



Diagnostic Study on a Lacquerware Cluster in Bagan and Nyaung-U, Myanmar

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ACRONYMS

BDS	Business Development Service
CB BANK	Cooperative Bank
FDA	Food and Drug Administration
GPS	Global Positioning System
ICT	Information and Communication Technology
JICA	Japan International Cooperation Agency
JETRO	Japan External Trade Organization
KBZ	Kanbawza Bank
MMK	Myanmar Kyat
MPU	Myanmar Payment Union
MRCCI	Mandalay Region Chamber of Commerce and Industry
NGO	Non-Governmental Organization
PACT-MYANMAR	Partners and Communities Together-Myanmar
POS	Point of Sales
R&D	Research and Development
USD	United States Dollar

I. INTRODUCTION

A. Defining the cluster

Myanmar is one of the few countries that produce entirely handmade lacquerware products. Within Myanmar, Bagan is the largest lacquerware production center and it is located in Nyaung-U district on the eastern bank of the Irrawaddy River in Mandalay Region. The lacquerware industry in Bagan has been one of the most significant business clusters in the country, as it has been there since the 11th century and the traditional way of making lacquerware is still well preserved. The products are solely handmade and from agro-based raw materials, such as bamboo, wood and lacquer sap. Currently, the cluster provides direct employment to at least 4,000 locals.

B. Objectives of the diagnostic study

The main objectives of this diagnostic study are to:

- Understand the current socio-economic environments associated with the lacquerware business cluster in Bagan
- Analyze institutional and cross-sectorial linkages
- Understand the strengths, weaknesses, opportunities and threats of the cluster and formulate sound strategies to promote the industry
- Identify the major issues and problems in the cluster and recommend implementable strategies for the long term and sustainable development of the cluster
- Create a baseline for future monitoring and evaluation.

C. Methodology of the study

This diagnostic study has been elaborated based on qualitative research through face-to-face interviews conducted in early March 2014:

- 12 principal lacquerware businesses in different villages in Bagan, Nyaung-U
- 4 major banks (KBZ, Aya Bank, Tun Foundation Bank, CB Bank)
- Leaders of the Lacquerware Enterprise Association – Nyaung-U
- Principal of the Lacquerware Technical College in Bagan
- Senior staff member of the Lacquerware Museum
- Several tourists (consumers)
- Locals with lacquerware making skills.

D. Historical development of the lacquerware industry in Bagan

It is worthy to note, that the lacquerware industry did not develop naturally in Bagan. It is believed by many researchers and local lacquerware producers in Bagan, that it was the King Anawrahta who brought skilled craftsmen back with him to Bagan from the Thaton Kingdom after conquering it in the 11th century. Since then, the lacquerware industry has been developed gradually and is known worldwide for its remarkable traditional value, the good quality and the very much esteemed art craft of the lacquerware.

Lacquerware making techniques have been handed down from generation to generation through traditional apprenticeships. The cluster developed in this specific region due to the concentration of skilled workers and handcrafters. However, from 2007 to 2009, the number of lacquerware workshops decreased significantly due to the decline in tourist arrivals, which are a substantial factor towards the positive development of this industrial cluster. Since the new government came into power in 2011 and opened up the country, tourist arrivals to Bagan have significantly increased and the lacquerware industry is again booming. The country with its diverse and extensive cultural, natural, and historic assets is enjoying unprecedented tourism growth. Between 2011 and 2012, visitor arrivals increased by 29.7% and, for the first time in its history, Myanmar received over 1 million international visitors. Other key drivers of growth include the rapid expansion of scheduled inbound flights, eased tourist visa-on-arrival privileges at gateway airports, improving business and investment conditions, and the growing demand for international travel among regional and long-haul markets. The total earnings from tourism sector was 926 US\$ million in 2013 compared to 319 US\$ million in 2011. The Myanmar Tourism Master Plan (MTMP) was launched in late 2013 and targeted to reach 3 million tourists by end of 2014, 5 million in 2015 and 7 million in 2020 respectively. The average length of stay is 10 days, often combined with visits to other nearby countries (Thailand, Cambodia, Lao and Viet Nam). Bagan, together with Mandalay, Yangon and Inle Lake, is one of the most popular destinations and traditional lacquerware products are highly appreciated by tourists.

E. Some photos of the lacquerware cluster



Lacquerware products in a retail shop in Bagan



One of the largest pieces of lacquerware for decoration seen at a lacquerware workshop



Apprentices being trained at a lacquerware workshop



A micro/home-based lacquerware business at a household



An underground drying cellar, which is one of the most important steps in the lacquerware production process



Government's Lacquerware Technology College in Bagan

II. FEATURES OF THE LACQUERWARE CLUSTER

A. Products

The lacquerware products being produced in Bagan can be roughly categorized into three groups:

1. Traditional lacquerware
2. Gold lacquerware or 'shwe z'wa' and
3. Japanese lacquerware.

As shown in the pictures above, the lacquerware products range from small souvenirs to very large decorative items and can be for daily use and decorative purpose.

Some examples of traditional lacquerware are: drinking cups which are made out of bamboo, horsehair and lacquer sap; cosmetic boxes; betel boxes; cheroot trays.

Gold lacquerware is mainly for religious purposes and decoration. Some examples are: Buddha images; flower caskets; wall decorations.

Japanese lacquerware has a marbled pattern of gold and brown on a dark background and cracked eggshells which are set on a plain lacquer surface. Some of the Japanese lacquerware has a characteristic pattern with thin flat ivory-color pieces which are cut from the inner core of the palm tree.

A book titled "Bagan Lacquerware. A concise introduction to Bagan lacquerware, its history and how various styles and designs are made by hand as well as how to care for these beautiful works of art" by Ma Thanegi, published in 2013, provides detailed descriptions of lacquerware products from Bagan.

B. Production process

To produce a fine lacquerware product, there are dozens of steps to go through – even up to 40 steps to ensure the good quality. How many steps each product needs to go through depends on what type of the product it is. However, all these steps can be categorized into three main phases:

1. Preparing the base (preparing a-phyu-dee)
2. Applying lacquer (preparing a-net-dee)
3. Decoration

There are three types of bases in the first phase¹:

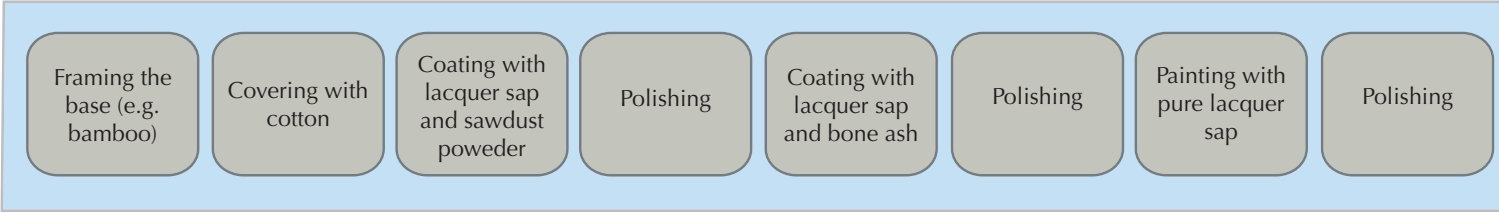
- Wooden bases for boxes, trays and furniture
- Woven or coiled cane or bamboo
- Woven bamboo and horsehair small flexible cups

In the first phase of preparing the base or the frame, the required shapes for the respective product are formed out of bamboo, wood, horsehair and other raw materials (plastic, ply wood, synthetic wood, etc.). After this phase, the items are cleaned for application of the lacquer sap. In the second phase, lacquer sap is coated on the items one layer after another. The first coating takes at least a month to dry and the number of layers can be up to 40, depending on the desired quality (the more layers, the better the quality). The second phase, the application of the lacquer, can take from four months up to two years to produce a fine quality product (the longer the drying process, the better the quality). Once the lacquer application is concluded, the items are decorated with traditional, Japanese or modern designs. This work is mostly done by women. After the decorated items are washed several times, they are ready for use. An in depth analysis of the production process is recommended to assess water consumption and pollution as well as risks associated to the use of natural colors involved in the decoration phase.

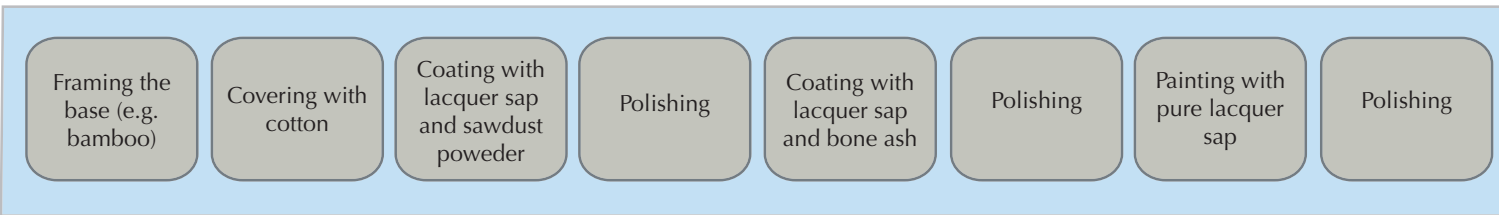
¹ Ma Thanegi, *Bagan Lacquerware*, 2013

The basic steps in production process for three different types of lacquerware are depicted below:

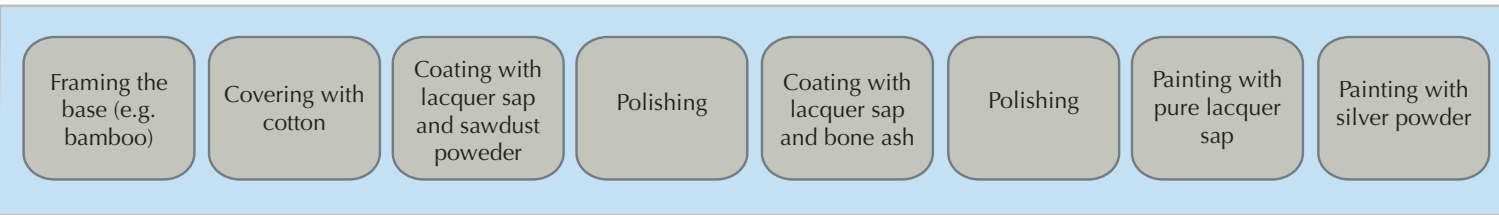
Production process for traditional lacquerware



