

## INTERNATIONAL JOURNAL OF TROPICAL AGRICULTURE

ISSN : 0254-8755

available at <http://www.serialsjournals.com>

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Volume 37 • Numbers 3 • 2019

### Development of Sericulture Farming in Marathwada Region and Economic Viability of Sericulture Farming

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**Abstract:** As per census 2011, 68.85 percent populations of India were living in rural area. Agriculture is main occupation of rural people. Most of the agricultural land is dependent on monsoons. Due to long dry spell within two rains fall in most of the years, there is an uncertainty of agricultural production. Whenever there is bumper production, the prices of agriculture commodity falls. In recent period the economical viability of agricultural is main problem. In 2017 farmers of many states of India announced strike. If farmers receive continuous and certain income from agriculture, they will stay with farming in future.

There is need if thinking on various sources which gives certain income to farmers. To generate continues income, farmers have started dairy farming, poultry farming, goat and sheep farming. Up to the harvesting of Kharif crops, there is need of some certain income source in the farmers hand to fulfill their daily needs. In this back ground various farmers in Marathwada region started Sericulture farming where they producing Cocoons.

In Maharashtra state there are 9783 farmers has planted Mulberry plants for Cocoon production up to 2018. From these, 48 percent farmers are from Marathwada region. In Maharashtra State mulberry plant has been planted on 10663.58 acre area up to 2017-18 for Cocoon production. From these area 47 percent area is only in Marathwada region. In 2017-2018 Sericulture farmers of Maharashtra State has produced 16, 36,445 k. g. Cocoon. In this production share Marathwada region is 59 percent. It means that the share of Marathwada region in total development of Sericulture farming in Maharashtra State is near about 50 percent.

In this back ground, the present study focus on the development of Sericulture Farming in various districts of Marathwada and profitability of sericulture farming. The present study is depended on primary and secondary data. The primary data has collected through the schedules canvassed among 20 Sericulture

farmers of Dongargaon (Kawada) village of Aurangabad districts of Marathwada region. In this village Sericulture farming started by 5 farmers in 2006; in 2018 there are 80 farmers are doing Sericulture farming. Now this village is famous for Sericulture farming in the Aurangabad district. Secondary data has collected through published reports of Maharashtra, Central Silk Board.

Up to 2018, 4723 farmers of 1009 villages of Marathwada region have planted Mulberry plants for Cocoon production in Sericulture farming. Area curved under Sericulture farming in Marathwada region is 5030 acre up to 2018. Beed, Osmanbad, Jalna and Aurangabad districts are leading Districts in Marathwada region for the land curved under Mulberry plants.

It is fiend out in the sample survey carried out by researcher that near about 90 percent of the Sericulture farmers getting benefit. It is fiend out in the field survey is that 35 percent farmers has construct new house or room of house or construct shelter for their animal after adoption of sericulture farming. In the field survey, 55 percent sericulture farmers have done long term development in their field. In the field survey area 25 percent farmers purchased durable goods after adoption of sericulture farming. In the field survey 50 percent sericulture farmers Children are going to private school by paying education fees, 45 percent farmers children are taking higher education.

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## **INTRODUCTION**

As per census 2011, 68.85 percent populations of India were living in rural areas. Agriculture is main occupation of rural people. Most of the agricultural land is depends on monsoons .Due to long dry spell within two rains fall in most of the years there is uncertainties of agricultural production. Whenever there is bumper production, the prices of agriculture commodity falls. In recent period the economic viability of agricultural is main problem. In month of June, 2017 farmers of many states of India announced strike. If farmers receive continuous and certain income from agriculture, they will stay in farming occupation in future.

In Kharif season farmers are sowings seeds in the month of June or July. Some crops of Kharif season are harvests in October month. Up to the harvesting of Kharif crops, there is need of some certain income source in the farmers hand to fulfill their needs. There is need if thinking about various sources which gives certain income to farmers. To generate continues income farmers have started dairy farming, poultry farming, goat and sheep farming, cultivating vegetables, fruits, flowers. In

this back ground various farmers in Marathwada region started Sericulture farming where they producing Cocoons. This is known as Sericulture farming.

