced by the differential access of the sectors to the market, and the developmental

agencies who are principally guided by the orthodox notions of modernisation, rationalisation and increased productivity as the indicators of economic development. Further, within the advanced sector itself the gender division of labour assumes different shapes, depending on the gender-bias of the diffusion of the new technology. For instance, in areas those are recently introduced to sericulture, the men put relatively more labour in the silkworm rearing, and the women's labour take subordinate position. This is due to the fact that the women lack the preliminaries of sericulture while the men obtained training. In this study, we try to locate the women in the development of sericulture and silk production in West Bengal. Section II deals with their role in mulberry cultivation and rearing while Section III elaborates on the status of women in the reeling and spinning activities. The forms of participation and status have been further discussed in Section IV to put the analysis in perspective.

Finally, mulberry is not generally cultivated as a commercial crop, in West Bengal. Those who cultivate mulberry also take up the rearing of silkworms. Thus, in the text, the terms 'cultivator' and 'rearer' have to be considered as synonymous. Further, the rearing of worms is done either for 'seed' production, or for commercial use, i.e. reeling. Unlike in the seed zones, in many places in the commercial areas the same household carries out both the rearing and reeling. The gender division in the labour process of silk production in the latter places is somewhat different from the former ones. To account for this the characteristic of the particular rearing area is mentioned, in the text, within parentheses.

II. Mulberry cultivation and silkworm rearing

Silk is a protein fibre produced by the silkworm for spinning a cocoon. The purpose of the cocoon is to provide a protective casing to the delicate silkworm during the most critical period of its life namely, the pupal stage. The mulberry-eating and crawling silkworm metamorphoses into a four-winged moth in the short span of ten to fifteen days. Basically there are two proteins which go to form the silk fibre viz., 'fibroin' which constitutes the core of the fibre and 'sericin', a waxy substance which encases the fibroin. These proteins are synthesised by the silkworm from the mulberry leaf it feeds on during its larval period of twentyfive to thirty days, in two silk glands. When the silkworm attains maturity and the silk glands are fully developed, it starts ejecting the silk fluid from the two glands through a spinneret at its mouth. The ejected silk fluid hardens into a fine filament on coming into contact with air. The filament is continuous and ranges in length from 350 metres in Indian breeds of silkworm to 1800 metres and more in the Japanese varieties. The silkworm uses this filament to spin a cocoon in which it virtually entombs itself in the course of about 24 hours. Silk of commerce is obtained from these cocoons by a process described as reeling which is the unwinding of the filament from the cocoon, after killing the pupae.

Mulberry constitutes the only satisfactory food of the silkworm *Bombyx mori*. The alternative host plants are Osage orange, lettuce, *Cudrania triloba* and ordinary peepul. These could at least be regarded as makeshifts only and can never

become satisfactory substitutes for mulberry. They can be used to keep the worms alive only when mulberry leaves are not available. Fed on these leaves, the silkworms would soon suffer in growth and vigour, and fall an easy prey to diseases. Even the survivors would be miserable specimens, spinning flimsy cocoons, if they do spin cocoons at all.

Mulberry being practically the sole food of the Bombyx mori silkworms the quality and the appropriate quantity of mulberry leaf determine the development of the worm and the quality of the cocoon. The mulberry leaf has to be very nutritive and fresh. Mulberry is a very quick growing plant and its leaves can be harvested at least five times in a year. Silkworms too grow fast. In order to make the maximum use of these two quick-growing living beings a delicate technique is required.

II.1. Technological components

In order to understand the scope of extension of the cultivation one has to know the kind of land that the plantation requires. Although tolerant to a wide range of soil conditions, mulberry grows best on loamy soil of high fertility. In the districts of Malda, Murshidabad and Birbhum where mulberry is mostly grown, soils are of Indo-Gangetic alluvium. In general, soils for mulberry should be deep, well-drained, clayey loam to loam in texture, friable, porous and with good moisture holding capacity. Although mulberry grows best in a flat and fertile land, in places where there are other competitive agricultural and horticultural crops, mulberry can be grown even in marginal and slopy lands where other crops cannot

be grown profitably. Mulberry also could be planted in gentle as well as steep slopes.

Let us clarify some of the distinguishing characteristics of the techno-economics of sericulture. First, there is an optimum ratio of the fixed to working capital, the adherence to which minimizes the risk and uncertainty, and maximizes the returns to the rearer. The fixed capital components are : land under mulberry, rearing house, laying trays (popularly known as dala), and mountages (chandrika), and a few other instruments like room-heater, hygrometer, etc. These together determines the volume of working capital to be employed, that is, the amount of silkworm eggs (in short, seed) to be reared. For instance, improved variety mulberry leaf output (about 32 quintals per season) on a land of 0.66 acre, is adequate only to feed about 400 hybrid variety (F_1 /Jaya) disease-free layings (in short, dfls.) (implying total eggs laid by 400 moths). Then, to rear 400 dfls., at least fiftytwo dalas and twentyfive chandrikas are required. To arrange those trays properly, four racks are needed. And a room of the size 22ft. x 10ft. x 10ft. is required to accommodate those four racks, in addition to the free space needed on the floor for two trays at a time. If the technologically determined proportions were violated and instead there is an overcrowding with dalas the growth of the larva would be restricted because of under-nourishment and improper aeration. At the same time, the uneven development of the worms in the bed would make them prone to diseases resulting in a higher larva mortality rate.

Secondly, the initial capital requirement for good quality cocoon rearing is high. For instance, the cultivation

of mulberry on one acre of land would call for such types of assets, the total market value of which may well be in the range of Rs.15,000 - 18,000, including a mud-built rearing house. In West Bengal, however, most of the rearers use either the dwelling room, or the cattle-sheds as a rearing house. In that case, a sum of about Rs.4,500 would be initially required to buy other equipment. It could be reduced further by hiring the required equipment. In addition, there is the cost of mulberry cultivation, and the capital required to buy the seeds.

Thirdly, manual labour plays the crucial role in rearing. Silkworm rearing calls for intensive attention comparable to that of a mother's care for a new-born baby, especially, during the later stages of the larvae. Collecting mature silkworms and mounting is a labourious job which requires a great deal of labour. Usually the matured worms are picked up by hand by skilled labour who can identify the ripe worms, and put them on the mountages. As this entire process is carried out with manual labour it is possible to ensure uniform distribution of mature worms on the mountages and thus reduce the incidence of double cocoons (two worms jointly forming a single cocoon; silk reeled from double cocoons has a slubby effect). In this method it is also possible to eliminate the diseased larvae and thus achieve a fair measure of uniformity of cocoons. In order to save labour involved in picking mature worms, some simpler techniques have been evolved involving the use of green branches or nets. Even after mounting much care and attention is required to harvest a good 'crop'. Moreover, the work associated with rearing and the supervision go on round-the-clock.

Fourthly, the level of 'information/knowledge' regarding the technology is critical in making the cultivation and rearing a profitable venture. The nature of feeding, control of temperature and humidity inside the rearing room, identification of the stages of growth of the larva by size, shape and colour, and the diseased worms, the appropriate pest control, etc. can separately and jointly make a difference between a triumph or a disaster.

Fifthly, the cocoon yield and hence the output of silk depends upon the availability of disease-free layings without which the entire forward linkages would be affected. However, the quality of seeds could not be gauged simply by the appearance of the seeds. The availability of disease-free layings is ensured only by a scientific method of rearing of the worms which would be utilised further for seed production. Here quality control by the public agencies is highly important for the sericulturists' success.