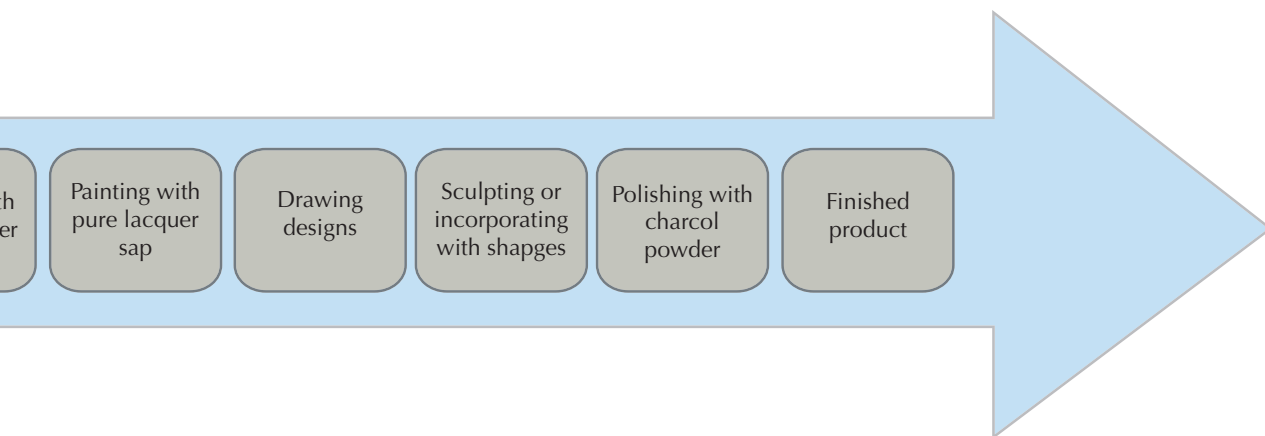
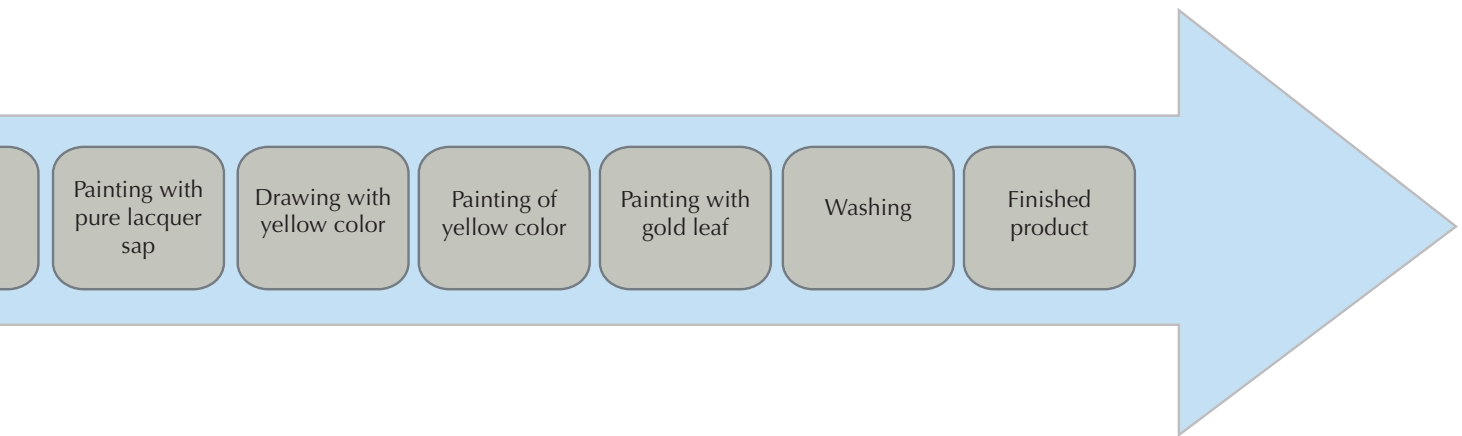
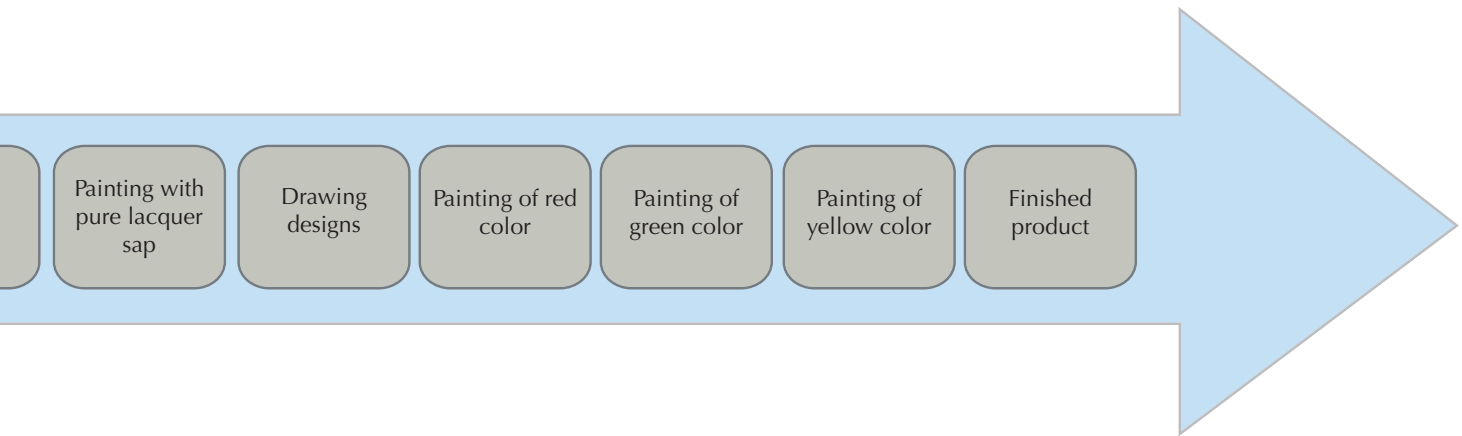
Production process for gold lacquerware



Production process for Japanese lacquerware



Source: Bagan House Lacquerware Workshop



C. Supply of raw materials

Lacquer sap ('thitsi' in Myanmar) or *Melanhorrea usitata* is the required main raw material needed to produce lacquerware. Lacquer sap is used to make the product durable, water-proof, to enable the products to be decorated with designs. Lacquer sap is produced in Shan State, Mawlamine, Ya-mae-tin, Mongywa and upper Myanmar.

The lacquer tree is found in a number of different parts of Myanmar and was probably more widespread in the past, prior to the high forest exploitation that took place in the last 50 years. The resin is harvested from the tree through the same practice applied to extract rubber. The usual method of tapping is to make two deep scratches to form a V-shape. The scratches are eight to ten inches long, and about two inches deep. At the base of the V-shape, small bamboo cups or plastic cups are placed, with an edge stuck into a small horizontal cut just at the base of the V. The sap, which exudes from the V-shaped notch flows into the cup. Lacquer tree has never been grown under plantation conditions, but gathered, randomly, in the forest.

Bamboo is also a main raw material for producing lacquerware. Bamboo is mostly transported from Katha, Shan State and upper Myanmar. Wood and cane are also used for bigger lacquerware products and they are brought from mountainous areas in Myanmar, such as Kachin and Shan State. Major raw materials such as lacquer sap, bamboo, wood and cane are transported to Bagan via Irrawaddy River.

Horsehair is used for the production of flexible products, such as drinking cups. It can be bought locally in Bagan and surrounding areas. Some other raw materials used for decoration, are gold leaf, gems, colors and clay.

D. Technology, machinery and tools

In Bagan, lacquerware products are made through traditional processes and no advanced technology or powered machinery has been used in any part of the production process so far. Some medium-sized firms use electrical lathe machines to make the classic tiered designs out of wood, but most firms operate similar machines manually. Some other important tools and elements used in the process of production are underground drying cellars, sharp blades that are used to etch designs on the surface of items and polishing agents.

During the study, several primary firms indicated that they want to acquire humidity/temperature control technology that would shorten the time required to dry the lacquer sap applied items (at least one month in a traditional drying cellar). The technology stabilizes the humidity in the drying cellars, maintaining 60 – 70 degrees Fahrenheit of temperature. Such technology is available in China, Japan, Viet Nam and Korea.

Most of the primary firms contacted prefer the traditional production process to using machinery and foreign technology to preserve traditions and to ensure the quality of products in terms of durability and designs. Some accelerated drying techniques based on chemicals reduce the quality and durability of products.

During the interviews conducted for the elaboration of this study, several senior lacquerware masters also pointed out, that foreign technologies, such as those from Japan and Viet Nam cannot be applied in Myanmar due to the differences in terms of types and quality of raw materials, production processes and the ways of sculpting the designs.

At the same time, they all agree that better and larger underground drying cellars with temperature and humidity control, that are weather-resistant, are required. Moreover, several lacquerware producers mentioned that they want to acquire Food and Drug Administration (FDA)-approved quality coloring materials from other countries and quality polishing sandpaper which can be bought from the United States and Japan.

E. Labor, skill level and training

Almost all of the workers involved in the lacquerware industry have learned their skills of making lacquerware at home or from workshops, rather than at a school. Lacquerware making techniques have been passed down from generation to generation through traditional apprenticeships.

The conducted study shows that the education level of workers ranges from primary level to college level or higher education. About 5% of the workers have primary education (5 years), 15 % have secondary education level (3 years), about 65 % have high school level (2 years) and the remaining 15% have college level education (2 years).

It takes at least three years of training to become a well-trained professional in lacquerware production. Many young students are enrolled in apprenticeships at lacquerware workshops during their school holidays to receive training and earn some extra pocket money. Each apprentice is paid 1\$ to 1,5 \$ per day and needs to bring her/his own meal from home. After one year of training the trainees have acquired basic skills.

Since many skilled workers have moved from the lacquerware industry to other tourism-related activities (see chapter IX), the skills gap has widened.

