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# Culture Innovation—Sanxia’s Indigo Dyeing Story<sup>1</sup>

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## Abstract

With a heart full of passion, a young local person from the Sanxia district, who was formerly employed at a high-tech company, entered into the culturally rich indigo dyeing industry, establishing Blue Dyeing Workshop. However, once thriving in the Sanxia region, this art form, rich in humanistic value, is now facing a multitude of challenges presented by regional revitalization. These urgent problems engulfed this young person and caused him to agonize over matters of how he must convince people to be willing to participate in the cultivation, and the passing on, of the industry. In addition, he also wrestled the problem of how to ward off competition, and how an experiential marketing design that combines local features and indigo dyeing culture must be utilized to create a business model that delivers concrete benefits. This case describes the predicaments and problems encountered by Blue Dyeing Workshop in the various stages from its establishment to the integration of local characteristics; it outlines how the creator devised methods to solve problems, and how, ultimately, colleges, farmer’s organizations, young farmers, and other applicative values from the community were integrated to obtain a novel solution and create a cultural innovation-based experiential marketing design, thereby providing students with an opportunity to learn by way of thinking, interpreting, clarifying, and analyzing the related information and situations presented in the case.

**Keywords:** Cultural innovation, Experiential marketing, Indigo dyeing industry

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## 文化創新一青出於藍染工坊<sup>2</sup>

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### 摘要

曾在高科技公司上班的三峽在地青年，滿腔熱情投入到深具文化特色的藍染產業，創立了「青出於藍染工坊」。但在三峽地區風華一時，深具人文價值之工藝，正面臨地方創生的諸多挑戰，這些亟待克服的問題衝擊著這位年輕人，如：該如何讓人才願意投入、深耕及傳承發揚？該如何運用結合當地特色與藍染文化的體驗行銷設計，形塑具實質效益的營運模式以避免競爭？本個案藉由描述染工坊，從創立到整合地方特色，所歷經的情境及困難，創業者思維問題解決的途徑，協調與整合社區大學、農會、青農與多元運用價值，獲致更具新意之解決方案，進而建構成以文化創新為核心價值的體驗行銷之過程，此有助於引導學習者由情境中思考、判斷、釐清與分析相關訊息。

**關鍵字：**文化創新、體驗行銷、藍染產業

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# Case

## 1. Preface

The old town of Sanxia (formerly, Sanjiao Yong) in New Taipei City, is still home to the establishments of numerous dying brands, a testament to the glowing reputation that this traditional art form once held in this region. However, in the 19th century, synthetic indigo that is resistant to color fading after dyeing was developed and introduced at low prices, sweeping the world, such was its popularity. This chemically synthesized indigo was not only used by large new factories, but even began to be appropriated by traditional indigo dying houses. Due to the influence of Western culture in Taiwan, the Hakka blue shirt symbolic of folk tradition became a product of nostalgia for a bygone era, while the industry and production techniques for traditional blue dyeing gradually waned and became obsolete. Meanwhile, the farms producing tea leaves, the new cash crop of Sanxia, gradually replaced those of assam indigo, the indigo dyeing material which is also called *da jing*.

The prevailing modern concepts of environmental concern, sustainable development, and cultural inheritance and innovation have provided a new opportunity for this ancient and natural art form. Yong-feng Liu of Blue Byeing workshop expressed the following sentiments: “Environmentally friendly, natural, and related to regional revitalization, indigo dyeing is a very interesting technique. It’s not only applicable to the dyeing industry but can be used as ingredients in Chinese traditional medicine, as well as for biotechnology, the clothing and fashion industries, and natural dye.” He remarked that despite these advantages, following the decline of the industry, the exceptional environment of Sanxia has also started to face the problems posed by opportunity cost. For instance, due to unplanned cultivation, the economic benefits of *da jing* harvests are extremely low. Mr. Liu said, “There is a lot of vegetation on the mountains, but they have no economic benefits. There are many weeds, and the herbs are of different sizes and have inconsistent quality. After a whole day, you’d be lucky to collect 10 kilograms,” indicating that under the grand vision of creating local places with cultural connotations, the challenges to be faced have proved far greater than expected. Mr. Liu has thought about the issues of how to incentivize young people to return to their home region to work in the industry, how to improve the economic benefits of *da jing* cultivation, and how to innovate applicative values, with these three objectives being both intrinsically linked in such a way that they mutually affect each other.

First, “Xia dyeing” achieved a brilliant result due to the industry clusters from the past. Even today, many obstacles, whether they be those in the forming of a heritage consensus or production innovation, require professional manpower to overcome. Mr. Liu mentioned the issues of insufficient manpower and talent succession when he said, “If you want to plant (*da jing*) and consider it as an industry, this is not something like an amateur hobby. If not enough young people are recruited, the results will be very limited.” Mr. Lin San-De, executive council member of Sanjiao Yong Cultural Association, also found the situation disheartening, voice the concern that, “I have always worried about today’s teachers (workers). Many of them are over 60 years old. If no young people enter the industry, then in 10 years would the industry not decline like before, ultimately becoming obsolete?” With such remarks, he conveyed the dilemmas of insufficient talent and an inheritance gap in the industry.

