

Directions for Design Contributions to the Sustainable Development of the Handicrafts Sector in Northern Thailand

Disaya Chudasri*, Stuart Walker**, Martyn Evans***

* Lancaster University, Chiang Mai University, dchudasri@yahoo.com

** Lancaster University, s.walker@lancaster.ac.uk

*** Lancaster University, m.evans@lancaster.ac.uk

Abstract: This research explores opportunities for design and sustainable development in the handicrafts sector through a case study in upper northern Thailand. The goal of the research is to systematically develop craft-design approaches that are congruent with the principles of sustainability. The paper presents key findings from a literature review and from semi-structured interviews with local producers, supporters, and buyers. The first part of the paper describes the problems facing the handicrafts sector today and explains the concept of design for sustainability in relation to craft-design approaches. It also identifies ten potential handicrafts that could be developed for contemporary markets. The latter part of the paper presents key findings from semi-structured interviews. These include the three handicrafts, which appear to have the highest potential for development. A justification of the handicrafts selected for in-depth studies is provided, along with potential markets and market components, handicraft suppliers, the supply chain of handicrafts and the role of designers. Ultimately, three directions are recommended as craft-design approaches for the sustainable development of the handicrafts sector – replication, adaptation and innovation.

Key words: *Design, Sustainability, Handicrafts, Thailand, and Directions*

1. Definitions of Terms

Handicrafts	Handicrafts “ <i>can be defined as products, which are produced either completely by hand or with the help of tools. Mechanical tools may be used as long as the direct manual contribution of the artisan remains the most substantial component of the finished product. Handicrafts are made from raw materials and can be produced in unlimited numbers. Such products can be utilitarian, aesthetic, artistic, creative, culturally attached, decorative, functional, traditional, religiously and socially symbolic and significant.</i> ” [30]
Design	Design practitioners generally describe ‘design’ as an <i>idea</i> and a <i>process</i> of how we think about <i>users’</i> needs or wants that will become tangible – a concrete expression of design outcomes [33, p.24; 14; 36, p.119] in various forms, e.g. packaging, home furnishings, websites and street furniture. In this research context, the authors mention the term ‘design’ in preference to <i>product design</i> or <i>design management</i> .
Sustainability	Sustainability is also known as the triple bottom line [6], which includes the three interdependent factors of environment, society and economics in association with human activities [2, p.15; 36, p.127]. It requires better connections between nature, culture, values, power relationships and technology and needs action from various groups: global policymakers, national and local governments, non-governmental organizations (NGOs), corporations, local enterprises, communities and individuals [2, p.14; 33, p.20]. Recent

	discussions of ‘sustainability’ often also include reference to inner values and spirituality, which Walker [36] refers to as Personal Meaning within a Quadruple Bottom Line of Sustainability.
Sustainable Development	This is the <i>process</i> by which we move towards sustainability [2, p.14]. Contemporary understanding of the term ‘sustainable development’ refers to a way of living responsibly in terms of environmental issues, social justice and economic equity [35, p.17; 2]. A number of approaches to sustainable development have been developed, which can be divided into two broad categories: ‘ <i>technological sustainability</i> ’ and ‘ <i>ecological sustainability</i> ’ [33, p.20]. These two approaches share awareness of the global environmental crisis; however, they offer different sustainable <i>societies</i> [33, p.20].
Design for sustainability	‘Design for sustainability’ is part of the bigger picture of sustainable development, it addresses the unsustainable development of globalised mass-produced goods and product distribution [2, p.1].

2. Significance of The Study

Handicrafts production has been identified as a key facet of sustainable development, as it can provide opportunities for employment, especially in rural communities, and contribute to economic growth and environmental stewardship [7; 8; 31; 29]. *Traditional* handicrafts production often offers socio-cultural, economic and environmental benefits. However, over the last two decades, many traditional handicrafts, all over the world, have disappeared, while some are in sharp decline [20; 10; 4; 15]. Many authoritative voices have identified strong links between traditional handicrafts and sustainable development [e.g. 28; 26; 33; 24]. Therefore, this research explores the *possibilities* of sustainable development in handicrafts production for a viable future – i.e. moving in a direction of craft-design approaches.