The highly skilled lacquerware masters and workers, who are passionate about lacquerware, remain in the industry but are facing the challenge of a lack of skilled young workers and are therefore forced to recruit young people with little skills. For example, the Ever Stand lacquerware workshop in Bagan recruited 25 young apprentices from surrounding villages and is now providing on the job training, which costs about 25,000 \$ per year to train about 25 young apprentices as the firm also covers the transportation expenses.

In addition to the lack of skilled lacquerware professionals, the cluster in Bagan is also facing a lack of required business skills, such as management, HR, marketing, sales and accounting. This kind of issue could be addressed through the promotion of the Business Development Service (BDS) providers in Bagan (marketing, logistics, access to finance, accounting, management, IT).

F. Markets

The main domestic markets for lacquerware products (home use, such as teacups, plates, trays, jars, jewel container, boxes, and religious offerings, and decoration in general) are retail shops in Bagan and other major cities in Myanmar, such as Yangon and Mandalay. The international market for the lacquerware products from Bagan has been rather limited. However, the domestic market is expanding as tourist arrivals to the country are significantly increasing in the past few years and also after the banks introduced POS machines in Bagan. The sale to other retail markets in Yangon, Mandalay and Inle has also increased, mainly due to the opening of the country and increasing tourist arrivals.

In terms of international market presence, some small and medium firms used to have regular customers from Thailand. However, the orders from these regular customers have declined recently. One major reason could be that since the economic sanctions were lifted by the western countries, customers who used to buy lacquerware products in Thailand now directly deal with the suppliers in Myanmar. Consumers from other international markets come from Japan, Korea, Italy, France, Germany and Spain.

The limited access to the international market is one of the major obstacles for the growth of the lacquerware industry in Bagan. Some suggestions to overcome these obstacles are proposed in the strategy section of this study.

G. Finance

It was not possible to obtain any related financial information from the enterprises contacted for the purpose of this study, as some enterprises refused to provide information due to concerns about confidentiality and implications in the competition with other firms and most of the micro and small firms simply could not provide monthly or annual financial figures because they do not have financial records or proper accounting.

An owner of a major firm said, "We know how much profit we make when we could buy land, a house or a car. We reinvest when we generate revenue, but we do not have proper records."

Most of the lacquerware enterprises are traditional small family businesses that have been passed down from generation to generation and do not have records of start-up finance or monthly or weekly profits.

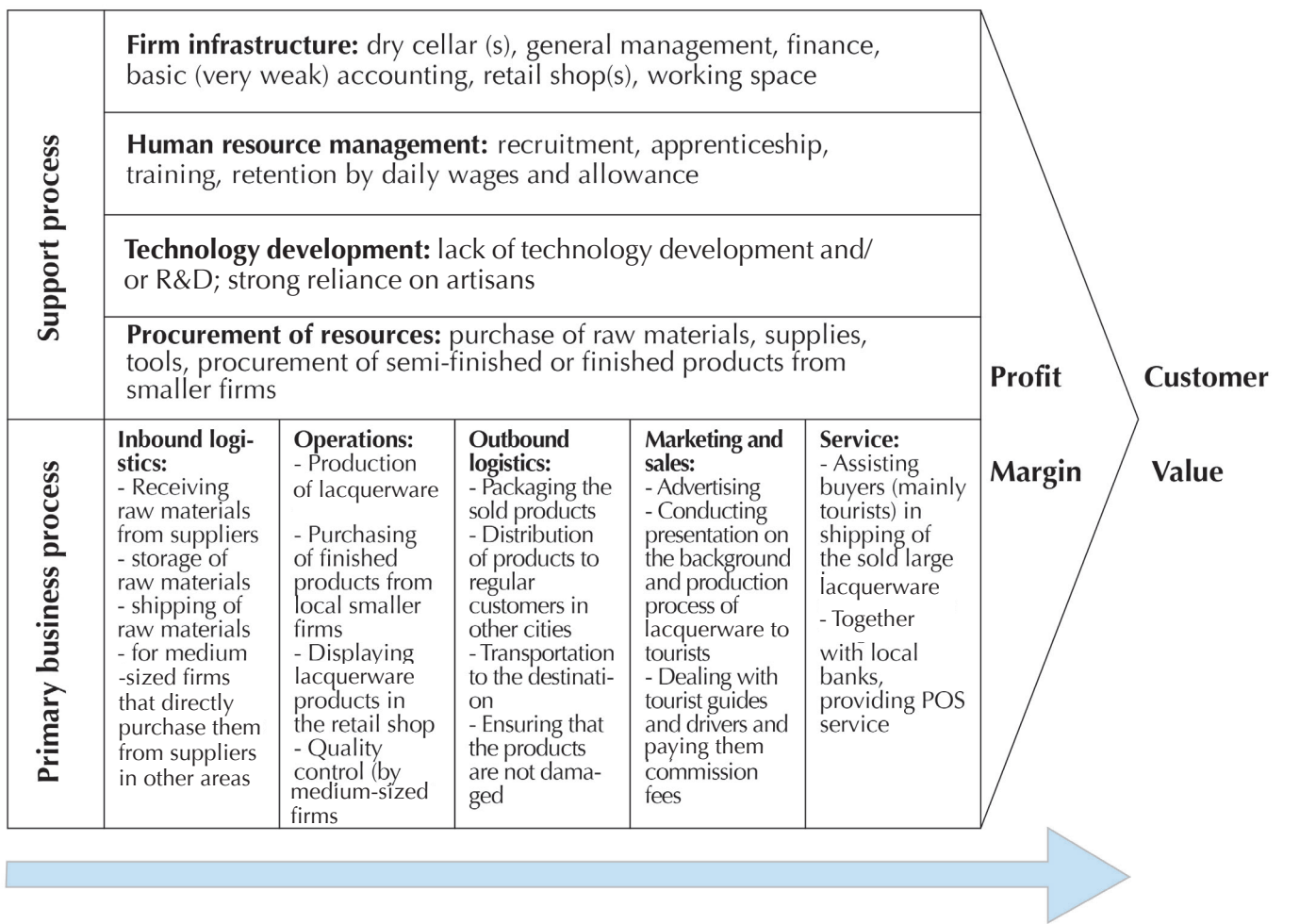
It is important to note, that most of the lacquerware enterprises prefer not to get loans from any sources to finance their businesses, but rather prefer to generate revenue from sale and increase their working capital.

The targeted interviewees were also asked if they required any additional financial resources in order to expand their businesses. Many of them, especially the micro and small enterprises mentioned that they needed finance to build better and bigger drying cellars that require a significant amount of capital investment.

III. OVERVIEW OF THE VALUE CHAIN

The following figure depicts the value chain analysis (based on the Porter’s value chain model²) for primary firms, including the small and medium-sized lacquer enterprises in Bagan.

Figure 1: Value Chain analysis of the lacquerware cluster in Bagan (based on Porter’s value chain model)

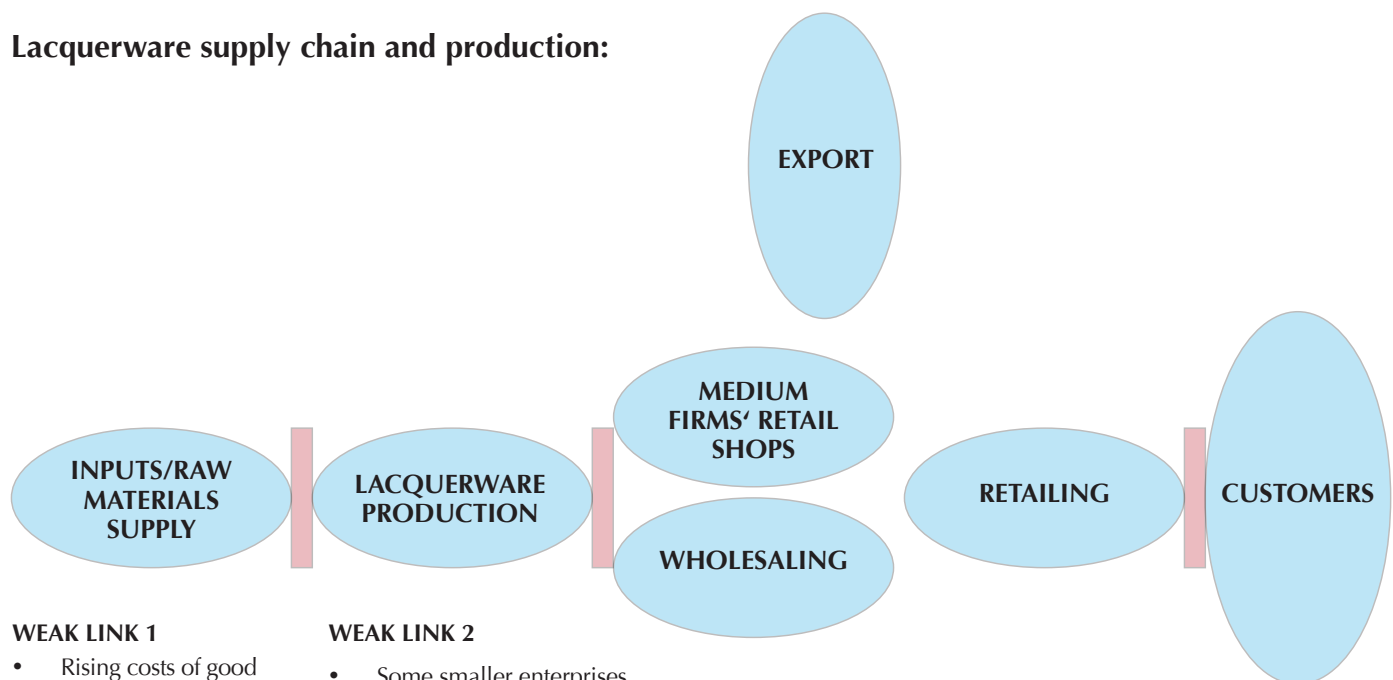


2 Porter, Michael E., «Competitive Advantage». 1985, Ch. 1, pp 15-11. The Free Press. New York.

Weak links identified by the study:

- Limited trust among stakeholders
- Low linkages among major stakeholders
- Firms and stakeholders lack long term strategies
- Weak supporting institutions (e.g such as lacquerware college, vocational trainings)
- Limited coordination and cooperation among stakeholders
- Limited information and data on lacquerware business cluster
- Limited practical support from government institutions to the cluster
- Lack of understanding on cluster development

Lacquerware supply chain and production:



WEAK LINK 1

- Rising costs of good quality raw materials
- Lack of control over the quality standards of the raw materials
- Seasonal dependency and different quality over seasons
- Same price of the inputs for different levels of quality.

