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## INNOVATION SYSTEM IN BALINESE WOODCRAFT INDUSTRY

**Prof. DR. Setiawan SABANA**

Head - Research Center for Arts and Design,  
Institute of Technology Bandung - INDONESIA  
sabana@melsa.net.id

**Mochamad Panji PUJASAKTI**

Researcher - Research Center for Arts and Design,  
Institute of Technology Bandung - INDONESIA

### ABSTRACT

*The Balinese are well-known as community which has intensely explored their intellectual property in creating creative products in Indonesia. Recently, the woodcraft industry is considered one of the most promising sectors in contributing to economic growth in Bali. In observation it is found that the innovation system shaped in the industry has been influenced by external and internal factors such as local culture, religion and tourism itself as the main capital. Overall, the innovation system constructed has created significant progress in generating economic value and has reduced the unemployment rates in the Province of Bali. Nevertheless, there are still problems such as the detour in arts orientation, low capacity in education and technology transfer, lack of policies and funding sources, lack of wealth distribution in communities. This paper is focused on investigating comprehensively the social construction and innovation system in the community of Balinese woodcraft industry. The research carried out in Bali is expected to be one model of creative industry development in Indonesia*

**Keywords:** innovation system, creative industry, education and policy

### INTRODUCTION

Traditional knowledge and skills as intellectual property of local people are valued for its potential contribution to the sustainability of ecosystems and livelihoods improvement of local communities. In particular, linking scientific, experiential and traditional knowledge to field and policy action offers potential for supporting local livelihoods and environmental conservation. While the role of traditional knowledge for the conservation science is acknowledged, the evidence related to its direct contribution to household income is often overlooked. Research on woodcarving in Bali is expected to opportunity to explore more about traditional knowledge on the contribution of woodcarving to livelihoods improvement and household incomes. The purpose of this paper is to explore and identify knowledge gaps and investigate comprehensively the social construction and innovation system in the community of Balinese woodcraft industry. The research carried out in Bali is expected to be one model of creative industry development in Indonesia.

## **EXISTENCE OF TRADITIONAL KNOWLEDGE ON WOODCARVING**

Neha (2007) a researcher of Craft Industry from India mentions that engravings and carvings are the earliest and enduring form of sculptures produced by humans. The Middle Stone Age abstract representations engraved on pieces of red ochre from Blombos Cave in South Africa have been dated about 77,000 years ago. These engravings support the evidence for emergence of modern human behaviour at least 35,000 years before the start of the Upper Paleolithic. Furthermore, origin of the figurative art is now considered as a crucial threshold in human evolution. Figurines carved from mammoth ivory at Hohle Fels Cave in the Swabian Jura, Germany provide evidence for the appearance of figurative art more than 30,000 years ago. These Aurignacian sculptures belong to one of the oldest traditions of figurative art known worldwide.

Later, Neha also described that starting with these pioneering steps, a continuous history of nature-society interactions gave rise to a large body of traditional knowledge in diverse fields including: hunting, fishing and gathering; agriculture, animal husbandry, tree cultivation; preparation, conservation and distribution of food; location, collection and storage of water; coping with disease and injury; interpretation of climatic phenomena; manufacture of clothing, tools, crafts and woodcarving; construction and maintenance of shelter; orientation and navigation on land and sea; management of nature-society interactions; and adaptation to environmental/social change.

Contribution of woodcarvings to livelihoods is now well researched in Indonesia. For instance export earning in Bali region of Indonesia amounts to US\$100 million annually. There are numerous of such examples showing the links between local knowledge and livelihoods improvement across the world. Recently, a range of case studies from many countries provide further evidence of woodcraft's critical links to rural livelihoods, deforestation, biodiversity and conservation, forestry and forest policy and the international trade regime.

## **WOODCRAFT IN BALI**

The Balinese sculpture is rich with natural media such as wood, stone, bone, horn and even tree roots. Nowadays, souvenir of wood carving has been successfully mass produced. A visitor to Bali is likely exposed to wood carving in all forms, be it the traditional ornate carved doors, the carved figures of gods, or the countless carved items in craft shops. Wood carving is a craft practiced all over Bali. Open your ears to the tapping sound of the carver's mallet and you would know that there is one around. It would be taxing to separate traditional and foreign influences. However, Balinese are intense observers of the outside world, effortlessly incorporating and adapting foreign themes into their work.