3. The Study Site – The Upper Northern Region of Thailand

For Thailand, handicrafts intangibly represent cultural heritage and national identity.

“Handicrafts support national identity, which is called soft power. This is very important and different from support for growth in terms of GDP. Handicrafts are something necessary because they are part of everything, for example, tourism, a brand of Thailand – the nation as a brand. It’s about national entity. The soft power or the entity of Thainess can help to persuade people to have positive attitudes to Thai products, for example. If this kind of soft power went, there would no be national identity ... It’s about a selling point of national identity. It’s about the capacity of retaining national identity through handicrafts.” (Kosit Panpiemras, 2012)

The ‘*upper*’ northern region of Thailand is identified as the part of the country with the strongest tradition of handicrafts production. It is a region with a high density of small and medium sized enterprises (SMEs), which play a significant role in contributing to the region’s historical and cultural heritage, using ‘local’ knowledge associated with nature, employment and income generation [38; 18; 25].

4. Research Goal, Key Research Questions and Methodology

The goal of the research is to systematically develop craft-design approaches that are congruent with the principles of sustainability. The key questions this research sets out to answer are:

RQ1 What are the key principles of *design for sustainability* and how do they apply to the handicrafts sector?

- RQ2 How can craft-design approaches contribute to sustainable development in general terms?
- RQ3 What are the potential *areas* to which design can make positive contributions to the handicrafts sector in upper northern Thailand?
- RQ4 How can *design for sustainability* be applied specifically to the handicrafts sector of upper northern Thailand?

The research methodology is based on an ethnographic approach to qualitative data collection. An ethnographic approach is used to study the *cultural* phenomenon of human knowledge and behaviours in a particular cultural and natural setting, e.g. attitudes, beliefs and practices [12]. Research in design and the social sciences often relies on an ethnographic approach to develop new design thinking, design knowledge and cross-cultural work practices [9, p.42; 3; 32, p.3517; 34, pp.26-29]. It is especially useful when considering the business of innovation [34, p.20]. Also, predictions for future changes can be explored through interviews in a form of series of general ideas or abstract statements e.g. interviews with rural communities [9, p.32, p.33].

5. Data Collection

To develop new design thinking and knowledge, especially in cross-cultural work practices, various factors derived from primary and secondary sources should be taken into account in order to identify key issues, necessary conditions and participants for engagement in the research activities of practice-based research [36, pp.26-27]. The authors employ mixed methods that include: literature review, conversations with experts and semi-structured interviews. The methods employed for data collection are summarized in Table 1, below.

Table 1. Methods for Data Collection and Sources of Information

Methods	Literature Review	Conversations with Experts	Semi-structured Interviews
Data Types	Secondary data	Primary data	Primary data
Sources	<ul style="list-style-type: none"> • Conference proceedings • Annual reports • Books • Journal articles • Magazines • Web-based information 	<ul style="list-style-type: none"> • Supervisors • Academia • Representatives of the Thai government • Peer reviewers of a conference • Attendants in conference presentations • A producer/buyer of handicrafts for global markets 	<p>26 participants, having experience in the field of handicrafts for 10-35 years, who are classified by their major roles in 3 groups:</p> <ul style="list-style-type: none"> • Producers • Supporters • Buyers

6. Literature Review

6.1 Problematic Issues in the Handicrafts Sector

- **A decline in *traditional* handicrafts**

Thailand, a country with long-standing elaborate ceremonies and a unique tradition of ornate arts and crafts, is facing a sharp decline in the production of traditional handicrafts [4; 38; 39]. This decline is apparent in every region of Thailand and includes, for example, basketry, lacquerware and hand-woven textiles [37; 13; 4; 38].