WEAK LINK 2

- Some smaller enterprises use inappropriate techniques which lead to low quality products
- Limited innovative ideas and techniques in the process of production
- Shortage of skillful designers and artists in decoration works
- Lack of modern facilities such as humidity/temperature controllers
- Lack of finance for micro and small enterprises
- Use of poor techniques rather than traditional ways (by some enterprises)
- Poor working environments
- Lack of quality control regulations or systems - from raw to finished products.
- Enterprises are not willing to investment in the development of business management skills of employees.

WEAK LINK 3

- MSMEs cannot sell their products or stocks on time to generate revenue and increase working capital
- Lack of access to international markets
- Limited marketing skills and promotional events
- High level of competition from substitute products
- Lack of effective and efficient shipping and transportation options

WEAK LINK 4

- Commission to tourist guides and drivers
- Lack of common standards and quality criteria

SHORTAGE OF SKILLED LABOUR ISSUES IN THE PRODUCTION PROCESS:

- Lack of quality education in the country
- Very high level of turnover of skilled labor to other industries (e.g., service related industries)
- Lack of interest in lacquerware business by younger generation
- Parents encourage their children to pursue other professional career rather than lacquerware related career

IV. ACTORS AND THEIR SOCIO-ECONOMIC CONDITIONS IN THE CLUSTER

A. Primary enterprises

There are about 650 to 750 micro, small and medium lacquerware enterprises in Bagan and Nyaung-U, with an estimate overall direct employment to at least 4,000 locals. Due to the nature of the work environment and culture at the lacquerware workshops (no contracts), it is difficult to have the accurate statistics on the level of employment. Almost all of the medium and small enterprises are registered with or pay taxes to the local municipality, while the micro-enterprises are not registered anywhere. Home-based enterprises do not need to register with any government department and are not required to pay taxes as per common practice.

Size of Enterprises (by employment)	Estimated No. of enterprises	Estimated overall employment	Estimated annual revenue	Estimated annual profit
Micro (less than 10 employees)	600 – 700	3,000	MMK 30 – 120 lakhs	MMK 15 – 75 lakhs
Small (11 – 50 employees)	40 – 50	900	MMK 120 – 2000 lakhs	MMK 50 lakhs – 1200 lakhs
Medium (51 – 100 employees)	6 – 8	500	MMK 2000 – 5000 lakhs	MMK 600 – 2500 lakhs
Estimated total	646 – 758	4,400	-	-

1 lakh = about 100 USD

B. Poverty gap among different sizes of firms

Among the different sizes of enterprises operating in the lacquerware cluster in Bagan, it was noted, that larger enterprises that own retail shops are better-off compared to micro-sized firms. The main reasons for this are that the large retail shops control the tourist market in Bagan, accounting for up to 95% of the market share; they are more competitive than the small and micro firms as they are able to pay high commission fees to tourist guides and taxi drivers that bring tourists to their shops. Micro-sized enterprises depend on the retail shops to access the market and cannot determine the price of their products, unless tourists purchase directly from them. Almost all quality products can only be found at large retail shops. Although some small firms also own retail shops, they are less competitive compared to the medium size firms that have recruited most of the skilled workers in the cluster, as they are able to pay better daily wages. Most of the small firms are currently struggling with the shortage of skilled workers due to the significant movement of skilled labor from the lacquerware industry to the service sectors.

This has increased the income gap among the different firm sizes, as well as among their workers. The income gap between employees at a micro firm and a medium-sized firm can be up to 40%.

C. Workers

The workers are important players in the lacquerware industry due the labor intensive production process. In Bagan, all workers at lacquerware enterprises are locals. The average age of employees working at the small and medium sized lacquerware workshops is 20 to 30 years. The study concludes, that:

- There are no types of contracts between the employers and the employees
- Employees are paid on a daily basis and there is no requirement for them to come to work every day
- They do not need to submit a formal request letter for leave
- There is no legal or formal binding between the employers and the employees after they leave the firms

Common working hours at the lacquerware workshops in Bagan may vary. The most frequent working hours are:

- 7:00 am to 4:00 pm
- 7:30 am to 4:30 pm
- 8:00 am to 5:00 pm

The average daily wages³ (in Kyats) for employees (workers, not apprentices) working in the lacquerware sector are:

Gender	Micro-size	Small-size	Medium
Male	2500 – 3500	3000 – 4000	3500 – 5000
Female	2000 - 3000	2500 – 3500	3000 – 4000

The ranges of daily wages are very much based on the skills and years of experiences of individuals rather than on a fixed or standardized pay system.

The workers are sometimes given additional social and medical allowances. For example, married working couples may receive some financial allowance when they have a new child and a worker who is sick and hospitalized will be given a medical allowance by the firm. However no written legislation is applied to these cases.

The owners, co-owners and co-workers of home-based or micro enterprises are middle-age or older. The main reasons are:

- They are married and have children who they need to take care of
- They prefer flexible working hours
- They possess specific skills or lacquerware making techniques that help them earn more revenue compared to daily wages at the other lacquerware workshops

D. Suppliers of raw materials

Direct suppliers of raw materials are traders from mountainous areas such as Shan State, Kachin State, Monywa Township, Katha Township and upper Myanmar. They have close business relationships with local traders in Bagan, who buy the raw materials from the direct suppliers and stock them in Bagan for sale to lacquerware enterprises, especially the micro and small businesses. Some of the small and medium sized lacquerware firms have direct linkages with the raw material suppliers from other towns or cities. The main objective of this is to secure the good quality of the raw material, such as lacquer sap and bamboo and obtain better prices.

E. Subcontractors and franchisers

Although there is no practice of formal contracting or subcontracts, informal subcontracts are common between different sizes of lacquerware enterprises. There have been almost no signed or formal contracts between different parties in the lacquerware cluster. There are also some franchising practices, though not significant. The linkages between such actors will be further discussed in the section of horizontal linkages.

F. Marketers: dealer, retailer and commissioner (tourist guide)

The main marketers for lacquerware products are the retail shops in Bagan. About 50 to 80% of the stocks being displayed at the retail shops in Bagan are purchased from the smaller and micro-enterprises, which are commonly home-based. Although the major retailers are also family-owned, they have a much larger scale of sales and control up to 90% of the market in Bagan. There are also retail shops in some major cities including Yangon and Mandalay, that are regular customers to small and medium-sized enterprises in Bagan.

³ Unskilled/hard work daily wage: min \$2, median \$3, max \$5.

There are some levels of informal dealerships among the different sizes of firms. This topic will be further discussed below in the section on the vertical linkages.

Large retailers (6-8 businesses, 0.8% of all lacquerware producers) control the tourist market in Bagan and usually have connections with tour guides or tour groups. The tourist guides or taxi drivers who bring the tourists to the retail shop are usually paid 30% of the revenue from sale (if both are present, tourist guide receives 20% and driver receives 10%). This practice helps large companies and retailers to link with tourists and increase their revenues. However, micro and small companies cannot compete, as they cannot afford to pay the commission fees to tourist guides.

G. Supporting institutions

There are a number of supporting institutions to the lacquerware cluster in Bagan, even though the linkages between them and the cluster are very weak. Through the provision of POS machines, bank institutions have contributed to the increase in sales in the past years. PACT-Myanmar, a non-governmental organization, also offers microfinance services to the locals, particularly for women. The NGO provides up to MMK 5 lakhs or 500 USD at a low interest rate. The services offered by PACT-Myanmar are not just for lacquerware producers, but for other industries as well. The cooperative department of the government also provides micro loans to some families, but again this service is not exclusively targeting lacquerware businesses.

The governments Lacquerware Technology College is considered as a supporting institution for the cluster. However, there has been very limited linkage between them in the past decade. In order for the college to be an effective supporting institution to the cluster, it is necessary that the college improves its facilities, curriculums and provides practical short-term and long-term training programs to potential and existing workers involved in the cluster.



V. OVERVIEW ON ANALYSIS OF BUSINESS OPERATIONS

There are six to eight medium-sized⁴ lacquerware enterprises in Bagan and each of them employs between 51 to 100 workers. These businesses have their own retail shops that display all kinds of lacquerware products from the region. Some of these firms include U Ba Nyein Lacquerware Workshop, Tun Handicrafts, Bagan House, Ever Stand, Mya Thit Sar and Shwe La Yaung. Their businesses were started several generations ago and passed from one generation to another. These companies control the local tourist market, as they have well-trained and English speaking sales and marketing staff at their workshops and retail outlets. These medium enterprises rely heavily on the smaller or micro firms that supply either semi-finished or finished products. About 60 to 80% of the finished products being displayed at their retail shops are supplied by smaller firms.

Even though the main buyers are tourists from different countries including France, Italy, Spain, Germany, Japan, Korea, China and Thailand, most of the medium enterprises also have regular customers from major cities such as Yangon, Mandalay and Inle Lake. The increase of tourism in the region has significantly contributed led to a significant growth of this cluster. The availability of POS machines has also had a positive impact on this development. The sale to tourists account up to 80% of total sale for some enterprises.⁵ For marketing, most of the enterprises rely on the tourist guides who bring tourists to the workshop. The retail shops pay from 20 to 30% of sale price to the tourist guide or/and taxi drivers who bring the customers to the shop.

These medium firms employ some of the most skillful workers in the industry by paying them comparatively better salaries. These skilled employees make good quality products for foreign customers or consumers. The daily wage for skilled labor working at these firms range from 3500 Kyats to 5000 Kyats for male workers and 2500 to 4000 for female workers per day. No employee is paid on monthly basis and there is no contract between the employers and the employees.

Compared to small and micro firms, larger firms have a higher level of entrepreneurship background, as several of the current and former owners of the enterprises received training abroad. Some of the entrepreneurs even brought back technology from Japan, especially bamboo and cane related technologies and applied them in their works.