### **Economic Benefit**

Three decades ago, the Balinese economy was largely agriculture-based in terms of both output and employment. Tourism is now the largest single industry; and as a result, Bali is one of Indonesia's wealthiest regions (wikipedia: 2008). The economy, however, has suffered significantly as a result of the terrorist bombings of 2002 and 2005. Although in terms of output, tourism is the economy's largest industry, agriculture is still the biggest employment, most notably rice cultivation. Crops are grown in smaller amounts including fruits, vegetables and other subsistence crops. A significant number of Balinese are also fishermen. Bali is also famous for its artisans who produce creative products such as wooden carvings.

In the year of 2007, precisely along January up to August of 2007, the total income obtained from the Bali export has achieved about Rp. 346.779.425.56 where the 46.83% from the export was dominated by the craft sector itself. It is proven that the main contribution in economic generating of Bali Province is from the intellectual property exploring activities. The tables below are the list of Bali province export values.

Detailed of such export values are listed on the following table.

Tabel 1. Bali Export Values (Courtesy: Disperindag Bali, 2008)

No	Sector	Values (Rp)	Proportion
1	Manufacture Industry	131.674.125.07	37.97 %
2	Craft	162.402.149.29	46.83%
3	Plantation	1.097.696.55	0.32%
4	Agriculture	49.373.45.04	14.24%
5	Others	2.222.003.61	0.64%
	<b>Total</b>	<b>346.779.425.56</b>	<b>100%</b>

Tabel 2. Craft Sector Values (Courtesy: Disperindag Bali, 2008)

No	Crafts Types	Proportion (subgroup)	Volume	Values (Rp)
1	Musical Craft	0.13%	43,575.00	705,885.03
2	Paiting Craft	0.58%	1,318,402.00	2,020,222,00
3	Bamboo Craft	2.30%	7,330,515.00	5,664,128.93
4	Padas Stone Craft	3.24%	2,958,203.00	8,982,209.03
5	Furniture Craft	10.46%	1,128,247.00	27,919,690.49
		0.00%	3,502.00	141,142.35
<b>6</b>	<b>Woodcraft</b>	<b>16.83%</b>	<b>33,896,648.00</b>	<b>63,136,109.16</b>
7	Ceramics craft	0.45%	760,065.00	1,748,272.05
		0.00%	90.00	290.53
8	Shell craft	0.66%	1,438,517.00	1,686,080.34
		0,00%	2,255.00	1,379.32
9	Cover Craft	0.98%	1,344,245.00	3,544,502.86
		0.00%	518,96.00	2,674.50
10	Others Craft	2.24%	14,458,173.00	10,444,825.03
		0.00%	22,747.00	22,878,07
		0.00%	24,558.00	8,587.27
11	Candle craft	0.05%	352,112.00	291,516.60
12	Metal Craft	2.30%	2,648,970.00	7,129,016.06
13	Painting Craft	0.20%	93,202.00	1,441,372.56
14	Silver Craft	0,06%	2,749,837.00	1,429,935.91
		0,00%	1,090.00	4,453.06
		5.58%	15,142,721.00	20,268,298.93
		0.00%	14,483.00	48,700.06
15	Rotan Craft	0.96%	759,837.00	2,871,132.00
16	Terracotta Craft	1.07%	4,018,325.00	2,642,069.38
17	Bone Craft	0.09%	394,094.00	251,777.77
	<b>Total Craft Values</b>	<b>48.19%</b>		<b>162,407,149.29</b>

Despite the annual income from woodcraft industry in Bali has resulted in huge amount of money, nevertheless, most of such benefit is still felt more by the capital owner. The rest of communities who are involved in the woodcraft industry are still in the state of economic insufficiency. In an interview with a number of employees (Gianyar: 2008) in a sub-contract group, they are only paid about Rp. 10.000 up to 20.000 per day. On the contrary, the capital owners profit is up to 100.000 times than the employees obtained. Furthermore, recent data from Neha (2007) shows that annual benefit obtained by the foreign clients is two times than the Balinese export values itself, about more than US\$ 67.000.000. However, although the welfare distribution is still uneven, but on the other side, Balinese woodcraft industry has been successfully eliminating the unemployment rates in Bali, by which each of people in every region of village has a job!