- **Two different perspectives on developing handicrafts: for *conservation* or for *commerce***

A conservative view gives priority to the preservation or reinvention of traditional handicrafts for cultural value, while a commercial view focuses on the adaptation of traditional handicrafts for greater quantities of production for better economic viability [4; 38]. Unfortunately, these *strongly* conflicting perspectives seem to obstruct sustainable development of the entire sector. Furthermore, both approaches share a common problem, which is unstable *demand* for handicraft products. In turn, this leads to uncertainties in the *production* of handicrafts.

- **A need for sustainable *development***

Handicrafts *production* in upper northern Thailand fluctuates in relation to changing market *demand*. Handicraft producers need sustainable development for many reasons, such as economic prosperity, social well-being, cultural preservation and environmental responsibility [27; 25; 21].

- **Deficiencies in the studies of more recent developments in handicrafts**

There are deficiencies in the study of more *recent developments* in handicrafts rather than the handicrafts of *former times*, particularly in terms of commercialization [4, p.1].

6.2 Design, Handicrafts and Sustainability

In the late twentieth century, *design* and *manufacture* were seen by some commentators as activities that encouraged over-consumption and created wasteful products with short life-spans [2, pp.2-3]. The critiques¹ of design for sustainability emerged in the 1960s and 1970s and addressed the unsustainable development of globalised mass-produced goods and product distribution.

‘Design for sustainability’ is part of a bigger picture of sustainable development that provides a broader context for designing that is responsible, synergistic, contextual, holistic, empowering, restorative, eco-efficient, creative and visionary [2, p.5]. It enables:

- Positive changes for sustainable patterns of *production* and *consumption*;
- The establishment of long-term strategic vision for companies e.g. product innovation, operations, added value that attracts customers, competition, cost-effectiveness and environmental responsibility [2, p.29].

The concept of design for sustainability can integrate the requirements of various stakeholders [5; 35; 33; 2; 36; 24] in order to sustain the supply and demand of handicrafts. The research has initially identified four key stakeholders in the handicrafts sector: craftspeople, craft inheritors, product designers and customers – in the domains of supply and demand. Thus, the concept of *design for sustainability* will be studied in depth in order to develop craft-design approaches for handicrafts conservation and commercial handicrafts.

Traditional handicrafts offer ‘local’ *approaches* that often embrace social, environmental and economical objectives in practice [33] through human relationships with *materiality* – either how craft-workers make or people use those objects [Miller, cited by 23, p.5]. Design can help to create a *culture of sustainability*, especially for *everyday* objects [33]. Thus, designing handicraft objects that *embrace local approaches and the creation of objects for enduring possession* can motivate sustainable development in both producers and users. William

¹ Critiques of Design for Sustainability by Packard (1963), Papanek (1971), Bonsiepe (1973) and Schumacher (1973)

Morris suggested that pre-industrial technologies, i.e. handmade objects, should be preserved for their social usefulness, essential humanity and nature [10; 17, p.25].

Consequently, an increasing number of design researchers are looking at the relationship between *design for sustainability and product design for the revitalization of traditional crafts* [24] as a way of manifesting functional and decorative goods that: are environmentally responsible; provide skilled satisfying employment opportunities i.e. ‘good work’ [28]; offer income opportunities, especially for local communities [22, p.51]; produce a material culture that is culturally significant and meaningful [36].

With evidence to suggest that some traditional handicrafts go hand in hand with sustainable development, this research examines *possibilities* for craft-design approaches and sustainable development in relation to:

- Cultural-handicrafts conservation;
- Commercial handicrafts.

In addition, recent reports into the sector suggest that potential products with a high market share are furniture, home decoration, gifts, toys, textiles/ garments and jewellery [31; 18; 25]. Jewellery and toys are frequently traded items with high volumes of export goods [UNCTAD, 2009, cited by 11, p.20]. Carpets, celebration items, yarn products and wickerwork have greater opportunities to enter the global market [29, p.116].

