Furniture Value Chains : Action research to improve power balance and enhance livelihoods of small-scale producers

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Abstract

Value chain analysis (VCA) has emerged since the 1990s as a novel approach for understanding how power, benefits and costs are embodied and distributed to various actors. The Indonesian furniture industry demonstrates a long chain of production to consumption, from raw material producers (tree growers), semi-finished producers, finished product producers, and retailers to exporters. Each actor is connected by intermediaries. Indonesian furniture, dominated by teak, contributed 2% of the global wood furniture trade (valued US$ 85 billion in 2007). Indonesian forests include more than 35% of the world's teak forests. The furniture industry provides employment and livelihoods to millions of people. This paper describes the value added distribution to all furniture actors, actions to strengthen small-scale producers, and global comparisons with other forest product value chains.

The furniture value chain connects producers from Jepara District, the center of Indonesian furniture with annual exports of US$ 150 million, with furniture retailers in Europe, the USA, Australia and Japan. The problem is power imbalance throughout the value chain and unhealthy competition among producers, which result in poverty of small-scale producers, product quality degradation and an unsustainable furniture industry. The adaptation of small-scale producers to market demand is low. They are price takers rather than the price setters, as indicated by their decreasing bargaining power.

We used VCA to hypothesize governance and institutional arrangement scenarios for more equitable power and income to sustain both the forest and the furniture industry. Following the VCA analysis, action research is being conducted. Researchers and furniture stakeholders have jointly developed plans and actions to strengthen the industry structure, improve value addition and improve livelihoods. To ensure local and national impacts, we have collaborated with the Jepara Furniture Multi-stakeholder Forum, the Jepara local government, the Forestry Research and Development Agency (FORDA) of the Indonesia Ministry of Forestry, and Bogor Agricultural University. At international level, we are comparing this study with lesson learned from value chains of bamboo in China, honey bee in Zambia, potential for reducing emissions from deforestation and degradation (REDD) credit in Indonesia, and palm heart/ *palmito* in Brazil.

Keywords: value chain, furniture, small-scale, governance, livelihoods, institution

I. INTRODUCTION

Furniture making is the most labor-intensive industry in forestry. In 2007, the global furniture trade accounted for US$ 85 billion, or about 1% of the world trade in manufactured goods. About 54% of furniture exports came from developing countries. In constant 2000 dollar terms, furniture sales grew 146% from $34 billion in 1985 to $ 85 billion in 2007. China's share increased from 3% in 1995 to 16% in 2005 as illustrated in Figure 1 (ITTO, 2006; CSIL 2008). All middle income countries e.g. Indonesia, Malaysia, and Brazil showed a very strong comparative advantage. However, their competitiveness index declined modestly (Han et al. 2009)

Furniture is a sector where small and medium-sized enterprises (SMEs) have important roles, so that any decrease in the furniture sector will increase poverty. Conversely, growth of the furniture industry will increase the number of jobs available and therefore reduce unemployment. Upgrading the industry would improve the quality of jobs and provide more voice and participation to workers and (small-scale) employers. The livelihoods of millions of people in Java, Indonesia depend on furniture industry and its chains (Ewasechko, 2005).

The balance distribution of value added is questionable. Purnomo (2006; 2008) revealed that overseas stakeholders enjoyed more value added than the domestic stakeholders in the case of exported furniture. Furthermore, finishing and exporting companies take the biggest profit compared to small-scale producers and tree growers. This study used value chain analysis (VCA) method and aimed at identifying (a) furniture actors and value addition distribution; (b) type of value chain governance; (c) leverage points and agents of change; and (d) strengths, weaknesses, opportunities and threats (SWOT) on the overall value chain. These results will be used to design the intervention scenario to upgrade the furniture industry in Jepara, Central Java, Indonesia.

II. CONTEXT AND METHODS

2.1. Context

The majority of the furniture industry in Indonesia is composed of small and medium-sized enterprises (SMEs), which contribute a significant amount of national income. Its contribution can be seen from the export volume which is continuously growing. According to COMTRADE (2007), the export value of wooden furniture in 2005 was more than $1 billion, equal to 0.36% of Indonesian Product Domestic Bruto.

In Jepara District, for instance, in 2005, at least 15,271 business units of workshops, showrooms and warehouses of furniture industries employed 176,470 workers (Roda *et al.*, 2007). The furniture industry, which processed 1.5–2.2 million m^3 wood per year, contributes about 35% of Jepara's economy. However, the current trend of this industry was decreasing in terms of exported volume and value, as well as employment. Export value fell from $127 million in 2005 to $118 million in 2007. The industry mostly produced low value-added product and is categorized as a 'sunset industry' by the government. The SMEs have a low market position compared to the bigger players.