II.2 Status of women

Although a gender division of labour exists in sericultural activities, it is not inflexible. It has been found that women sometimes do all the types of work that characterise cultivation and rearing. When working as hired labourers, women engage in all types of work except ploughing mulberry fields. They are often preferred to male workers on grounds of efficiency. Sri Durgapada Bhuyia of the village of Khasbajar in the Medinipur district (block:Debra) has, for

example, employed mostly women as hired labourers because according to him women are more efficient than men in sericultural activities while the wage-rate of female labourer is less than that of male labourers. However, when self-employment within the household is concerned the gender division of labour is determined by a few other factors within and outside the household.

Usually women's work includes disinfection of the rearing room, chopping and sprinkling of mulberry leaves over the dalas, bed-cleaning, keeping a continuous vigil on the worms in all the stages to detect any incidence of disease, then disease related work such as separating out the affected cocoons, picking up of matured worms, at the final stage, and mounting them on chandrikas, and careful handling of the chandrika. The worms require attention during spinning of cocoons as the quality of cocoons is, to a great extent, determined by the environmental conditions that obtain when the worms are on the mountages. Generally, worms during spinning require a slightly higher temperature than during rearing; but too high a temperature is to be avoided as it will compel the worms to spin in haste and thus waste a lot of silk. The usual practice is to place the chandrikas in the open. It is, however, necessary in this case not only to avoid draughts of wind but also direct sunlight which distorts the spinning process by the worms. The worms have also to be guarded from their natural predators such as birds. Thus with the changes in the direction of wind and sunlight the chandrikas are required to be moved accordingly.

The intensity of the silkworm related work of the women, at different stages of the worm, could be gauged from Table 1. This is in addition to the large part of the working time that is spent in tasks that relate to the maintenance and reproduction of the household : house-cleaning, washing clothes, cooking, cleaning of utensils, fetching water, preparation of cow-dung into fuel, processing of paddy, caring for domestic animals, and most essentially, child care. In many households the bidi-making is an additional time-consuming load on the women. However, to note, the size of the family and the household composition are important determinants of the household-wise variation in the time-budgeting of the women. In sericulture, usually, the outside work like work related to mulberry planting, fetching of leaves from the mulberry field, cleaning of dalas and chandrīkas in the ponds, etc., are done by men only. Many Muslim and Hindu women say that the domain of home and outside is predetermined by the religio-cultural practises. The division is much more ritualistically followed in Muslim households. But one would frequently come across women, including Muslim women, who are supposed to remain confined behind purdah, fetching leaves from the field, or taking the trays to the ponds for cleaning, etc. This is independent of the sect of Muslims, and their marital status. While the phenomenon is observable in Bhadrapur in the district of Birbhum, Panchgram in Murshidabad, or in Bethuadahari in Nadia the frequency of the incidence is very high in the Sujapur-Kaliachak region in the district of Malda. What distinguishes the Sujapur-Kaliachak area from the rest is that the silk-centered activities and other trading activities have made the area far more commercialized and its job availability greater. Male

members of the family, who do not have enough family work to try and work as hired labourers in reeling, or other activities. This is quite in contrast to Badkhalla, Gopalchak in Birbhum, or Sagarpara in Murshidabad where the male members do not have full-time jobs in the household-sericultural work and do not have enough job opportunities outside the home. It may be argued that those rearers could expand the volume of cultivation and thus keep themselves engaged fully. But, the expansion of the volume of rearing requires additional investments that the poor rearers could not afford. And thus they remain under-employed within the domestic domain while additional income is necessary simply for subsistence. This has resulted in a different division of labour among the men and women in the sericulturist family as against the Kaliachak-Sujapur area, and putting less load of sericultural work on the women as the outside work is mostly done by the men. However, the sericulturist families in these areas say that the women are debarred from the outside work due to the religio-cultural practises.

That the domestic 'gender' division of labour crucially depends upon the availability of wage employment in a labour-surplus economy, particularly among the economically weaker sections of the community, is more strikingly evident in Ratan village in the Kaliaganj block in the district of Dinajpur (North) (an 'official' seed zone). The total number of households in Ratan is three hundred. Of these, 134 households are landless and belong to scheduled castes (Rajbansi), and 15 are landless Santhals. Out of the 134 landless households for about 15, handcart or rickshaw pulling is the principal occupation. About five of them earn their livelihood in the nearby

Table 1

Average work-load of an adult female family member in silkworm rearing

Stage of operation	Type of work	No. of days		No. of hours per day for rearing:		
		Summer	Winter	100dfls.	200dfls.	400dfls.
Pre-rearing	Disinfecting the rearing room and appliances	2	2	5	6	7
Instar #						
First	Brushing, plucking, the leaves, leaf-chopping, feeding, bed cleaning	3.5	5	1	1	1
Second	Plucking, chopping, feeding, bed cleaning	2.5	4	1	1	1.5
Third	Feeding, bed cleaning	4	6	2.5	3	4
Fourth	Feeding, bed cleaning	5	6	4.5	5	6
Fifth	Feeding, bed cleaning, collecting the matured silkworms	7	10	6	7	9
Spinning:	Mounting the matured worms on chandrika, harvesting of cocoons from the chandrikas	5	7	2	2.5	4

oil mills. The rest are engaged in the agricultural and sericultural work. The wage-rates in the oil mills do not exceed Rs.19, for the day shift, and Rs.20.50 for the night-shift work. The average daily earnings by pulling rickshaws or handcarts¹⁵ is Rs.25. The wage-rate for the agricultural work is Rs.20 (without food) which increases to Rs.24 (without food) in the months of Shraban and Pous. In some cases, it is Rs.16 with breakfast and two meals. In contrast, for a duration of work from 6 a.m. to 6 a.m. in the next day (that is 24 hours) hired labour (men) for sericultural work is easily available in the area, on an average, at Rs.22 (with breakfast, usually fried rice, and two meals). The hired labour has to stay inside the rearing room in the night. There are 45 sericulturist households in Ratan. And, in none of households the female members take part in the silkworm rearing related activities, at least, up to the fourth instar. Either the men of the household themselves, in case of a low amount of rearing, or hired labour, where the number of dfls. brushed is large, perform the sericultural work. The non-participation of the women in rearing, who are otherwise found driving the cattle home from the grazing ground could not be explained in terms of the 'socially degrading' work. The dichotomy between home and outside work is found to be very weak as it is found that the women doing the domestic work are also going outside to fetch grass for the cows, or to sell milk, which in the 'traditional' society are not considered as 'dignified' job of the women. Thus, economic backwardness has moulded the otherwise socially accepted notion of appropriate work for the women. The economic deprivation in Ratan, in particular,^{and} in all the adjacent villages, in general, have restricted the men in Ratan to find appropriate work. Correspondingly, women do outside work but as soon as the work is paid a market wage, men do it.

