

THE POSSIBILITY OF USING SILK PRODUCTION TO BUILD AN SUSTAINABLE ECONOMIC BASE

I read the book *SILK – A world History* by Aarathi Prasad. The author discusses the history of silk commerce throughout human history. This trade in silk largely for the use as fabrics had serious impacts on many of the human societies in the past. Today silk is of increasing importance in the face of the climate change. There are numbers of groups and agencies in the process of developing new and expanded uses of silk. These include uses for silk in medical, scientific, construction, packaging and new fabric designs. Many of the uses under development will result in replacing plastics, adhesives and construction materials that are currently based on petrochemicals.(1)

We feel that the demand for silk as a fabrics will increase dramatically in the future as the world is suffering from serious issues around water shortage. Cotton grown traditionally is a terrible insult on the environment. It can take 7,000 to 10,000 liters of water to produce one kilogram of cotton, or the material for a single t-shirt.(2). Because of the water shortage in many places around the world there are people developing ways to grow cotton in urban vertical farms and there is development in process of using silk and cotton fibers together to produce a cotton silk fabric. (3) The other uses under development will we think increase the demand for silk and open up opportunities for production centers.

Starting silk production will require silk worms to produce the silk and white mulberry trees to feed the silk worms. One complainant about silk worm production is that the traditional methods require boiling the cocoon of the worms to extract the silk but there is under development another method. This is the Silk Pavilion being developed by the Mediated Matter Group at the MIT Media Lab (1). This structure is a giant scaffold ‘built like an enormous work of string art, by a robotic arm that rapidly attached silk thread wound off a reel to nails placed around the edges of aluminum frames of four, five, or six sides.’ After the silk was collected the worms fall onto a drop cloth and continued to metamorphose into moths.(2)

The leaves of the white mulberry tree (*Morus alba*) are a principle component in silk production. The silk worm mouth consumes the leaves for making silk. In addition to feeding the silk worm the white mulberry tree has other uses. The trees have been used planted in China to help prevent erosion and is being used to reforest areas in many parts of the world.

... Desert mulberry is an ecotype of mulberry that was successfully planted in desert areas of Xinjiang parts of China. This ecotype enables the mulberry plants to be cultivated in deserted conditions with minimum levels of irrigation, hence it is recommended for natural restoration of empty deserted lands and desertified grasslands (Jian et al., 2012). Mulberry plants are also utilized and successfully demonstrated for ecorestoration of salinated lands and stony deserted areas

As the development of animal husbandry and the reduction of grassland resources, using mulberry leaves as forage for livestock and poultry has caused attention of farmers in various countries. In 2000,

food, food additives and cosmetics made from mulberry leaf and fruit have been available in the market. A special edible carbon made from carbonization of mulberry root and stem has been widely used as food additive.(Jian et al., 2012).(4)

The Environmental Concern Collective feels that there is a great potential for the silk / mulberry industry to increase dramatically over the years. Silk already is in demand for its current uses and the new uses under developed will increase that demand. The mulberry tree by itself has an expanding system of uses and coupled with the demand for silk this combined industry will become a valuable tool for helping communities develop a sustainable economic base.

Mulberry trees can be grown in semi arid environments in many parts of Africa, Asia and South America. It will take about 2 years from planting the trees until the leaves are ready for use in silk or livestock fodder. This two year period would be when the housing and infrastructure of the community and the facilities for silk and livestock feeding are constructed. During this period would be development of marketing arrangements and training of the community in producing silk and other products.

It is very likely that many of the communities in the need of relocation will have no experience in silk production. We are thinking that the two year period needed for the trees to mature will be enough to train parts of the community in the skills needed to produce silk.

Silk production is also an attractive investment as the current uses and those under development are and will increase in demand. This means that to help in the rebuilding of a community it will be possible to attract money from investment pools.

The Environmental Concern Collective is working with Seaboard International to help establish marketing arrangements. We are also looking to partner with firms and groups in the engineering and architectural professions and construction firms to help design concepts for facilities needed for silk production. In addition we are searching for groups and agencies involved in finance and micro finance to help set up procedures for attracting investments to finance the operations. The actual business set up a silk production facility will depend on the nature of the community, the requirements of regional and national agencies and finding groups willing to make an investment in such facilities. The Environmental Concern Collective is a non profit and our part would be working with and considering the needs and requirements of the community and construction, engineering, finance and marketing and government agencies in setting up the business.

REFERENCES

- 1- Prasad – page 279
- 2- <https://h2oglobalnews.com> (Cotton farming and water scarcity – challenges and solutions)
- 3- Szoneier <https://szoneierfabrics.com> (why cotton silk fabric is a game changer for sustainable textile business)
- 4- Ecological Issues of Mulberry Sustainable Development Journal of Resources and Ecology vol 3 no. 4