In Maharashtra state 9783 farmers has planted Mulberry plants for Cocoon production up to 2018. From these 9783 farmers, 48 percent farmers are from Marathwada region. In Maharashtra State mulberry plant has been planted on 10663.58 acre area up to March 2018, for Cocoon production. From this 10663.58 acre area, 47 percent area is only in Marathwada region.

## **SIGNIFICANCE OF STUDY**

Sericulture is an important agro industry in Indian economy. India occupies a predominant position in the world and it is the second largest producer of silk after China.

Now days it is widely discussed that agriculture is in loss. Now the question is that how it will become profitable? In this background there is necessity to find out, is the Sericulture farming helpful to increase farmers income? Is the Sericulture farming is helpful to solve the uncertainty of the farmers' income? It

is also interesting to study, Does the Sericulture farming successes to maintain farmers in Agricultural sector? Drought prone regions like Marathwada in Maharashtra, where there is uncertainty of agricultural production; It is important to study that, Is the Sericulture farming is Profitable and is it gives certain income to farmers?

### OBJECTIVES

There are following main objectives of this research paper:

1. To study the development of Sericulture farming in Marathwada region of Maharashtra State
2. To study the economic viability of Sericulture farming.
3. To study the effect of Sericulture farming on farmers economic condition.

### RESEARCH METHODOLOGY

The present research paper is depends on primary and secondary data. To find out the profitability of Sericulture farming survey has been carried out in the Dongrgaon (Kawad) village of Phulambri taluka, Aurangabad district of Marathwada region . In this village Sericulture farming started by 5 farmers in 2006; now there are 80 farmers are doing Sericulture farming in 2018. Now this village is famous for Sericulture farming in the Aurangabad district. The primary data has collected through the schedules canvassed among 20 Sericulture farmers of Dongargaon (Kawada). Data has been collected in August 2017 and concerned to 2016-17.

Secondary data has collected from Aurangabad Divisional office of Sericulture Department, Government of Maharashtra. Secondary data has used to explain the Development of Sericulture farming in Marathwada region.

### RESULT AND DISCUSSION

#### Region wise Mulberry Plantation in Maharashtra

**Table 1**  
**Region wise Mulberry Plantation in Maharashtra (up to 2018)**

Region	No. of Village	Numbers of Farmers				Mulberry Plantation in Acre			
		New	Old	Total	% to total	New	old	Total	% to total
Amravati	629	786	877	1663	17	806.58	1087.00	1893.58	18
Aurangabad	1009	2097	2626	4723	48	2136.05	2894.25	5030.30	47
Nagpur	367	358	320	678	7	375.00	474.25	849.25	8
Pune	973	1210	1509	2719	28	1187.45	1703.00	2890.45	27
Grand Total	2978	4451	5332	9783	100	4505.08	6158.50	10663.58	100

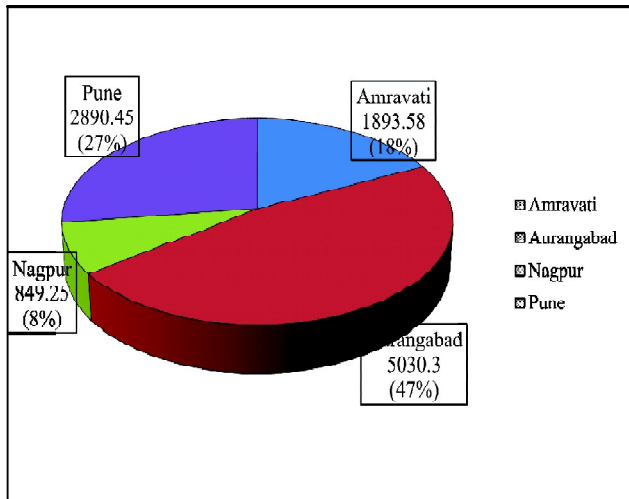
Source: Government of Maharashtra, Textile Department, Sericulture Monitoring System. [https://mahasilk.maharashtra.gov.in./Report/Report of Old and New Plant.aspx](https://mahasilk.maharashtra.gov.in./Report/Report%20of%20Old%20and%20New%20Plant.aspx), Date: 1/02/2018

