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A Case Study: Impact of Training on Knowledge Level of Different Types of Participants

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Abstract: ***The tasar culture is a forest based agro-industrial avocation and source of livelihood for tribal people living on the edge of the forest. Tropical tasar culture has special significance owing to its positional in providing self-employment and also in terms of its socio-cultural, socio-economic and ethnic importance. It provides gainful rural employment and remunerative income to a large tribal population. It is a way of life for tribal and inhabitants of forest areas. Rearing tasar silkworm and finally tasar silk reeling and spinning by these people provides them to earn for their livelihood 30% to 50%. Based on the training programmes results has drawn it can be concluded that training has got a great impact on the development of skills and knowledge level of the participants min is 40% max is 95%. All the assessed participants are fully equipped and confident that they can practice Tasar Reeling and Spinning technology (wet, dry reeling and spinning) (40% to85% and 40% to 95%) and tasar Silkworm Rearing, Seed Production technology and disease management (40% to 95% and 35% to 90%) respectively on their own, which in turn will serve them as a self-employment. And through this they can earn their livelihood and look after their family by increasing their annual income through Tasar culture rupees 3000 to 5000/ month. On the other hand this will help in expanding the Tasar industry in Jharkhand in particular and India as a whole.***

Keywords: Tasar culture, Silkworm rearing, Seed production, Tasar reeling & Spinning, impact of knowledge level

1. Introduction

Among many agro-based cottage industries in India, sericulture provides income and employment generating opportunities to rural poor and tribal. Among Vanya or non-mulberry silks, tasar culture is practiced by about 1.5 lakh tribal populace in the states of Jharkhand, Chhattisgarh, Odisha, Madhya Pradesh, Utter Pradesh, West Bengal, Bihar, Maharashtra, and Andhra Pradesh. Tasar culture involves continuous chain of several production activities. It starts with either collection of nature grown cocoons from forests or rearing of silkworm on its host plants in forests or raised by rearers which are utilized by reelers and weavers for production of yarn and fabrics. In the past tasar culture was practiced as subsidiary occupation (Shetty *et. al*., 2007) involving two to three months of family labour.

Central Tasar Research and Training Institute (CTR&TI), Ranchi is one of the premier Institutes of Central Silk Board (CSB) under Ministry of Textiles Govt. of India. It is located at about 18 km from Ranchi city on Kolkata-Mumbai National Highway (NH-23). It was established in the year 1964 as Central Tasar Research Station (CTRS) with a prime objective of providing R & D support of tasar Industry and to put "Tasar Culture" on scientific grounds so that production and quality improvement of tasar silk become a continuous process, and thus traditional source of earnings of tribes is presented, enriched and perpetuated. Later, to fulfill the requirement of human resource training and development for the growth of Tasar Industry, the training component was added to CTRS, giving its present name – CTR&TI. The Institute is having its Research and Administrative building, plantation as well as residential quarters spread over in an area of 86.31 acres of land.

CTR & TI has spacious building to cater the need of research, training and administration. The research wing of the institute has 14 disciplines to carry out R & D works on Tasar host plant and silkworm. The Institute is well equipped with state of the art equipment. The Institute has its own farm of about 60 acres covered with Tasar food plants, facilities for silkworm rearing, auditorium, training hall and hostels. It also has a full- fledged Post Cocoon Technology (PCT) for taking up silk reeling, dyeing and weaving related research and technology development work.

CTR & TI has a support system to transfer of technologies and other extension related works, CTR & TI has well established extension network comprising of eight (8) Regional Tasar Research Station (RTRS) and twelve (12) Research Extension Centers (RECS) spreading throughout the country (Annual Report 2007-08, 2008-09).

Human resources is one of the most critical components for the growth of an Industry. Training division of CTR & TI runs various Human Resource Training Programmes for the Scientists, officer and technical/field staff of Central Silk Board (CSB) and Dept. of Sericulture (DOS) from different Tasar growing states, and also farmers, silk reelers, unemployed youth, NGOs and other stake holders of Tasar industry. On the basis of need assessment of tasar industry in general and technological requirement in specific/gap area in particular, exclusive training programmes have been designed to provide hands-on-training to the farmers to improve their technical knowledge and operational skill in

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various state-of-the art technologies and techniques of tasar culture for higher cocoon productivity and silk quality. To hasten the diffusion of technologies in the field, it is imperative that the extension staff should possess good knowledge pertaining to recommended technologies (Ronald R. Sims 2006). Keeping this in view, the training programmes have been formulated to impart training to extension officials for improvement of their knowledge about various tasar culture technologies and other related aspects. These programmes are conducted by well-experienced, qualified, trained and able scientists of CTR & TI. Most of the programmes are fully sponsored by either CSB or funding agencies and the participants are provided free boarding & lodging and travelling facilities.