Sahebdanga village, also a seed zone, in the district of Birbhum and located at a distance of about 14 kilometres from Bolpur-Santiniketan, however, gives a different picture. The area where the village is now located was part of a thick forest till 1962. About ten-twelve 'displaced' families from East Bengal, first settled in the district of Nadia, and then were permitted to construct dwelling houses inside the forest of Illambazar. They constructed their cottages inside the forest on the bank of the river Ajoy. In 1964 fifty households were given plots of 1.5 to 1.6 acres of land per head at the rate of rupees ten per acre. When they migrated they did not have even ploughs. They used to dig the land with spades. The burden of the reclamation work was largely shared by the female members. While the men were out to Durgapur, and other places, for casual work in the factory the land-reclamation work was solely done by the women. In 1972 they got permanent settlement rights and parchas. Now there are 120 households whose average landholdings is about 2.5 acres. And, 38 households have taken up sericulture as their subsidiary occupation. As the land is highly fertile (much of the land has also been reclaimed from the bed of the river Ajoy as it receded) they reap a bountiful harvest of paddy, wheat, mustard seed, potato and other vegetables. On an average, the size of the mulberry land per household does not exceed 0.5 acre. However, interestingly, the same women (belonging to agriculturist or sericulturist families) who used to work in the field and in jungle-clearing in the initial days of their settlement are now not supposed to work outside the domestic boundary. But that has not lessened the burden on the women in a sericulturist family. The higher agricultural productivity (all the 188 acres of

cultivated lands are irrigated either by deep or shallow tubewells) has opened up multitude of work outside home for the men, including that of taking the produce to the markets, the nearest of which is about 5 kms. away (at Illambazar). While men do the work of planting and fetch leaves from field to home women bear the principal burden of silkworm rearing besides carrying on all the household work including cooking, cleaning and child-rearing. The division of labour between men and women so far as the rearing of silkworms is concerned, is as follows : the washing of the rearing room with the formalin mixed cow-dung, and the dalas and chandrikas are done by women, fetching eggs from the office and brushing are done by the men, then from first to fourth instars the entire work is done by the women with occasional assistance of men, at the fifth instar when the number of dalas is increased the placing and bringing down of the dalas to and from the upper stairs of the rack (which are beyond the reach of the women) are done by the men, picking up the matured worms and mounting on chandrikas are usually done by the children under the supervision of the women, the 'appropriate' placing of the chandrikas under the sunlight is done by the men while the children guard those from birds, etc. However, keeping constant vigil inside the rearing room is an additional burden on the women during the entire period of rearing.

So-called tribal communities exhibit another variant of the gender division of labour in sericulture. Ayodhya Hills is a cluster of villages with very low levels of income (the total population is about 10,000). It is situated at a distance of about 50 kilometres from the district headquarter of Purulia.

The climatic condition is remarkably different from that of other parts of the district because the cluster is located at an altitude of about 2200-2400 feet above the sea-level; the hills are also densely forested. The maximum and minimum temperatures during the summer season are 30° - 35° celsius and 23° - 27°c, respectively. The temperature during winter varies between 10°c and 26°c. The place is less humid throughout the year than most other parts of Bengal.

The population of Ayodhya village (where case studies were undertaken) is about 300, of whom 80 - 85 per cent are of tribal origin and the rest belong to the so-called backward castes. The majority of the tribal people are Santhal and Bhumij. About 10 per cent of the population have read up to the primary level and the rest are illiterate. Almost all of them own land but not all land is cultivable. While agriculture is the principal economic activity, gathering and cutting wood from the forest provides substantial income to the otherwise poor people. As there is no source of irrigation the agricultural production is limited to a single season, when the rains come. Ayodhya Hills is an isolated place in the sense that there is no road transport, except for vehicles of the government offices located there. The nearest market (Baghmundi) from where they buy their daily necessities as well as agricultural inputs such as fertilisers, etc., is about 15 kms. away and the ordinary people just walk there down hill paths. There is no supply of electricity either to the villages.

The Central Silk Board, Government of India (CSB) introduced sericulture to the hills in 1983. Since 1988, CSB has ceased operation and the Department of Sericulture, Government of West Bengal (DOS) has taken over. The extension of sericulture in the hills is in many respects different in nature from that in the 'plains'. First, a substantial part of the rearing and feeding of silkworms requires a rigid adherence to a fixed time schedule. However, the hill people are yet to shed their aversion to a routine dictated by the clock. Secondly, the diffusion of the technology, which is considered even by the general cultivators as complex compared with the cultivation of foodgrains, is even more difficult among the Santhals and Bhumij. The latter are not yet exposed to HYV cultivation using fertilisers, pesticides, etc. Thirdly, since gathering of forest products including timber is a traditional as well as popular activity, it is very difficult to confine them within a narrow space of activity.

Although all the rearers have their own land under mulberry the leaf-yield is, in general, practically nil. They depend almost entirely on the leaves of the government farm. Their traditional-cultural practices are partly responsible for the phenomenon. To allow the domestic animals to graze freely is a customary practice among the tribal people. And they lose quite a substantial amount of leaves because of this.

Because of these factors the process of diffusion of the 'technology' from the government agencies to the people in

Ayodhya hills is very halting. However, the field-staff of DOS pay frequent visits of the sericulture-households. They also choose a time when the female members are not engaged in other household work. Thus, in Ayodhya Hills, the extension practices have ensured the active participation of the women in the rearing-families, since they learn the various procedures of rearing at first hand. This is in pleasant contrast with most of the other sericultural areas in West Bengal in which the field-staff particularly visit the houses in the forenoon when the female members are normally engaged in cooking or otherwise. Naturally the knowledge is gathered by the male members of the family. This provides them a 'discretionary power' to dictate the 'novice' women in the family blindly assisting their 'superiors'. And the women always remain as the apprentice of the men.

Ayodhya Hills is a testing ground of bivoltine rearing. DOS found the place ideal for Bi-rearing and made plans accordingly. All the private rearers have hi-yielding mulberry plantation. The Nitrogen Protein content of the mulberry leaf is high as is considered to be suitable for bivoltine. However, the cocoon output is below the standard elsewhere. Nevertheless, while 700 cocoons constituting one kilogram is considered to be the standard, in Ayodhya Hills, 580-590 cocoons weighed one kilogram. Although the low rate of yield of cocoons per unit of dfls. despite very low incidence of disease points to some other reasons for relatively low productivity the hill people, undoubtedly, are slowly adopting the practice. They are yet to be convinced that sericulture provides a better way of life than hunting-gathering. It is often found that in the middle

of feeding the worms they leave for forests. Since hunting-gathering is the focal point of their daily lives, irregularities in feeding of the worms leading to low yield is not considered as a serious problem by them.

In Ayodhya village, the widows who are found engaged in sericulture bear all the drudgery starting from land-preparation to cocoon selling. But the participation of women in either joint family or nuclear family is limited mainly to fetching leaves from the field, and chopping which is required at the first instar. They again take part in harvesting the cocoons from the chandrikas but only as assistant of the men. The main activities relating to worms are done by the men. The women stated that they hardly enter into the rearing room since they are very scared of the silkworms. They rather help the men in the outside work. A large part of the day-time is spent by the women just on gathering the fuel-wood.

The level of technology is an important influence on the status of women in sericulture. Broadly, the rearing of the Nistari variety of silkworm constitutes the traditional technology while that of Bivoltine and other hybrid varieties constitute the advanced technology. Capital goods can, in general, be decomposed between those that substitute for land and those that substitute for labour. Land-saving capital is usually identified with particularly the intermediate inputs of mulberry cultivation. It takes the form of biological, chemical, and water control investments increasing the yield per unit of land. If the land is cultivated by tractors and such other machinery and equipment it is usually identified as

labour-saving capital. In sericulture, labour-saving capital could also be identified with investments in improved silkworms for rearing, apart from the other related investments such as improved rearing-houses, room heaters, increased numbers of trays, etc. The technology is labour-saving as it increases the output of cocoons (in terms of weight) per unit of labour-time spent. For instance, while about 450 kgs. of mulberry leaves are required to produce 13 kgs. of Nistari (the traditional variety) cocoons the same amount of leaves coupled with a marginal increase in the intensity of labour (in terms of attention) within the same labour-time could produce 100 per cent more hybrid cocoons. The technological change, however, at the same time enhances the elements of risk. In other words, while the traditional technology has a low mean and a low variance the new technology has a high mean and a high variance. However, variance in the new technology gets reduced increasingly with the availability of information/knowledge regarding the appropriate conditions of adoption of the technology and the appropriate disease control mechanism, provided the new technology is being adopted in an appropriate agro-climatic condition.