Mulberry plants leaves are used as food of Silkworms. Table no. 01 shows that, 9783 farmers planted Mulberry plants for cocoon production in

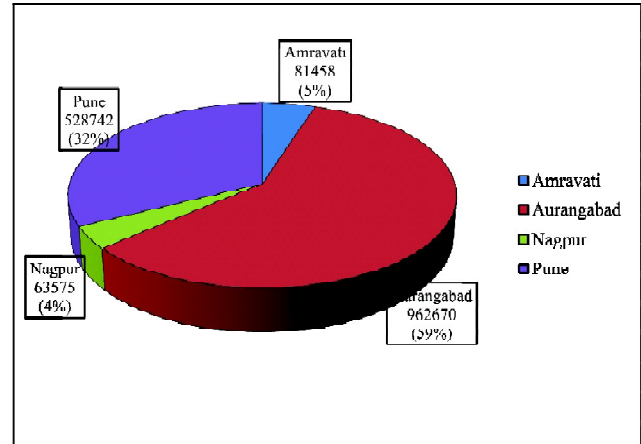
Maharashtra State up to 2018. From these 9783 farmers, 48 percent farmers are from Aurangabad division (Marathwada region) and rest 52 percent

farmers from Pune division (28 %), Amravati division (17%)and Nagpur division (07%) of Maharashtra state.

In the Maharashtra state mulberry plant has been planted on 10663.58 acres area up to 2018 for cocoon production. From this 10663.58 acres area, 47 percent area is only in Aurangabad division and fallowed by Pune Division (27%), Amravati Division (18%), Nagpur Division (08%).



**Graph 1: Region wise Mulberry Plantation in Maharashtra (up to 2018) (Area in Acre)**



**Graph 2: Region wise Cocoon Production in Maharashtra 2017-2018 (Production - in KG)**

Cocoon is the first step of Silk production. The intact cocoons are boiled, killing the silkworm pupa. The silk is obtained by brushing the undamaged cocoon to find the outside ends of the filament. The silk filaments are then wound on a reel. One cocoon contains approximately 1,000 yards of silk filament. The silk at this stage is known as raw silk. One thread comprises up to 48 individual silk filaments.

In 2017-2018 Sericulture farmers of Maharashtra State has produced 16, 36,445k. g. Cocoon. In this production share Marathwada region is 59 percent, followed by Pune Region (32%), Amravati region (5%), Nagpur region (4%).

### Region wise Cocoon Production in Maharashtra

**Table 2  
Region wise Cocoon Production in Maharashtra 2017-2018**

Sr. No	Region	Cocoon Production (In KG)	% to grant total
1	Amravati	81458	5
2	Aurangabad	962670	59
3	Nagpur	63575	4
4	Pune	528742	32
	Grand Total	16,36,445.00	100

Source: Government of Maharashtra, Textile Department, Sericulture Monitoring System. [https://mahasilk.maharashtra.gov.in/Report/ Report of Old and New Plant.aspx.](https://mahasilk.maharashtra.gov.in/Report/Report%20of%20Old%20and%20New%20Plant.aspx), Date: 1/02/2018

### Mulberry Plantation in Marathwada Region

Mulberry plant has been planted in 1009 villages in Marathwada region up to 2018. From these 1009 villages, 16.95 percent villages are in Jalna District, 16.45 percent villages are in Nanded Districts, 16.06 percent villages are in Beed Districts and fallowed by Latur (11.79 %), Osmanabad (11.50%), Prabhani (11.30%), Aurangabad (10.41%) and Hingoli (5.55 %) districts of Marathwada Region. These figures shows that Jalna, Nanded and Beed districts are leading Districts in Marathwada region for the number of villages where the Mulberry plants has been planted for Sericulture farming.