Almost all micro enterprises and many of the small-sized firms see the larger firms as their markets, as they have been given informal subcontracts and offer their finished products to them. Micro firms also supply with semi-finished or finished products to small firms that have informal wholesale contracts with medium firms or regular customers in other cities including Yangon and Mandalay.

In Bagan, not every family is involved in production of lacquerware. Many of them are involved in trading of raw materials such as bamboo, lacquer sap, wood and coloring materials. These traders have a strong linkage with suppliers of raw materials from Shan State and upper Myanmar.

VI. CLUSTER MAPS

Figure 2: Lacquerware Cluster Map of Nyaung-U Township

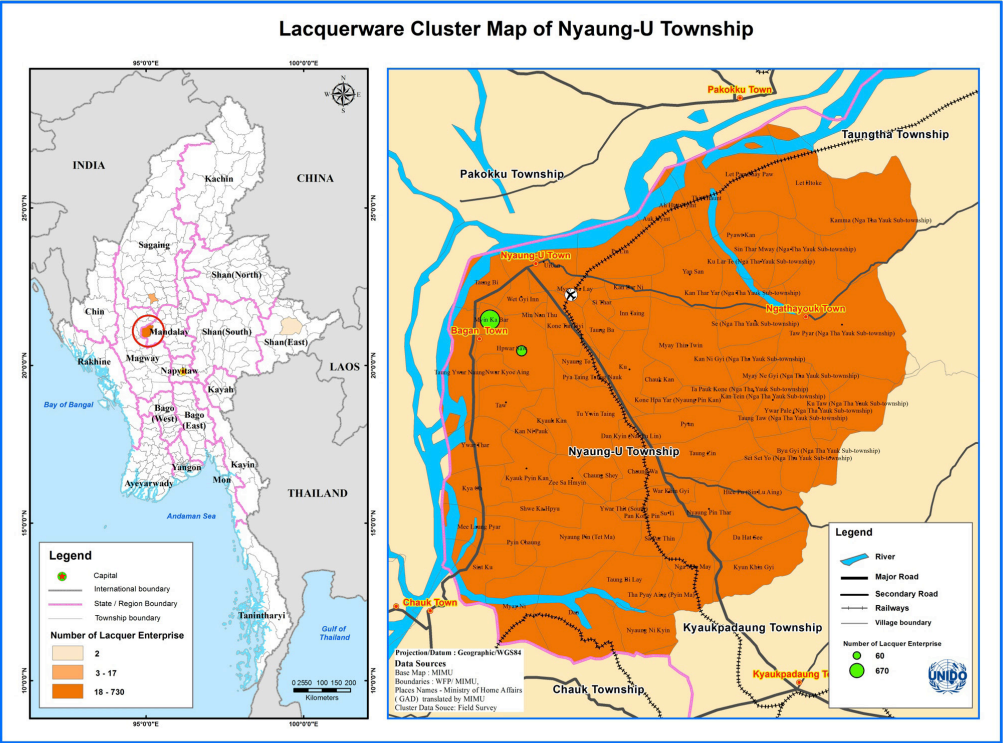
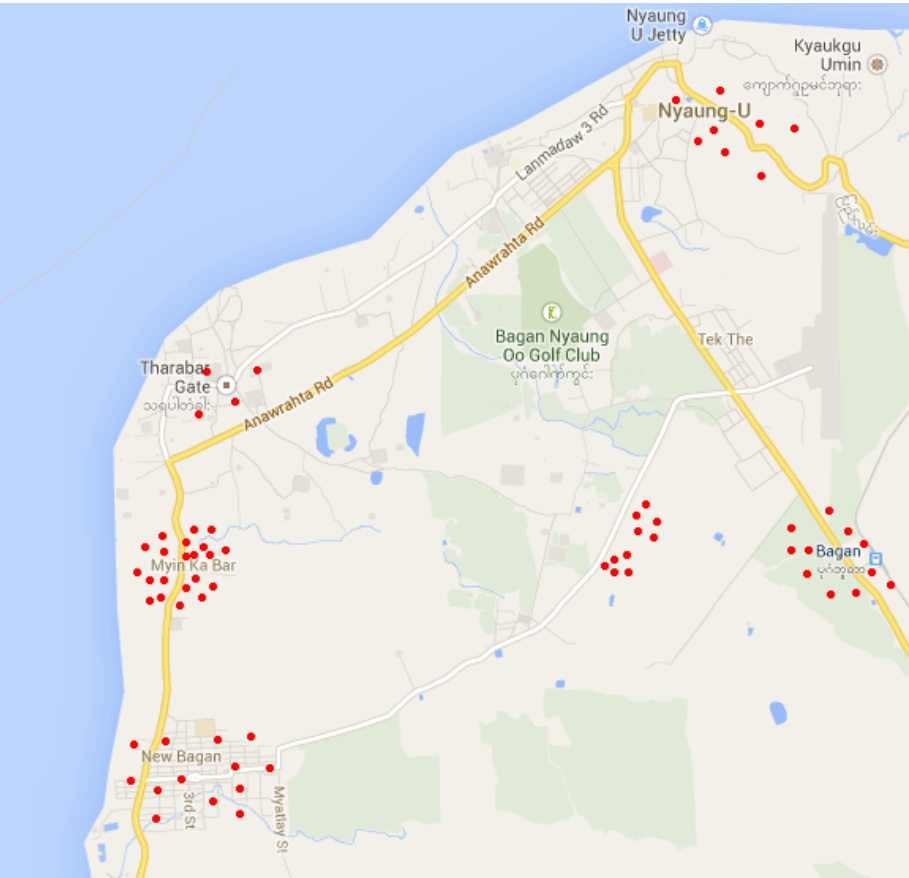


Figure 3: Location of small and medium lacquerware enterprises



VII. STAKEHOLDER LINKAGE ANALYSIS

A matrix of stakeholder linkage analysis was conducted in order to explore levels of linkages among the major stakeholders including lacquerware enterprises, direct raw material suppliers, government's lacquerware technical college, financial Institutions (banks, regional business association (MRCCI)), local business association at township level, BDS providers, other supporting institutions, such as cooperatives, PACT-Myanmar, tourist guides/taxi drivers, etc.

The scoring criteria for the stakeholder linkage analysis was set as follows:

1.	No linkage or no cooperation or no impact on each other	0
2.	Poor linkage or weak cooperation or very little impact on each other	1
3.	Fair linkage or some cooperation among them or some impact on each other	2
4.	Good linkage or good cooperation among them and has significant impact	3
5.	Very good linkage or excellent cooperation among them and excellent impact	4

As depicted in the matrix below, the highest level of linkages among the stakeholders are:

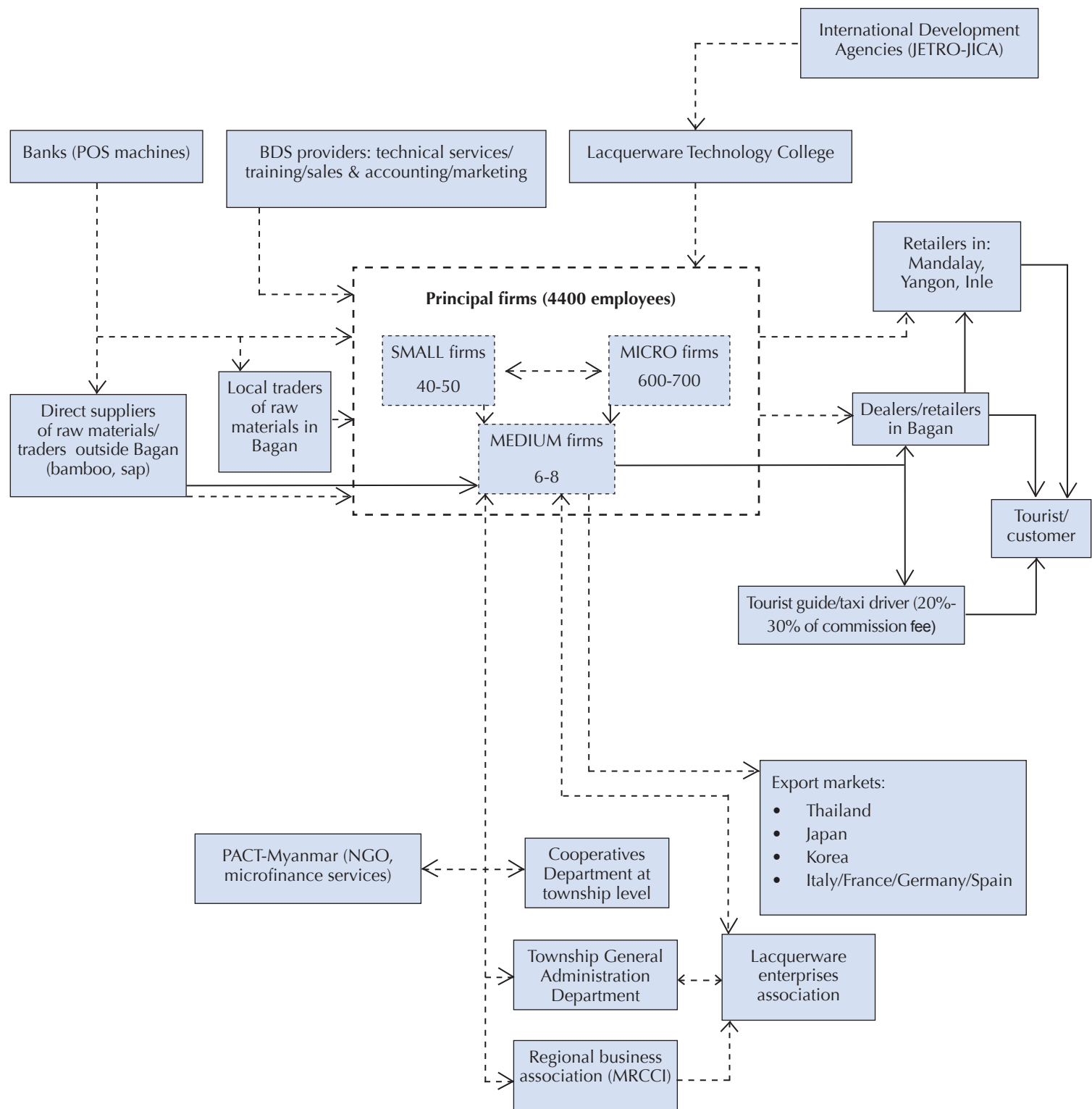
- Between the lacquerware enterprises with different sizes – by number of employees
- Medium sized enterprises that own large retail shops and tourist guides/taxi drivers who take tourist to the shops
- Direct raw material suppliers and medium-sized enterprises
- Matrix on the level of linkage among the major stakeholders in the lacquerware cluster



