

The Double-Edged Thread: Economic Gains, Social Shifts, And Well-Being in The Revival of Sericulture in Zhongyuan Village, China

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Abstract. This study dealt with the multidimensional impacts of a sericulture revival program in Zhongyuan Village, known as the poverty alleviation through re-introduction and modernization of cocoon production. The study used qualitative means, majorly personal interviews with the villagers, to unearth the economic, social, and psychological effects of the development strategy. The results indicated that though sericulture had provided an alternative source of income and promises of some economic gains, which were not as forthcoming as initially perceived by the policy, socially, the program has resulted in changes in community dynamics. It has reduced the daily interaction involving household members and strengthening the traditional communal bonds, household interest in individual economic development. Pride and at the same time nostalgia for the old social fabric and loss with the new found economic oomph and independence by the individual villagers, and loss by the village community in cohesion are expressed by the villagers. The study has proven that the sericulture scheme has lessened poverty to some extent, though in the final run of it and to sustain it, more holistic assessment is needed taking into account these nuanced social and emotional costs alongside economic outcomes. Future efforts could see better results if more customized strategies with local conditions were introduced, including improved training market access and digital integration.

Keywords: Sericulture; Poverty Alleviation; Rural Development; Social Impact Assessment; Community Well-being.

1. Introduction

As part of a national policy for alleviation of poverty, poor agricultural localities with a history of sericulture were targeted for a revival of silk production across China. In different regions of China, old and new technologies were deployed to encourage farmers subsisting on unreliable crop production for local markets to participate in a renewed sericulture industry.

This research examines how the sericulture initiative that has been implemented across the country starting in 2000. This project looks at the way sericulture has been promoted and supported with the promise of an increased standard of living and higher incomes. The move to silk production also coincided with the growth of manufacturing in the region that offered new employment opportunities besides agriculture. A number of locals moved to take jobs in these new industries, so the silk initiative in this community was embraced by individuals who chose to continue to participate in the agricultural economy.

It appears that the full model of modern sericultural production theorized by poverty alleviation policy and implemented in some parts of China, especially in eastern provinces with histories of silk production, was not carried out in Zhongyuan. Nevertheless, the village was a site of a three-way innovation strategy involving government officials, local and regional entrepreneurs, and researchers and experts in silk production and marketing from local universities.

This research has explored some of these social effects of the introduction of sericulture in this setting. Through visits to the village and interviews with residents participating in the silk initiative, the research has examined some ways villagers' lives have changed with the reintroduction and support for silk production, in relation to some of the projected outcomes described in official accounts of this particular strategy for rural poverty alleviation.

It documents some of the attitudes of the villagers towards the changes associated with the revitalization of silkworm breeding.

To better understand the effects of an intentional reform project in the local economy, this interview-based research posed questions to villagers in Zhongyan on a series of topics related to their participation in the sericulture sector. The interviews had three parts and included: First, basic information on individuals, including their age, income before and after sericulture development, expenses for raising silkworms, trigger for raising silkworms, whether government helped and their family composition. Second, people's satisfaction level and the impact of silkworm breeding on them; And the third part contains questions about their relations with their neighbors or others in the village, whether the relationship changes or not.

It is noteworthy that until present, there is no survey on the happiness and satisfaction of villagers in Zhongyuan Village. Measuring material effects of poverty alleviation is a good thing, but it is also important to pay attention to the changes in the psychological state of the villagers caused by the changes in the economic structure of the community in connection to the economic interventions. It is possible that economic improvements make people feel less satisfied. The survey discussed here was conducted to measure the effects of the poverty alleviation strategy in terms of villagers' happiness.

According to our hypothesis, the unanticipated social stratification introduced by the renewal of sericulture should affect farmers' happiness levels, especially in relation to growth in income inequality. The research showed that the revival of sericulture in Zhongyuan has indeed brought about some economic benefits and social changes, but not as significant as initially hoped and described in governmental policy. The individual narratives collected reveal a desire for autonomy and economic stability, yet there is an undercurrent of longing for the social fabric that was once a fundamental part of village life. With the gradual development of sericulture in Zhongyuan Village as an economic development strategy and the appearance of some new sericulture entrepreneurs, it appears that some social class distinctions among the villagers and the gap between the rich and the poor have also changed.