In West Bengal, the government agencies are the sole innovators of the technology. Thus the diffusion of the new technology depends, to a great extent, on the methods adopted by the government agencies and their effectiveness. During conversation it was revealed that women are overwhelmingly in favour of rearing hybrid worms although, according to them, Nistari could be harvested much more easily. According to

them the size of the mulberry plantation remaining the same, the number of dfls. would decline in the case of hybrid worm rearing as compared to Nistari thereby the number of worms to be looked after would also decline significantly. Not only the gross income from rearing is likely to increase, at the same time, the hybrid rearing would enable the women to enjoy extended leisure-time. The small holdings of mulberry lands which could produce adequate leaves for the existing numbers of Nistari worms reared would no longer remain economic for rearing the same number of hybrid cocoons. While about 500 kgs. of mulberry leaves are required to rear 100 dfls. of pure Nistari (commercial) the requirement of leaves for the same number of hybrid Bivoltine is about 600 kgs., and for pure Bivoltine about 850 kgs. (see Table 2).

However, the preference of the women has hardly any influence on the pattern of rearing. First, as opposed to the rearing of Nistari, as we have stated earlier, the hybrid rearing requires a different kind of human-embodied technology. The knowledge of Nistari rearing has been transmitted through generations, rendering it less prone to risk. On the other hand, the assimilation of the new technology from a foreign body is always associated with enhanced risk unless the technological knowledge is properly transmitted. It is found that during a son's marriage, in a sericulturist family, girls having skill in sericulture are preferred. In many cases during marriage negotiations, elderly persons from the bridegroom's side ask the girl questions about the nitty-gritty of sericulture. Though girls with knowledge of sericulture are preferred this obviously is not a necessary condition for

marriage since the villagers feel that they could train the bride in sericulture as the techniques are not very difficult to learn.

Table 2

Average quantity of silkworms (variety-wise) that could be efficiently reared for commercial purposes in the four different seasons with hi-yielding variety of leaves grown on 0.5 acre of land

Season	Leaf yield (kgs.)	Amount of dfls. to be brushed		
		N_i	F_1 ($N \times B_i$; $N \times G$)	B_i
April-May	2400	460	400	275
June-July	2600	500	430	300
Aug.-Sept.	2600	500	430	300
Nov.-Dec.	2200	425	360	250
Jan.-Feb.	2000	350	300	200
Total	11,800	2,235	1,920	1,325

- Notes: 1) During August-September the leaf yield declines.
- 2) During February-March and, especially, during November-December the life-cycle of the silkworm gets elongated resulting in increased requirement of leaves.
- 3) Normally, one kilogram of Nistari cocoon requires 22 kgs. of leaves, that of F_1 requires 26-28 kgs., and B_i requires 32-35 kgs.

The government sponsored training programme is supposed to reduce the information gap. Incidentally, many government agents still assume that the men of the household are the potential agent or knowledge carrier for the whole family. Otherwise, it is difficult to explain the poor participation of women in government training programmes.

Moreover, the extension staff of the government development agencies visit the household usually at a time when the women are engaged in domestic work, in the forenoon. As stated earlier, this results in discriminatory distribution of knowledge. The result is the subordination of women to men within the family, in the hybrid or pure B_1 rearing. This has a negative impact on the hybrid cultivation: women are willing to rear hybrid or pure B_1 silkworms but they are scared. The male-bias of the knowledge that is being diffused by the government agencies and the lower-than-average yield of hybrid cocoons is found to have a significant correlation, in different areas. In Chanchol, for instance, most of the rearers introduced the cultivation during last five-six years. The majority of the rearers are Muslims and most of them own cultivable land not exceeding 5 bighas (1.65 acres). There, men share the greater burden of rearing (commercial), and they were provided with training on the new technology which they follow, being new, very scrupulously. As a result, the productivity of cocoon is much higher compared to most of the traditional, and other new areas of sericulture. And the rearers fetch fair amount of income by directly selling the cocoons, without further entering into reeling, unlike many other commercial areas. In contrast, in Alipur village in the

Kaliachak area (Malda district) most of the rearers are Muslims and, on an average, they do not own more than 0.66 acre of cultivable land. Many of them are not engaged in economic activities otherwise also. Yet the participation of men in rearing (commercial) is practically nil. On the other hand, the training that has been imparted by the government agency is hardly attended to by the women. The selection of candidates by the agency is no less important than the social resistance against the women going outside to take lessons from the male teachers, which has resulted in such a poor participation of women in the training programme. The outcome is : a very low productivity of hybrid cocoons. In the case of PM x B₁, in Chaitra (February-March), the production per 100 dfls, in Alipur, did not exceed 40 kgs. for most of the cultivators. In Chanchol, on the other hand, the number of cultivators who harvested above 55 kgs. per 100 dfls. is quite substantial. Further, in Alipur, the low yield of crop was largely due to the loss out of such diseases as Muscardine and Grasserie. The spread of Muscardine disease was almost inevitable as the rearers hardly observe basic hygiene. One could see dead Muscardine affected worms spread here and there in the-courtyard. The improper spacing of silkworms, application of disinfectants, and ventilation all added up to low yield, and signalled the information-gap so far as the new technology is concerned.

In brief, new technology has to be considered as a matrix, the elements in which must also include women as vital participants, as sericulture in West Bengal is primarily a domestic activity, so as to have the desired results. Otherwise,

risk-averse male cultivators stick to the traditional technology despite the fact that the women are in favour of high-yielding races of silkworms. This also indicates the weaker position of the women in decision-making so far as the sericulture is concerned. As in the Muslim dominated Alipur village, which is located within the most commercialized zone in West Bengal, in the Mahisya (non-SC Hindu) dominated villages like Itai, Garkilla and Khasbazar in Debra block in the district of Medinipur, too, the same kind of deprivation of the women is transparent.

There exists high preference among the rearers in the traditional areas for Debra Nistari. The seed-cocoon rearers in Debra, never have problems regarding the disposal of cocoons because of the demand from the government agencies as well as private grainures. The average size of aggregate landholdings of the sericulturists is about 2.5 acres, while that under mulberry is 0.64 acre (about two bighas). Most of the lands are irrigated either by shallow tubewells or by river water, enabling the cultivators to harvest, apart from mulberry and paddy, wheat, oilseeds, potato, onion, jute, and horticulture at a relatively higher yield-rate. Moreover, the rate of output of cocoon (seed) is also higher compared with many other areas. For instance, in Baisakhi, Srabani and Aswina the average yield of cocoons per 100 dfls. is 20-25 kgs., while in Pousa and Falguni that goes up to 30-35 kgs. The price of cocoons comes down to the lowest in Srabani season whereas in Aswina it is found to be as high as Rs.125 per kg. (in the year 1991). Since the average brushing of seeds per

rearer per season in those villages is found to be about 200 dfls., taking an average selling price of cocoon as Rs.60 per kg., the average annual income of the households from sericulture alone was no less than Rs.15,000. This is supplemented by income from other agricultural crops. Judging by these indications the villages in Debra could be considered as relatively economically developed.