Based on interview, the employer and foreign clients are very important and significant in determining the rates of salary to the employees. They have controlled tightly all trading traffics

beginning from the upstream up to the downstream. Consequently, the employee cannot do more to negotiate business with them. The figure above describes that the foreign clients will always contact the employer at the first time to order. Further, the employer will distribute such a demand order to sub-contract groups where the employees stay in. The share of profit from the Sub-contractor to the employee is always negotiable. Nevertheless, since the employer has determined the rates, therefore the profit obtained by both the sub-contractor and employee are not much.

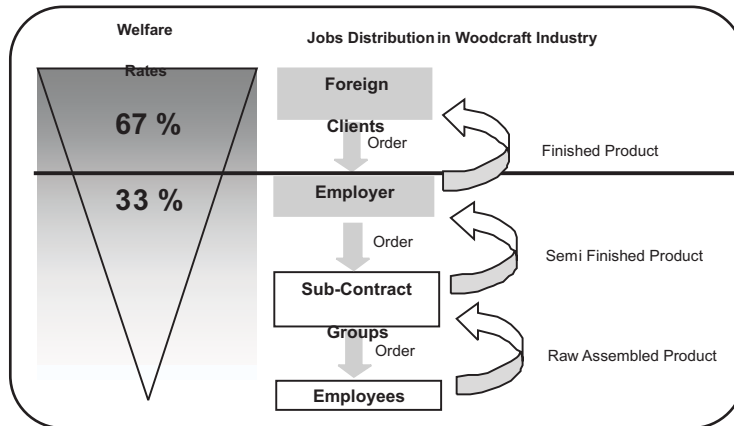


Figure 1. Jobs Order Mechanism and Welfare Distribution

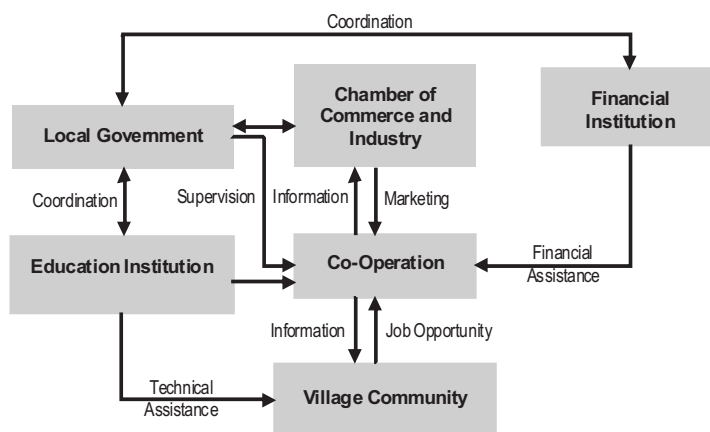


Figure 2. Innovation Mechanism in Community Empowerment

government of Bali province (Disperindag) has initiated strategies policy to anticipate semi-monopoly activities by many exclusive groups, by empowering their local co-operation (economic enterprise) in every village and coordinated with the funding institution. This program is aimed at enhancing the capacity building of the village communities involved and participated in the Balinese woodcraft industry. Therefore, the trading traffics beginning from the upstream up to the downstream will be guarded by the local government. Nevertheless, this program is still restricted to villages which have already well assessed. The first criteria applied is that the village communities which have been involved in woodcraft industry for a long time. The empowerment programs are aimed at unlocking the dependency of village community on the supply-chains from the other un-cooperated stakeholders. The outcome expectation of such a program is that all Balinese stakeholders could participate in developing and controlling such a business mechanism.

The figure above describes the mechanism of empowerment in Balinese community to be involved in woodcraft Industry. There are many institutions involved in such a program as has been mentioned before where each of institution has the specific roles. For instance the Local Government (Disperindag) has the role as controller, supervisor, regulator and policy maker. They do supervision to every village-co-operation (KUD) and controls every outcome progress

### Innovation System

One of the systematic ways in improving the governance performance is by creating system innovation. Hans de Bruijn (2006) the professor of Innovation System from TU-Delft mentions that the idea behind innovation system is that regular change will not suffice to solve them. They are embedded in certain institutions, structures and values that will have to change as well. This makes the change a systemic one, it is not a matter of solving an isolated problem, but of overhauling the entire system. The isolated problem is just a component of the system. In the case of welfare distribution improvement in Balinese woodcraft industry, therefore the system innovation is quite important as the ways to analyze the specific role of the existing stakeholders (institutions), in order to bind them in an integrated system.