Training Division of Institute has the following prime objectives:-

- To generate human resource by imparting training through Post-Graduate Diploma and many short-term certificate and Adhoc courses in Tasar culture.
- To strengthen the institutional capabilities through continuing education and training programmes, and updating the techno-managerial skills of staff associated with Tasar industry.
- To design and implement the need-based formal and informal human resource training and development programmes.
- To provide hands-on-practice training to farmers and unemployed youths for helping them to become successful entrepreneur.

The following are the training programmes during the period of (September -13 to April -14) 2013-14 at CTR & TI, Ranchi.

I. Structured courses:

I. Post Graduate Diploma in Sericulture (NM)

II. Capsule Courses.

A. Training Programmes under Enterprise Promotion and Training Component

a)Management Development Programme (MDP) for Officer/ Officials.

1. Refresher Course in Tasar Culture Technology
2. Tasar Silk-worm seed production Technology
3. Tasar Silkworm Rearing and Disease Management Technology

b). Skill Upgradation programme (SUP) for farmers

1. Tasar Host plant maintenance, Silkworm Seed Production & Rearing Technology
2. Tasar Silkworm Seed Production Technology
3. Silk Reeling and Spinning Technology
4. Tasar Silkworm Rearing and Disease Management Technology

B. Skill Seeding and Upgradation of skills in Sericulture sector to meet the dynamic needs of the industry and increasing employability, income levels and quality of life.

1. Trainers training in tasar culture
2. Tasar silkworm rearing Technology
3. Tasar Silk Reeling and Spinning Technology
4. Entrepreneurship Development in tasar culture
5. Integrated Skill Development Scheme-ISDS

All the mentioned training programmes falls under the sector called 'Human Resource Development', which is one of the main sectors of Central Silk Board (CSB), a statutory body deals with the production of silk in India.

Human Resource Development (HRD) can be defined as "the framework for helping employees develop their personal and organizational skills, knowledge and abilities". HRD included such opportunities as employers training, employee career development, performance management and development, coaching, monitoring, succession planning, key employee identification, tuition assistance and organization development.

The focus of all aspects of Human Resource Development is on developing the most superior workforce so that the organization and individual employees can accomplish their work goals in service to customers. (Ronald R. Sims 2006). Coming to sericulture which is a skilled-based industries, trained man power is the backbone of it. This can be accomplishing only through Human resource development in general and training programme in particular. Through training programme trained man power can be boost out in sericulture which finally leads to the development of silk production in the country as a whole.

2. Objective

- To analyze the level of improvement in the different skills of participants.
- To study the effectiveness of the training programme.
- To assess the outcomes of the training programme.
- To find out the important of training programme.
- To study the mindset of the participants after the training programme.

3. Materials and Methods

As the topics and objectives suggest this study was done to determine or assess the impact of different training programme on the skills development of different participants who have undergone training in the Institute. The assessment was made through personal interaction with those participants, and this can be done by a method called, "questionnaire method or personal interaction method". This method is based on two steps i.e. preparing questionnaire and asking questions to the participants personally.

Therefore, based on the above cited method the first step of this case study was initially done by preparing questionnaire. Since, different training programmes were conducted in the Institute, the questionnaire prepared was based on the training programme attended by the participants. In the present case study, two different programmes had been assessed i.e. the post cocoon technology and the Seed Technology and Rearing Technology in Tasar Culture. According to these prograrmmes the questionnaires are being prepared.

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The second step is involves asking the prepared questions to some selected members among the participants. The members are selected randomly among them, so that a clear-cut idea about the knowledge level and mind-set of the participants can be drawn. In this present case study 25 members of three batches and one batch 29 members had been selected each batch depending on the number of participants from each training programme. The training programmes that had been assessed three batches from the post cocoon technology and one batch from the tasar Seed production Technology and Rearing technology.

Further in order to get the main impact of the training programme on the development of skills of the participants a two tier interview had been made to each batch. This is done by preparing two types of questionnaires for each programme viz. Pre-training questionnaire and post-training questionnaire as standard formats. The pre-training questionnaire was asked before the starting training programme and the post-training questionnaire were asked after the completion of the programme and then accordingly the assessment had been made.

The drawn data were analyzed in percentage form, where number of participants learned after training was divided by total number of participant assessed in to hundred to get the impact knowledge level was calculated using the following formula (Srinivasa *et al*., 2007and Scott B. Parry2005).

$$\text{Impact of knowledge level (\%)} = \frac{\text{Learned Post-training}}{\text{Total No. of Trainees assessed}} \times 100$$

4. Results

The case study results drawn from the participants of each batch were presented in the following tables. For each batch different table was formulated so as to assess them accordingly. Since, four batches had been assessed, therefore, four tables were formulated and comments were given accordingly.