With the next step came the key to developing diverse applicative values for blue dyeing lies in increasing economic benefits so that farmers would be willing to carry out cultivation improvement and planting to prevent the obstruction of development caused by insufficient supply. On the matter Mr. Liu said, “One must know how to plant, which involves finding a suitable environment for increasing efficiency and spending minimal labor to obtain relatively more economic benefits. For example, if farmers do this for a living, it will become an economically beneficial crop, making for a double-win situation. For us, the greater the amount of raw materials, the higher the quality, and for the farmers, besides the planting of green bamboo shoots, there is also a lot of *da jing*, which to them are weeds. They must be informed that these have economic benefit.” However, suffering from limited resource capabilities, Mr. Liu was aware that only by seeking out external resource collaborations, such as the resources of the government, local organizations, businesses, and academia, could the rapid enhancement of the resilience and persistence of the blue dyeing industry be achieved, while many conflicts of interest and challenges would have to be taken on during the integration process.

Lastly, the Sanxia indigo dyeing industry that has finally started to see rays of hope has had to face a predicament concerning red ocean competition. For instance, many workshops hold activities along the lines of handmade towel-making. Over-competition has killed prices and stolen customer sources, making it impossible for techniques to advance, with some competitors even adopting chemical dyes. Therefore, dyeing workshops have become overrun with questions surrounding how to avoid a competitive scene plagued by a lack of innovation, and how to shape a business model that can deliver concrete benefits, and demonstrate the unique values of the indigo dyeing business. In regard to planning and setting up a new business model, Mr. Liu’s internal blueprint reads like this: “The forests of Sanxia District are filled with assam indigo (*da jing*). The place is calm, and the environment is pleasant, making for good venues to hold activities and delivering experiences such as making dyes out of dye yielding grass, firefly gazing

camping activities during the *Luciola* firefly season, and March Sakura gazing. In this way, we are able to connect the natural dyeing industry with nature.” However, several questions arise. How many people can such experience activities attract? Can they protect dyeing workshops from competition? Or like other businesses, will they be forced to resign themselves to the current situation? On the other hand, there are many avenues in which *da jing* can be used. As to how to extend the indigo dyeing industry to various innovation initiatives, Mr. Lin believes that, “In theory, there aren’t any issues in terms of techniques. What we lack right now is design and marketing.” In other words, the road to innovation for indigo dyeing in Sanxia has in actuality become a test as to how local business owners can accomplish the tricky task of leading the local people to mutually create local cultural innovation.

## 2. The Prosperity and Decline and Innovation and Revitalization of “Xia Dyeing” in Sanxia

### 2.1 The Prosperity and Decline of “Xia Dyeing” in Sanxia

When indigo dyeing was introduced to Taiwan at the beginning of the 19th century, both the environment and climate of Sanxia were suited to the growth of the dyeing material “*da jing*”. The century-old traditional industry subsequently took root with the formation of the cloth dyeing industry and clothes stores. Old dyeing workshops and buildings could be seen everywhere on the old, traditional streets, initiating the golden period for “Dyeing Street in Sanjiao Yong” (Figure 1). The industry mostly used sugarcane trains (Figure 2) to transport materials from the foot of mountains to city districts and utilized the plentiful irrigation at the convergence of the three rivers, Dahan River, Sanxia River, and Heng River (Sanxia’s old name Sanjiao Yong, meaning “Three Gorges” in Chinese, refers to this concept) to transport dyed clothes along those rivers to be sold ashore at Dadaocheng Dock; it also formed a “market town street” regional industry division of labor model together with Mengjia and Dadaocheng. In this early period, Taiwan’s indigo dyeing materials exhibited a competitive advantage in both price and quality, peaking at third globally in export amount and habitually ranking first in total export value.<sup>3</sup>

At the end of the Qing dynasty, Taiwan’s indigo dyeing industry underwent a major change. According to *Tamsui Trade Report*, only a river basin output of 21 thousand remained in 1881, about 10 percent of the output in 1875. This marked the start of the decline of the indigo dyeing industry, which is generally believed to be related to an inability to adapt to the advent of synthetic dyes in Europe. Taiwan’s traditional dyeing houses faced similar situations as those in other countries, gradually beginning to appropriate the extremely convenient synthetic dyes, or creating blue dye colors by using chemical reducing agents on natural indigo dyes. In the year 1900, only five traditional indigo dyeing production houses remained, and in 1930, the number of registered traditional cloth dyeing businesses only numbered 2 to 3, while the indigo dyeing industry completely withdrew from the market around 1940.

