

SERICULTURE IN TURKEY: CURRENT SITUATION, CONSTRAINTS AND POLICIES

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MATERIAL

- The main material of the study is the primary data as well as the secondary data.
- Primary data collected from face to face surveys done with sericulture breeders
- Secondary data, consists of statistics and report of Official Authorities

Sericulture in Turkey is;

- performed where the agricultural lands are not suitable for other agricultural activities,
- done in mountainous, limited, unproductive and slanting agricultural areas,
- performed in small scale farms
- providing alternative source for livelihood income
- performed by families with lower income scales
- economically performed only in spring

Sericulture in Turkey is;

- Employing family labor in 1709 households in 2014
- Still an economical activity for the producers who have lower incomes
- 14-fold added value is provided as a result of transformation of fresh cocoon into silk carpet



- Turkey is one of the few countries that produce silkworm eggs free from polarin disease (sanitary) and has its own genetic resources, and meet the big part of the EU's need of silkworm eggs.
- Moreover sericulture has an important place for Turkey in terms of protecting cultural heritage and genetic resources.



FRESH COCOON PRODUCTION

In 2014, fresh cocoon production is made in 37 of the 81 provinces of Turkey:

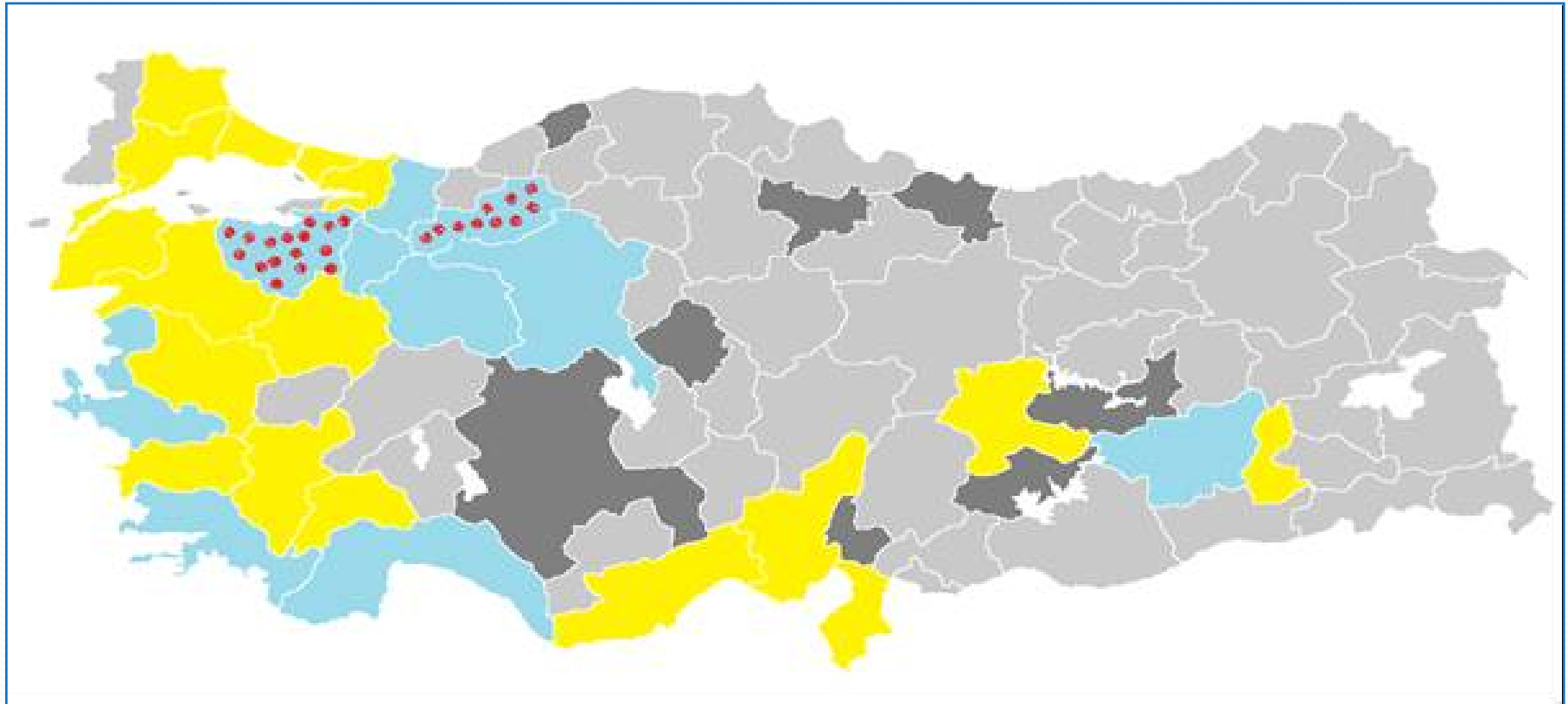
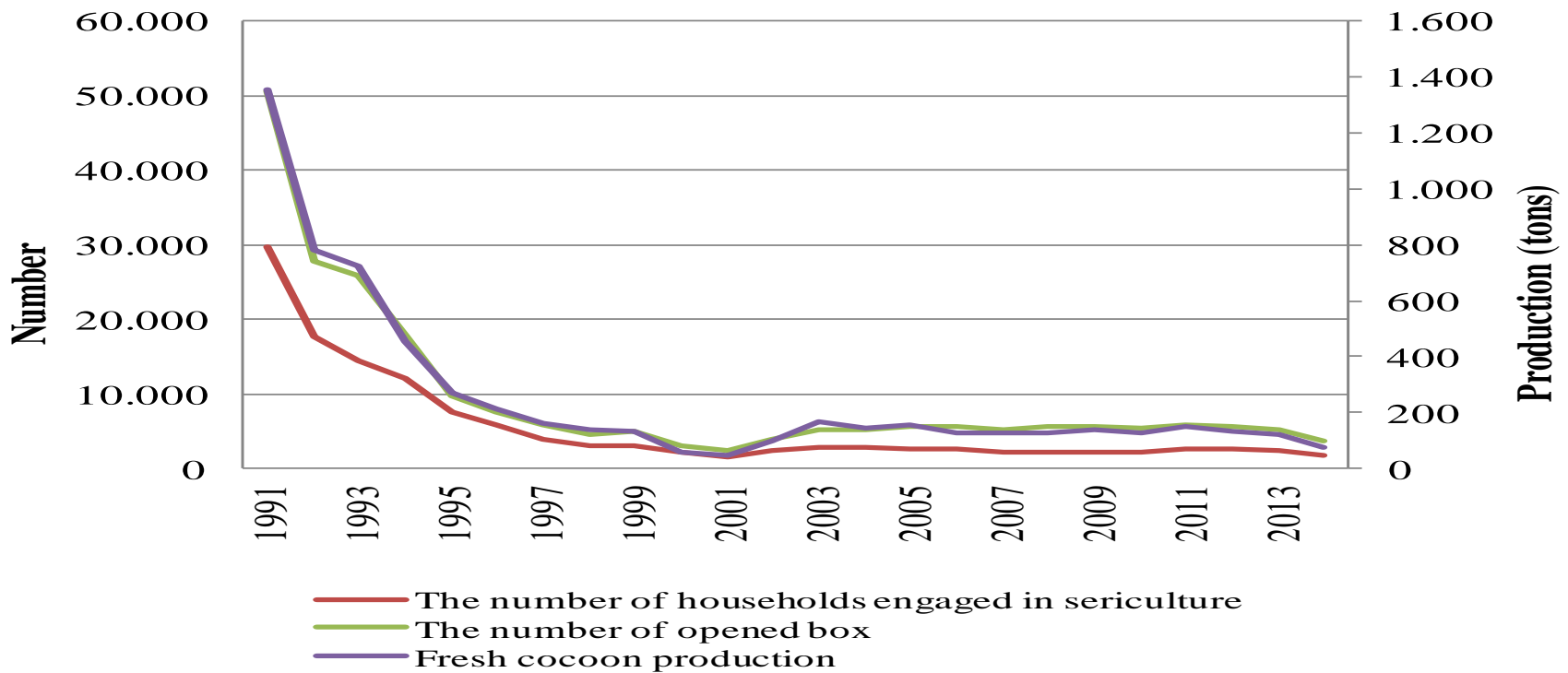


Figure 1. Distribution by province of fresh cocoon production in Turkey

p.s.: Blue: 97% of fresh cocoon production, Yellow: 3%, Dark Grey: the provinces that are unproductive, Red points: the provinces that make 100% of the breeding production

Yillar	Households (number)	Opened box (number)	Production (tons)
1991	29.689	50.623	1.353
↓	↓ -94%	↓ -93%	↓ -94%
2014	1.709	3.625	77,5



The main factors that leads to significant decrease on production and number of households involved in sericulture :

