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## Mobile Applications for Promotion of Sericulture Industry in India

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By 2023, experts opine that India might supersede China as World's most populous country. Among 65% of the country's population under the age of 35 (<https://economictimes.indiatimes.com>), very few opt for agriculture as a source of income and livelihood. In India, the agriculture and its allied sectors are prime economic activities providing ~50% of employment and ~17% of India's gross domestic product (GDP). Towards sustenance of agricultural sector, which is considered as back bone of Indian economy, necessitate just not a qualified but skilled young individuals who can bestow themselves in farming. But the current scenario is different, wherein youth migration from rural to urban areas in search of easy and quick money making jobs has been increasing accounting to approximately 30% of the 315 million migrants. By 2050, it is expected half of India's population will be urban as per World Bank report, while a sizable proportion of agricultural workers in the total workforce are expected to plunge from 58.2% to 25.7%. To overcome the scarcity of working manpower and strengthen the prevailing workforce, modern digital information and communication technology based gadgets, like mobile phones with the support of Internet are indispensable. Substantially, it facilitates the rural youth not only mere getting the information's what they want, but also some of the mobile apps guiding them with appropriate scientific information to sustain in the field of agriculture/sericulture. As a consequence, in the recent past, the digital explosion has made India is the second largest users of internet (932.23 million internet users) and mobile phone in the global map next to China (1047.4 million internet users). The total number of internet subscribers in rural India was over 331 million in 2022 (<https://www.statista.com>). Now, the growth of mobile communication technology is creating a number of opportunities for social empowerment, and grassroots innovation in India. Digital Literacy in India, which was initiated by Digital India (2015), has given a boost and increased availability of band width, low-cost data plans, and increased awareness driven by government programmes to rapidly bridge the digital divide between urban and rural India.

Among agriculture sectors, the sericulture an agro-based industry is playing pivotal role in elevating our country's rural economy offering gainful occupation. It is providing occupation for about 8.8 million people who live in rural and semi-urban areas in India. Compared to other agricultural crops, sericulture has tremendous scope as it is woman-friendly and eco-friendly that endow with high returns on regular basis at fixed intervals with low gestation, and allow flow of capital from rich to poor. Besides, domestic consumption and export of silk, silk goods also contribute greatly to the country's exchequer.

The usage of ICT in sericulture industry, albeit an emerging field, need to focus on both on- and off-farm sectors of sericulture enabling timely dissemination of required information and helps in implementing such technologies in a very precise way. Now-a-days the Mobile apps are designed to run on smart phones, tablets, and other devices that enable a user to access specific information, place order and make payments online, receive and send

messages and many more. In this regard, a proper design of soft ware for specific purposes has a lot of prospective to boost farmers' productivity.

Despite the fact that the majority of the current sericulture apps are used to get general information's about sericulture, but not technology oriented, therefore scientific technology based mobile software and application are warranted for promotion and substance of silk industry. However, due to skill gap and inaccuracy in the adoption of scientific technologies in the field, the full potential of the mulberry varieties and silkworm breeds does not reach to the expected level. Towards this, to fill this gap, Prof. H. B. Manjunatha and his research team have developed for the first time, scientific technology based a mobile app "SeriApp" to disinfect the rearing house more precisely with ease using precise quantum of disinfectants and achieve accuracy in disinfection of the rearing house. Most of the farmers do not pay much attention for selection and preparation of disinfectants and scientific procedure for disinfection of the rearing house in all the seasons(Shafi *et al.*, 2018; Likhithgowda *et al.*, 2020). Thus, keeping this skill gap in view, a systematic survey on ground truth and limitations associated with the disinfection procedures followed by the farmers was conducted, which revealed that none of the farmers follow scientific recommendation with respect to concentration and volume of the specific disinfectant in accordance with total area of the rearing house, instead, all the farmers use disinfectants with rough estimation without giving much importance for concentration and total volume of disinfectant required for the rearing house for disinfection (Likhithgowda *et al.*, 2020).

**SeriApp:** SeriApp has been developed with an aim of hosting field oriented solutions for the benefit of Seri-farmers (Likhithgowda *et al.*, 2020). To begin with, it acts as a silkworm rearing house disinfection guide facilitating the silkworm growers can calculate a very precise quantum of disinfectants of interest while preparing disinfection solution for disinfection of the rearing house with ease and accurate. The SeriApp is simple and user-friendly, all farmers' irrespective level of their education can simply enter the length, width, and height of their respective rearing house in the respective windows. The input data is computed with the inbuilt program as per the standard recommendations for the respective disinfectant (Nataraju and Balavenkatasubbaiah, 2014) and display the calculated data. By simply clicking on the disinfectant of interest, it displays the amount of components to be taken and facilitate the Seri-farmer to prepare required concentration and quantum of the disinfectant solutions as per dimension of the rearing house. The app developed is first of its kind in sericulture and has ample scope for expansion (under progress in our laboratory) with specific modules for different applications.