Furniture industry and related sector have becoming an important source of income in Jepara for many years. There are at least two major sources of household income related to furniture. First, the business sector, i.e., log trader, log processing, furniture including handicraft workshop and showrooms. Second, the blue collar class, laborers who work in the furniture sector, i.e. finishing (mostly female), workshop labor, packaging, and artists who design the furniture and artist who sculpt wood.

Figure 3 shows income from furniture of furniture producers compared to average household income in each village. Furniture producers commonly earn more than an average household, especially in Sinanggul, Karanggondang, Kawak and Jondang, where other source of income are less attractive. Meanwhile in Tahunan, Tegal Sambi and Kecapi, which are urban and peri-urban areas, sources of income are more diverse.

2.2. Methods

Value chain analysis (VCA) describes activities that are required to bring a product or service from conception or design, through different phases of production, to delivery to final consumers and disposal after use (Figure 4). A value chain provides a systemic view of a particular product. With the growing division of labor and the global dispersion of the production of components, systemic competitiveness has become increasingly important (Kaplinsky and Morris, 2001; Schmitz, 2005).

Economic rent arises from productivity factors and barriers to entry. New rents will be added over time, and existing areas of rent will be eroded through the forces of competition (Schmitz, 2005). Ratnasingam (2006) mentioned that product development and marketing activities add the most value in furniture industries, while manufacturing adds little value to the final product.

ILO (2006) proposed the use of VCA to upgrade the furniture industry. 'Upgrading' means that a multi-dimensional process that aims at increasing the economic competitiveness of enterprises, as well as having a positive impact on social development (ILO, 2006). The following steps were used in this research: (a) initial mapping of the value chain; (b) defining the areas of interest; (c) identifying the entry point for VCA; (d) planning detailed maps of particular parts of the chain; (e) carrying out the field survey; (f) evaluating the findings; and (g) developing scenarios for upgrading (ILO, 2006).

III. RESULTS AND DISCUSSION

3.1. Results

3.1.1. Initial mapping of the value chain

The first effort was to identify actors and relations among them. Figure 5 describes value chain map from market to producers and forests in Jepara. On the market side, we distinguished between international and domestic actors. On the producer side, we differentiate between mechanized and integrated producers and small-scale producers. On the forest side, we identified four sources—forest plantation state-owned Perum Perhutani (PP), outside Java forest, community-based agroforestry and illegal sources. The map provides relationships between the different actors in the value chain and understanding of the flow of goods from raw material supply to the end consumer market.

There are several possible chains to bring wood material from forests through different producers to the market. We can see, for instance, a chain from domestic retailers, through small-scale producers and wood retailers, to agroforestry. Another chain describes relationships from international retailers, through supermarket buyers, finishing companies, small-scale producers and wood retailers to PP.

3.1.2. Defining areas of interest and identifying the entry point for value chain analysis

Our interest is to increase the value added enjoyed by small-scale furniture producers *vis-à-vis* other furniture actors, particularly big players. Purnomo (2008) provides the value added distribution in Table 1. Overseas teak actors enjoyed 61.1% of the value added, while domestic players, such as local teak growers, log traders, furniture producers and exporters together, got only 38.9% of value added. The small-scale

producer obtained 3.6% of the value added in furniture business.

3.1.3. Comparing perceptions of different stages of value chain actors

The comparison was aimed at understanding the performance of the furniture sector from the perception of actors at different stages of the value chain. We selected five aspects of performance to be investigated—quality, price, delivery time, ordering flexibility, and design. For the global market, the perception was investigated by interviewing global buyers and local producers of furniture. From the interviews with global buyers from Italy, Samoa ,India and small-scale producers, we found that both global buyers and producers have the same high perception on price and flexibility performance of Jepara furniture. The global buyers give lower ranks than the small-scale producers on quality, delivery time and design aspects (Figure 6). This means that only on price and ordering flexibility did the expectation of global buyers meet the perception of the local producers. On the aspects of quality, design and delivery time, the local producers need to improve their performance to meet the expectations of global buyers.

For domestic market, we compared the perception of domestic retailers and small-scale producers. Retailers and producers shared the same high perception of price and design. The retailers perceived quality and ordering flexibility a bit lower than the local producers. The biggest gap was on the delivery time (Figure 7), which the retailer scored lower than the producers.