In Debra, women play a crucial part in sericulture. While they do not do the ploughing or harrowing of the land they are found weeding around the mulberry plants. They fetch the leaves from the field. Men usually bring the eggs from the office but the follow-up work such as washing the eggs with formalin are done by the women. For the rest of the period until the fifth instar the rearing is solely the burden of the women. At the fifth instar and during mounting of ripe worms, that is when the work-load goes beyond the capacity of the women, the male members of the family share the burden. The placing of the chandrikas under the sunlight is usually carried out by the men while women share the work of carrying the chandrikas in and out of the room, with the men. Although no training has been provided to any of the rearers by the government agencies the women are found to be highly skilled in Nistari rearing.

Interestingly, while we find certain cultural practices associated with silkworm rearing in many other places, in Debra such practices either have a very low profile or are non-existent. One may argue that those cultural practices stem from the milieu in which people live and their tradition. Those

practices may also be highly regarded because of the uncertainty of crop production and their lack of control over the whole process of the rearing. There are uncertainties at every stage, beginning with the possibility of getting diseased eggs, to attack of disease at later stages. Rearers attempt to circumvent the possible misfortune through certain practices which vary among the regions as well as caste and community. Some of the practices are part of the rules of pollution and purity while the rest can be classified under particular beliefs such as, for instance, keeping red chillies or iron or vermillion in the trays. These are practices which are not found among all rearers. Among the Hindus it is largely believed that women should not enter the rearing room wearing unwashed clothes from the preceding day, or clothes worn during cooking, etc. They should wear fresh and clean clothes. Further, during pregnancy and menstruation women must not enter into the rearing room. Perhaps because of the increased importance of sericulture in the aggregate household income, or due to some other social factors, the concept of pollution during pregnancy, prevalent mostly among the Hindus, has been on the wane in many sericultural areas.

A comparison between the practices in Debra and those prevalent in Bhadrapur village in the district of Birbhum is attempted here. Among the 300 and odds sericulturist households in Bhadrapur only two are Muslims, and among the Hindus 226 households are Poundra Khastriyas (SC), and 39 are non-scheduled caste Hindus comprising mainly Brahman, Kayastha and Mahisya. Further, the degree of participation by the women within the households in sericulture is much low compared to that in Debra.

Nevertheless, especially among the poor, forbidding the women from silkworm rearing during pregnancy is considered to be costly. The relatively better-off cultivators are also slowly shedding such inhibitions. But hardly any household allows the women to enter into the rearing room during menstruation. The same Mahisyas or Kayasthas or Napits in Debra have already shelved these ideas of pollution and purity; pregnancy as well as menstruation are not considered as pollution. Only during the 21 days since the birth of the child women are not allowed to work in worm rearing. Even the period of mourning is no hindrance for taking part in rearing in Debra. In general, in this traditional and developed area, hardly any cultural practice associated with silkworm rearing is observed. Whether because of the absence of many such social restrictions on the women's participation in sericulture they are found to share the bulk of the burden or, because women's participation is essential so such restrictions withered away in Debra is yet to be conclusively probed.

The dependent position of the second sex is, however, widespread. In spite of even near-total participation of women in sericultural work, the end-product becomes property of the male members of the household and the women are still considered as economically dependent and are subject to the autocratic behaviour of males. The cultural aspect of the human relationship perhaps plays an important role. Among the Muslim rearing households in Chanchol or, in Gopalchak (commercial) (in district: Birbhum) women seem not have experienced the kind of repression that is being faced by the women in Alipur. In all the areas the sericulturists belong more or less

to the same economic class, and, except in Chanchol, the work-load of sericulture on women is almost the same in the other two places. Generally, the women, even those who labour ceaselessly, do not have any role in the financial management of the family. Moreover, while women of poor Muslim households are allowed to talk to outsiders, the relatively better-off Muslim sericulturist households in Chanchol have pushed the women behind the veil and restricted them to limited conversation with even the persons visiting the household in connection with sericulture. On the other hand, in Gopalchak, the women, cutting across the economic classes, enjoy much more freedom in this respect. Many of them say that the men are bound to allow them this freedom of speech as they contribute substantially to rearing. But, it seems that this freedom is more the counterpart of culture than of economic factors. The rearing there is carried out for commercial purposes only, and the reeling is solely the domain of men within the same household. Thus, the comparative work-load solely in the labour process of silk production, of the men, and the women who share the bulk of the burden of rearing is subject to detailed scrutiny. Moreover, usually, the women's work, being carried out in the home along with their unpaid domestic tasks, tends to be undervalued and classified as 'subsidiary activity'. On the other hand, men's supremacy directly follows from their engagement in reeling which alone fetches tangible income.

In Alipur, while the participation of the Muslim women in the labour process of rearing is total they do not have even the right to talk to outsiders without the prior permission of

the men or their physical presence. Men are not even bothered whether wife and children have taken meals or not while child-rearing is the sole responsibility of the women. Moreover, the wife who practically sacrifices her life to the household, one fine morning finds the husband appearing with another married girl. Any protest by her only would result in talaq. Incidentally, in Gopalchak, cent per cent people are literate while the literacy rate is much higher in Chanchol than in Alipur. Perhaps this could explain why the extreme subjugation of Muslim women as witnessed in Alipur is not a common phenomenon in many other Muslim dominated villages.

The sericultural work-load on the women gets reduced with economic prosperity, irrespective of whether they are Hindus and Muslims. The women in the better-off households enjoy even the freedom to say 'yes' or 'no' to sericulture. The hiring of wage-labour for sericulture is quite widespread among those households. Only during the fifth instar of the worm the participation of the female members becomes substantial. But, in the middle peasant households, the women bear a lot of burden of paddy-processing, etc., which consumes substantial labour-time. Thus, the villages where hired-labour at the agricultural wage-rate is scarce, the unwillingness of the women to take part in rearing has led the middle peasant households to opt out of sericulture even though they are aware of the economics of it.

From women's perspective, in the not so well-off households, the motivation to work for sericulture, despite severe exploitation, stems only from the dream that sericulture

would some day bring prosperity to the household and simultaneously reduce their work-load. However, the upward mobility of sericulturist families, despite the relative profitability of the crop, is severely restricted by the social system of dowry. The additional income out of improved sericulture is mostly saved. But, women are not generally the beneficiaries of such a saving, except in an indirect manner, due to the widespread prevalence of the dowry system. The more the number of daughters than sons, more is the net outflow of resources from the household. Moreover, when the poor sericulturist give marriage of his daughter to a better-off family pays much more than what he gets, as dowry, from the son's marriage. Among the various 'sects' of Muslims (so far we have interacted) the dowry normally does not exceed 10-12,000 rupees for average households, which again is **refundable** after divorce. In contrast, among the Hindus a more elaborate system of dowry, associated with caste, landholdings, and economic condition, is found to be a general phenomenon in rural West Bengal. The rate of dowry among the Poundra-Khasatriyas, who are traditionally rearers by caste, is generally higher compared to other castes throughout the sericulture areas. They pay something around 60-70,000 rupees as dowry in Bhadrapur. The amount of dowry certainly varies according to landholding, and the usual number of dfls. reared per annum by a particular household, but that part of the dowry which is independent of the economic factors is also quite substantial. The regional variation in terms of developed and underdeveloped sericulture areas is also significant. To note, in Debra the rate of dowry, in general, which holds for the sericulturists too, is found to be associated with landholdings

in the following manner :

Upto 3 acres of land	- Rs.20,000
3 - 5 acres	- Rs.40,000
5 acres and above	- Rs.60,000

Particularly, among the Mahisyas it varies between Rs.4,000 - Rs.30,000, in Debra. In Ratan (Dinajpur, North), on the other hand, the majority of the rearers are Debsarma (SC) and the rate of dowry among them varies between Rs.1,000 and Rs.10,000. Further, while the rate among the Poundras is much higher in Bhadrapur it varies between Rs.15,000 - Rs.40,000 in Deshalpur (block : Khargram; district: Murshidabad), which is a traditional **commercial** zone yet underdeveloped. In brief, it is the prosperity of an area rather than the prosperity of particular households which largely defines the scale of dowry. This means that it is more burdensome for poorer families in a prosperous area. Apart from the restrictions that the dowry system put upon the upward mobility of households it has other relevance too, particularly for the women. A girl who has been very badly treated at her father's place may be lucky enough to find her position relatively better, and enjoy greater autonomy, at her in-law's place. But the cost of the 'relative autonomy' is high. Generally parents who prefer girl having skill in sericulture as bride, at the same time, wish that their daughters should be married off to non-sericulture households so that they do not have to undergo the same tedium.