- decreased prices in domestic markets due to the lower import prices
- The more revenue of alternative agricultural activities than that of sericulture
- The structural problems of the farms
- The changes and interactions in social structure
- The excessive use of agricultural chemicals
- Industrialization
- Urbanization and immigration

- Most of the cocoon produced in Turkey processed domestically and silk is manufactured
- Raw silk thread production began in the facility that was established by Kozabirlik (Cocoon Union) in Eskişehir in 2009 in order to draw filaments from silkworm cocoons.
- However, the production was ceased for a while in February of 2012 because of the decreasing prices towards the end of 2011
- Moreover, to prevent the losses stemmed from dehiscence in 2008, a dehiscence facility was established to disseminate the dehiscent bugs to the producers in the region



- The only organization in sericulture is Cocoon Union (Kozabirlik) that is active in sericulture and marketing the products.
- Kozabirlik is an Agricultural Sales Cooperative and the sole purchaser (monopsony) of the fresh cocoons produced domestically. from Cocoon Union.

After 1995, with the private sector withdrawing from the market, Kozabirlik purchasing share has reached to 100 percent.

All the silkworm seed to feed is met



Consumption

- The dry cocoon is processed mostly by Kozabirlik (Cocoon Producers Union) and transformed to silk, drawing filaments from annually average of 50 tons dry cocoon.
- The significant proportion of imported raw silk and silk thread is used in carpet sector.
- Because of the very high prices of silk carpet, nearly all of carpets are exported. However, 50 tons of silk textile products made by raw silk are consumed domestically.

Taking into account market conditions, nearly average of 100 tons of silk thread imported annually is used by carpet manufacturers



Foreign Trade of Turkey

- The fresh silk cocoon is not subject to trade in Turkey but dry cocoon, raw silk and silk thread.
- The products (seed, dry cocoon, raw silk) of sericulture has zero tariff rate and there is no subsidy allocated for their exportation

Import

Table 1. Türkiye'nin İthalat Miktarı (Kg)

	Raw Silk	Silk Thread
2000	203.650	8.080
2001	255.789	19.404
2002	205.482	29.803
2003	183.579	17.494
2004	193.737	62.640
2005	160.054	67.005
2006	116.636	73.709
2007	130.393	171.896
2008	96.571	198.022
2009	54.572	114.108
2010	92.422	87.510
2011	113.991	49.439
2012	47.957	36.688
2013	58.300	63.233

Kaynak: TURKSTAT, 2014

- Turkey is dependent on foreign countries and is net importer for raw silk. Because of;
 - ❖ Supply of fresh cocoon not meeting the demand,
 - ❖ Turkey not having modern drawing facilities for processing of cocoons produced domestically,
 - ❖ Silk production costs being very high
- In 2013, Turkey imported 58.3 tons raw silk and 63.2 tons silk thread and value of this importation was 6.3 million dollars

Export

Table 2. Türkiye'nin İhracat Miktarı (Kg)

	Dry Cocoon	Silk Thread
2000	54.000	138.387
2001	0	111.789
2002	3.050	74.945
2003	82.800	86.791
2004	61.200	91.911
2005	39.600	14.713
2006	32.400	14.679
2007	0	14.210
2008	0	26.721
2009	30.675	6.580
2010	67.568	7.927
2011	7.884	5.763
2012	80.238	9.006
2013	30.445	9.912

- Since there is no modern silk flatur machine and the cocon drawing capacity is limited, the big part of cocoons are exported. Therefore, Turkey is a net exporter of dry cocoon.
- Average 35 tons of dry cocoon were exported annually between 2002-2013 and important decreases occurred in the years of crisis since the product elasticity was very high.
- Turkish silk thread exportation was decreased by 92.8 percent and the exportation value of 1.65 million dollars in 2000 decreased to 445 thousand dollars in 2013. In line with exportation decrease, thread importation increased by 8-fold
- Nearly all the silk carpets produced are exported and the value of exportation of silk carpet is annually some 100 million dollars

Sericulture policies in Turkey

Since 2002, sericulture have been subsidized due to:

- Encourage sericulture production,
- Prevent immigration from rural to cities,
- Provide livelihood income for rural people
- Conservation of traditional and cultural activity
- Conservation of genetic resources,
- Promotion of Rural Development

- Subsidy is given per kg of product to the producers who sell their product to the Kozabirlik. In addition to the subsidy, the purchasing price per kg of product is granted to the farmers.
- In 2014, -silkworm seeds which have been distributed without any charge- government gave 10 €per box subsidy to KOZABİRLİK and 10 €per box to producers for fresh cocoon.