2. Literature Review

As one of the oldest industries in the world, China's silk industry has a history spanning several millennia. Since the invention of sericulture around 2600 BCE, silk gradually became an integral part of China's socio-economic fabric and linked China to other regions of the world through the Silk Road. Archaeological evidence suggests that the earliest silk production in China can be traced back to the Shang Dynasty (circa 1600-1046 BCE), with indications of sericulture even during the earlier Xia Dynasty [1]. Over time, silk in China has undergone numerous iterations, transitioning from handicraft workshops to modernized industry.

During the Han Dynasty, silk was not only a key commodity in trade but also a symbol of China's cultural exchange with the outside world. It served as an important medium for diplomacy and international commerce. As silk spread along the Silk Road to Central Asia, Europe, and beyond, it facilitated not only the exchange of goods but also the dissemination of cultural and technological knowledge [2]. In more recent times, with the advent of industrialization, China's silk industry began transitioning toward modern production methods. However, this shift was not without challenges. From the late 19th to the early 20th century, China's silk industry faced increasing pressure from foreign technological advancements, particularly from Japan and Europe. Nevertheless, China managed to maintain a significant share of the market through exports and traditional production methods. While silk exports grew noticeably during this period, productivity improvements did not keep pace with the surge in demand [3].

By the 20th century, China's silk industry began to align with the government's modernization policies and economic development plans, entering a new phase of industrialization. In the wake of China's economic reforms, especially following the "Reform and Opening-Up" policy, the silk

industry seized new opportunities. To meet the demands of the global market and adapt to the changes in domestic economic structures, the industry evolved from the traditional "family-based sericulture" model to a more modern "company-factory-base" system, significantly enhancing production efficiency and integrating the industry's value chain [4, 5].

The modern silk industry has played a crucial role in supporting regional economic development and improving rural livelihoods in Southwestern China, particularly in Sichuan and Chongqing. Local governments have prioritized the modernization of silk production, transitioning from traditional practices to more industrialized, efficient systems that offer greater economic stability for rural households [6]. During the 12th Five-Year Plan, sericulture was identified as a key sector for targeted poverty alleviation, helping smallholder farmers integrate into broader industrial networks and create sustainable income sources [7-9]. Although the silk industry's export orientation has contributed to economic growth, challenges such as limited industrial chain development persist [10]. Ongoing improvements in infrastructure and government support have helped maintain the sector's competitiveness in the global market.

Research on the topic of happiness, an outcome of interest in this project, is often defined as a sense of life satisfaction and emotional well-being, playing a critical role in both personal welfare and social cohesion. Generally, higher levels of happiness are associated with better health, stronger social connections, and increased productivity [11]. Poverty alleviation projects have a wide-ranging impact on mental health, particularly in enhancing happiness and overall well-being. Some studies highlight both positive and negative effects of these initiatives. For example, health-focused poverty alleviation programs in China have been shown to reduce financial risks, lower impoverishing healthcare expenditures, and improve household well-being [12]. However, not all projects are equally successful; research suggests that projects lacking sufficient community involvement or empowerment often fail to sustain long-term improvements in happiness and well-being [13].

2.1. Background

Zhongyuan Village is located in the southwest of Qianjiang District, Chongqing, China. Residents include a total of 7 villager groups, 626 households, 2,166 registered population and 964 permanent residents [14]. Zhongyuan Village has achieved the first stage of poverty alleviation, which is an initiative of the CCP for rural development, to improve the standard of living by vigorously developing the local economy. With its excellent geographical location, sunshine, and history, Zhongyuan Village was chosen as a locale to introduce and develop sericulture-related industries.

The Qianjiang region, to which Zhongyuan Village belongs, has a long history of mulberry plant cultivation and raising silkworms. According to the records of Qianjiang County, a book written by historians in Qing Dynasty, Qianjiang began to plant mulberry trees as early as the Qing dynasty, and initially developed an economic model of small-scale sericulture.

Much later in 1945, sericulture began to rise in Qianjiang, but due to many objective factors, it failed to develop for a long time [15]. To be more specific, in 1945, China won the War of Resistance against Japanese Aggression, ending the eight-year war. People began to develop other industries besides the necessities of life. However, in 1945, the Kuomintang and the Communist Party engaged in the Chongqing Negotiations, a series of talks prior to the Chinese War of Liberation. Although some tentative agreements were reached during the negotiations that promised peaceful coexistence and economic development in the region. But the negotiations broke down, China fell into war here, and sericulture also declined.