**Table 3**  
**Mulberry Plantation in Marathwada up to 2018**

District	Villages		Numbers of Farmers				Mulberry Plantation in Acre			
	No. of Village	Percent	New	Old	Total	% to total	New	old	Total	% to total
Aurangabad	105	10.41	287	345	632	13.38	300.4	369.00	669.4	13.31
Beed	162	16.06	518	494	1012	21.43	521.10	598.00	1119.1	22.25
Hingoli	56	5.55	189	106	295	6.25	189.50	101.00	290.5	5.78
Jalna	171	16.95	151	561	712	15.08	156.51	566.00	722.51	14.36
Latur	119	11.79	414	224	638	13.51	417.79	238.00	655.79	13.04
Nanded	166	16.45	119	176	295	6.25	124.50	215.00	339.5	6.75
Osmanabad	116	11.50	230	434	664	14.06	231.00	502.50	733.5	14.58
Parbhani	114	11.30	189	286	475	10.06	195.25	304.75	500	9.94
Marathwada	1009	100.0	2097	2626	4723	100.00	2136.05	2894.25	5030.3	100.0

Source: Government of Maharashtra, Textile Department, Sericulture Monitoring System. [https://mabasilk.maharashtra.gov.in./Report/Report of Old and New Plant.aspx](https://mabasilk.maharashtra.gov.in./Report/Report%20of%20Old%20and%20New%20Plant.aspx), Date: 1/02/2018

Up to 2018, 4723 farmers have been planted Mulberry plants in Marathwada region for Cocoon production in Sericulture farming. From these 4723 farmers, 21.43 percent in Beed district, 15.08 percent are in Jalna district, 14.06 percent are in Osmanabad district and followed by Latur (13.51%), Aurangabad (13.38%), Parbhani (10.06%), Hingoli and Nanded districts (6.25 % percent in each district). These figures shows that Beed, Jalna, Osmanabad, Latur and Aurangabad districts are leading Districts in Marathwada region for the numbers of farmers who have planted Mulberry plants in their field for Cocoon production.

Total 5030 acre lands have been utilized for the Mulberry plantation in Marathwada region up to 2018. From this 5030 acre area, 22.25 percent is in Beed District, 14.58 percent in Osmanabad district, 14.36 percent in Jalna District, 13.31 percent in Aurangabad District and followed by Latur (13.04 %), Parbhani (9.94 %), Nanded (6.75 %) and Hingoli (5.78 %) districts of Marathwada region. These figure shows that Beed, Osmanabad, Jalna and Aurangabad districts are leading Districts in Marathwada region for the land utilized for Mulberry plantation .

### Cocoon Production in Marathwada Region

**Table 04**  
**Cocoon Production in Marathwada (2017-18)**

Sr. No	Districts	Production	% to total
1	Aurangabad	72454	7.53
2	Beed	275871	28.66
3	Hingoli	54400	5.65
4	Jalna	212248	22.05
5	Latur	46609.00	4.84
6	Nanded	77649	8.07
7	Osmanabad	154253	16.02
8	Parbhani	69186	7.19
	Marathwada	962670	100.00

Source: Government of Maharashtra, Textile Department, Sericulture Monitoring System. [https://mabasilk.maharashtra.gov.in./Report/ Report of Old and New Plant.aspx](https://mabasilk.maharashtra.gov.in./Report/Report%20of%20Old%20and%20New%20Plant.aspx), Date: 1/02/2018

Sericulture farmers of Marathwada region have produced 9 lakh 62 thousands 670 k. g. Cocoon in 2017- 2018. In this production Beed (28.66 percent), Jalna (22.05 percent), Osmanabad (16.02 percent) are leading districts, followed by Nanded (8.07

percent), Aurangabad (7.53 percent), Parbhani (7.19 percent), Hingoli (5.65 percent), and Latur (4.84 percent) districts.

## II) Economic Viability of Sericulture Farming

This part of research paper is dependent on primary data analysis.