	Micro firm (less than 10 employees)	Small firm (11 – 50 employees)	Medium firm (51 – 100 employees)	Direct raw material supplier	Government's lacquerware technical college	Financial Institution (Banks)	Regional business association (MRCCI)	Local (township level) business association	BDS provider	Other supporting institutions (Cooperatives, PACT-Myanmar)	Commissioner or tourist guide (who brings tourists to workshops)
Micro firm (less than 10 employees)	0	2	3	1	0	1	0	1	0	2	1
Small firm (11 – 50 employees)	2	0	2	2	0	2	0	1	0	1	2
Medium firm (51 – 100 employees)	3	2	0	3	1	2	1	1	1	0	3
Direct raw material supplier	1	2	3	0	0	0	0	0	0	1	0
Government's lacquerware technical college	0	0	1	0	0	0	0	0	0	0	0
Financial Institutions (Banks)	1	2	2	0	0	0	0	0	0	1	0
Regional Business Association (MRCCI)	0	0	1	0	0	0	0	1	0	0	0
Local (township level) business association	1	1	1	0	0	0	1	0	0	0	0
BDS provider	0	0	1	0	0	0	1	0	0	0	0
Other supporting institutions (Cooperatives, PACT-Myanmar)	2	1	0	0	0	1	0	0	0	0	0
Commissioner or tourist guide (who brings tourists to workshops)	1	2	3	0	0	0	0	0	0	0	0

LACQUERWARE CLUSTER MAP

(Dashed lines show weak linkages)



VIII. INSTITUTIONAL LINKAGE ANALYSIS

A. Government's Lacquerware Technology College

Founded in 1924 in Bagan, the lacquerware training school was upgraded to Myanmar Lacquerware Institute in 1995. In 2003, the institute was renamed as Lacquerware Technology College, offering one-year and two-year lacquerware technology diploma courses. Each academic year about 350 to 400 students mostly from Nyaung-U district are enrolled. The curriculum includes basic lacquerware, English, mathematics, accounting, statistics, management and ICT. With support from Japanese Development Agencies, such as JICA and JETRO, the college has established exchange programs with institutions in Japan.

However, the linkage between the lacquerware cluster and the college is very weak due to the following reasons:

- The students attend the college not because they are interested in lacquerware business, but rather because the college is seen as a stepping stone to continue higher education at other universities, such as Monywa Economics University. Therefore, the students who are trained at the college rarely work in the lacquerware industry
- The college recruits only the students who graduate from high school, giving no opportunities to young people that have not graduated from high school, but are in fact involved in the lacquerware industry
- The college lacks required facilities for teaching (e.g., it doesn't have enough budget to purchase required raw materials, such as bamboo, wood, lacquer and other tools needed for practical training purposes)
- The college does not have short-term or long-term vocational training programs that are suitable for existing workers
- The college does not have a research and development department to conduct in-depth studies on the lacquerware industry
- The college does not reach out to the lacquerware enterprises for collaboration
- Even though the college used to organize promotional events, such as contests, exhibitions, such events have halted mainly due to mismanagement or lack of proper management of the college
- On the lacquerware industry side, the enterprises lack trust in the college
- The enterprises prefer to use traditional way of teaching and training new apprentices
- The enterprises also do not like to send their workers for short-term trainings to the college due to the lack of belief that the trainings will be beneficial to their businesses

B. Financial institutions

All banks are located in Nang Oo, which is closer to the airport, but quite far away from most lacquerware businesses. None of the banks offer special products or services for the lacquerware industry yet. All lacquerware shop owners get standard services and conditions at the banks. During the study no significant loans or credits to the lacquerware businesses could be detected.

The most requested financial services from the lacquerware businesses are:

- Remittances to other townships within Myanmar
- Foreign exchange (mostly USD into Myanmar Kyat MMK)
- POS (Point of sale) machines, so customers can pay by credit card in the lacquerware shops (lacquerware businesses have to pay a 2% fee on every transaction).

Often, major business owners have two POS machines due to low connectivity (one for the telephone line, one for the internet/GPS). This infrastructure is expected to be improved by the new telecommunication providers operating in Myanmar (Telenor/Oredoo).

Banking institutions in Bagan	POS installing service	Clients with Lacquerware background	Comments
Aya bank	✓	Around 10	Plans to open 2nd branch in New Bagan to be closer to more clients in 04/2014
Tun Foundation Bank	x	< 10	Best FX rates sometimes and most professional booth at the Bagan Airport
KBZ	✓	> 50	Best remittance service due to most branches in Myanmar, has a 2nd building closer to the market for FX exchange
CB Bank	✓	< 20	Just opened 3 months ago, in the process of increasing number of clients

C. Business associations

Only in early March 2014, the first lacquerware enterprises association (Bagan, Nyaung-U) was formed in the region with the encouragement from the Mandalay Region Chamber of Commerce and Industry (MRCCI). The formation of the local association was driven by the necessity for the lacquerware enterprises to deal with supporting institutions, particularly development agencies. The major lacquerware enterprises are planning to strengthen the association and its role within the industry.

In term of the linkage between the newly formed association and the cluster, some positive backward linkage was observed, since the establishment of the association has helped building a trusted relationship between larger lacquerware enterprises or retail shops and smaller suppliers, who get informal sub-contracts in the process of making lacquerware products. The interviews conducted with members of the new association for the purpose of this study revealed a strong vertical linkage between micro and medium enterprises.

Such business associations within the cluster can be formalized as supporting institutions that promote both, forward and backward linkages. Furthermore, they can organize promotional events, such as exhibitions, contests and auctions to enhance forward linkages, as well as arrange capacity building trainings and partnership matching to promote backward linkages.

D. Horizontal linkage and inter-firm collaboration

There is a weak horizontal linkage among the medium enterprises that consider each other as competitors. These firms compete with each other in terms of access and control of markets, recruitment of skilled workers, access to good quality raw materials and design innovation (new design ideas and techniques tend to be copied). Among the micro and small enterprises, there is a fair horizontal linkage as they cooperate with each other in the value chain or production processes. For example, when a micro or small enterprise gets a contract with a medium-sized enterprise, but is not able to complete the work because limited production capability and management skills, it will approach its neighbor enterprise to seek for cooperation.

Due to the traditional production process of making lacquerware based on moving back and forward the handicrafts from the drying cells, sapping phase, design and polishing, it is necessary and critical, that the teams of workers or individual workers in one firm cooperate with each other to ensure the quality of products. The study observed an excellent inter-firm linkage within the cluster.

There is also a strong inter-firm linkage between the production teams and the retail shop. The results of the study indicate that this is mainly due to the fact that the retail shop owners want to control the quality of products being displayed at the retail shops.

E. Vertical linkage: sub-contracting and franchise practices

There are very strong linkages among the different sizes of enterprises in the lacquerware industry in Bagan. The micro and small enterprises rely on the medium-sized enterprises that own larger retail shops for accessing the markets and generating revenue from sales. At the same time, the medium enterprises also rely heavily on the micro and small enterprises for integrating their own production or to outsource or contract some semi-finished products.

Most of the micro or home-based lacquerware producers supply their semi-finished or finished products to retail shops without contract. When there are no orders, they go to the shop that offers the best price and try to sell them. If the products are rejected due to lack of quality or the retail shop has enough products on stock, they go to the next one, even if that one will offer a lower price. If the shop also refuses to buy the products, they will go to the next shop until they find one that is willing to take their products for a negotiated price.

In terms of accessing the tourist market, the micro and small enterprises find it difficult to compete with the medium-sized companies that own large retail shops and also offer competitive commission fees to tourist guides and taxi drivers who bring potential customers, particularly the tourists.

Due to the shortage of skilled labor and increasing daily wages for workers, the medium enterprises that own large retail shops in Bagan usually give informal contracts to home-based or micro enterprises for making some types of lacquerware, either parts of the production process or the finished product.

Regular customers from other cities, such as Yangon and Mandalay also make orders to the small and medium enterprises to produce lacquerware products for sale in their retail shops and/or for export. However, the study shows, that micro firms do not have regular customers from other cities.

There is no paperwork, such as signed or formal contracts among micro, small and medium enterprises in the lacquerware cluster – both in the production process and value chain. The agreement or collaboration among them is rather based on mutual trust.

F. BDS providers

There are almost no business development service providers for the lacquerware industry in Bagan, except the advertising agencies and the Government's Lacquerware Technology College, which has a very weak linkage with the cluster. The small and medium lacquerware enterprises provide their own trainings to new workers and apprenticeships young individuals who join the enterprises as unskilled workers. The lack of professional BDS providers in the industry is mainly due to the local enterprise culture where individual firms are self-reliant for their business from every aspect including capacity building, production, management, marketing, sale and others.

G. Opinion leaders and implementing institutions/agencies

The main opinion leaders in the lacquerware industrial cluster are:

- Owners of medium and small-sized enterprises
- Leaders of lacquerware enterprises association at township level
- Entrepreneurs
- International development agencies or organizations
- Officials who are involved in SME development
- Designers or artists working at the lacquerware workshops
- Customers
- Researchers.

The implementing institutions or organizations for the development of the cluster include:

- Lacquerware enterprises association
- International development agencies
- Government institutions including the Lacquerware Technology College and cooperatives
- Medium-sized firms
- BDS providers.



IX. CROSS-CUTTING LINKAGE

A. Linkage with the tourism sector

In 2013, about 200,000 tourist arrivals were registered to Bagan, which was about a 20% increase to the prior year.⁶ The significant increase in tourist arrivals has led to a boom of the tourism-related industries, such as hotels, construction and services. Moreover, the sudden growth in the tourism industry has strong forward and backward linkages with the lacquerware industry.

Positive forward linkage and negative backward linkage for the lacquerware cluster are noteworthy.