7. Method and Criteria for Identifying the High Potential Handicrafts for Future Development

As mentioned above, *many* types of handicrafts (ten) were identified during the initial stages of this research. Moreover, no clear directions for sustainable development were identified from the literature. Therefore, to establish a rationale for further research, semi-structured interviews were conducted with 26 participants to identify those handicrafts that were judged to have high potential for future development and to identify design directions for sustainable development.

Participants included 10 handicrafts producers², 14 supporters³ and 5 handicrafts buyers⁴, all of whom have engaged, directly or indirectly, in the handicrafts sector for 10-35 years. More than half of them were identified as having 1-2 secondary roles besides the primary ones. Regarding the question of the three handicrafts with the most potential for development, participants generally suggested 2-3 types of handicrafts with their reasons for selection. Keywords were listed out and classified into three main groups as the followings:

- **Criteria for selection**
 - *Production capacity* – includes skills, techniques, raw materials and cost of labour, specifically for handicrafts at a community level.
 - *Product feasibility* – product’s relevance to everyday use and present lifestyles with practical usage and good price points in the market.

² **PRODUCERS:** People whose first role is to make handicrafts. Some of them are the makers as well as the business owners themselves. Some are the business owners, design directors, designers of the company productions. They are from various handicraft productions: textile, blacksmith, silver jewelry, mulberry paper, ceramics, woodcarving, wickerwork, and furniture – with experiences in the fields between 10-28 years.

³ **SUPPORTERS:** People who engage directly or indirectly with the handicrafts sector e.g. design educators/ designers, government agents, business advisors, presidents of associations, the director of a commercial bank, and a secretary of an organization. Their experiences in the fields vary from 10-35 years.

⁴ **BUYERS:** People who buy handicrafts for business e.g. purchasing managers, importers, traders, distributors of the companies – with experiences in the fields between 10-30 years.

- *Market Share* – takes into consideration product price, frequency of trade and longevity in markets, especially in the tourist and export markets. Relatively, the legislation of destination countries and competitors at international level are also taken into consideration.
- **The Three Handicrafts that hold most potential for development, based on Ranking Values from Interviews are as follows:**
 - Furniture from wood and fibrous plants (30 points)
 - Hand-woven textiles and garments (29 points)
 - Silver jewellery and costume jewellery (27 points)

Regarding products and markets, participants confirm that the above *three* categories of handicrafts could potentially be applicable to everyday life at high price points in export and tourist markets. Handicrafts for home decoration, gifts and souvenirs are highly preferable. In terms of production, common issues of the handicrafts sector include:

- A shortage of skilled labour and handicraft inheritors and
- Increasing cost of labour for production (minimum wage increased in 2012).

8. Selecting One Handicraft for Further, In-depth Study

The numerical results shown above are not distinct enough to select one particular group for further investigation. Therefore, qualitative content analysis is taken into consideration to identify a *single* handicraft for in-depth study. The key points of each sub-sector are summarized as follows:

- **Furniture from wood and fibrous plants** – is faced with the problematic issues of: skills improvement; materials scarcity, especially hard wood; illegal wood for production and trade; rigorous legal policy for importation of wood to Thailand and exportation of wood products to destination countries, especially fumigation.
- **Natural hand-woven textiles and garments** – have better opportunities for sustainable development in terms of: availability and cultivation of local materials (yet in danger), especially silk and cotton; highly-skilled craftsmen; product applications ranging from home furnishings to fashion accessories.
- **Silver jewellery and costume jewellery** – have potential in terms of highly-skilled craftsmen and a unique identity. However, there is a lack of local sources of materials. For example, silver, metal and synthetic beads are largely imported from overseas countries, resulting in fluctuating costs of raw materials.

The justification for selecting a single handicraft for further in-depth study is based on participants' criteria for selection (product capacity, product feasibility, market share) and content analysis. The concept of 'Plus/Minus/Interesting' (PMI)⁵ is applied numerically⁶ to identify the most convincing handicraft. A strong negative score can be found in the category of furniture from wood and fibrous plants (-12.5), while hand-woven textiles and garments gains the highest positive score (17.5), followed by silver jewellery and costume jewellery (10). Clearly, *hand-woven textiles and garments* are convincing for in-depth study of sustainable development, especially in terms of raw materials and market longevity.