**Construction of Shade Cost:** Mulberry plants leaves are feeds to Silkworms in a shade. Shade is constructs with the help cement, breaks, iron angles and tens are used for the roof of Shade. To constructs the 20 feet by 50 feet shade minimum Rs. 1 lakh cost incurred. So the cost on this item is ranged between Rs 1 to 3 lakh in the study area. Government has given Rs. 87500/- subsidy to construct the shade. After deducting the subsidy for shade the cost on this item is ranged Rs. 12500 to Rs. 2 lakh 12 thousand 500 rupees. In an average the cost on this item was found 89 thousands rupees in the study area.

**Preparation of land:** Land preparation is important thing for plantation of Mulberry plant. The land has to be ploughed twice and harrowed once and rotating by Rotavator. So the per acre cost on this item was found to have ranged between Rs. 1750 to Rs. 5000 and averaged Rs. 3302 in the study area.

**Plantation Cost:** Mulberry plants sticks are used to develop new Mulberry plants. In the initial stage of Sericulture farming in Dongargaon (Kawad) village, farmers purchased the Mulberry plants sticks from Baramati, Dist. Pune. In the later stage farmers are getting this plants sticks in their own village. There is need of labour for planting these sticks in the field. So the per acre cost on this item was ranged between Rs. 2500 to Rs. 20000 and averaged Rs.7560 in the study area.

**Total fixed cost:** Construction of shade, preparation of land, plantation of Mulberry plants these are the fixed cost items in Sericulture farming.

Cost on this items called fixed cost. In the study area total fixed cost was found to have ranged Rs. 24200 to 218800 and averagely Rs. 99862.

If life of shade is assumed 20 years and the fixed cost has been spread over 20 years the average fixed cost was found to have ranged between Rs. 1210 to 10940, and averaged Rs. 4993.

**Drip Installation cost:** In the surveyed village 90 percent farmers are preferred drip irrigation method to irrigate the Mulberry plants. So the per acre cost on this item was found to have ranged between Rs. 10000 to 55000 and averaged Rs. 30222 in the study area. Durability of the drip set's is depends on its quality, ranged 3 to 7 years in the study area. The per acre cost on drip installation has spread in various years as per its durability. Yearly drip installation cost was ranged between Rs. 3333 to 7857 in the study area and averaged Rs. 6102.

**Inter-season Cultivation Cost:** Inter-season cultivation is needed for removing the unneeded grass; it's also helpful for the soil health and growth of Mulberry plants. In the field area farmers are using human power and Bull power for Inter season cultivation. So the per acre cost on this item was found to have ranged between Rs. 3600 to 18400 and averaged Rs.10702 in the study area.

**Manures and Fertilizer Cost:** In the study area 95 percent farmers used manures and fertilizer for to maintain the growth of Mulberry plants. So the per acre cost on this item was found to have ranged between Rs. 4500 to Rs.28000 and averaged Rs.15339.

**Mulberry Plants cutting Cost:** After completing leaves feeding of Mulberry plants to the Silkworms, farmers are cuts the plants from shots, by keeping some distance from soil. New branches are develops within 25 days after cutting. There is need of labour and some tools for this work. So the per acre cost on this item was found to have ranged between Rs. 2400 to Rs.7500 and

averaged Rs.4190 in the study area. The cutting cost is depends on how many lots have taken in a year by farmers.

**Shade cleaning and disinfecting cost:** After taking one lot of Cocoon production farmers have to clean and disinfested the shade by using various cleaning powders and pesticides. So the per acre cost on this item was found to have ranged between Rs. 3000 to Rs. 20160 and average cost on this item was Rs. 9845 in the study area.

**Chaki Center Cost:** Silkworms bread their initial stage in Chaki Center. Chaki center also called Silkworm breeding center. Breeder is charges Rs. 1000, for per 100 DFL (Disease free Laying) rearing. In the one lot farmers purchased 100 to 200 DFL. According to water availability for irrigation of Mulberry plants farmers take 2 to 4 lots of cocoon production in a year. So the cost on this item was found to have ranged between Rs. 4800 to Rs. 14400 and average cost on this item was Rs. 8430 in the study area.