### 2.2 The Innovation and Revitalization of Xia Dyeing

50 years later, after realizing the important role that regional culture and social systems played in the region’s development, Sanxia’s local people and dyeing practitioners established the “Taipei County, Sanjiao Yong District Cultural Association” in 1996 to promote indigo dyeing cultural values and organizations for nurturing related techniques and stimulate regional indigo dyeing industries. At the same time, Taipei County Government included Sanxia blue dyeing in its list of important developmental projects in the hope of enabling blue dyeing to become a local characteristic, and also held a series of large-scale celebratory activities in the period between 2002 and 2007. In 2020, farmer’s association initiatives were launched to assist young farmers in crop switching, as well as for the purposes of exploring and developing applicative values, designing automated production technologies, and pushing marketing channels and related experience activity designs; the hope was to motivate organizations, educational units, workshop workers, and farmers in the region to jointly carry out cultural revitalization work by evoking everyone’s collective emotions and memories toward blue dyeing (Figure 3). As a result, the persistent efforts of local people s and organizations had seemingly brought about the rebirth of Xia Dyeing.



Figure 1 Vestiges of Xia Dyeing’s Former Glory



Figure 2 Sugarcane Train (For Transporting Coal)



Figure 3 Xia Dyeing Regional Revitalization (Blue Dyeing Workshop)

<sup>3</sup> Ma, Fen-Mei (2010), “The Review and Development of Natural Taiwan Indigo Production & Craft,” *Taiwan Historica*, 61(2), 153-188.

### 3. The Blue Dyeing Journeys of Young People in Sanxia

#### 3.1 The Developmental Process of Blue Dyeing Workshop (Short Form: “Dyeing Workshop”)

A local history class at Sanying Community College awakened the blue dyeing spirit of one product manager of Taiwan’s Shared Corporation, leading this young person who harbored intimate emotions for Sanxia to wholeheartedly devote himself to the blue dyeing art form that once flourished in his hometown. He stated proudly, “As it turns out, such a magnificent story took place in my hometown. Here there are the facilities of eight different dyeing brands, and each facility has its own story.” An art-lover, he was greatly attracted when witnessing profound techniques such as blue dyeing, sewn dyeing, resist dyeing, clipped dyeing, and wax-resist dyeing for the first time. To practice just a single technique takes many hours; it would not be unusual to mess up two to three hundred products in a single session. However, in this process, more and more products with unique features are accumulated, and more importantly, love for the homeland is bred and nurtured. Mr. Liu subsequently frequented many places, perusing historical records and documents, and paid visits to elderly professionals, finding that this environmentally friendly and natural old artform had formerly made a distinct name for itself in his hometown. He then made the resolute decision to quit his job, so that he could focus entirely on carrying on the glory days of blue dyeing in Sanxia. In 2014, Mr. Liu quit his high-tech job and rented an abandoned blue dyeing visitor service center to establish Blue Dyeing Workshop. At the time, he really didn’t know what kinds of equipment were required for a dyeing workshop. In addition, due to having not been used for a long time, the old service center did not have water and electricity facilities and also lacked a drainage system. On rainy days, rainwater would not only accumulate in the vicinity, but also seep through indoors. The greatest hardships are truly always at the beginning of an undertaking; although unexpected problems cropped up every day, he maintained his fiery resolve. While perfecting his base of operations, he recognized which resources that were needed. He arranged for the District Office to install a water sewer and drainage system, while the Civil Affairs Bureau inspected and renovated the surrounding environment and Hotai Motor Co. sponsored the surrounding environmental facilities.

“Dyeing Workshop” is located on Renai Street in Sanxia, New Taipei City. In 2015, its application for Toyota’s Environmental Month activity was approved, and in its second year, it successively obtained the company’s sponsored environmental facility renovations. Trial courses were also held for over 300 members from the corporation, laying the foundation for the holding of large-scale blue dyeing experience activities. “300 people from Toyota Corporation will be coming here to experience blue-dyeing. Many check-in facilities have been set up on the street. I couldn’t be happier,” said Mr. Liu. In addition to organizing a variety of business activities, Mr. Liu also devoted himself to realizing blue dyeing knowledge dissemination and supply chain integration; he opened blue dyeing courses at general colleges, community colleges, and farmer’s associations; and collaborated with academia, government units, and farmer’s associations on blue-yielding plant cultivation and technology research. Dyeing Workshop also received an honorable mention in Soil and Water Conservation Bureau, Council of Agriculture, Executive Yuan’s 2019 Rural Cultural Skills Library. Thus, no efforts were spared in cultural promotion. During the three years since 2018, Dyeing Workshop has represented New Taipei City in holding a blue dyeing trial activity for foreign diplomats; had its homemade products featured in New Taipei City’s 2018 Best Gifts; and represented Sanxia in forming blue dyeing test teams together with President Cai Ing-wen. In May 2021, seeing as business operations and activities were greatly affected by the pandemic, Mr. Liu turned his attention to creating economic benefits for indigo planting and cultivation and invested his energies in the diversification of blue dyeing application and international market development. The main events for the workshop are hereby summarized below:

**Table 1 Major Events of Blue Dyeing Workshop**

2014	Blue Dyeing Workshop was founded.
2016	Successively applied for Toyota’s Environmental Month activity (joys of indigo tree planting)
2016	Opened blue dyeing general education courses at Department of Visual Communication Design, China University of Technology Taipei Campus.
2018	Handmade blue dyed book covers were included in New Taipei City’s Best Gifts 2018.
2018–2020	Represented New Taipei City to host a blue-dying trial activity for foreign diplomats at Sanying Art Village.
2020	Represented Sanxia to co-create blue dyeing test teams with President Tsai Ing-wen.
2020	The blue dyeing art form was an honorable mention in Soil and Water Conservation Bureau, Council of Agriculture, Executive Yuan’s 2019 Rural Cultural Skills Library.
2021	Collaborated with Hsinchu Forest District Office, Forestry Bureau and Department of Forestry and Natural Resources, National Ilan University on indigo planting and experiment conducting.

### 3.2 Current State of the Industry and Opportunities and Challenges

After the founding of Dyeing Workshop, besides the environmental problems at the site, the challenges have seemingly never ceased. For the sponsored experience activity held for 300 corporate employees and the 2018 Taiwan-Japan blue dyeing technique exchange, due to the inexperience of event organizers, the value of such experiences and exchanges were greatly diminished. Moreover, the problems inherent in Dyeing Workshop's popularization and introductory experience-based business model were thoroughly exposed, which included issues concerning a lack of professional blue-dyeing knowledge and techniques, the creation of unique experiential venues and atmospheres, and the design of different course tiers. With much regret and annoyance, Mr. Liu recalled the reflections he had on the day of the blue dyeing technique exchange; "They taught us some resist dyeing techniques, and we shared with them natural dyeing techniques. The teachers were all brilliant. Teachers who are good cultural assets...you can only imagine how I felt. Such excellent courses, great teachers, and good cloth materials as well, but because the experiential design process was suboptimal, everything fell apart." Mr. Liu continued by using the activity as a means to reflect on several points: "One day, I will utilize these excellent teachers to ensure that the blue dyeing field has professional environments"; "I aim to offer a variety of courses to attract more people and support their livings"; "I will straighten out all of these environments so that everyone can be in good spirits and be willing to spend more time, integrating better topics"; "The traffic flow must be designed well, so that the public can visibly see the dyes and dye vats and the classes in session"; "More specialized classrooms, such as those for batik and sewn dyeing, more professional equipment, and more advanced courses. A small indigo garden is all it takes to demonstrate the planting of many types of indigo, becoming something like a museum." However, such efforts require manpower, time, and resource investment, as well as the congregation of local people's shared belief and acknowledgement.

In 2020, Dyeing Workshop was affected by the pandemic, leading to a reduction in the number of foreign tourists and also affecting the close-contact experience activities held domestically. For this year, the workshop's revenue was over NTD \$5 million, while experience economy remained the top source of income. Compared to the trial courses of other businesses, Dyeing Workshop had a unit price of around 200 yuan higher, and disposable towels were the main product used. Furthermore, Mr. Liu devised a variety of experiential products, among them bags, scarfs, clothes, carry-on bags, opened a series of blue dyeing courses small group (3-5 people), and provided one-on-one trial teaching services, effectively increasing the unit price to an 1,500 yuan average, stabilizing prices between 1,000 to 2,500 yuan, and achieving a retention rate of over 60%. Currently, besides running Dyeing Workshop, a great deal of money is also being spent on resolving material supply issues. One instance of this is carrying out indigo planting improvement to increase the overall economic benefit of the blue dyeing industry; equally important is using a shared attitude to actively nurture local, young blue yielding grass contract farmers; also vital is collaborating with the government and school organizations to improve the blue dye-making workflow and production processes. With his hands smeared with blue coloring, Mr. Liu pointed towards the unremarkable looking plants that he had personally planted sitting in the *da jing* pots and continued to explain his thoughts on the material improvement and restoration process. "Japan sells at high prices due to the scarcity of their natural dyeing materials. But the quality of their pigments are not as high as ours and they have longer production times. The Japanese people have also imported indigo from us to cultivate *ryukyu* blue, but their climate prevents them from matching our quality and production quantity." He continued, "As blue dyeing is one of the themes of the 2020 Tokyo Olympic, Japanese people have gone out of their way to buy dyeing materials from our Sanxia Crafts Research and Development Institute, buying quite a large amount." The above remarks allude to the exceptional advantages of Sanxia's geographical environment and industry clusters, in addition to the diverse applicative values for blue dyeing, such as the cloth dyeing industry, Chinese medicine ingredients, biotechnology, the clothing industry, fashion industry, and even natural dye.