Table 1: Methods Learned by the Participants from the Training Programme Post Cocoon Silk Reeling / Spinning Technology (PCT)
No. of Participants attended**:** 25
No. of Participants assessed**:** 25

Sl. No.	PARAMETERS		No. of Participants		Impact of knowledge level (%)
			Known pre-training	Learned post training	
1.	Sorting and grading of cocoons		5	20	80%
2.	Drying	Sun drying	9	16	64%
		Hot air drying	4	21	84%
3.	Cooking	Traditional method	8	17	80%
		Cooking with H_2O_2	3	22	88%
4.	Chemical used in cooking	Washing soda	4	21	84%
		H_2O_2	0	25	100%
5.	Reeling		6	19	76%
6.	Re-Reeling		7	18	72%
7.	Spinning (Katia, Ghicha)		5	20	80%

Comments
In this batch, almost all the participants are new to the post cocoon technology activities. Most of them do not have knowledge about Post Cocoon Technology activities like sorting and grading of cocoons, cooking, reeling, spinning, drying of cocoons etc., before the training programme. Therefore, after this training programme has got a great impact on their knowledge level, handling of machines and skill upgradation of tasar silk reeling and spinning and other activities viz; sorting and grading of cocoons, drying of cocoons, cooking, reeling and spinning, newly developed reeling cum twisting machine (CTR&TI) katia, ghicha etc., of post cocoon technologies

Table 2: Methods Learned by the Participants from the Training Programme Post Cocoon Silk Reeling / Spinning Technology (PCT)
No. of Participants attended: 25
No. of Participants assessed: 25

Sl. No.	PARAMETERS		No. of Participants		Impact of knowledge level (%)
			Known pre-training	Learned post training	
1.	Sorting and grading of cocoons		6	19	76%
2.	Drying	Sun drying	8	17	68%
		Hot air drying	5	20	80%
3.	Cooking	Traditional method	9	16	64%
		Cooking with H_2O_2	2	23	92%
4.	Chemical used in cooking	Washing soda	3	22	88%
		H_2O_2	0	25	100%
5.	Reeling		6	19	76%
6.	Re-Reeling		7	18	72%
7.	Spinning (Katia, Ghicha)		5	20	80%

Comments
Here some of the participants are practicing spinning and silk reeling technology at their houses, but some of them are new to silk reeling and spinning technology. Most of them do not have knowledge about the activities of post cocoon technology before the training programme but after the training programme it was observed that they have learned the skills and knowledge of silk reeling and spinning practically handled newly developed reeling cum twisting machine (CTR&TI Ranchi) and katia, ghicha etc., all machines operated their own. Therefore this training programme has got a positive impact on their skills and knowledge level improvement.

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Table 3: Methods Learned by the Participants from the Training Programme Post Cocoon Silk Reeling / Spinning Technology (PCT)
No. of Participants attended : 25
No. of Participants assessed : 25

Sl. No.	*Parameters*		*No. of Participants*		*Impact of knowledge level (%)*
			Known pre-training	*Learned post training*	
1.	Sorting and grading of cocoons		5	20	80%
2.	Drying	Sun drying	9	16	64%
		Hot air drying	4	21	84%
3.	Cooking	Traditional method	8	17	68%
		Cooking with H2O2	3	22	88%
4.	Chemical used in cooking	Washing soda	4	21	84%
		H2O2	0	25	100%
5.	Reeling		5	20	80%
6.	Re-Reeling		6	19	76%
7.	Spinning (Katia, Ghicha)		7	18	72%

Comments
Almost all the participants are new to post cocoon technology training programme. Though some of them have known before training it was confined only to crude method like sun drying of cocoons, chawarka reeling etc. Therefore, after this training programme they learned and improve their knowledge level in new technologies of sorting and grading of cocoons, drying of cocoons, cooking, reeling and spinning, newly developed reeling cum twisting machine (CTR&TI) katia, ghicha etc., has a great impact on their knowledge level, skill development and their livelihood.

Table 4: Methods Learned by the Participants from the Training Programme Seed Production & Rearing Technology in Tasar Culture
No. of Participants attended **:** 29
No. of Participants assessed **:** 29