- The amount of support is of big importance for the fresh cocoon producers
- Because, sericulture farms are located in mountainous areas in the absence of alternative sources of income
- 74.9 percent of the producers interviewed stated that their main income sources was sericulture
- Therefore, in order to provide livelihood income for people involved in sericulture and to preserve genetic resources taking into account the importance of traditional and cultural dimensions by the way preventing sericulture enterprises from expiring in addition to this to enhance rural development efforts by supports seems to be very important and compulsory.

- However, 72 percent of fresh cocoon producers interviewed stated that the subsidy amount was insufficient.
- On the other hand, producers asks for nurture house supports.



- The lack of any precondition such as least production amount, etc. for producers to benefit from support ensure the sustainability of the production but do not increase the yields and production.
- Because, after 2002, although the decrease in sericulture production was stopped due to subsidies, the production amount in 1990s can not be achieved.

RESEARCH FINDINGS

- The findings that are obtained from the surveys conducted with fresh cocoon producers in the farms engaged in sericulture are given in this part of the study.



RESEARCH FINDINGS

- The work force has gradually decreased and the average age of producers has increased
- 83.8 percent of fresh cocoon producers in the farms engaged in sericulture are over 40 and 20.3 percent over 65.
- This shows that the silkworm producers will become more aged population in the future period. Therefore it is estimated that there will be a significant decline in the number of households that are engaged in sericulture.



RESEARCH FINDINGS



- 71,4 percent of household workforce in sericulture farms are actively working in production
 - 20.3 percent of the farms are not involved in any agricultural activity beside sericulture
 - 79.7 percent of the farms produce plants and/or livestock products.
 - However, the income of vegetative and livestock production are the main source of income only in a little part of farms.
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- 74.9 percent of the producers interviewed stated that their main income sources was sericulture

Yield and production per box

Average indicators per farm	
Box opened	2.4 box
Breeding fresh cocoon yield	19.18 kg/box
Polyhybrid Fresh Cocoon yield	28.36 kg/box
Breeding fresh cocoon production	46.03 kg
Polyhybrid Fresh Cocoon production	59.85 kg

Status of Income

Sericulture is an important income source for the small family farms

Income status of farms are indicated in the table blow

Average annual income of the farms	3625 Euro
Average annual income of farms from sericulture	645 Euro
Share of income collected from sericulture under agriculture	54.7 %
Share of sericultural income under total agricultural revenue	17.8 %

Since the annual total income of the producers that are engaged in sericulture is very lower than the ones that make other agricultural activites it is obvious that the farms studied need certainly the income of sericulture.

Gross Production Value (GPV) and gross margin

Gross Production Value (GPV) per farm in 2013

- ❖ hybrid cocoon producing farm 153 Euro
- ❖ breeding cocoon producing farm 400 Euro

However, as all the producers who produce silkworms get the government subsidy, the annual GPV is 802 euro in breeding farms and 605 in hybrid ones.

According to the study findings, excluding fresh cocoon and seed, gross margin per farm is -11.72 euro/year, otherwise 226.96 euro/year.

Fresh cocoon production costs

- The inputs such as seeds and formaldehyde etc. are met for free by Kozabirlik (Cocoon Union), the production cost of fresh cocoon is very low.
- The fresh cocoon cost is calculated as all expenses of sericulture activity is divided into annual production.
- Thus, 1 kg fresh cocoon cost is 2.67 euro in hybrid farms and 3.36 in breeding farms and 2.72 euro in all the farms.

Nurturing Conditions



The mulberry trees used in nurture in Turkey are generally grown in mountainous villages, sides of roads, the areas which is free from agricultural chemicals. Therefore, sericulture is partly or wholly an organic agricultural activity.

It is determined that mulberry trees in the farms studied were mostly (54.5 percent) scattered and border tress. This creates hardness for transporting leaves.



Nurturing Conditions

- The production in Turkey is made mostly in traditional methods and the farms do not have proper facilities.
- 63.3 percent of the producers interviewed used the part of their house as nurture facility and 30 percent of them used separate nurture house.
- Producers both live a social life and and produce in a part of their houses. 3.9 percent of them use the barn as nurture house which has the contamination risk and do not have proper physical conditions.



Nurturing Conditions

Depending on adverse conditions of production, –in survey year- 47.8 percent of producers stated that they met silkworm disease and incurred yield loss.