Mr. Liu believes that if more people can be led to identify with the blue dyeing artform, then more business opportunities will naturally present themselves. He deeply understood that Xia Dyeing revitalization cannot be limited to formality or slogans, but that concrete business practices must be implemented one step at a time, "I am a Sanxia resident. I am very proud to say this, since there are many outstanding places in Sanxia (referring to blue dyeing) that can help me make a living." Such a belief perhaps brought about the first taste of success for Dyeing Workshop, but what followed concerned the issue of insufficient material supply. "After being introduced to natural dyeing materials for the first time, Radium Life Tech. Co. found the towels to be very beautiful, placing an order for a 1,000 of them. Our yearly usage for experiential economy is roughly 800, yet they placed an order for 1,000. How are we supposed to supply them?" In regard to natural dye, a Japanese business placed a demand for 800 kilograms of indigo and 8,000 kilograms of extracted *da jing* leaves, surpassing the amount of dye materials used locally by Sanxia over the course of an entire year, a situation which enlightened Mr. Liu to the issue of insufficient upstream material supply.

Mr. Liu therefore determined that the lack of available manpower would be the first item of business in resolving the supply issue: "First, there must be people willing to contract farms to increase the production amount. Then, automated equipment must be used to extract pigments during the production process to increase quality." He continued; "When the amount of buyers increase, farmers will no longer have to worry about sales and will be able to make a living, allowing them to focus their energy on how to improve planting. Actually, there are many methods that

are used in planting. For example, collecting stem cuttings and seeds every year are two such methods. Cuttings are enough to make a living, while seeds can be used to raise seedlings.” Another piece of inspiration he voiced was this; “Farmers must be taught how to plant. Farmers of the same region must be aware of planting knowhows, which will reduce costs and increase economic benefits and bring in more money for supporting living.” He went further, stating he must, “collaborate with National Ilan University to conduct pigment experiments every month. The goal is after the competition of the experiments, to achieve listing as an under-forest economic crop. If the farmers of Sanxia want to plant but have no land, the Forestry Bureau will provide land to make planting legal in Sanxia’s forest regions.” Mr. Liu also realized that due to lack of personal resources, he must seek out external resources and share his own experiences and professional knowledge in order to overcome obstacles for continued growth and reduce possible risk. Therefore, he shared his own experiences and devoted himself to improving the quality and quantity of dyeing material planting, and also thought about how to integrate resources so as to allow farmers to carry out production with the most economically beneficial methods.

In 2021, Dyeing Workshop employed only 2 professional workers, while there were only a few other part-time workers who worked during peak hours. Mr Liu said, “Jing-Jan Retail Business Company wanted us to set up a check-in counter, however...manpower issues”, and mentioned the predicament of young peoples’ lack of willingness to participate in the industry. “In the blue dyeing world, I am considered a part of the new generation.” After the pandemic situation eased up in Taiwan in June 2020, although a surge of people made appointments for experience activities, with blue dyeing experience activities being successfully held for 6,000 people hailing from over 100 organizations from different countries, including Hong Kong, Macao, United States, France, Italy, and France, the amount of professional manpower was not sufficient at the time. Then, after the domestic pandemic situation rose to a level three alert in May 2021, the experience courses were greatly affected, making manpower allocation even more difficult. Mr. Liu made the following arrangements in his head, “Though there have been various difficulties and setbacks, I still have a dream. Over five years of efforts, the uninterrupted stream of blue dyeing culture lovers and arts visitors hailing from different countries has given me affirmation and hope.” Although the pandemic had reduced the number of participants, he hoped to bring Sanxia—this region that was part of the earliest blue dyeing renaissance, making it the home to numerous long-standing brands and senior dyeing artists, replete with natural environments and cultural resources—a brand that possessed professional techniques and experience venues which also demonstrates cultural innovation and sustainable business.

## **4. Discovering New Business Opportunities; Challenges in Supply Chain Integration**

### **4.1 Emergence of New Business Opportunities**

As one of the first organizations to promote blue dyeing culture, Sanjiao Cultural Association has devoted itself to cultivating professional blue dyeing professional competencies and holding cultural promotion activities since 1999, gaining a considerable reputation and forming a steady collaborative basis with corporate customers from organizations such as the government, schools, and travel agencies. Compared to the cultural association, Mr. Liu was a late arrival to the industry, so was only able to obtain a limited amount of resources from the government. On that issue, these following remarks are telling: “Resources were very scarce in the beginning. Having no accolades, you’d hardly expect that someone would be willing to transport coal in the snow for you, so you would have to do it yourself. Sometimes, you would occasionally have some resources on hand, like the Civil Affairs Bureau. That is to say, you must build these environments, so that the industry can survive and that at the very least you can make a living. After all, the whole point of trial products is to have customers be willing to come back.” As a result, in order to introduce an obscure traditional art like blue dyeing to more people, he created a Facebook page, and by means of old customers introducing themselves to new customers, a social and word-of-mouth marketing effect was achieved. He reflected on the process of establishing customer sources during Dyeing Workshop’s early period; “Actually, all I did was make a Facebook page, but then there were more and more customers. A large part of this was the introduction by one person to another. But during the two years in the very beginning, there were hardly any customers.”