III. Reeling and spinning

The operation of unwinding the silk filament, a bave forming the cocoon, is called reeling. To a great extent, reeling activity in the state has developed as a way of by-passing the hazards of the market rather than as a separate trade. As a result, family-based units predominate in this activity. However, the direct participation of women in reeling, either as family members or as hired labourers, is missing. Some women explain this by ascribing it to some unstated religious obstacles while they feel that they could easily do it. The role of the women in the household is limited only to cocoon drying. The object here is to kill pupae before they metamorphose into moths, piercing the cocoons in the process and rendering them unreelable.

There are three distinct types of reeling viz., the country charkha (popularly called kat-ghai), cottage basin, and filature. Tentatively, more than half of the yarn is reeled in kat-ghai in West Bengal. The country charkha is a simple appliance which can be easily manufactured by the village artisan at a cost of about Rs.200-300. This can be installed in the backyard and is easy to operate. It is manually operated and requires a complement of two persons, namely, a reeler and a turner (of the wheel). The outfit of a charkha comprises a mud platform. The forepart has a built-in fire place with, usually, an earthenware basin fixed over it. The other part of the platform is solid with a flat/^{top}intended for the reeler to sit and attend to the reeling operations.

Sufficient space is left all around the basin on top of the platform for keeping such necessary equipment as a small earthenware pot of cold water, silkwaste removing sticks, and ladles for cooking cocoons. The basin is buried upto its brim in the mud platform with a large part of the basin exposed to the fireplace below. The basin is used both for boiling cocoons and for reeling from those. The total cost of installing a kat-ghai is around Rs.1350, including equipment (at 1992 prices). The reeler sits perched upon the platform facing the basin and the reel. When water in the basin reaches the boiling point (for warp yarn), or 50°c - 60°c for weft yarn, the reeler takes a handful of cocoons and boils them in the pan of the hot water. After the removal of floss, a required number of brins from as many cocoons is taken and thread formed by a 'croissure'. The reel is rotated manually by a turner and generally two or four ends are reeled. The cottage basin is only an improvement over the charkha. Otherwise the process of reeling is more or less the same. There is nothing peculiar to the 'process' which renders it unsuitable as an occupation for women.

When asked about the reason for complete absence of women from this activity, some women in Alipur, angrily replied: 'we rear worms, make bidis, do household work, look after children, what more will we do?' But their non-participation may not be guided by their free choice. Usually the reeling starts early in the morning and it goes on for 8-9 hours, up to noon. Once the work starts it is done continuously, otherwise the fuel-costs would be higher. In the poor wage-labour households usually the meal is cooked once a day,

either in the morning before the men or women or both go out for work, or in the evening. Thus, engagement in reeling as hired labour is not a problem for these women. However, in the rearer, or reeler households a domestic routine is usually followed, the major part of which coincides with the routine of reeling activity. Thus the women perhaps are disallowed. That the women are less fit for the work compared to men is also well known. This may explain the employment of only males as hired labour. However, the state-run filature unit in Madhughat, a place very close to Sujapur-Kaliachak, provides a different picture. Filature is a large factory where reeling of cocoons is undertaken using advanced technology to ensure the high quality of reeled silk. In the Madhughat Filature unit all the work related to reeling is done by one hundred and five women. Of them, seventy are employed as reelers and thirtyfive as assistants. The working hours are from 8 a.m. to 5 p.m. They are supposed to produce 405 gms. of silk yarn per day for a daily rate of Rs.27.70. If the production is below the stipulated amount deductions are made proportionately from the stipulated wage rate. Many of these women are residents of the traditional reeling centre, that is, Sujapur-Kaliachak area, and for whom cultural practices are no obstacles to their taking part in reeling. They are neither condemned nor considered socially degraded by the neighbours.

The flosses which are separated from the cocoons during reeling are also processed into yarn. Women instead monopolised spinning of silkwaste (jhute). The silkwaste obtained from the reelers is first, cleared of the stifled pupae and other wastes. Sometimes the reelers get it done by their family members, mostly

by the women, and sell the silkwaste at a higher price than the uncleaned one. The 'cleaned' silkwaste is then boiled with a little amount of caustic soda, and dried in sunlight. Then it is spun in an improvised charkha the wheel of which is operated by the feet.

The yearly volume and duration of the activity solely depend on the level of output of the cocoon and the volume reeled. The availability of silkwaste also is not certain because of competition arising out of demand from the neighbouring districts such as Bhagalpur in Bihar. However, in Rishipara, Sujapur, Dariapur, Jalalpur, Chaspara, Kaliachak, that is, within the central commercial area in Malda, the spinning is carried on a large scale by Hindu and Muslim women alike. (The paddle charkha is usually made by the artisans in Sujapur, and costs about Rs.250).

Usually, the 'uncleaned' silkwaste is available at Rs.8-9 per kg. in the reelers' villages. There are a few middlemen who buy a large volume of silkwaste from the reelers at Rs.8-9 per kg., then get those cleaned by hired labours, and sell it to the spinners at Rs.15-18 per kg. The spinners usually buy 2-3 kgs. of silkwaste at a time.

The spinning usually starts in the afternoon when the women have finished their domestic chores. Otherwise, the charkha remains in the courtyard throughout the day and they do some spinning in between other household work. On an average, they try to spend at least three hours behind the spinning

wheel a day. On an average, 21 hours of work are needed to process a kg. of silkwaste into 300-350 gms. of yarn. The yarn is sold at a price between Rs.180-Rs.210 per kg. to the middlemen who usually pay frequent visits to the households. The other expenses for soda, fuel, etc. being Rs.1.80-2.00 the gross earnings from processing a kg. of silkwaste turns out to be about Rs.36-Rs.53, depending on the prices of yarn. In other words, the wage-rate per hour varies between Rs.1.70 - Rs.2.55 (Table 3). Many of them spin about 1.5 kgs. of yarn a month out of about 5 kgs. of silkwaste, and earn about Rs.200/- (at 1991-92 prices), after deducting the costs of silkwaste.

The income from spinning may not be as important, to the women, as their 'autonomy' which they enjoy irrespective of whether they are Muchi (SC), caste-Hindu, or Muslim. They control the money they earn. They utilize the money in buying clothes, etc. for the family members but also as the working capital for their productive activity. They themselves decide from whom to buy the silkwaste and, the amount to be purchased at a time. Among the poorer families, however, the spinning provides the principal source of income and of course the status of the spinners there is much better compared to that of the dependent rearer-women, in general.

