

## Achieving Sustainable Development Goals through Sericulture

Merrylina Marak

Sericulture Inspector, Directorate of Sericulture, Government of Assam, Assam

### SUMMARY

Sericulture is an agro-based industry which culminates in the production of silk as well as proteinaceous food for humans and animals. It contributes to economic development of a region, its products of larvae, pupae and silk find usage in human consumption, consumer goods to health care and soil conservation. This article's goal is to provide brief information on the potentiality of the silk industry in achieving the Sustainable Development Goals (SDGs) which is to be attained by 2030.

### INTRODUCTION

In the year 2012 at Rio de Janeiro, Brazil, 17 Sustainable Development Goals (SDGs) set forth by the United Nations replaced the existing Millennium Development Goals (MDGs) to solve the global environmental, political and economic challenges. At the Conference of all Parties (COP 21) Paris climate conference and together with the Sendai Framework for Disaster Risk Reduction signed in Japan in 2015, agreed to set common standard and attainable goals to be achieved between 2020 and 2030 (SDGR, 2021). Some of the SDGs might have been attained to some considerable extent, however, some of the SDGs such as end of poverty, eliminate hunger, and ensure healthy living for all are still far away from reach for some countries especially for countries in Africa and Asia continents. With the year 2030 fast approaching when the SDGs must have reached full actualization, there is a need to multiply the efforts to achieve the set goals.

Nature is bountiful of resources, and mankind is dependent on it for its sustenance. It has helped to achieve some if not all of the SDGs, and one such asset is beneficial insects. Silkworms are one such beneficial insect which have potential in achieving Sustainable Development Goals. Sericulture is the rearing of silkworms for silk production. Sericulture is an agro-based industry which plays a sustainable role as it not only brings in areas under cultivation, but generates income providing greater employment opportunities, and helps in the overall development of a region. The silkworm food plants are mostly perennial and thus play an important role in maintaining ecological balance.

### Attributes of Sericulture contributing towards SDG:

Sericulture is an interlinkage of activities which includes cultivation of its food plants, leaf harvesting, rearing of the silkworms, cocoon reeling/spinning, twisting, weaving, dyeing, finishing and processing of silk waste. Thus these activities of sericulture have a great potential of creating gainful employment to ever-increasing labour force. It has been reported that for every kilogram of raw silk produced engages around 12 people (mostly women) in silk reeling, threading and weaving, fabrication of machines for both the small filature and the big time miller.

The potential of silkworm in achieving goal 3 which is ensure healthy lives and promote well-being for all at all ages of the SDGs cannot be underrated. For example, silkworm's excreta is been used in the treatment of infectious diseases such as headache, abdominal pain and blood pressure. Furthermore, the treatment of headache, abdominal pain, and blood pressure, reduction of blood glucose, treatment of mouth ulcers, fever, anaemia, dizziness, insomnia, hepatitis and constipation are some other potential in sericulture that are applicable in achieving some of the SDGs.

The food plant of mulberry silkworm i.e. the Mulberry plant (*Morus alba*) has been found to contribute immensely in achieving 3 of the SDGs. Scientists have reported that extracts from different mulberry plant parts such as leaves, fruit, roots and branches possess antioxidant properties. Reports suggest, the two alkaloids present in mulberry leaves namely 1-deoxynijirimycin and fagomine are known to decrease blood glucose in human. Among other studies, it is reported that mulberry fruit juice can be used to treat ailments such as mouth ulcers, anemia, dizziness, constipation and also boosts immunity, relieve tiredness and fatigue and enhance hair growth. Thus sericulture benefits by ensuring healthy living and promoting well-being which is one of goals out of the 17 SDGs.

Silkworm larvae and pupae can be a nutritious alternative to fulfill the ever-increasing food demand. With crop yields not increasing fast enough to meet the global needs and with an estimate that by 2050, there will be an additional 2.5 billion people and 70% increase in food demand, silkworms as an edible food alternative provides a viable option in achieving sustainability in food and nutritional security. It is one of the emerging insect-based nutritious food sources. The different stages of silkworms- eggs, larvae, pupae contains high amount of proteins, oils, vitamins and several other beneficial components which are nutritious and have a positive effect on human health. Silkworm pupae are reported to protect the liver, enhance immunity, inhibit apoptosis, inhibit microbial growth, and regulate blood glucose and blood lipids, and lower blood pressure.

#### CONCLUSION:

Sericulture is a labour-intensive industry, leaving very little carbon in the manufacturing process. Silk industry has attributes which are valuable and thus making it appropriate to call sericulture an ideal industry for a sustainable future.

#### REFERENCES:

- Ayandokun, A.E., Alamu, O.T., George-Onaho, J.A., and Ete, J.A. (2022). Achieving sustainable development goal. In proceedings of the 8<sup>th</sup> biennial conference of the forests & forest products Society held at the Forestry Research Institute of Nigeria, Ibadan, Nigeria, 14<sup>th</sup>-20<sup>th</sup> August 2022, 443-447.
- Altman, G.H., and Farrell, B.D. (2022). Sericulture as a sustainable agroindustry. *Cleaner and Circular Bioeconomy*. Volume 2, 100011 Website at: <https://www.sciencedirect.com/science/article/pii/S2772801322000094>.
- Mahanta, D. K., Komal, J., Samal, I., Bhoi, T. K., Dubey, V. K., Pradhan, K., and Jeengar, D. (2023). Nutritional aspects and dietary benefits of “Silkworms”: Current scenario and future outlook. *Frontiers in Nutrition*. 10: 1-15.
- Mushtaq, R., Qadiri, B., Lone, F.A., Raja, T.A., Singh, H., Ahmed, P., and Sharma, R. (2023). Role of Sericulture in Achieving Sustainable Development Goals. *Problems of Sustainable Development*, 18(1): 199-206.