There is strong positive forward linkage, as rising tourist arrivals increase demand and sales of the lacquerware products in Bagan, thus giving the opportunities for the lacquer enterprises to generate significant revenue. For instance, 80% of the total sales revenue of the Bagan House, one of the largest enterprises in Bagan, is from tourists.⁷ Micro enterprises in smaller villages, such as Pwar Saw and Min Nan Thu also see the growth of tourism as an opportunity, as they are able to increase their direct sales to tourists who appreciate the arts and respect the labor-intensive and traditional way of making lacquerware. Foreign tourists who visit Bagan mentioned their appreciation, not just on the 2500 red-bricked temples, but also on the unique culture of lacquerware.

However, despite the increase in demand of lacquerware products in Bagan there is a strong negative backward linkage for the lacquerware cluster in terms of production, as workers including trained and skilled ones move from the lacquerware industry to tourism-related industries (as mentioned before growing very fast), such as hotel and construction. This negative backward linkage has led to the shortage of skilled labor in the lacquerware industry.⁸ The study indicates, that the high level of movement of semi-skilled or skilled labor from the lacquerware industry to other tourism-related industries, are mainly due to the following reasons:

- Younger generations prefer to work in hotels, to sitting all day long in the lacquerware workshops and getting their hands dirty⁹
- Working at hotels people receive monthly salaries as well as tips from tourists and thus ensure a higher income
- Younger generations prefer professional careers, as they can climb the social ladder
- The social perception of working at a lacquerware workshop as an “inferior job” compared to jobs in other sectors
- Working environments in other sectors are comparatively better than in the lacquerware workshops
- Parents prefer their children to pursue professional careers rather than working in the lacquerware workshops

The small and medium lacquerware enterprises in Bagan have lost half of their workers in the past year.¹⁰ These enterprises are now facing the shortage of qualified workers to expand their businesses, especially as it takes up to three years of training to acquire the necessary skills.

Some lacquerware enterprises have even downsized their businesses and moved from the lacquerware industry to other sectors, such as hotels due to the shortage of skilled labor. For instance, the owner of Shwe Bagan lacquerware workshop has opened a small hotel next to his lacquerware retail shop. His family now earns more regular revenue from the hotel business than through their the lacquerware retail shop.

7 Ibid

8 “Skilled labour shortage poses threat to traditional lacquerware”, The Mizzima News, 11 February 2014, <<http://www.mizzima.com/opinion/features/item/-10897skilled-labour-shortage-poses-threat-to-traditional-lacquerware/-10897skilled-labour-shortage-poses-threat-to-traditional-lacquerware>>

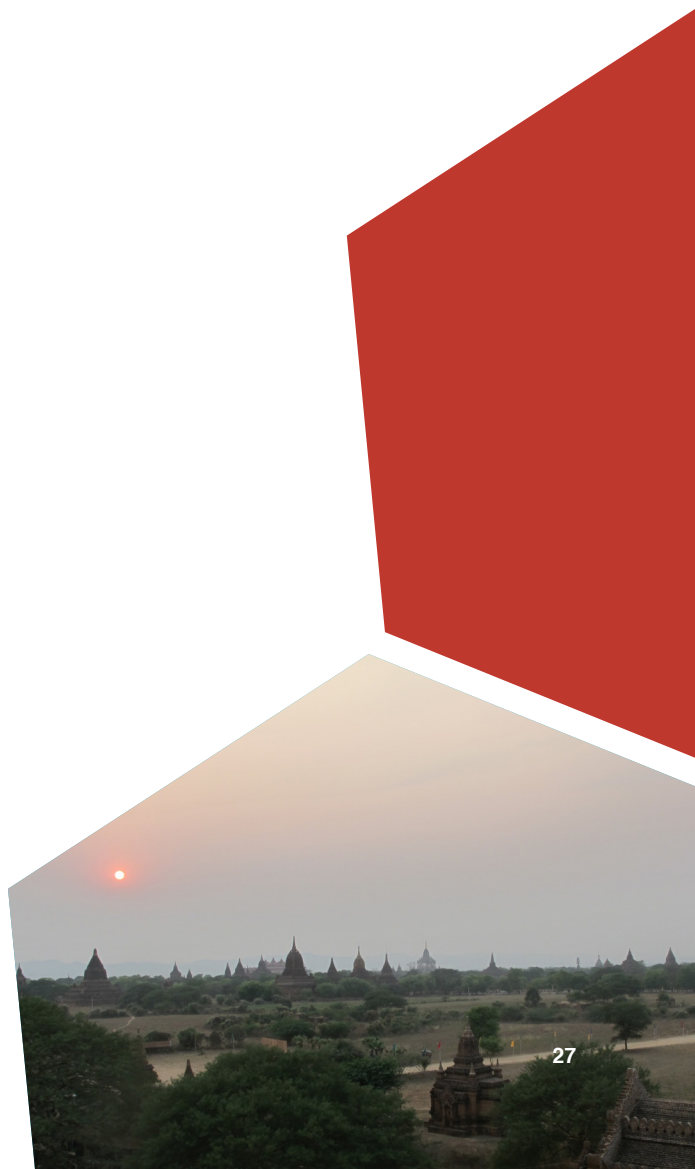
9 Ibid

10 “Bagan’s tourist growth a double-edged sword for lacquer trade”, The Irrawaddy, 22 January 2014 <<http://www.irrawaddy.org/business/bagans-tourist-growth-double-edged-sword-lacquerware-trade.html>>

B. Linkage with the forestry sector

The lacquerware business cluster in Bagan has a strong backward linkage with the forestry sector, as major raw materials including lacquer sap, bamboo, cane and wood are forestry products. While bamboo is mostly from Monywa area and Shan State, other raw materials such as lacquer sap, cane and wood are from mountainous regions of the country.

In the past two years, the prices of such raw materials increased 20-30% due to increasing demand related to the overall economic growth of the country. For instance, a quality 15-foot bamboo now costs MMK 2,500 (USD 2.5) and used to cost MMK 2,000 (USD 2) in 2012. Regarding sap, the declining supply might have played a role. When the lacquer sap producers in Ya-mae-tin township moved to gold mining because it became more profitable in 2011, the price of quality lacquer sap increased by 30%.



X. SWOT analysis on the cluster

Based on the data collected, a SWOT analysis was conducted in order to analyze the current situation and particularly target the strengths, weaknesses, opportunities and threats of the lacquerware cluster in Bagan. The following sections provide implementable strategies and recommendations in line with the results of the SWOT analysis.

SWOT Analysis Lacquerware Business Cluster in Bagan, Nyaung-U	
Strengths	Weaknesses
<ul style="list-style-type: none">▪ “hand-made” products or handicrafts▪ Strong traditions in the production process▪ Uniqueness in terms of designs▪ Consumers appreciate and acknowledge the product for the labor intense production process, traditional value and regional characteristic▪ Unskilled or skilled workers can be trained▪ Skill transfer through traditional teaching or apprenticeship▪ Enterprises have capability to produce good quality and diversified products▪ Strong vertical linkage among micro, small and medium enterprises▪ Understanding local and domestic markets▪ Flexibility in working environments and hours▪ Recent formation of new local lacquerware association	<ul style="list-style-type: none">▪ Lack of access to international markets▪ Rising prices for raw material and no certification of quality of raw materials▪ No proper or systematic business management (e.g. marketing, accounting, sales)▪ Lack of access to finance for micro and small enterprises▪ Weak supporting institutions (e.g. such as lacquerware college, vocational trainings)▪ Shortage of skilled workers including designers or artists▪ Limited coordination and cooperation among stakeholders▪ Limited information and data on lacquerware business cluster▪ Limited practical support from government institutions to the cluster▪ Lack of advanced technology such as humidity/temperature controller▪ Lack of quality control regulations or systems - from raw to finished products▪ Limited adoption of proven best-practice techniques in areas such as product development of lacquerware▪ Lack of understanding on the concept of cluster development

Opportunities	Threats
<ul style="list-style-type: none"> ▪ Increasing number of tourist arrivals to Bagan ▪ Better political and business environments ▪ Availability of international markets, as economic sanctions have been lifted by western governments ▪ Availability of POS machines – UnionPay, MasterCard, VISA, MPU, etc ▪ Tourists’ appreciation on the products and process of making them ▪ Location – being in Bagan ▪ Strategic location as products can easily be shipped to other parts of the country or to neighboring countries ▪ Availability of cheap labor ▪ Availability of support from both governmental and international organizations ▪ Availability of microfinance institutions 	<ul style="list-style-type: none"> ▪ High level of movement of skilled labor from lacquerware cluster to others ▪ Use of chemicals or cheap materials such as adhesive latex by some enterprises in making the products ▪ Use of easy techniques and ignoring traditional ways by some enterprises ▪ Availability of fake products ▪ Poor working environments for workers ▪ Fierce competition in the international market ▪ Lack of trust among major stakeholders ▪ The practice of paying commission to tourist guides and drivers ▪ Lack of effective and efficient shipping and transportation options ▪ Rising costs of good quality raw materials ▪ “Keeping skills secret”

Summary of formulated strategies based on SWOT analysis	
Strategies using strengths to address opportunities	Strategies to reverse weaknesses to address opportunities
<ul style="list-style-type: none"> ▪ Promote traditions in view of increasing sales to tourists ▪ Improve the role of lacquerware enterprise associations in the cluster and recruit more members by providing technical or managerial assistance to the associations ▪ Improve and use vocational apprenticeships to train cheap labour ▪ Use lacquerware related associations to expand the domestic markets and enter international markets ▪ Standardization, classification and certification of products to enter international market and increase exports 	<ul style="list-style-type: none"> ▪ Get assistance from governmental and international organizations to have access to international markets ▪ Get assistance from financial institutions and international organizations to invest in building better facilities, particularly drying cellars ▪ Employ cheap workers train them to become professional workers ▪ Provide seminars, (e.g. firms hire consultants/ employ trainers to improve business performance (like management, marketing, etc.) ▪ Use location – Bagan – as large production center keeping the traditional production process – but obtain higher productivity (through adjustments in cooperation forms or technology, e.g. drying cellars) and enter the neighboring markets. ▪ Penetrate other international markets by promoting the products through tourism and tourists and via different media tools (e.g. provide better information about products, producing process, labor used, hours for making each product, documentary videos, stories, books, etc.)