⁵ **Plus/ Minus/ Interesting (PMI)** is "codified by Edward de Bono in his book *Serious Creativity*" [19].

⁶ Plus (5), Minus (-5), Interesting (2.5).

Table 2. Justification for the Selected Type of Handicraft for In-depth Study

(Source: Semi-structured Interviews with 26 participants)

Criteria for Selection	Types of Handicrafts						References	
	Furniture from wood	Furniture from fibrous plants	Hand-woven textiles	Garments from handmade fabrics	Silver jewelry	Costume jewelry	Literature review	Semi-structured Interviews
Production capacity								
Skills and techniques	-5	-5	5	5	5	5	YES	YES
Raw materials	-5	-5	2.5	2.5	-5	-5		YES
Cost of labour	-5	-5	-5	-5	-5	-5		YES
Product feasibility								
Everyday use								
Present lifestyles								
Functionality and practicality								
High price points								
Market share								
High prices								
High frequency of trade					5	5	YES	
Longevity			5	5			YES	YES
Tourist market	5	5	5	5	5	5	YES	YES
Export market	2.5	2.5	5	5	5	5	YES	YES
Legislation of destination countries	-5	-5						YES
Competitors								YES
	-12.5	-12.5	17.5	17.5	10.0	10.0		

9. Key Findings from Semi-structured Interviews

9.1 Potential Markets and Market Components for Thai Handicrafts

Based on semi-structured interviews, the three main markets are: the *domestic* market, the *export* market and the *tourist* market. Handicrafts for *domestic markets* are those sold and delivered within Thailand. *Export goods* means shipments of goods from Thailand to customers abroad. The *tourist market* is found to overlap with the domestic and export markets, and is sometimes referred as a sub-group of exports, namely *indirect exports*. In the case of indirect exports, handicrafts usually involve tourism activities, due in large part to foreign tourists, for example, distributions of handicrafts for sale in retail shops in hotels and airports.

Among the three main markets, the export and tourist markets are mentioned as having greater potential. Nevertheless, *tourism* plays a vital role in the distribution of handicrafts, motivations for purchasing and connecting local handicrafts to global markets. However, participants reveal that the numbers of orders for export and foreign tourists have decreased, resulting from the global economic recession and political unrest in Thailand. Inevitably, some handicraft enterprises have recently focused on regaining or building on market share from domestic sales. In addition, participants mentioned other components in relation to Segmentation, Target and Product (STP) that hold high potential for Thai handicrafts, which are summarized as follows:

Table 3. Market Components that Hold High Potential for Thai Handicrafts

(Source: Semi-structured Interviews with 26 participants)

Distribution Channel ⁷	Market Segmentation	Target Customers	Product Positioning	Sales Quantity	Merchandising ⁸
Domestic Export Tourist - Indirect export - Foreigners - Thais	Art & craft Craft design Niche market By Product Categories Fashion Furniture Gifts & Souvenirs Home decoration	Major Customers by Country USA Europe Japan Emerging Customers by Country or Region Brunei China* India* Indonesia Malaysia Middle East Russia South Africa Vietnam Characteristics Elderly people* Foreign tourists* Interior designers Organizations Parents Younger generation ⁹	By Style Authentic Commercial Commercially traditional Contemporary Ethnic Intricate Original Original design Replicate Traditional Tribal Utilitarian By Class Division High end Medium high	Sale System Retail sales Wholesale Sale Units One-off Limited edition Batch lot Mass quantities ¹⁰	Chain stores Corporations/ organizations Department stores Direct sales Events, road shows Exhibitions Hotel shops Local markets Project clients Restaurants Specialty shops Tourist venues Trade fairs Websites, online shops

* Indicating target customers with high purchasing power and large number of populations