**Feeding Cost:** Silkworm is growing in five molts. There is need to feed the Mulberry plants leaves to the Silkworm. Farmers are feeding them leaves in the shade. Silkworms are lying on the beds and leaves are spreads on the beds. Feeding tender leaves to younger age worms is essential. As the larval growth advances the mature leaves can be feed. Maximum leaves are consumed during in the 5<sup>th</sup> steps of their development only. So the cost on this item was found to have ranged between Rs. 21000 to 75000 and average cost on this item was Rs. 37995 in the study area.

**Covering Cost:** The matured silkworm spins the outer protective covering called cocoon and remains in dormant stage inside as pupa. When the Silkworm started to spin the cocoon, plastic net (Chandrika) and News papers are lying on beds. It is found in the study area is that, some farmers have gets these plastics net by the Sericulture department in the form of subsidy. Some farmers have purchased

nets by their own money. Some farmers are using other farmers' nets, if their nets are free. So the cost on this item was found to have ranged between Rs. 750 to Rs. 3800 and average cost on this item was Rs. 1777 in the study area.

### **Harvesting of cocoons: (Separating Cocoon from Net)**

Harvesting of cocoons is done on the fifth day of spinning. Cocoons are harvested generally with hand. In this step cocoons are separated from plastic nets. There is need of labour for this process. So the cost on this item was found to have ranged between Rs. 1500 to Rs.9000 and average cost on this item was Rs. 4607 in the study area.

**Transportation Cost:** Cocoons have to sale within fifteen days after their preparation. The cocoon prices are higher in Karnataka state than Maharashtra State. So the farmers in the study area are preferred to sale their cocoon in the Ramnagar market, near Bangalore in Karnataka State. So the farmers have to spend money for the transportation of cocoon and their own travelling. So the cost on this item was found to have ranged between Rs. 8200 to Rs.36000 and average cost on this item was Rs. 17643 in the study area.

**Total Cost:** Per acre per year total cost of Cocoon production was found to have ranged between Rs. 81795 to 206085 and averaged Rs. 1, 22,293, in the study area.

### **Net Cost: (Total Cost – Wage Subsidy)**

Sericulture farmers' couples are getting Rs. 362 per day wage subsidy, in three or four months in the year by Government. If the received wage subsidy by farmers, subtracts from the total cost, we gate net cost of Cocoon production. So the net cost was found to have ranged between Rs. 53831 to Rs.177125 and average net cost was Rs. 92722 in the study area.

**Table 5**  
**Relative Importance of Various Cost of Cocoon Production**

Sr. No.	Various Cost	Minimum	Maximum	Average	Percentage to total
1	Construction of Shade	100000	300000	176500	
2	Net Shade Exp	12500	212500	89000	
3	Preparation of Land	1750	5000	3302.5	
4	plantation Cost	2500	20000	7560	
5	Total Fixed Cost	24200	218800	99862.5	
6	Average Fixed Cost	1210	10940	4993.12	4.08
7	Drip Installation Cost	3333	7857	6102	4.99
8	Inter season Cultivation Cost	3600	18400	10702.5	8.75
9	Plants cutting Cost	4500	28000	15339	12.54
10	Shade Cleaning Cost	3000	20160	9845	8.05
11	Chaki Center Cost	4800	14400	8430	6.89
12	feeding Cost	21000	75000	37995	31.07
13	Covering Cost	750	3800	1777.5	1.45
14	Harvesting Of Cocoon	1500	9000	4607.5	3.77
15	Transportation Cost	8200	36000	17643.35	14.43
16	Total Cost	81795	206085	122293	100.00
17	Net Cost	53831	177125	92722.48	