In order to eliminate the gaps of welfare distribution shaped in many regional of Balinese woodcraft industry, the local

of program anytime, while they also coordinate and make a deal with other stakeholders such as Chamber of Commerce and Industry (KADIN) to facilitate the cooperation between 'Village-Co-Operation' with KADIN itself in sharing information and marketing the communities products. Besides that, the involvement of financial institutional is aimed at assisting the village community via their Co-Operation in enhancing their operational capital with the low interest rate. The Higher Education institution comes to the system in order to give technical assistance toward both the Village-communities and Co-Operation itself systematically. Since the research skill has not well shaped in Balinese woodcraft industry, therefore creating the creative product are still inconsistent with their skills and orientation. The role of university and research institutions are expected as agents of technological transfer from the outer Bali into Balinese community, and also as agent in enhancing research capacity itself. Nevertheless, this model is expected to bind together any relevant stakeholders who are involved in Balinese woodcraft industry. Therefore, the welfare distribution efforts in woodcraft industry could be soon achieved.

### **Role of Education System**

The role of education system in Bali is quite important in maintaining the sustainability of woodcarving tradition. In the past, there were not any formal education institutions for woodcarving. There were only 'Sanggar' or workshop as the real institution which successfully shaped the competency of local communities in woodcarving capabilities. The role of 'sanggar' was very significant compared to formal institution. It has proven nowadays that the learning pattern of 'the sanggar' is still acceptable by students in formal education institutions. It means that a significant evaluation toward the formal curriculum and learning pattern should be taken in order to be able to find new appropriate and systematic concept in learning process. Furthermore, the national policy in education system should adapt comprehensively the local culture itself.

### **Environmental Issues**

As we know that Bali is a tiny island without much of local source such as forest and others. Therefore in running their business in woodcraft industry, it certainly requires much of wood material. Most of Balinese woodcraft industry has imported such wood material from other provinces such as Java and Kalimantan. Nevertheless, recent study shows that the deforestation has influenced the environment quality and climate change. This situation has made a new controversy on the use of wood itself. Since the woodcraft industry in Bali has contributed almost half of the total export income. The sustainability of such an industry might be very important for Balinese community. However, since the rate of deforestation in Indonesia is the highest in the world, then the felling of trees in Indonesia's forest is more protected tightly. Indonesia lost 21,717,000 hectares of its primary forest cover during that time. Deforestation rates of primary cover have decreased 30.8% since the close of the 1990s. Measuring the total rate of habitat conversion (defined as change in forest area plus change in woodland area minus net plantation expansion) for the 1990-2005 intervals, Indonesia lost 25.6% of its forest and woodland habitat. From such a description above then it could be assumed for a while that the means of sustainability of Balinese woodcraft industry will meet some serious obstacles and constraints in their trajectories for the future.

### **CONCLUSION**

The Balinese woodcraft industry has been successfully generating significantly the new economics growth of Bali. It is proven by the outcome of creative industry export that had contributed amount of 48.19% from the total export. Particularly for the woodcraft industry, such a sector has contributed to the total export about 16.83% from the export values. Nevertheless, the lack of welfare distribution is still happening in the involved community of woodcraft industry itself. This situation maybe caused by the uncontrolled of trading traffics stream by the government. The capital owner is still powerful in determining the rates of labour itself. The new innovation system established by the local government to bind together multi-stakeholders in Bali has resulted in a gradual progress in improving the welfare distribution in the villages. There must be a significant evaluation and governance in education system policy, particularly for the art domain, where the learning process system should be adaptable with each of local culture

itself. The environment issues such as deforestation and climate change have contributed to the national policy on felling of forest trees in Indonesia. It would affect the sustainability of woodcraft industry in Bali. Finally, the innovation system applied in Balinese woodcraft industry has successfully changed gradually the life quality of involved communities. In conclusion, such a model might be implemented as pilot project for other Indonesia's provinces.

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