9.2 Levels of Handicraft Suppliers in the Context of Thailand

Key players in the supply of handicrafts are artisans, families, communities and Small- and Medium-sized Enterprises (SMEs). These players usually fall into two broad groups of “producers or makers” and “job allocators or end-suppliers or enterprises”. Artisans, families and handicraft communities are often found to exist as a group of producers or makers, while SMEs serve as job allocators or end-suppliers. Furthermore, producers or makers primarily work at home or in a shared space, e.g. in a cooperative society; a number of them are elderly people of former generations. SMEs represent a group of people who have registered companies for business purposes – for manufacturing, trade (wholesale), trade (retail) and service. They usually run their business in office buildings with a network of handicraft communities and/or factory-based or home-based companies. It is noticeable that a number of SMEs are in fact the offspring of former generations. In addition, a number of *families* are fundamental units of handicraft manufacturing, ranging from 10-20 families to a total of 50-100 people in a village. Handicraft communities are not only served for SMEs, but are also *part* of a production *process* for large companies.

⁷ **Distribution Channel:** “The way that a company delivers a product or service to its customers” [16].

⁸ **Merchandising:** “The business of arranging and showing products in shops in a way that makes people want to buy them” [16].

⁹ **Younger Generation** is mentioned as a potential group for a viable future for handicrafts, e.g. first-jobbers. Yet, it is found to be fewer in numbers, both for production and purchasing.

¹⁰ **Mass quantities** for handicrafts production is arguably, from the perspectives of producers and supporters, a less efficient way of working, when considering the production capacity of local communities, natural resources used, working hours, units of work, and net profit. The net profit from making low-quality handicrafts in mass quantities is in fact nearly the same as making high quality handicrafts in small quantities. Generally, mass-produced handicrafts are usually of low quality and sold at low prices per unit. In contrast, from the perspective of buyers at a global level, there is demand for mass-produced handicrafts in global market. Nevertheless, they mention that handicrafts from Thailand are less competitive, especially in terms of low price and production capacity, in comparison to competitors, e.g. in China, Vietnam, Indonesia and India.

Table 4. Levels of Handicraft Suppliers in the Context of Thailand
(Source: Semi-structured Interviews with 26 participants)

Levels of Producers	Roles	Workplaces	Business Registrations	Generations
Artisans	Producers, makers	Cottages		
Families		Cottages		
Communities		Private houses or shared spaces	e.g. cooperative societies	Former generations
Small and Medium Enterprises (SMEs)	Job allocators, and end suppliers	Office buildings, home-office, with a network of craft communities, factory-based companies	e.g. Company Limited, Corporation Limited	Offspring generations

In the context of Thailand, SMEs are categorized into four main groups: manufacturing, trade (wholesale), trade (retail) and service – based on either or both of two criteria: number of employees and fixed asset value [1, p.58].

Table 5. Categories of Small and Medium Enterprises (SMEs) in the Context of Thailand [1, p.58]

Types of Enterprises	Sectors	Numbers of Employees (person)	Asset Value* (Million Baht)
Small	Manufacturing	Up to 50	Up to 50
	Trade (Wholesale)	Up to 25	Up to 50
	Trade (Retail)	Up to 15	Up to 30
	Service	Up to 50	Up to 50
Medium	Manufacturing	50-200	50-200
	Trade (Wholesale)	26-50	50-100
	Trade (Retail)	16-30	30-60
	Service	51-200	50-200

*On September 14, 2011, the exchange rate was at 1 USD = 30.29 baht.

9.3 Supply Chain of Handicrafts and the Role of Designers

There are more than 30 words that refer to the various people involved in the handicrafts sector. The authors classify these into five *primary* groups, based on roles that are: producers, enterprises, traders, distributors and buyers. These groups act as a loop in a supply chain of handicrafts. There are three domains along this chain, namely: supply, market exchange and demand. In addition, there are two groups of *secondary* players, referred to here as supporters and investors, who interact directly or indirectly with the primary players in the supply chain.