3.1.4. Types of value chain governance

The type of value chain governance would fundamentally determine the success of the intervention strategies. The following are the indicators for each type of value chain governance: (a) Market-based, indicated by many customers and many suppliers; repeat transactions possible, but information flows limited; and no technical assistance; (b) Balanced network, indicated by supplier having various customers; intense information flow in both directions; and both sides have capabilities and commitment to solve problems through negotiation; (c) Directed network, indicated by main customer takes at least 50% of output; customer defines the product and provides technical assistance; and imbalance of information; and (d) Hierarchy, indicated by vertical integration; supplying establishment owned by customer; and very limited autonomy to take decisions at the local level (ILO, 2006)

We assessed the initial value chain map through the interview with respondents in each stage of the value chain, (Figure 8). The governance types between finishing companies, which also act as exporters, and small-scale producers were hierarchy. The finishing companies receive instruction from the global buyers about the specification and design. The global buyers are a subsidiary of the overseas retailers. Very few of the finishing companies developed their own designs. They were very protective and careful not to risk that others would imitate their designs for mass production. Some of the finishing companies own showrooms located in Jepara and other cities. However, the exporters were driven by the importers and global brokers, which were in directed network relationship with the international retailers.

The small-scale producers are in directed network relationship with domestic brokers. The brokers became the main customers of the small-scale producers and took more than 50% of their product. The brokers can easily shift from one producer to another. This condition ended with the directed network type of governance between exporters and small-scale producers. In some situations, the relationship became hierarchy when exporters had more control over the small-scale producers. Mechanized furniture producers have a better position in the value chains. They are in balanced network relations with their higher stages, i.e., global brokers and importers.

The relations between small-scale producers and sawmill owners and wood retailers were market-based type of governance. Nobody controlled the transaction or price. The small-scale producers could freely buy wood form the retailers. When they had enough money they would seek retailers all over the regions. However, if they did not have sufficient funds, they would take loan from the closer wood retailers. They were also free to choose which sawmill sawed their logs.

The relation between wood retailers and tree growers is a directed network. With about 1 million hectares of teak plantation, Perhutani had more control and power than wood retailers, as pricing and quality were determined by them. However, community-based agroforestry, which is small scale, are less powerful than wood retailers.

The finishing companies or exporters had hierarchical type of governance with small-scale producers for verification of legal origin (VLO) certification. The international buyers required all wood sources used in furniture manufacturing to be legally verified. The exporters ensure VLO standards are fulfilled in the country by controlling production processes and the small-scale producers. The exporters bought wood from Perhutani and their own sawmills. Figure 8 provides the value chain map of VLO. This case most likely will occur for eco-labeled or certified furniture.

3.1.5. Leverage points and agents of change

One purpose of VCA is to identify leverage points where pressure could initiate change. A small amount of pressure at this point can generate a big effect elsewhere in the chain. The following are identified leverage points in the chain: (a) improving capacity to calculate cost and benefit for small-scale producers; (b) improving domestic market; (c) improving product quality and capital; (d) changing perception of small-scale producers to be more business minded; and (e) improving design innovation. These findings would then be integrated into the scenario of upgrading to change the current situation. We also identified two types of agents of change—associations and government.

Associations have a strong influence on the well-being of the sector. We identified three associations in this case—ASMINDO (furniture enterprises association), APKJ (small-scale furniture producers association), and HPKJ (wood traders association). ASMINDO aims at improving the bargaining power of exporters, finishing companies and mechanized furniture producers. While APKJ aims at helping small-scale producers *vis-à-vis* bigger players (exporters and retailers), and HPKJ aims at upgrading wood retailers against Perhutani.

Government agencies at national, regional and local levels play a major role in administrating, controlling and stimulating the furniture industry. At the local level, the Office of Trade and Industry planned to develop a ‘one stop service’ for all administration related to furniture industry to ease the industry operation.

3.1.6. SWOT analysis on the overall value chain

We analyzed weaknesses and opportunities to show areas where there is a need for change. For the international market, we identified skills in carving and carpentry as the strengths of the small-scale producers, while modern technology was the strength of the mechanized furniture industry. The weaknesses included unsustainable wood sources; hierarchical relation making upgrading difficult; and exporters

absorbing too much value added. The opportunities included good image of Jepara brand, while threats included that importers could source from outside Jepara (Figure 9).