In the 1980s, at the initial stage of China's post-Mao reform period and economic opening, China began to implement a series of economic reform policies under the leadership of Deng Xiaoping to promote the development of a market economy. In this same time period, some people independently recognized the favorable environment of Zhongyuan village in particular for silk production. Plans were made to focus on the development of sericulture, but due to the limited supply of local mulberry trees at that time, the development was not successful [15].

In 1990, the government began to lead the development of sericulture in Zhongyuan Village and 10 years later, China put forward the policy of "East mulberry To the West" [15]. Starting in 2000, the government promoted a shift in the development of sericulture from eastern cities such as Zhejiang, Shandong, Jiangsu, etc. change to cities in the west of China like Sichuan, Chongqing and so on.

But as young people left the village to earn better livings elsewhere as the country developed, most people gave up raising silkworms as the main source of income. Farmers who originally raised silkworm were getting older and the labor required to raise a large number of silkworms was insufficient. The industry declined and farmers turned to other agricultural enterprises: grain production and pig breeding.

With the introduction of more and more mulberry trees around 2000, sericulture began producing more economic benefits for Zhongyuan Village than the other, prevalent forms of farming. In this time period, a small number of village residents of recognized the growing number of abandoned mulberry gardens as a business opportunity, and began to contract with the owners to grow the trees. This encouraged the formation of large households in production. New employment relationships on a seasonal basis in the village also appeared. The production of sericulture around the 1990s or 2000s had begun to play a leading role in the whole village.

2.2. Recent and Future Developments in Zhongyuan

For Zhongyuan Village, the government has played an important role in promoting the development of sericulture. In the 1990s, the Chinese government initiated a policy to shift the focus of the country's silk culture from the east to the west, giving more people in the Qianjiang region access to sericulture. In September 2000, after the establishment of Qianjiang New District, the local government attached great importance to the development of sericulture industry, listed sericulture as one of the most important agricultural industries in the district to build. Officials took the lead in the city under the cover of the national policy to return farmland to forest, which was undertaken for other ecological reasons to prevent flooding and other disasters, to encourage at the same time sericulture, which was consistent with the reforestation campaign. In addition, the government has actively communicated with the Sericulture Institute of Southwest University to make the process of sericulture more systematic and efficient. The continuous promotion of local and national governments has made sericulture play an important role in Zhongyuan Village. Through cooperation with Southwest University, villagers get advanced silkworm rearing technology.

In 2022, Hanzhen Yusi, a company promoting economic development, settled into Zhongyuan Village, entering into cooperative agreements with governments to improve villagers' living standard. The income of some Zhongyuan Village households increased by as much 66,000 yuan per year. Future developments will continue to emphasize the expansion of sericulture and related industries, including the establishment of factories for processing mulberry-leaf-based products and promoting mulberry-themed cultural tourism.

Future developments related to sericulture revival strategy are expected through the integration of east-west cooperation and assistance funds, the construction of Zhongyuan Village photovoltaic project to generate electricity in environmentally friendly ways. A new 800-square-meter photovoltaic power station will be built, with a total investment of 733,000 yuan and an estimated annual power generation of 137,500 kWh. This development should promote the annual income of the village collective economy by about 70,000 yuan. Those policies effectively are expected to further drive up the employment and income of farmers.

2.3. Raising Silkworms and Silk Production

The first stage of silk production is the egg hatch, often in a controlled environment. In the past, people used aluminum boxes to control the temperature; Now with the development of technology, people can use intelligent temperature regulators.

The second step is the feeding of silkworms. At the beginning, the device used by people was not breathable and convenient to place mulberry leaves, which resulted in a high mortality rate due to the decrease in the quality of silkworms. Now, after a series of studies, large shelving frames woven from bamboo are used.

After about six weeks, the silkworms stop growing and develop their cocoons. The cocoon will form in about eight days.

After preparation of the cocoons for extraction by soaking them in boiling water, the silk fiber is pulled away from the cocoon using spindles to gather and spool the threads for spinning or sale in the marketplace for later processing into fabric and other materials. In Zhongyuan the front-line silk producers offer either the harvested cocoons or the raw silk thread wounds on spools to government vendors or private entrepreneurs for purchase and for later sale and processing elsewhere.