In the farms that faced with disease, yield per box was decreased by 18.96 percent from average 28.51 kg/box to 23.10 kg/box.



Constraints and proposals

- According to the fresh cocoon producers interviewed the major reasons quitting sericulture are:
- **The low price of cocoons :** The lowness of cocoon prices cause to producers to rip of their mulberry tress and tend towards the more gainful agricultur el activites
- **lack of work force:** The other most important factor for quitting sericulture is the lack of work force for especially breeding silkwarm farmers. Although it creates income in a short period, the young population do not continue sericulture and tend towards other professions because of its hardness of working conditions and being labor intensive
- **The problems of procurement mulberry leaves**
- **and the more profitability of other agricultural activities**

Constraints and proposals

The commitment of producers to sericulture and producers having necessary traditional information about it, producers being able to produce healthy silkworm eggs, the existence of the regions that are not polluted by pesticides and industry free, not requiring much expenses but producers workforce, good quality, having silk carpet trademark and the sector organizing in Cocoon Union which is the sole farmer organization on sericulture in Turkey are advantageous aspects to sustain sericulture

However, insufficient workforce due to the migration of young population from villages to cities with industrialization, insufficiency of the number of mulberry gardens and trees and the production being made once a year so nurture performing in the houses are the most important constraint for increasing production.

Constraints and proposals

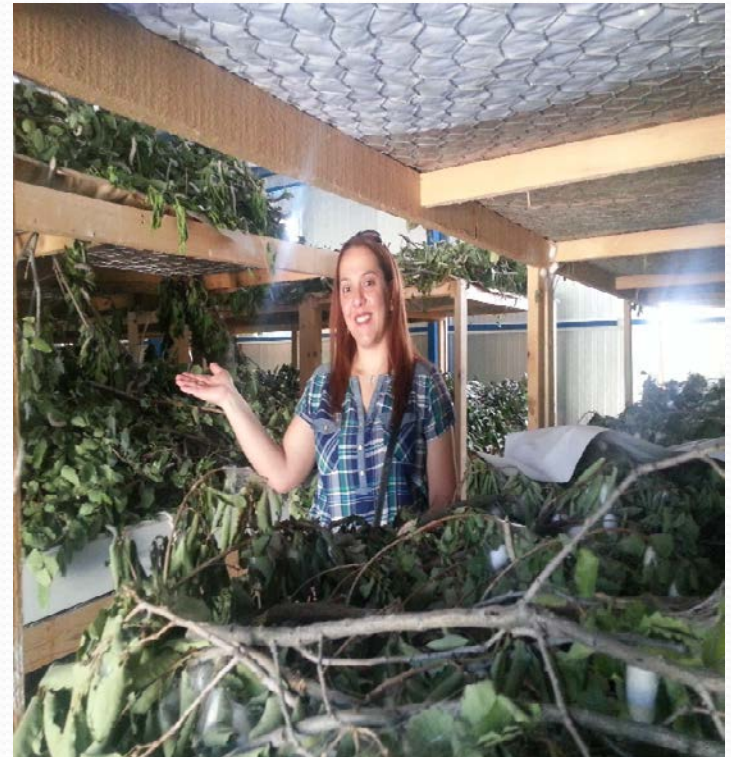
- Producers not having the special nurture houses and gaining low incomes due to low production, the yield losses due to the continued traditional production methods, the negative effect of importation due to competition for lower prices and zero tariff rate for silk importation affect production increase.
- The main aim in the sector is to increase production. Therefore, it is required to create strategies directed to increase production and consistent price policies. However, creating financial funds for nurture houses and mulberry gardens and giving information about current rural development subsidies are other important issues.

Constraints and proposals

Although there are various credits for agriculture in Turkey, these credits generally comprises for postharvest phases. The current production will be protected if the long-term credits are provided for the construction of nurture places.

To increase quality and productivity;

- the use of new technologies in production,
- modernization of nurture material,
- Promotion of R&D activities,
- increasing corporating possibilities with international institutes and universities are required.



Constraints and proposals

Since there is an increasing demand for organic and ecological products due to awareness of conscious consumers to these products in the world and Turkey, organic agriculture is developed. Therefore sericulture as the second agricultural activity should be promoted in the organic agricultural areas. This potential should not be lost while such current sericulture is going on.

For silk carpet sector subsidies should be provided to compete with international markets, certification should be generalized in carpet production. New employment possibilities and income sources will be created by producing new alternative products beside the silk carpet.

Thank for your attention