Strategies to counter threats with strengths	Strategies to fix vulnerabilities and eliminate threats
<ul style="list-style-type: none"> ▪ Attract skilled workers by improving their social status (e.g. workers involved in the cluster should get better financial and social benefits in order to make this career option more attractive and promote the perception of this cluster) ▪ Use traditional way of training or apprenticeship and foster the creation of better qualified and skilled workforce ▪ Use associations to organize meetings among stakeholders, build trust among them and promote standardized quality requirements ▪ Use existing capacity and skills to diversify products targeted at specific markets – by geographical locations and purposes of products ▪ Use associations to prevent the use of chemicals or cheap materials that might be threats to the reputation of traditional lacquerware products and the environment ▪ Improvement of working environment will attract more skilled workers to the cluster and enhance quality of the products; high quality standards shall lead to an increase in appreciation of the products by the consumers 	<ul style="list-style-type: none"> ▪ Building trust and cluster development for coordination and cooperation among stakeholders to set up and consistently improve quality control mechanisms ▪ Building trust and cluster development to coordinate stakeholders and organize promotional events such as product show, competitions or contests, auctions of high quality products domestically and internationally ▪ Introduce transport system or logistic supporting firms that specialize in packaging and transporting or shipping lacquerware products to different cities in the country as well as other countries ▪ Promotion of products as “major artistic products” and enhance appreciation on products that are for decoration ▪ Conduct laboratory tests on “use-quality products” and issue certificates as safe products for daily use ▪ Building trust and cluster development to coordinate stakeholders and award firms based on “quality of products”, “excellent working environment”, “creativity”, etc...

XI. Vision

All stakeholders including primary firms, supporting institutions, BDS providers, development and government agencies, etc. shall come together to develop a vision that will provide a strategic direction for the long term development of the cluster. The following issues can lead to a more inclusive vision statement:

Lacquerware products from Bagan, Myanmar, are the ones that all stakeholders including producers, marketers, buyers, customers, end-users, BDS providers and government institutions are proud of because of their good quality, traditional way of making them and also their contribution to job creation and poverty reduction. All end-users in foreign countries will have a pleasant memory about “Made in Myanmar” excellent quality and long lasting lacquerware products that are usable in daily life. All customers will also enjoy the art, history and culture embedded in the products for the purpose of decoration.

XII. Major issues, problems and implementable strategic recommendations

This section points out major issues or problems identified in association to the clusters being, the rationale for intervention and implementable strategic recommendations to resolve the main problems:

Major issues and problems in the cluster	Rationale behind the issues or problems	Recommended strategic solutions to deal with issues or problems
1. Shortage of skilled workers – in production process	<ul style="list-style-type: none"> ▪ Very high level of movement of skilled workers from lacquerware cluster to other industries (e.g. service related industries) ▪ Lack of interest in lacquerware business by younger generation as it is not perceived as an attractive career option ▪ Parents encourage their children to pursue other professional careers rather than engaging in a lacquerware related career 	<ul style="list-style-type: none"> ✓ Firms can attract skilled labour by creating better working environments and providing financial and social incentives (e.g. planned social ladder) ✓ The government can add vocational training programs to the current Lacquerware Technical College ✓ The government can also create a research center at the college and conduct research-oriented studies on the lacquerware markets both at domestic and international levels, how to improve the production process, how to improve the work environments at the firms ✓ Associations, development agencies or government institutions can conduct studies on the existing traditional way of teaching/learning and improve the efficiency and effectiveness of on-the-job learning

2. Lack of finance	<ul style="list-style-type: none"> ▪ Lack of financial institutions that provide loans and services to MSMEs ▪ Lack of access to international markets ▪ MSMEs cannot sell their products or stocks on time to generate revenue and increase working capital 	<ul style="list-style-type: none"> ✓ Many micro and small enterprises are looking for finance to improve their facilities used in the production process, particularly building better drying cellars ✓ Government and financial institutions can design tailored financial services to meet the needs of MSMEs, particularly for lacquerware businesses (but it is worthy to note that MSMEs prefer to generate revenue or raise capital from sales and to increase their working capital rather than getting loans). ✓ The government, development agencies, financial institutions should provide funding that covers promotional events to help enterprises generate revenue, marketing of the products, trainings that improve skills of the existing workers, and build good quality drying cellars ✓ Development agencies, government institutions can strengthen the supporting institutions including BDS providers
3. Limited market access	<ul style="list-style-type: none"> ▪ Lack of experience in international markets ▪ Limited marketing skills and promotional events ▪ High level of competition by other substituting products 	<ul style="list-style-type: none"> ✓ Development agencies and the government can strengthen the supporting institutions including business associations ✓ Enhancing coordination and cooperation among stakeholders in organizing promotion, marketing and sale events such as fair, product shows, auctions, contests, etc ✓ Development agencies, the government, supporting institutions and major firms can use different media tools to introduce lacquerware products from Bagan at domestic, regional and international levels; Media tools such as documentary videos, stories and product catalogues.

4. Limited cooperation among stakeholders	<ul style="list-style-type: none"> ▪ Limited trust among stakeholders ▪ Very low linkages among major stakeholders ▪ Firms and stakeholders lack long term strategies 	<ul style="list-style-type: none"> ✓ Associations and supporting institutions can facilitate cooperation among stakeholders by providing information, networks, organizing business events ✓ Development agencies, government institutions and associations can organize or sponsor trainings, workshops and capacity building events to increase cooperation ✓ They can also work together to promote the concept of intellectual property rights ✓ Associations, development agencies and government institutions can educate the stakeholders about competitive environments in foreign markets to promote the cooperation among them ✓ Development agencies can fund the cooperative activities by stakeholders
5. Inappropriate business and managerial skills	<ul style="list-style-type: none"> ▪ Lack of quality education in the country ▪ Owners focus more on production than business management such as marketing, sales, managing HR, etc ▪ Enterprises are not willing to invest in the development of business management skills of employees 	<ul style="list-style-type: none"> ✓ The government should add business-oriented courses or programs to the curriculums at Lacquerware Technical College ✓ Promote competitive working environment in business management by offering financial and social incentives ✓ Introduce BDS providers to some major enterprises
6. Weak supporting institutions and lack of efficient and effective logistic support	<ul style="list-style-type: none"> ▪ Supporting institutions are weak mainly due to past and current weak public administration and political problems ▪ Lack of coordination among supporting institutions ▪ Lack of logistic support that specialize in transport and shipping of lacquerware products 	<ul style="list-style-type: none"> ✓ Administrative reform at all levels is a must in order for the government to support the businesses, particularly the private sector, so as to eliminate corruption, improve transparency and coordination among stakeholders including supporting institutions such as associations ✓ Strengthen supporting institutions including business associations and BDS providers by offering technical and financial assistance ✓ Improvement of logistic infrastructure will shorten the time of transporting or shipping domestically made products including lacquerware products

7. Lack of product quality control and control of quality raw materials	<ul style="list-style-type: none"> ▪ Use of cheap chemical or raw materials by some smaller enterprises ▪ Lack of quality control mechanisms ▪ Some smaller enterprises use easy and short-cut techniques which lead to low quality products 	<ul style="list-style-type: none"> ✓ Leading business associations can encourage enterprises to avoid using non-traditional materials and even to conduct laboratory test to certify products which are for daily use ✓ Leading business associations, supporting institutions and other stakeholders can coordinate to design and set up quality control mechanisms (e.g., clear classification of products by purpose, size, weight, materials used etc...) ✓ Supporting institutions can set guidelines and educate the enterprises about best practice techniques
8. Production process and technology issues	<ul style="list-style-type: none"> ▪ Limited innovative ideas and techniques in the process of production ▪ Shortage of skillful designers and artists in decoration works ▪ Lack of modern facilities such as humidity/temperature controllers 	<ul style="list-style-type: none"> ✓ Supporting institutions including business associations and the college can organize or sponsor contests for the enterprises and producers – in term of quality, production processes and design for consistent improvement of the products ✓ Government and international development organizations can provide financial support to enterprises for building better and weather resistant drying cellars



XIII. Annex – List of interviewed firms, organizations and individuals

Date	Primary firms	Others	Interviews conducted by
6 March 2014	Ever Stand lacquerware shop*		Sai Aung Mane
6 March 2014		Several locals and tourists	Sai Aung Mane
7 March 2014		Several workers at hotels, restaurants and small shops	Sai Aung Mane
8 March 2014	“Family” lacquerware shop**		Sai Aung Mane & Tim Scheffmann
8 March 2014		Several micro and home-based firms in the villages****	Sai Aung Mane
9 March 2014	Mya Thit Sar lacquerware shop*		Tim Scheffmann
9 March 2014	Shwe Sin Jey lacquerware shop**		Sai Aung Mane
9 March 2014	Su Yat Di lacquerware shop**		Sai Aung Mane
9 March 2014		“Htay Family” lacquerware shop***	Sai Aung Mane
9 March 2014	Myo Myo**		Sai Aung Mane
9 March 2014	Shwe Bagan lacquerware**		Sai Aung Mane
9 March 2014		Some tourists	Sai Aung Mane & Tim Scheffmann
10 March 2014	Shwe Hla Yaung lacquerware shop**		Sai Aung Mane
10 March 2014	Chan Tha Tu lacquerware**		Sai Aung Mane
10 March 2014	Bagan House lacquerware*		Sai Aung Mane
10 March 2014	U Ba Nyein lacquerware*		Sai Aung Mane
10 March 2014	Tun Handicrafts*		Sai Aung Mane
10 March 2014		KBZ bank	Tim Scheffmann
10 March 2014		Aya Bank	Tim Scheffmann
10 March 2014		CB Bank	Tim Scheffmann
10 March 2014		Tun Foundation Bank	Tim Scheffmann
10 March 2014		Principal of lacquerware college	Sai Aung Mane
10 March 2014		Senior staff of lacquerware museum	Sai Aung Mane
10 March 2014		Some tourists	Tim Scheffmann

* Medium-sized firms

** Small-sized firms

*** Micro-sized firms

**** Brief interviews with home-based and micro firms that do not have business names. They are subcontractors or suppliers of semi-finished or finished products to retail shops

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