The business model Dyeing Workshop adopted during its initial founding period was similar to that of other dyeing workshops, where the primary focus was on the provision of blue dyeing experiences. However, the customers were mostly independent travelers, including a large number of tourists from other countries; it took three to four years of word-of-mouth marketing before the workshop was finally able to attract the attention of corporate customers. The workshop utilized an experiential activity design to collaborate with Toyota on an environmental month activity, allowing participants to gain an understanding of the *da jing* growth environment and blue clay production and personally participate in the blue dyeing production process, while negotiations for holding similar activities were held with Radium Life Tech. Company. Meanwhile, as environmental considerations started to grow in popularity across the world, the environmentally friendly blue dyeing industry started to receive the attention of different sectors. Japan started to push “non-dyed” textile products, and Radium Life Tech. Company began to feature Japanese blue dyeing brands at the special counters of its department stores. Such products included clothing and apparel, blue-dyed towels, and other related products, with the sales prices often exceeding 10,000 thousand yuan. In addition, the

company brainstormed ideas for the devising of trial course designs that would allow VIP customers to participate in the production process, thereby increasing customer participation and nurturing loyal customers. The company elected to purchase 1,000 towels from Mr. Liu, but due to an insufficient supply, the order was unable to be completed. However, as a result, this experience helped Mr. Liu, who was attending to matters of indigo cultivation improvement at the time, to become more acutely aware of a business opportunity outside that of blue dyeing's traditional experiential economy; "Do you know who had the best dyes in the world at the time? It was Sanxia, who had the biggest leaves and the best pigments. Japanese prices are so high due to their selling of handmade and natural dyes, with which we are highly competitive. We have all-natural pigments, lower production times, and a greater competitive advantage!"

In the fall of 2019, an esteemed customer arrived at Dyeing Workshop—the President of a Japanese hair salon chain. This president owned numerous high-end hair salons in Japan and was looking to develop a natural hair dye, such as the dyes made from henna. In order to find more natural dye materials, he hired an Agriculture PhD academic from a Tokyo-based college to conduct visits to various dyeing workshops across Japan. However, as blue dyeing is regarded as a conservative traditional industry in Japan, industry practitioners believing blue dyeing to be an all-natural and highly revered art form were unwilling to sell dyes to hair salons to be used as hair dye. Finding no success in sourcing natural dyes from Japan, they next turned their focus to India. However, upon hearing about the limited production amount for blue yielding plants in India and the use of chemical dyeing materials in a portion of dyes, coupled with the fact that the president's son was currently attending school in Taiwan, they came to Taiwan to look for dyeing materials. As if guided by destiny, they found their way to Blue Dyeing Workshop, harboring hope that the workshop could provide them the natural dyeing materials they were looking for. Mr. Liu brought them to a Sanxia mountain to show them indigo cultivation sites, where the Agriculture PhD academic realized that, compared to the blue-yielding grass in Japan's farmer's markets, Sanxia's indigo plants were not only deeper in color, but bigger and prettier, and capable of producing a high-quality natural dyeing material. After purchasing 20 kilograms of dyeing materials to bring back to Japan, they were able to successfully create a natural blue hair dye with an estimated demand of 800 kilograms per year, translating to a yearly indigo leaf demand of 8,000 kilograms. Although, due to the pandemic, dyeing materials are temporarily unable to be exported to Japan, such a collaboration proved that besides traditional blue dyeing applications, indigo has many applicative values that are not only limited to traditional dyed clothes, but also extend to the textile and clothing industries. Furthermore, dyeing materials such as indigo can produce multifaceted economic values, while their roots (commonly referred to as Indigowoad Root) can be used as Chinese medicine ingredients.

In recent years, environmental awareness has started to gain ground in international society, and consumers have started to place a greater focus on natural and organic products. Mr. Liu reinforced this pointed in a high-spirited manner: "Products that are environmental, natural, and related to regional revitalization have high developmental potential, which I must strive to realize. Blue dyeing will not bring harm to any environment, while the public must be educated on the fact that these kinds of natural dyes can help to maintain aesthetics." Such a point thus accentuates the value of the blue dyeing industry, which is not merely confined to the passing on of a traditional art form but includes the potential for development as a green industry owing to the features of being a natural dye and constituting eco-friendly environments. "The public needs to be educated. If you ask customers to choose between buying chemically dyed clothes and natural dyed clothes, they will just select the cheaper option. But if you are able to plant the seeds in their minds while they are still young on the differences between naturally dyeing and chemical dyeing, when they grow up, they will be willing to spend more money on natural dyes." Mr. Liu also devised plans to use handmade, natural, and environmental characteristics to narrate product stories, in order to allow more consumers, particularly those of the younger generation, to familiarize themselves with the culture and industry values of blue dyeing, thereby extricating the workshop from the red ocean competition of the experiential economy sector and laying down the foundation for blue dyeing cultural revitalization in Sanxia.