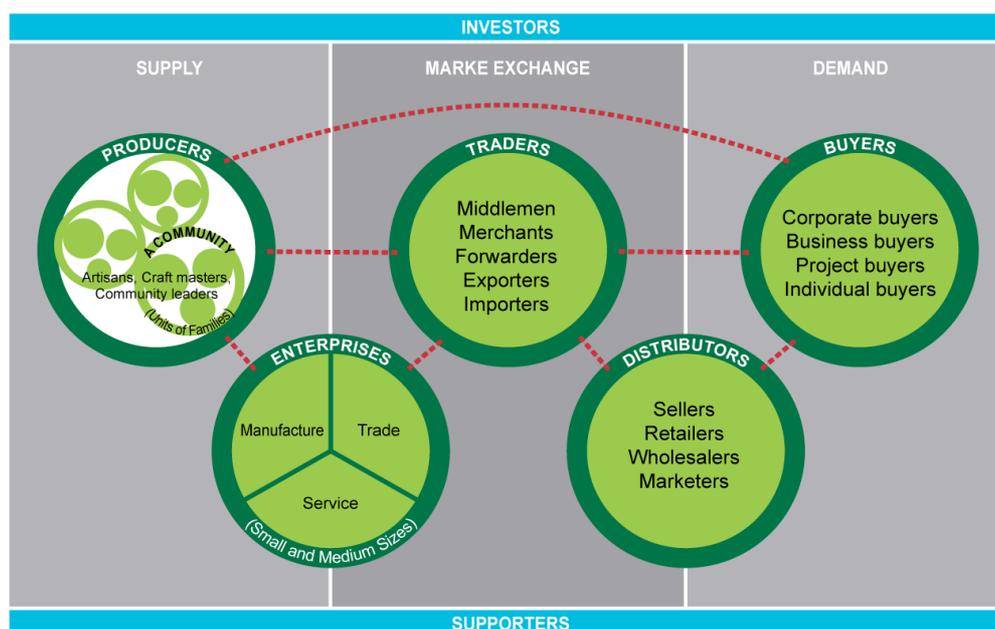


Figure 1. Players in a Supply Chain of Handicrafts, Classified by Roles
(Source: Semi-structured Interviews with 26 participants)

This research has identified that *designers* are located in different parts of the supply chain, and are often found in the loops of *enterprises* and *buyers*, whereas designers in a loop of local *communities* are rarely mentioned.

The positions of designers may vary, from employees, freelancers for design service, design consultants to business owners. In terms of locality, there are local Thai designers, urban Thai designers and foreign designers.

Their roles are various, e.g. illustrators, conceptual designers, product designers, Web designers, events designers, makers of product samples, sourcing technicians, specifiers, job allocators for production, collectors of products (parts or finished products) and quality controllers.

9.4 Design Directions for Sustainable Development of the Handicrafts Sector

Regarding the design directions for sustainable development of the handicrafts sector, participants in the group of buyers recommended three main directions: Replication, Adaptation and Innovation.

- **Replication** – Making handicrafts in the traditional way and according to traditional designs, which offers a continuity in the production of original things, e.g. the production of “Benjarong”, Thai porcelain that is traditionally designed in five primary colours, painted in traditional patterns on particular forms, e.g. a round jar with a lid and handle in a spiral shape.
- **Adaptation** – The development of handicrafts based on traditional handicrafts, but with changes to something for different purposes and added value, especially new applications of products for everyday life, e.g. adjustments to particular forms of Benjarong jars to make other types of tableware, such as coffee mugs, plates and tea sets for a wider range of customers.
- **Innovation** – The developments of handicrafts that do not adhere to traditional ways of doing things or originality, e.g. colours, shapes/ forms and patterns. Although tradition serves as a foundation, an asset or an inspiration for innovation.