Source: Field Survey

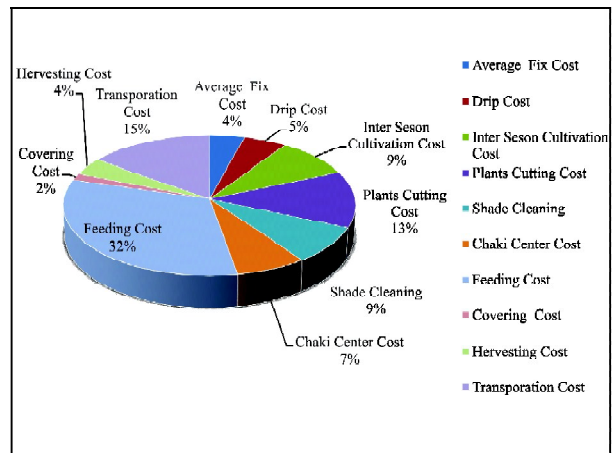
### Relative Importance of Various Cost of Cocoon Production

Table 5 shows that, Leaves feeding Cost (31.07%), Transportation Cost (14.43%), and Plants Cutting cost (12.54%), Inter Season Cultivation cost (8.75%), Shade Cleaning Cost (8.05 %) are the major cost in the production of Cocoon in the field area. Although the shade construction cost is higher in the absolute term but its spreads over 20 years.

### Total production and Income

In the study area Sericulture farmers are able to produced Cocoon production ranged between 140 k. g. to 1125 k. g. in 2016-2017 year by using one acre of land and averagely they produced 465.77 k. g Cocoon.

The surveyed farmers had sold their Cocoon output at different prices ranging from Rs. 225 to



**Graph 3: Relative Importance of Various Cost of Cocoon Production**

Rs. 473.50 for per k. g. and averagely they sold their Cocoon at Rs. 368.77 for per k. g.

Total income from Sericulture farming is not only depends on output of Cocoon but also on



market price of Cocoon. The study indicates that Sericulture farmers gross income is ranging between Rs. 57680 to 5, 80,037 and averagely they earned Rs. 177284 from cocoon production.

### **Net Income: (Total income- Total expenditure)**

The study indicates that out of total Sericulture farmers 90 percent were got profit from Cocoon production. In the study area the per acre profit from Sericulture farming was found to have ranged Rs.- 34156 to Rs. 4,14,222 and average net profit was 84,562 in the study area.

### **III) Effect Sericulture farming, on farmers Economic Condition:**

Effect of sericulture farming on farmers' economic condition has been fiend out through various indicators.

#### **Purchasing of Land or Plot**

In the field survey it is fiend out that 10 percent Sericulture farmers have purchased land or plot after adoption of Sericulture farming.

#### **Construction of New House or Room**

To find out the economic effect of Sericulture farming on farmers economic condition, the question asked in the field survey to the sericulture farmers is that," Have you construct new house or some part of house after adoption of Sericulture farming? It is fiend out in the field survey is that 35 percent farmers has construct new house or room of house or construct shelter for their animal after adoption of sericulture farming.

#### **Long Term Development in the field**

Economic effect of Sericulture farming on farmers economic condition also clarify through long term development has been done farmers in their field. Digging of well, bore well, pipe line for irrigation,

leveling of land, fitting of drip irrigation set etc. are included in the long term development of land.

In the field survey, 55 percent sericulture farmers have done long term development in their field. From that 30 percent farmers digging well or taking bore well in their field, 20 percent farmers has done pipe line, 10 percent farmers purchase drip irrigation set and 20 percent farmers level their land after adoption of sericulture farming.

#### **Purchasing of New Vehicle**

In the field survey it is fiend out that 20 percent farmers purchased Motorcycle after adoption of Sericulture farming. This observation also supports to clarify the positive effect of Sericulture farming on farmers economic condition.

#### **Purchase of Durable Goods**

Economic Effect of Sericulture farming on farmers' economic condition also measure by their purchase and use of durable goods after adoption of sericulture farming. In the field survey area 25 percent farmers purchased durable goods after adoption of sericulture farming. In the field survey 15 percent sericulture farmers purchased Television set and cooler. 5 percent farmers purchased cylinders with LP Gas and 5 percent farmers purchased farmers other durable goods.