For the local market, gender imbalance, opaque price calculation, inability to calculate benefit and cost, and inconsistency in delivery time and quality of product were the weaknesses. Forming cooperatives or associations and good brand image were the opportunities, while competition with other districts was a threat for domestic retailers.

3.1.7. Lesson learned from local actors

Teams and individuals of the Cluster Multi-stakeholder Forum (FRK) partners were hired to develop their own stories in the period of November–December 2008. They comprised a small-scale producer team, one small-scale individual producer, an independent body, one big company owner and a government officer. The stories will complement to the quantitative studies conducted by the project team.

Small scale producer experienced the boom bust market of Jepara furniture in 1998, however very little of them could take advantage of it. They were not prepared with proper strategies to anticipate. On the boom stage, many new players entered the industry, product quality wasn't appropriately controlled. Income wasn't wisely spent and when the bust came they all collapsed. Therefore they believed that it is very necessary to improve group cohesion among small scale producers, minimize consumerism and gain support through government policy to protect small scale producers.

An independent body described the story during the boom of furniture in 1998 has affected the forest degradation as an implication of excessive furniture demand and the need of government support to prevent further forest destruction. One of the big actor and leader of big furniture industry association expected that Jepara will have a so called "Jepara incorporated" to standardize minimum prices of various products, a wood terminal, Jepara branding and a grand strategy of Jepara furniture industry.

A government officer explained that they have been actively supporting Jepara furniture by enhancing value added through product design; protection and certification; developing a common market for Jepara producers and trading alternatives such as auctions; human resource improvement; and information technology-based business promotion and information.

3.1.8. Lesson learned from other countries

Beekeepers in Zambia were gathered in a beekeeping group, which role is to provide support on marketing, such as distributing buckets from buyers and bulk sale of honey. The group collaborated with other stakeholders to improve production technology. Hence, beekeepers would be able to sell various higher-quality types of honey product to different channels of the market. There are at least six chains of honey buyers from producers in the village (Figure 10). Different chains buy different products of honey, i.e. wax, liquid and comb (Hussellman *in prep*).

Palm heart is a popular and high-value non-timber forest product in Brasil. A study in the Brazilian Atlantic forest, State of São Paolo, found three types of palm heart producers—large forest owners, small holders and clandestine harvesters. High cost of government inspection has stimulated illegal palm heart production. Minimum government control has resulted in illegal product normally mixed with legal product

to pressure the cost (Fantini *et al.*, 2004). Government intervention in harvesting would ensure better palm heart production practices.

Culms and shoots are the main commercial bamboo products in China. They are traded and consumed locally as well as exported into international market. Farmers are mainly interested in low technology processing activities that require low input, i.e., mats rather than 'high-tech' processing that requires more inputs. Therefore it is necessary for local government intervention to limit by taxing trade in certain low-tech products and giving incentives to high-tech products. In order to increase their margin, exporting companies prefer to trade cheap products. Presence of government intervention is needed to regulate the export of high- and low-price products (Maoyi and Xiaosheng, 2004).

The existing UN Framework Convention on Climate Change (UNFCCC) is aimed at reducing negative impacts of climate change through mitigation and adaptation. The Kyoto Protocol that set emission reduction targets for developed countries will end in 2012 and current discussions focus on inclusion of incentives for reducing emissions from deforestation and forest degradation (REDD) in a post-2012 agreement. Vertical allocation of REDD credit depends on where value addition occurs in the REDD 'value chain.' The value chain of REDD-carbon (C_{REDD}), shows where different stakeholders at different levels including international level (buyers and brokers), national (government and national NGO's), local intermediaries (province and district scale government, large-scale industries) and local actors (companies, communities, forest farmers, local NGOs) add values to the creation of emissions reductions from REDD (Purnomo *et al.*, 2007).

3.2. Discussion

Value chain initiatives have vertical and horizontal dimensions. The vertical dimension is related to the different stages of the chain, while the horizontal dimension is related to the same stage of the value chains (ILO, 2006). We proposed three upgrading scenarios for vertical dimension and one scenario for horizontal dimension.