10. Conclusion

This research has identified that three types of Thai handicrafts with high market potential are furniture, hand-woven textiles and jewellery. *Hand-woven textiles* are strongly associated with the goal of this present research, with its focus on sustainability within the crafts sectors, for three main reasons – the legacy of weaving, the availability of raw materials, and the ‘fit’ with the principles of sustainable development, including the sustainment of the skills of local artisans. In addition, the *tourist market* is identified as a market with great potential that simultaneously embraces the domestic and export markets. Three *levels of handicrafts suppliers* are local communities, small-sized enterprises and medium-sized enterprises. The design directions for sustainable development of the handicrafts sector are replication, adaptation and innovation. Design can contribute to the handicrafts sector in three areas: products, market components and levels of suppliers – towards key design directions for sustainable development (see Figure 2).

11. Acknowledgements

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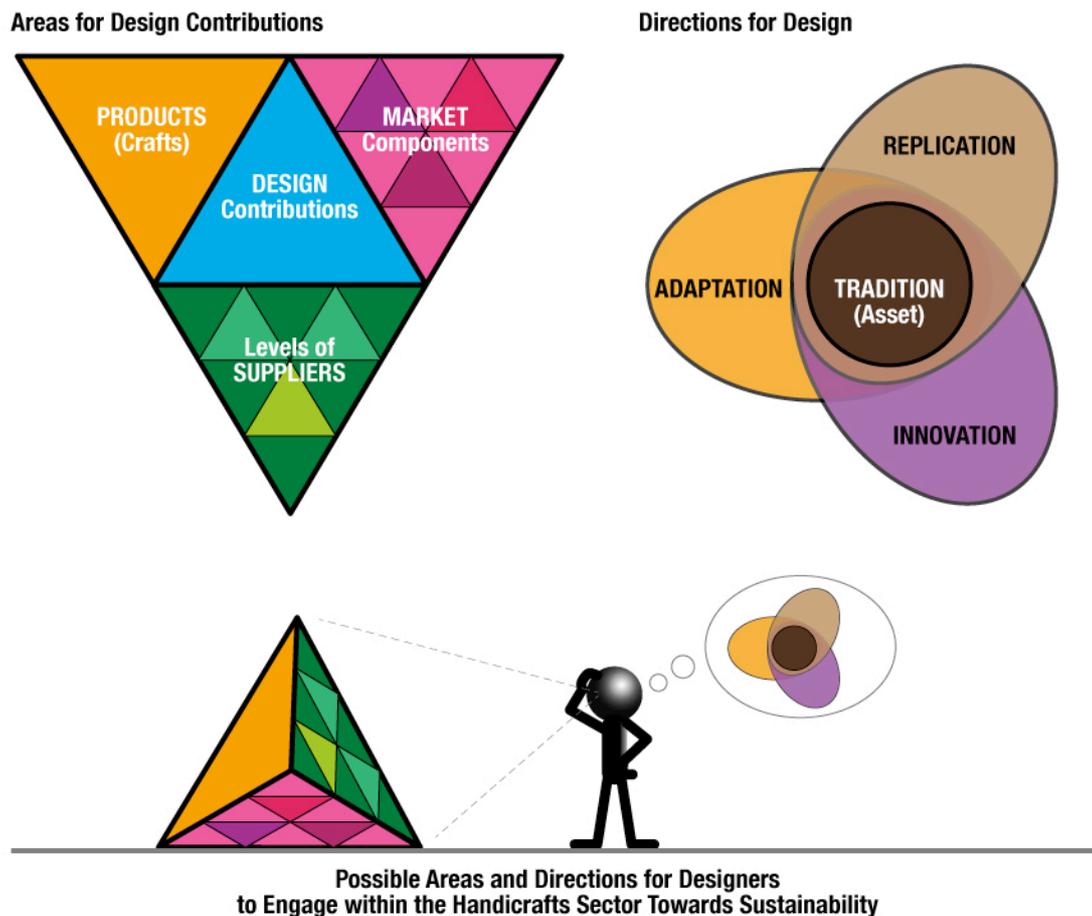


Figure 2. Possible Areas for Design Contributions to the Handicrafts Sector and Sustainability

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