**AP Sericulture Reelers:** This mobile application is useful for the silk reelers to participate in the e-auctioning of cocoons in the government cocoon markets of Andhra Pradesh, which display the cocoon lots for bid. Since it has some limitations, because it shows all the cocoon lots than the cocoon lot offered for bidding, it is difficult for the bidder to bid for the cocoon lot, which he is interested and transaction is not in order. Hence, it warranted updating.

**Sericulture Information:** This app was developed by the Bangladesh Silk Research and Training Institute comprising the history of silk production and its evolution in the country, along with employment opportunities in this new sector. Besides, the app also offers information on the mulberry production process, silkworm rearing, cocoon processing, and silk production training.

**My sericulture for farmers:** This app manages silkworm batches under rearing at farmers and guides farmers to undertake silkworm rearing and disease management, the prevailing cocoon rates both English and Tamil languages. Basically, it host contemporary sericulture publication based information's, which either offers scientifically advanced technological

guidelines pertaining precise disinfection of the rearing house, brushing capability based on leaf yield and rearing house nor makes any appropriate recommendations for rearing of different types silkworm breeds/hybrids as per its requirement.

**AP Sericulture Market staff:** This app is offered by the Department of Sericulture, Andhra Pradesh for staff of cocoon market to record cocoon auction lots, farmer accepted and rejected lots, farmer and reeler requests.

**Seri APP:** It is developed emphasising sericulture and organic sericulture and offering different tools- market price of silk cocoons, general information's regarding mulberry, Tasar, Muga, Eri, Oak tasar, organic sericulture, handicrafts, lentils, marigold flowers, honey bees, and its procurement methodology on mobile phones. The app has some features for formulation of pesticide, calculation of quantum of fertilizer, preparation of Sanitech solution for disinfection of rearing house, etc. This app can be used only for mixing quantum of Sanitech components required for preparation of disinfection in general but not based on the dimension of the floor area of the rearing house and no other commercially available disinfectants are available, which is applicable for mulberry pests and disease management (<https://play.google.com/store/apps/details?id=com.SeriTool.seriAPP>).

**ReshaMandi:** It is an India's first and largest natural fibre supply chain from farm to retail including all farmers, reelers, weavers and retailers. It is offered by a company Reshamandi in six different languages. The app is entirely business objective based rather technology oriented, and does not support farmers to improve their abilities while doing sericulture operations.

**Mahy silk:** It is offered by Mahyco Grow, which is a Chawki Rearing Center and farmer relationship building app providing a platform for purchasing and distributing chawki larvae to farmers.

Unlike agriculture sector, sericulture mobile applications (SeriApp) relating to (i) cultivating, raising, improving, protecting and production of mulberry foliage; (ii) growing, improving, protecting silkworms and production of eggs and cocoons; (iii) production and analysis of silk and its products; and (iv) marketing and commerce are highly negligible. Although there are a few apps are available, but they fail to address ground related issues and gap between the CRC and farmers. In this context, as mobile apps allow users to handle information instantly and real time and an excellent communication channel between different sectors of sericulture industry and its stakeholders, appropriate mobile apps and artificial intelligence powered machines (AI-powered) are needed to meet these challenges.

## Conclusion

Being sericulture industry one of the most promising sectors in Agri-commerce having chain like system start from production of mulberry leaves to export of silk and its products. Need of the hour is strong linkage, which can connect all these sectors and know how to make it more stabilised and most productive. Towards this, a mobile application which can bring all these chain-systems on one convenient platform is needed not only to communicate with each other but also update with the advanced technologies, which helps farmers and stakeholders to improve their business and taking it further profitable way.

## References

1. <https://economictimes.indiatimes.com/news/india/india-to-become-most-opuloucountry-by-2023-experts-call-it-an-opportunity-for-nation/articleshow/95534352.cms?from=mdr>.
2. <https://www.statista.com/aboutus/our-research-commitment/2834/shangliao-sun>.

3. Afroz, S., Manjunatha, G.R., Biswas, T.D. and Pandit, D. (2018). Skill Gap Analysis in Silkworm Rearing among Farmers and Extension Workers in Eastern India. *Indian Journal of Extension Education*, 54(3):85-90.
4. Likhith Gowda, M., Akanksh, A.M., Nayanashre, C., Abhicharan., Naleen., Kunal Ankola. and Manjunatha H.B. (2020). Development of Disinfection Card and Mobile App for the Precise Application of Disinfectants in the Silkworm Rearing House. *Research Journal of Agricultural Sciences*, 11(6): 1229-1234.
5. Nataraju, B. and Balavenkatasubbaiah, M. (2014). Disinfection and Hygiene Practices. (Eds) Dandin S. B. and Giridhar K. Hand Book of Sericulture Technologies. Published by Member Secretary, CSB. pp 307-334.
6. Shafi, A., Manjunatha, G.R, Biswas, T.D. and Pandit, D. (2018). Skill gap analysis in silkworm rearing among farmers and extension workers in Eastern India. *Indian Journal of Extension Education*, 54(3): 85-90.