#### **Education Status of Farmers Children's**

Improvement in the economics conditions of Sericulture farmers has been cleared indicates through their Children's Schooling. In the field survey 50 percent sericulture farmers Children are going to private school by paying education fees; 45percent farmers children are taking higher education, from that 15 percent are taking higher technical education. Only 5 percent farmer's children are going to Government Schools.

### **Free from Loan Debt Trap**

In the field survey, it is observed that 10 percent Sericulture farmers responded that they are able to free from Debt Trap, through income generated by Sericulture farming.

### **FINDINGS**

1. In Maharashtra state there are 9783 farmers has planted Mulberry plants for Cocoon production up to 2018. From these 48 percent farmers are in Marathwada region.
2. In Maharashtra State mulberry plant has been planted on 10663.58 acre area up to 2017-18 for Cocoon production. From this area 47 percent area is only in Marathwada region.
3. In 2017-2018 Sericulture farmers of Maharashtra State has produced 16,36,445 k. g. Cocoon. In this production share Marathwada region is 59 percent.  
  
Above three conclusion shows that the Share of Marathwada region in total development of Sericulture farming in Maharashtra State is near about 50 percent.
4. Up to 2018, 1009 village farmers of Marathwada region are preferred Sericulture farming and they Mulberry. Jalna, Nanded and Beed districts are leading Districts in Marathwada region for the number of villages where the Mulberry plants has been planted for Sericulture Farming.
5. Up to 2018, 4723 farmers have planted Mulberry plants in Marathwada region for Cocoon production in Sericulture farming. From these 4723 farmers 21.43 percent are in Beed district, 15.08 percent are in Jalna District, 14.06 percent are in Osmanabad district and followed by Latur (13.51%), Aurangabad (13.38%), Parbhani (10.06%), Hingoli and Nanded districts (6.25 % percent in each).
6. Area curved under Sericulture farming in Marathwada region is 5030 acre up to 2018. From this area 22.25percent areas in Beed District, 14.58 percent in Osmanabad district, 14.36 percent in Jalna District, 13.31 percent in Aurangabad District, 13.04 percent in Latur District, followed by Parbhani (9.94 %), Hingoli (6.75 %) and Nanded District (5.78 %). The figure shows that Beed, Osmanbad, Jalna and Aurangabad districts are leading Districts in Marathwada region for the land curved under Mulberry plants.
7. It is fiend in the study that Leaves feeding Cost (31.07%), Transportation Cost (14.43%), Plants Cutting cost (12.54%), inter Season Cultivation cost (8.75%), Shade Cleaning Cost (8.05 %) are the major cost in the production of Cocoon in the field area. Although the shade construction cost is higher in the absolute term but its spreads over 20 years.
8. Sericulture farmers received subsidy under MGNREGP and some farmers received some equipment's for Sericulture farming under the previous scheme.
9. It is found in study that Sericulture farmers are able to produced cocoon production ranged between 225 k. g to 1125 k.g in 2016-2017 year and averaged they produced 465 k. g. in acre.
10. It is found in study that 90 percent Sericulture farmers were get profit from cocoon production. Averagely they have earned Rs. 87470 in acre of land under Sericulture farming.
11. It is fiend out in the field survey is that 35 percent farmers has construct new house or room of house or construct shelter for their animal after adoption of sericulture farming.
12. In the field survey, 55 percent sericulture farmers have done long term development in their field.

13. In the field survey it is found out that 20 percent farmers purchased Motorcycle after adoption of Sericulture farming.
14. In the field survey area 25 percent farmers purchased durable goods after adoption of sericulture farming.
15. In the field survey 50 percent sericulture farmers Children are going to private school by paying education fees, 45 percent farmers children are taking higher education.

### **SUGGESTION**

1. Farmers are selling their cocoon in Karnataka state so they have to bear more travelling cost. So there is need of developed cocoon market in the Marathwada region.
2. Due to delay in the receiving the Government subsidy for Shade construction, farmers have to have to investment in the Construction of shade. So there is need of fast track mechanism for delivered the subsidy.
3. There is need of cocoon processing unit in the Marathwada region.

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