Compared to the manual process of the past, the fully automated processes applied to the stages of silk cocoon processing and reeling that have been adopted in China greatly enhance the hygiene and efficiency in silk production. In the Chongqing region Southwest University hold some lecture on how to raise silkworm in a more scientific way to both increase the efficacy and protect villagers' own benefits (like put insurance on their own cocoon).

Nowadays, there are still many farmers who see silkworm production as a sideline, which allows them to earn some extra pocket money. However, since there are few people own a big industry, these villagers typically work as contractors for them, helping out during the silkworm season.

3. Methodology

The primary research method for this project involved conducting interviews in Zhongyuan Village, accompanied by a local official due to language barriers. The villagers primarily spoke Tujia, a regional dialect unfamiliar to the researchers, necessitating the official's assistance for translation and interpretation. Three participants were interviewed, focusing on three key areas: their satisfaction with current living conditions, assessed through a structured quantitative scale; their attitudes toward their neighbors, explored through open-ended qualitative questions to understand community relations; and their views on the silk-based poverty alleviation program, which were also gathered using qualitative open-ended questions to capture their perceptions of the program's impact on their lives. The official's presence ensured effective communication and accurate understanding of responses throughout the interviews. The presence of a local official may have affected some of the responses of my interviewees, which may have affected parts of the analysis. Interviews were transcribed, coded and analyzed for similarities and differences in participants experiences and satisfaction with sericulture.

4. Results

Three villagers consented to interviews. The first is a male around 50 years old. He initially worked at a factory in the town nearby. However, he has to take care of his family, which includes a school-age child and an elder who fell ill. According to him, raising silkworms was an attractive option -- certainly, working at factory is more profitable, but it consumes time that he otherwise would need to devote to the care of his family. In addition, planting usual crops costs too much in time and money. Therefore, sericulture for him is an expedient measure. He scores his satisfaction level 6 to 7 because of the surplus time he has to take care of his family.

Villager 2 is a 63-year-old female who has experienced a substantial increase in her monthly income, from 1,000 to 2,000 yuan to 4,000 to 5,000 yuan, thanks to sericulture. She finds her life much better than before, as silkworm farming is more profitable than traditional crop farming and allows her to do some extra work. Her relationship with her neighbors is described as "feng dan dan xiang," or supportive and cordial, but close. She has experienced no conflicts, but everyone is focused on their individual household economic growth. She notes that employment opportunities have

improved, as workers can now choose their jobs, she does not perceive the economic gains that others have experience.

Villager 3 is a male aged between 50 and 60. Unlike the others, he has not seen a change in his income. He finds sericulture time-consuming, although requires several days' work each production cycle. He wants to provide some financial support for his son. His satisfaction level is low due to the field policy which put restrictions on planting and the prohibition of certain crops. The elders in his family cannot work outside because of physical injuries, so the whole family mainly rely on sericulture.

The results of my research into the introduction of sericulture in Zhongyuan paint a picture of the multifaceted ways the crop produces impact on the local community. Economically, sericulture has offered a middle ground between traditional crop farming and wage labor, providing a more substantial income than the former while allowing for familial care obligations similar to the latter. However, the income from sericulture is notably less than what could be earned through factory work, indicating a trade-off between the benefits of household-based production and the higher wages available in industrial settings.

The allocation of land for sericulture by local authorities has led to a more dispersed living pattern, reducing daily interactions among neighbors and potentially diminishing the sense of community compared to the dense, shared living spaces required by communal agriculture.

Socially, the transition to sericulture has weakened the tight-knit social structure that was a hallmark of traditional agricultural practices. The solitary nature of sericulture, with its focus on individual household production, has replaced the collective labor and community engagement that characterized the older economy. As a result, households have become more self-reliant and private, but this shift has also led to a noticeable decline in community cohesion and everyday social interactions.

In addition to household production, some villagers are engaged in a more industrialized, technology-based model of sericulture, working for larger enterprises rather than operating independently. For these villagers, employment in sericulture enterprises has generally provided more stable and predictable income compared to small-scale household farming. However, this model has also contributed to changes in social engagement. Working in more structured and hierarchical environments has reduced opportunities for informal communication and traditional community bonding. Although financial security may have improved for some, the social fabric of village life appears to have been further eroded under both models, albeit through slightly different mechanisms.

The villagers' mixed views on sericulture reflect a complex interplay of economic opportunity and social change, with some appreciating the flexibility and control over their work, while others express frustration over production limitations and a sense of loss for the closer community ties of the past.