Based on previously identified leverage points and SWOT analyses, a scenario to address issues on product quality, delivery time, cost benefit calculation capacities, even distribution of value addition, and sustainable wood resources needs to be developed. Reflecting on lessons learnt from local and global settings, in particularly Brazil and Indonesia, the need for a wood terminal, as well as government control on legal wood sources, taxing for REDD funding, and a set minimum standard of prices also needs to be addressed. Therefore the first scenario proposed is the **Collaborating down Scenario**, where small-scale producers collaborate with wood traders and tree growers to address inconsistency in delivery time and product quality. Frequently, the inconsistency of delivery time is caused by unavailability of wood sources and wood stock. This scenario can increase the product economic scale, trust of buyers and value added. Through this scenario, power balance between small-scale business (small-scale producers, small-scale wood traders and tree growers) and big players can be improved. They can have better bargaining position to negotiate with brokers and exporters due to better product quality and uniqueness.

The second vertical dimension scenario is the **Moving up Scenario**. Urgent needs for calculating cost and benefit capacities, business mentality, and balanced relations can be addressed through this scenario, thus strengthening competition with other furniture producing regions and forming a positive Jepara brand image. This scenario encourages small-scale producers to move up to the higher stages in the value chain, e.g., to become furniture brokers or finishing companies or exporters. In the buyer-driven value chain, the higher stage generally has control over the lower stages. The moving up scenario requires training and knowledge on brokering, financing and overseas trading. By moving up, small-scale producers can have

more power than before. In addition, they may find it easier to manage or develop network with other small-scale producers. This is in line with lessons learnt from local and global settings, such as Zambia and China, where associations support marketing channels while governments impose taxes to limit competition and regulate exports. Through training, design development and protection, an IT based marketing channel may also serve small-scale producers accordingly. This scenario can shift producers from specializing in furniture production to diversification hence can improve their income portfolio and actual household income.

The third scenario in the vertical dimension is **Green Product Scenario**. By improving quality, delivery time, and design innovations through modern technology and business management, this scenario may lead to balanced relations and gender equality, evenly distribute value addition and strengthen competition with other furniture producing regions. This scenario is conducted to produce certified, eco-labeled or *green* furniture which requires up and down coordination between various companies in the value chain. Based on lessons learnt from Brazil, China, and Jepara, supporting government policies needs to be present, i.e. control on certification, incentives to increase competition, regulation on exports, standardization of minimum prices, and product design protection. A blue print needs to be developed; incorporating technology and business training, IT based marketing and the final goal of producing a positive Jepara brand image. This green product scenario can only be done by integrating competences of different members of the value chain, for instance, Perhutani for certified timber, small-scale producers for certified processing, and exporters for marketing to certain customers. Green product will give more value added to the products as recognized by Veisten (2007) and Muradian and Pelupessy (2005).

3.2.2. Scenarios on the horizontal dimension of the value chains

The scenario for the horizontal dimension is the **Small-scale Association Scenario**. This scenario suggests organizing small enterprises locally and assisting them to access financial institutions and markets. Associations or cooperatives are common forms of this scenario. Based on lessons from Zambia and China, associations hold an important role to support marketing while government provides incentives and taxes to sustain healthy business competition. Lessons from the local setting have also identified the importance of associations in providing their members with training on cost and benefit calculations, design development and its protection. Associations can organize marketing channels and negotiate better prices, challenging exporters and brokers. Balanced relations may increase healthy competition, the even distribution of value addition, and form a positive brand image of Jepara. The main challenge of this scenario is the obedience of members to the common rules or institutions.

The Jepara Small-scale Producers Association (APKJ) was established in 2008, by representatives of small-scale furniture producers from seven sub-districts in Jepara. Its missions are to improve small-scale furniture producers' skills for better bargaining position, to create fair market prices, and to facilitate access to credit.

IV. CONCLUSIONS

Most SMEs are highly dependent to the furniture industry, as it provides better livelihoods than agriculture and fisheries. Nevertheless, they obtain unfair portions of value added compared to brokers, finishing companies, exporters and other bigger players. Furthermore, the recent global financial crisis in 2008 has decreased Indonesia's furniture export value, mostly affecting small-scale producers. The value chain analysis is an appropriate approach to analyze the complexity of forest product development, actor networking and value added distribution.

There are four possible scenarios to be implemented to upgrade SMEs i.e. collaborating down, moving up, green product and small-scale association scenarios. The latter has been implemented in Jepara through an action research and has successfully strengthened collaboration among producers, and expected to improve bargaining power against bigger companies. Surprisingly the large-scale producers association has committed to collaborate in improving the competency of the furniture industry in Jepara in facing global competitors from China and Vietnam.

Lessons learnt from Zambia shows associations able to being able to improve value added enjoyed by SMEs. While lessons from China and Brazil show that government support through local regulations is necessary to protect their market.

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