#### **4.2 Challenges of Supply Chain Integration**

After accumulating the aforementioned experiences, Mr. Liu was acutely aware that in order to develop business models outside of the experience economy, to rely solely on the collection of blue dye yielding plants from Sanxia's mountains would be insufficient for meeting dye material demands, let alone creating blue dyeing's economic values. "The development of such an industry requires not only gathering vegetation, but carrying out collaborations starting at the agriculture end. Only after the amounts of raw materials are sufficient can natural dye brands then be developed." Revitalization in the blue dyeing industry must therefore start by improving the issue of material supplies, such as by increasing the quality of dyes or obtaining professional manpower or related equipment for the supply end; only then can more diverse application opportunities be obtained. Accordingly, Mr. Liu began to address planting sources by actively seeking out farmers who were willing to engage in indigo restoration collaborations. Farmer Lin, a friend of Mr. Liu's, explained, "I have many friends in the farming industry. I always tell them that these are Sanxia's cultural products. Assam indigo (*da jing*) contains characteristics unique to Sanxia, and at the same time can be developed into natural dye." Mr. Liu also recruited contract farmers and instructed them on how to improve indigo planting

techniques. The goal was to, through reducing costs and increasing production capacity, increase the overall economic benefits of indigo planting by farmers, with the ultimate goal being to create a double-win situation together with the farmers. “It would be hard for me to plant a lot by myself. The hope is that local farmers will be willing to plant for us, which for them creates economic revenue, while for us, the greater the number of raw materials, the higher the quality.” Such a concept also serves as the basis for forming a competitive advantage: “You have to make them irreplaceable. Farmers that are willing to participate in planting would be very difficult to replace.”

To conform with Sanxia Cultural Association’s indigo restoration efforts, Mr. Liu held classes at the cultural association, which allowed farmers to visit his indigo cultivation sites to carry out trial planting, see indigo growth environments in person, and harvest plants on-site. Farmer Lin relayed the process of Mr. Liu’s teaching of indigo planting to the farmers; “At the beginning of the year, the association arranged for groups of young farmers to attend Mr. Liu’s classes, where they were systematically taught the various natural processes from planting to environment selection and harvesting. A young person himself, he would not keep secrets and would always be willing to help anyone that asked him, making for an interactive learning environment.” Mr. Liu hoped that the farmers would obtain knowledge and information from the classes, and while interacting with the farmers, often raised examples from other disciplines to communicate the diverse economic values of indigo and matters of how to overcome obstacles for continued growth and reduce risk. All of these things strengthened the willingness of the farmers to engage in Da Jing production. Farmer Su remarked that, “More related talent is needed for professional or later-stage product development. Just like how Yong-feng questioned whether our products could be incorporated in crackers or health foods. They can be used in Chinese medicine, so why can’t they be used in health products? This is because we are not professionals, but when government departments or corporations become involved in the future, there will then be enough capital to hire people to conduct research in these aspects.”

Mr. Liu collaborated with the Forestry Bureau and National Ilan University’s Department of Forestry and Natural Resources, where, in addition to assisting farmers with indigo planting improvement, fifteen one-square meter plots of land were designated for the installation of cameras to determine which light and humidity conditions are best suited for the growing of high-quality indigo. However, such a collaboration did not always prove to be smooth sailing. In regard to the issues of local conflicts and how to overcome obstacles in resource integration, Mr. Liu said, “I brought you guys to Fuhui Mountain, where there is land rented by Mr. Wang from the Forestry Bureau. When we first went, we were thrown out because they thought we were stealing their land. Later, people from the Wulai District Office came, who also thought of us as thieves... It was only after one to two years of collaboration that they realized that we were doing legitimate work, and now we are extremely welcome.” In circumstances of limited land resources, there will inevitably be pushback from local groups owing to considerations of personal interest, calling to attention the importance of converting obstructing forces into helping forces. To encourage more farmers to join the ranks of planting, Mr. Liu also actively explored methods for increasing the farmers’ salary. In recent years, he has also been made aware of Forestry Bureau’s promotion of under-forest economic crop planting (crops planted in forests with short-term economic benefits), although assam indigo is currently not listed as an under-forest economic crop. Therefore, Mr. Liu has collaborated with National Ilan University to collect indigo leaves every month and conduct pigment alcohol testing using a fixed production of 300 grams of dyed mud in the hope of confirming the economic benefits of indigo. If indigo could be listed as an under-forest economic crop in the future, this could in turn encourage more farmers to participate in such farming.

The time consumed by the traditional blue dyeing manufacturing process is extremely long, and therefore requires the assistance of professional institutions to improve the quality of technology. To this end, Mr. Liu has collaborated with the Crafts Research and Development Institute and China Medical University to make plans for production automation. Using the pigment release procedure as an example, after the leaves are gathered, washed and immersed in water, under warm weather conditions, one day is all it takes for the pigments to be fully released. However, under cold weather, such a procedure could require two to three days and can be difficult to control. At this time, if the automation of production could be achieved, a heater rod would be able to fix the water temperature of the soak tank at around 30 degrees, so that the time needed for pigment release would not be affected by climatic conditions. In addition, automated processes such as agitating equipment can be incorporated in the production process, thereby utilizing automated equipment to output dyes with high quality and stability.