Psychologically, the villagers have experienced a range of emotions in response to the changes brought about by sericulture. There is a sense of pride and ownership in their new occupation, counterbalanced by nostalgia for the communal support and shared experiences of traditional agriculture. The individual narratives collected reveal a desire for autonomy and economic stability, yet there is an undercurrent of longing for the social fabric that was once a fundamental part of village life. The findings suggest that while sericulture has been successful in alleviating poverty to some extent, its impact on community life and individual well-being is more nuanced than initially anticipated. The economic benefits are accompanied by social and emotional costs that must be considered in a holistic assessment of the initiative's effectiveness and sustainability.

In psychological perspective, sericulture on villagers reveals a complex interplay of progress and loss. While villagers' express pride in their newfound economic autonomy and stable livelihoods, interviews underscore a persistent nostalgia for the communal bonds and shared rhythms of traditional agriculture. Individual narratives highlight a tension between desire for financial independence and an undercurrent of longing for the social cohesion that once defined village life. This duality underscores a critical lesson: although sericulture has reduced poverty in some degree and create more spare time for villagers, its success must be measured beyond economic improvements alone.

The initiative's sustainability hinges on addressing the social and emotional costs—eroded community ties, shifts in identity—that accompany modernization. By integrating these dimensions into policy evaluations, what the village should do later is find a balance between material advancement and preservation of traditional manners.

5. Discussion

Comparing the situation of Zhongyuan with villages in the article *An Investigation of the Present Living Condition of the Sericulturist Group in the Sericultural Area along the Jialing River Basin*, the development of sericulture in Zhongyuan appears to be less successful. The cause can be discussed in three different perspectives.

Firstly, Zhongyuan Village, with its proximity to industrial jobs, sees less reliance on sericulture compared to the Jialing River Basin, where it remains a pillar of the local economy. Besides, Jialing area may have established market channels for silk products, which could provide a more stable income for sericulturists while Zhongyuan does not. In addition, a more dispersed community could lead to less social support and cooperation in sericulture activities, whereas Jialing River Basin has a tighter-knit community might foster better cooperation and support, which are beneficial for sericulture. Finally, both villages face generational challenges, as younger people tend to move away from agricultural activities, contributing to the decline of sericulture. However, overall, sericulture in Jialing keeps a better state since it has a more stable commercial structure and stronger community ties.

6. Conclusion

My research on the introduction of sericulture in Zhongyuan reveals its complicated impacts on the local community. Economically, sericulture serves as a bridge between traditional farming and industrial labor, offering higher earnings than agriculture while maintaining the flexibility of family care akin to wage work. However, sericulture's income falls short compared to factory jobs, highlighting a trade-off between domestic production benefits and industrial wage advantages. Land allocation for sericulture has dispersed living patterns, potentially reducing community interactions and cohesion.

Socially, sericulture has altered the close-knit structure of traditional agriculture. Its solitary nature has supplanted collective labor, leading to more independent households. While this independence offers privacy, it also diminishes social bonds and support. Villagers have mixed feelings about sericulture, with some valuing the flexibility and others lamenting the loss of community closeness.

Psychologically, sericulture has stirred a mix of emotions. There's pride in their new trade, yet a longing for the community spirit of traditional farming. The narratives suggest a desire for autonomy and stability, tempered by a yearning for the social connections that once defined village life. Sericulture has alleviated poverty, but its broader social and emotional impacts are more complex, necessitating a holistic view of its effectiveness and sustainability.

In conclusion, the revival of sericulture in Zhongyuan has indeed brought about some economic benefits and social changes, but not as significant as initially hoped and described in governmental policy. Despite the modest gains, the effort to implement sericulture in Zhongyuan can be considered worthwhile, as it provided an alternative income source for some residents. However, the model could have been more successful if it had better address the specific needs and conditions of the area, such as providing more training, improving market access, and integrating digital platforms for sales. As for the broader application of this development approach, it may be beneficial to consider similar initiatives in other regions, but with tailored strategies that take into account local characteristics and capabilities. The expectation that farmers in Zhongyuan would engage in a national market through digital means was not fully realized, likely due to a lack of infrastructure, digital equipment, and

effective marketing strategies. This contrasts with areas where producers have successfully used digital platforms to sell directly to remote customers. When the promises of new technologies and new communication links to outside markets is finally met locally, we might expect sericulture in Zhongyuan to show a more successful and popular profile.

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