Sl. No	*Parameters*	*No. of Participants*		*Impact of knowledge level (%)*
		Known pre-training	*Learned post training*	
1.	Selection of rearing site	9	20	68%
2.	Height of the plant use for rearing	7	22	75%
3.	Nursery Technique	5	24	82%
4.	Application of Manure	8	21	72%
5.	Application of Fertilizers	8	21	72%
6.	Type of Manure	4	25	86%
7.	Type of fertilizers	5	25	86%
8.	Pruning methods	10	19	65%
9.	Chawki garden maintenance	5	24	82%
10.	Silkworm eco- races	3	26	89%
11.	Brushing	5	24	82%
12.	Awareness about Disease	2	27	93%
13.	Use of LSM (Tasar Rakshak)	0	29	100%
14.	Disposal of disease worms	3	26	89%
15.	Methods of worms transfer	5	24	82%
16.	Care during moulting	4	25	86%
17.	Foliage to be left for spinning	0	29	100%
18.	Care during spinning	0	29	100%
19.	Checking of crawling down of worms	0	29	100%
20.	Maintenance of seeds	5	24	82%
21.	Protection from ants	3	26	89%
22.	Harvesting of cocoons	6	23	79%
23.	Grading of cocoons	8	21	72%
24.	Transportation of cocoons	2	27	98%
25.	Mother moth examination	0	29	100%
26.	Improved method of eggs washing and Surface sterilization	0	29	100%
27.	Indoor rearing of silkworm	0	29	100%
28.	Model grainage house	2	27%	98%
29.	Chemical use in disinfection of grainage House	5	24	82%
30.	Selection of cocoons	15	14	48%

Comments
Though some participants have been practicing rearing of tasar silkworm at their native places, few of them were new to rearing and seed technology. Even among those participants who have been practicing rearing at their native places, they know only traditional method but coming to this training in tasar culture in our Institute they were observed and learned practically and theoretically in different aspects like disinfection, selection of seed cocoons, preservation of seed cocoons and also new technologies of tasar rearing and seed production, mother moth examination, improved method of egg washing, disease and pest management to improve the quality and good yield. Therefore this training programme has a positive impact on their skill development and their knowledge level. Through this they can earn for their better livelihood and look after their families by increasing their annual income through Tasar culture

5. Discussion

This case study had been done in order to study the impact of training programs held in the institute. This Institute conducts different training course for farmers, reelers, weavers, officers, etc. Most of these participants are sponsored by the Central or State government. Base on the study made, the training Division of the Institute played a main role on this issue and also others division of the Institute had played their own subordinate role in order to make these training program a successful one. The training course on which the study was made are Post Cocoon/Reeling & Spinning Technology which is mainly for women and Rearing and Seed Production Technology which is mainly for male participants. The participants of all these programs belong to the tribal families of the State in which most of them work for their daily bread. The annual income of these families ranges from Rs. 15,000 –Rs. 40,000 which is far less than the middle men. These people practice both agriculture and sericulture in order to fulfill their livelihood.

As we know Sericulture is a skill-based, in order to earn more or boost out the product and income, special training is much needed for these group of people. These training had been conducted in this Institute and other training centre of the State, so as to enhance the living standard of these tribal people who are the Tasar culture practitioner in the State.

The major constraints faced by these groups of people is that most of them are not literates and some of them belong to the intermediate level while others are under metric and

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some of them are illiterate. Therefore, these kinds of Training Program are very much useful for their knowledge and skill development through which they can practice at their field and at home or at any common facilities centers (CFCs). These Training program gives a lot of knowledge and help them to develop their skill in their particular field. Through all these knowledge and skill they can now go and perform better in their own particular area. (scott B parry, 2005, Donald L. Kirtkpatrick and James D. Kirtkpatrick. 2006, 2007.

In the present case study, the selected participants shows their willingness towards the programmes and also to Tasar Culture. Through this study it can be clearly observed and analyzed that training programme has uplifted their knowledge level and skills to some extent. Some of them, who are already been practicing sericulture, have gained more skills and knowledge from these programs which has make them master in their field. The participants who are totally new to Tasar Culture had been an opportunity to realized another path in their life through which they can earn their living through Tasar Culture which is quite comfortable and scope-full. These participants though they are new to this culture, they shows their interest in learning and their eagerness to practice this tasar culture in their own.

Therefore, at last but not the least, in order to improve the living standard of the tribal tasar growers and women, more and more such training programmes has to be conducted in more centers so as to reach every nook and corner of the State. Recent and new technology can also be tried and transfer to the farmers through these programmes. These, type training programmes can be frequently conducted from time to time and demonstrate practically in the field so as to gain more impact.

6. Conclusion

In the present case study a total four batches of 104 participants were assessed the different training programmes. Based on the result drawn it can be concluded that these training has got a great impact on the enhancement of skills and knowledge level of the participants. All the assessed participants are now fully equipped and confident that they can undertake tasar silkworm rearing, seed production and reeling/Spinning technologies on their own, which in turn will serve them as a self-employment. By doing so, they can earn their livelihood and look after their family by increasing their annual income through Tasar culture. On the other hand, this will help in expanding the Tasar industry in Jharkhand in particular and other tasar growing states in India as a whole. Ultimately, this will help the Institute in achieving one of its objective i.e. Human Resource Developments (HRD) which is the need of the hour in Tasar culture.

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