## **5. Decisions on Vision and Business Model**

Currently, the experience market for Sanxia’s traditional blue dyeing industry is primarily composed of cooperative customers from organizations such as the government, schools, and travel agencies, for whom the main source of revenue is the trial blue dyeing courses offered for standardized towels of different sizes. Although the sales quantity is high, the prices are relatively low. An alternative is the one-on-one customized trial teaching courses designed for independent travelers which focus on relatively larger products, such as scarfs, clothes, and tablecloths, with these two groups making up Blue Dyeing Workshop’s primary customer base. On this matter, Mr. Liu stated the following: “The foreign customers that come here will participate for about a day. The spending for one to two small

families of around eight people is around two or three thousand per person, a similar spending capacity to large corporate groups, while they will also find the activities to be unique and interesting. Others will find the one-on-one teaching to be more professional, helping to introduce new customers to the product by word-of-mouth. Therefore, I don't worry about not having customers. For instance, the phone call just now was someone making an appointment. I would say that the way I run my business is different from other people." Mr. Liu's goals are to develop a complex innovative service business model, establish a service center that is both educational and fun, provide customers and their friends and family members with blue dyeing courses that cover the basic, advanced, and professional levels, as well as indoor blue dyeing product exhibitions, sales interpretations, food and drinking services, blue yielding plant planting experiences, and the physical environments and travel itineraries for outdoor leisure and seasonable-type activities. A further goal was to create customized blue dyeing experience itineraries for customers of various age groups and needs, thereby establishing product and service values. Meanwhile, the experiential process would not only be one marked by product sales, but one that leaves enduring memories for customers created by the interactions between blue dyeing masters, customers, and a live service personnel. Lastly, Mr. Liu spoke of his initial thoughts on an innovative experiential economic model that would be "A complex model that integrates business, exhibitions, bars for eating and drinking, and the like. Parents could bring their kids to participate for an hour in experience activities that are both fun and fulfilling. Those that want to learn more professional and advanced technologies could also work with teachers who teach advanced techniques, attending one hour of class a week." Such a model would also incorporate blue dyeing planting experiences, "In the forests, there is *da jing* everywhere, surrounded by flowers. It's just like climbing a mountain, where you breathe in the phytoncide. These areas are all very pleasant, and such relaxed places do not pose any danger to the natural environment. Once all of the installments are in place, we could carry out blue-yielding grass gathering and dye-making activities." Mr. Liu also plans to combine blue dyeing experiences with ecological leisure activities: "The *Luciola* firefly season in April allows for firefly gazing activities in the evenings, while *Sakura* gazing can be held in March. In this way, we are able to connect the natural dyeing industry with nature."

Empowered by a sense of mission for passing on the blue dyeing culture and an ambition for developing diverse economic values, Mr. Yong-feng Liu hoped to, through sharing capabilities, technologies, and knowledge and engaging in specialized production with local Sanxia farmers and receiving assistance from the government and academia sectors, enhance the applied applications and technologies of and uncover innovative opportunities for the Sanxia blue dyeing industry. Several instances of these aims were, new supply sources, new applicative values (hair dye, Chinese medicine ingredients, biotechnologies, foods), new overseas markets, and new complex business models. By means of the above, the hope was to reconstruct the irreplaceability of the blue dyeing industry value chain in Sanxia. He explained, "For example, what is Sanxia most known for right now? The tea industry. As well as camping...for which there are already a large clump of competitors. What we want to do right now is to provide these local Sanxia farmers with another industry without knocking down their former industries. But we also shouldn't follow the crowd and do the same thing as everyone else."

Although the blue dyeing industry in Sanxia has already seen seedlings of success in recent years, including no small number of local individuals from Sanxia who harbor a sense of mission toward the revitalization of the blue dyeing industry, a portion of local people still hold different opinions, believing that blue dyeing can only bring a limited number of economic benefits to the local region. Alongside the benefits brought by tourism, the majority of workshops that provide towel-making experiences mostly do so to reduce costs, among which a number also incorporate poor-quality chemical materials, causing the industry to sink into the predicament of red ocean competition. The challenges faced by Mr. Liu came thick and fast with the need for professional and scaled economies in the various aspects from upstream blue yielding grass cultivation, as well as the de-weeding and essence extraction processes, product and marketing positioning is an issue that Mr. Liu urgently seeks to resolve. All this was in addition to the challenges faced by blue dyeing industry revitalization as a whole. The key question is this: How must young people be persuaded to participate in blue dyeing industry cluster innovation? For a workshop that is currently considered to have a niche market, is the next order of business to greatly increase the number of standardized tourists for towel experiences, or to cultivate loyal customers who are willing to experience unique values over the long-term?

### Suggested Questions

1. From the perspective of cultural advancement, how must Mr. Liu persuade people to join the ranks of the blue dyeing business? How must he persuade farmers to participate in dyeing material planting?
2. In the face of competition, would it be more effective for Mr. Liu to increase the number of standardized tourists, or to cultivate loyal customers who are willing to experience unique values? What would you do if you were in Mr. Liu's shoes? Please analyze the advantages and disadvantages for each solution and explain the reasoning behind your decision.