Yarn is also spun out of the pierced or 'cut' cocoons, that is, out of those from which Moths have been allowed to emerge mainly for the purpose of 'seed', or which were cut for the purpose of testing. These are available in bulk in the government grainages. Occasionally, the Central Silk Board,

Table 3

Some characteristics of spinning of silkwaste (jhute)

Item	Rishipara (Block: Kaliachak; Dist.: Malda)
1. Religion/Caste	Muchi(SC), Muslim, Caste-Hindu
2. Source of Silkwaste	Local reelers, middlemen
3. Cost of silkwaste: (per kg.)	
Uncleaned	Rs. 8-9
Cleaned	Rs.15-18
4. Status of spinners	Independent
5. Vent for the yarn	Local middlemen
6. Price of yarn (per kg.)	Rs.180-210
7. Output of yarn per kg. of silkwaste	Rs.300-350 gms.
8. Cost of soda, fuel, etc.	Rs.1.80-Rs.2.00
9. Gross earnings per kg.	Rs.36-Rs.53
10. No. of days required	7 days (approx.)
11. No. of hours spent per day	3 hours (approx.)
12. Income per hour of spinning	Rs.1.70-Rs.2.55
13. Availability of work in a year	6-8 months

Government of India and the State Sericulture Department (s) sell these out in auction. A few private traders have practically monopolised the purchase of the pierced cocoons from the government grainages. On the other hand, the spinning of yarn, known as Matka, is the domain entirely of women. A battery of intermediaries operates in between. The women spinners, for example, in Brahmottar (in the Sujapur area), collect the cocoons from a middleman. The latter

sits at a central place in the village, weighs the cocoons and distributes it to the women, usually, one kilogramme at a time. About 700 gms. of Matka yarn ought to be produced out of a kg. of cocoon. On an average, the spinners spend 6-7 hours a day in between other household chores, and can spin 80-90 gms. of yarn. The same middleman who distributes the cocoons receives the yarn from the women at the rate of Rs.40/- as labour-cost per kilogram of cocoon. The same middleman also acts as money-lender and may provide crop advances to the women.

In Madanpur (block: English Bazar, district: Malda), on the other hand, the role of the private middleman in Brah-mottar is replicated by the 'Gandhi Gram Vikash Samity', a co-operative society. The spinners are mostly Kayasthas, Nama Sudras, Poundra Khastriyas, Ganget Mondals, Logar Mondals, and Ghosh. However, the Samity could not provide them work for more than six months in a year. During the shortage of supply from the Samity the women buy the pierced cocoons from private traders, if available. However, the amount of yarn per kg. of cocoons to be 'returned' to the Samity by the spinners, for a particular 'batch', is fixed by the Samity unilaterally. It first gets the yarn spun from the raw material by a woman under its direct supervision and decides the standard. Then, if the yarn returned by the spinners in Madanpur falls short of the stipulated standard, a deduction is made from the stipulated wage. Usually, 600 gms. of Matka yarn is expected by the Samity from a kilogram of pierced cocoons. For this amount of work the wage is fixed at Rs.48/-. Although the price per kg. of the quality of Matka yarn spun in Madanpur does not exceed Rs.260/- in the open market, the Samity makes deductions

at the rate of Rs.300/-, whenever the women spinners fail to comply. This is quite in contrast to Brahmottar where the private middleman, while calculating the deductions to be made, assumes the yarn price to be Rs.200/- per kg. However, the wages earned by the women in Madanpur are higher. While in Brahmottar the private middleman pays Rs.40/- for processing 1 kg. of cocoons into 700 gms. of yarn, in Madanpur, the Samity pays Rs.48/- for processing the same amount of cocoons into 600 gms. of yarn. The lower piece-rate in Brahmottar may be partially explained by the spinners' dependence on the middleman for consumption-loans, the need of which arises quite frequently. However, Madanpur's spinners usually take longer time to process a kg. of cocoons than in Brahmottar. In Madanpur the women spend about 5-6 hours daily for as long as 16-20 days to spin 600 gms. of yarn which reduces the average wage per hour to about Re.0.50 as compared to about Re.0.77 in Brahmottar (Table 4). The spinning of Matka yarn is not a very skilful operation which otherwise would have explained the hourly-income differences.

The features of spinning of Matka yarn in Harharia (east) village in the Raninagar-I block in the district of Murshidabad is, however, significantly different. The village is adjacent to the big weaving centre in Chawk-Islampur. In contrast to Malda, a substantial amount of Matka yarn changes hands in the haat (local market) which assembles every Thursday. There are about 2,000 Muslim women spinning Matka yarn in Harharia alone. Of them, about 600-700 women take part in the putting-out system organized by a few co-operative societies, and the rest do it independently; buy the pierced or 'cut' cocoons from the local market and take the yarn to the market.

For those who spin the cocoons for the co-operative societies, in Harharia, the wages vary according to the quality of yarn as follows: for 12 nos. - Rs.60, for 16 nos. - Rs.55, 18 nos. - Rs.60, and for 20 nos. - Rs.90 for one kilogram of cocoons. Most of them usually spin upto 16 nos. yarn. And, they are supposed to return 600 gms. of yarn in lieu of one kilogram of cocoon. However, the income earned per unit of processing is no higher for independent spinners than for those associated with the co-operative society. Although in the district of Murshidabad the price of yarn is Rs.250/- per kg. for an average quality, the same yarn sold by the independent spinners could not fetch more than Rs.230/- in the local free market. While there are a few buyers the number of sellers being large, in the local market, the latter's position is practically reduced to that of a price-taker. Since most of the Matka weavers are associated with the weavers' co-operative societies they are not direct buyers in the local market, and thus enabling the private yarn traders, being the bulk purchasers, to manipulate prices in their favour. Notwithstanding, the immediate demand of the large number of weavers routed through the co-operative societies in the Chawk-Islampur area must have placed the Matka yarn spinners in Harharia in a relatively better position. The women spinners there earn about Rs.1.25 - Rs.1.50 per hour for upto 16 nos. of yarn spinning, and still more ~~xxxxxx~~ for finer yarn. Moreover, unlike in Madanpur and Brahmottar, the women in Harharia find work throughout the year (Table 4).

However, the processing of pierced or cut cocoons is a kind of work which men find highly repulsive. When asked

the reason for the complete absence of men from this economic activity the reply/was ^(from the women) that the process is a really dirty and stinky one. Thus the women are forced to do the dirtier jobs, to supplement their family incomes. The spinning is done manually with takli (spindle) where both the hands are in continuous use. The backbone and the whole body of the spinner is racked with aches and pains. During spinning her hands become pale, and her fingers are affected by chilblain. On the other hand, although spinning from the silk waste does not involve a stinky process men do not participate in it for the wages are too low. In other words, that the men are not engaged in spinning because the process is dirty and stinky, is a myth. The reeling process itself in kat-ghai, for instance, is dirty and stinky one to a stranger, yet men have monopolized the sector. However, for the women, the silk waste-spinning is a better paid job than the spinning of pierced cocoons. They find their tool, paddle charkha more comfortable, than the takli is for its users. They can work in the evenings, and throughout the day in between other domestic work. Apart from everything else, the jhute-spinning women in Rishipara, look more healthy than the spinners of pierced cocoons. In the afternoon, when a woman jhute-spinner sits on the pedal she is found to be quite well-dressed by the standards of the locality. A comparison of the two kinds of spinning shows that the dirtier jobs are often less remunerative too. While the average income per hour of jhute-spinning varies between Rs.1.62 - Rs.2.55 it does not exceed Rs.1.50 in the spinning of pierced cocoon, be it in Madanpur, Brahmottar or Harharia. In all the places, participation in a job with money earnings attached to it, however low they may be, and the regular flow of those earnings

Table 4

Some characteristics of pierced cocoon spinning
(Matka yarn) in three different places

Item	Brahmottar	Madanpur	(at 1991-92 prices) Harharia (East)
Location: Block District	Kaliachak II Malda	English Bazar Malda	Chawk-Islampur Murshidabad
Religion/Caste	Muslim	Hindu-SC	Muslim
Source of Cocoons	Middlemen	Co-opt. Society	Co-opt., Middlemen, local market
Price of cocoons (per kg.)	Rs. 80-100	Rs. 60-62	Rs. 95-100
Vent for the yarn	Middlemen	Co-opt. Society	Co-opt., Middlemen, local market
Price of yarn	Unspecified quality: Rs. 260/-	Unspecified quality: Rs. 300/-	12 nos.: upto Rs. 250/-; Finer yarn; upto Rs. 350/-
Output of yarn per kg. of cocoon (stipulated)	700 gms.	600 gms.	600 gms.
Spinner's gross income per kg. of cocoons	(piece-rate) Rs. 40/-	(piece-rate) Rs. 48/-	(piece-rate) Rs. 30-55/-, Rs. 60-90 (Independent) Rs. 35/-
No. of days requi- red to process 1 kg. of cocoons	8 days	16-20 days	5-8 days
No. of hours usually spent per day	6 hrs.	5-6 hrs.	5 hrs.
Income per hour of spinning (approx.)	Re. 0.77	Re. 0.50	Rs. 1.25 - Rs. 1.50
Availability of work in a year (approx.)	6-7 months	6 months	12 months

have enhanced the creditworthiness of the women. They can now obtain groceries from the local shops on credit, in their own names, and this is an important advance in status, dearly bought though it is.

While they have been able to improve their status on their own there are no official records of their existence. They remain invisible. In the course of field-work, initially, we hardly could obtain any preliminary information on them even from the various public agencies associated with the development of silk production. And, as usual, these women remain outside the boundaries up to which the state labour laws have reached to protect the labourers from the vagaries of market, be it perfect or imperfect. Similarly, the public financial institutions do not consider them eligible to be covered under the various soft-loan assistance schemes.

IV. Forms of participation and status

Arati Mondal is twentyeight years old and literate. She is married to Pashupati Mondal (SC) who owns a tiny plot of 0.17 acre (0.5 bigha) agricultural land, and a kaccha house, in the Madanpur village. They have two sons (12 years and 6 years, respectively) and two daughters (10 years and 8 years, respectively). All the land he owns is under mulberry plantation. But the volume of rearing does not provide enough income for the subsistence of the family. It could not economically 'engage' the adult members, either. Pashupati looks for a job here and there. Sometimes he is employed by the Gandhi Gram Vikash Samity in reeling operation as reeler, turner or

twister in the Kat-ghai. As a reeler he gets Rs.15/- as wages. The maximum period for which the Samity can provide him employment does not exceed eight months in a year; but even eight months is exceptional. So he works as hired agricultural labour, helper of the truck-driver, or as the watch-man of a mango-grove, and sometimes pulls cycle rickshaw.

The average brushing of dfls. by the household is larger (200 dfls of 'F₁' in the Agrahyani, 1991) than can be sustained by the leaf-yield from the piece of 0.17 acre owned by Pashupati. The family buys leaves from others. The money for the leaves is borrowed from the local private moneylenders at a high rate of interest (not less than 4 per cent per month). The loan repayment is usually made out of the proceeds of sales of the cocoons, which again is far below the average yield.

Pashupati and Arati jointly manage the operation of rearing. Moreover, to supplement the family income Arati has taken up, for the last 10-11 years, the work of spinning of pierced cocoons. For the last 3 years, these cocoons are being supplied by the Samity. The entire transaction with the Samity is carried out by her. She decides the pattern of spending of the money that she earns out of spinning. Sometimes she, along with other women neighbours, work as agricultural hired-labour, at a wage-rate which is, of course, lower than that of the male labourers. She has other work also. She carries meals to Pashupati's place of work, if it is not far away. She also occasionally relieves Pashupati from the work as watch-man in the mango-grove.

Despite the hard labour that both Arati and Pashupati put in, the family reels under abject poverty. But Arati's paid work is carried out at home and outside, and she earns almost as much as Pashupati, besides carrying on with the unpaid domestic chores. She enjoys relatively greater autonomy within the family. Arati's cash earnings certainly have paved the way to her freedom but perhaps no less important is the structure of the family as a functional unit. The nature of engagements of both husband and wife distinguishes the family from a standard peasant family in many respects, and consequently many of the 'does and don'ts' for the women do not apply to Arati. The Samity's management also admits the range of pursuits, from cattle grazing to watching the mango-gorve, which a woman is engaged in. The Samity's experience is that because of such varied preoccupations the rate of wastages of yarn, in terms of both quality and quantity, is high, thereby forcing it to deduct a greater percentage from the women's wages out of the yarn. Thus, of late, the Samity puts out only 250 gms of pierced cocoons per spinner, at a time, in general. But, at the same time, the Samity differentiates the women who are otherwise not so 'busy' and whose wastage is relatively low from others, and puts out greater amount of pierced cocoons to them.

In our endeavour to proceed further, there is 'gender' division of labour within Arati-Pashupati's family but that is not strictly compartmentalized. The latter phenomenon is consistent with the family's daily chores of household work. In a typical peasant family there is an orderly series of chores of domesticity, although the order may not be obvious

to outsiders. To a great extent, this is functionally related to the property-ownership of the household that provide a regular flow of income. Unlike the standard property-owning peasant-family, the food in Arati's house is cooked only once in the evening, although Pashupati likes to have a full meal in the morning before he goes out for work. They usually consume the remaining part of the rice cooked the previous day as breakfast. And the lunch for all the members of the family simply consists of chhatu (crushed maize). The instability of the husband's income and the failure of that income and the yields of the owned assets to provide enough subsistence, has weakened patriarchy in this family. If rearing had been the sole source of income the labour-input of Arati surely would have remained unaccounted and her labour-time would have been controlled by her husband as evident in places those we have already discussed at length. The status of Arati and other women belonging to the same category in Madanpur is also reflected in the low incidence of marriage-dowry. In many cases there is no dowry at marriage, and if a dowry is given it is limited to Rs.200 - 1,000/-. Moreover, dowry is never a bone of contention in the families in Madanpur.

Arati's is only a representative case of the one hundred, more or less comparable, women in Madanpur who were identified by the Department of Sericulture (DOS), Government of West Bengal as members of 'women group' in August, 1991, as part of the women's development programme under the World Bank aided National Sericulture Project (1989-94). A few meetings of the government officials with these women took place thereafter but nothing has fructified till date. Even in the beginning

of 1992, women were in the dark regarding even the aims and objectives of the 'group'. However, in the present context, they were asked whether they would like to work (spinning of pierced cocoons, and silkwaste) at a common place under a shed along with others in the group, or independently at home. Many of them expressed their preference for the former. They feel that a routine work for a specific period of time, and outside the home would certainly enhance their productivity through mutual competition and without distraction, and hence income, in the piece-rate system of wages.

In brief, what seems developmental in Madanpur the same does not hold good, for instance, in Chanchol. In the latter, even a training programme organised for the women would not be attended to by them if the place of training was in the adjacent village. It is in this context that the familial relationships within the households bear relevance for any development programme aimed at the women. Unless the familial relationships as a parameter be part of the agenda of development programmes the receding motivation of the women, after the break-even point, may frustrate the 'grand' objective of development itself.

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