

Final Report on INT/16/K07 “The successful
bamboo development model in China and its
implications to Indonesia and Vietnam”

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After Committee of Experts for the Perez-Guerrero Trust Fund approved the project of “The successful bamboo development model in China and its implications to Indonesia and Vietnam INT/16/K07”, the project started in Dec. 2016 and completed in Dec. 2018. China, Indonesia and Vietnam are the participative countries of the project. The implementers are China National Bamboo Research Center in China, Forestry and Environment Research Development and Innovation Agency of Indonesia, and Silvicultural Research Institute of Vietnam respectively in three countries, and initiated and guided by China National Bamboo Research Center as the leading party of the project.

I. Background

Bamboo grows widely in tropical and subtropical regions with approximately 70 genera and over 1,200 species. China is one of the most important countries for bamboo production and processing. Its bamboo resources, area, growing stock and trade volume all rank first in the world, and are reputed as “Kingdom of Bamboo”. Bamboo grows in 16 provinces nation-wide with about 10 main categories in China, including traditional bamboo products, bamboo man-made board, bamboo pulp for paper production, bamboo fabric, bamboo charcoal and vinegar, bamboo shoot products and bamboo extracts etc. About 7.55 million farmers are involved directly in bamboo production and processing. Total output from bamboo sector will reach 300 billion CNY (approx. US\$ 48 billion) in 2020, 10 million people will be involved in bamboo production and processing directly, and bamboo farmers’ income will reach 2,100 CNY, accounting for above 20% of their net income per capita by then. In this regard, China will generate even more significant portion of global bamboo exports.

A bamboo development model study could provide a good reference to other bamboo rich developing countries, such as Indonesia and Vietnam etc.

- To provide general information on bamboo area, resources, distribution, types of use, traditional and industrial utilizations, research efforts, governmental policies etc.

- To illustrate how bamboo develops in general pictures and provide overall understanding of China’s bamboo sector development.

- To illustrate institutional arrangements and institutional development of bamboo sector in China.

- To explain in details of different types of industrial processed bamboo products in China and provide hints for other countries.

- To enhance the level of bamboo forest management towards a more intensive management.

- To improve the government and non-governmental entities’ role in supporting bamboo sector’s development.

- To increase the added-value for bamboo products.

China National Bamboo Research Center was established in 1984, and supervised by Chinese Academy of Forestry (CAF) since 1992. And China International Forestry Training Center was set up based on CBRC with the approval of State Forestry Administration in 2011. As an important platform for forestry international

implementation of conventions, CBRC conducts bamboo foreign aid work which focused on bamboo technical cooperation and exchanges. Since its first implementation on foreign aid training task in 1993, CBRC has implemented 115 training courses/ seminars, including 6 ministerial seminars, for 3000 participants from 106 countries as sponsored by the Ministry of Commerce of the People's Republic of China, UNDP, UNIDO etc. Meanwhile, it provides international foreign aid technical cooperation for developing countries such as Rwanda etc. It also has bamboo technical cooperation and exchange with over 30 countries, including Mexico, India and Brazil etc. CBRC has been working actively on promotion of world bamboo development, as well as South-South Cooperation.

This project aimed at explaining bamboo sector's development model through detailed illustration on bamboo resources, utilization, policies, researches, institutions, types of products etc. By conducting the study, CBRC offered the participative countries the technical knowhow and experience sharing of bamboo development, including bamboo resource management, product processing techniques, governmental policy supporting, institutional arrangement such as cooperatives and association, functioning of cooperatives and associations, market and others. Besides, we also shared experience and information on project implementation, bamboo farmers' daily activities, governments and research agencies' actions, vision and planning on bamboo. China has provided good example to both Indonesia and Vietnam for bamboo development, and both the countries learnt from China's experience, not only through this project, but also through many other channels of cooperation, such as China's foreign aid training programs.

II. Bamboo development model in China, Indonesia and Vietnam

Three studies on bamboo development models were conducted in China, Indonesia and Vietnam by three implementers.

Three expert panels were organized in China, Indonesia and Vietnam respectively. Survey structure and report format were also discussed among the panels. Study areas were also selected by the project implementers in three countries.

1. Bamboo development model in China

An overall data collection on bamboo sector was done, including general information such as bamboo resource abundance, distribution, output, cultivation level, utilization types, products ranges, marketing, policy and regulations, cooperatives and associations existence and functioning etc. Bamboo species and trading figures etc. are also listed in the report. As for the case study, Anji county of Zhejiang province was selected as the study site. Anji is a typical and high development bamboo county in China, which has the most completed bamboo value chain and the best pattern for bamboo development. Local forestry bureau, bamboo farmers, enterprises, cooperatives and associations etc. are met and discussed in order to clarify the situation, Anji Forestry Bureau in particularly, gave high supports for the project implementation.

In the research we found that Anji's bamboo development pattern is a joint effort of local government, enterprises, bamboo growers, R. & D. entities, various cooperatives

and association. Different parties functioned together and realized the booming bamboo industry in Anji.

Main work includes:

- 1) Literature review to collect general information on bamboo, such as area, growing regions, species abundance, industrial utilization types, policy and regulations, institutional arrangement, development plan etc.
- 2) Meeting with staffs from local forestry bureau and collection on general information of case study area.
- 3) Visit bamboo farmers, bamboo product manufacturers, intermediaries, bamboo related association and cooperatives, interview and discussion.
- 4) Data arrangement and analysis, report drafting to elaborate the detailed situation about bamboo development model of China based on Anji county.

2. Bamboo development model in Indonesia

Indonesia has rich bamboo resources and bamboo is traditionally used by local people for centuries. Indonesia has rich diversity on bamboo, and its bamboo instrument is world famous. The government and forestry research institutions also made big efforts to develop its bamboo resources. Many researches on bamboo products design, bamboo forest management etc. are done. However, the general level of development of bamboo in Indonesia is lagging behind of China.

The report explained the challenges and opportunities of bamboo industry development in Indonesia. It explained Indonesia's relevant national programs and policies on bamboo, bamboo resources and distribution, social and cultural uses of bamboos, traditional and modern utilization, Indonesia's advantages on bamboo development, integrated bamboo industry, national strategies for bamboo industry, and experience learnt from China.

The research focused on the experience learnt from China and how Indonesia tries to develop its bamboo industry by looking at China's example, including database development, technical assistance, capacity building, networking supports, technological supports, bamboo rehabilitation and products marketing etc.

An expert team from China also visited Indonesia during the project implementation and took part in the field survey. Bangli district and Kintamani district of Bali province are the project field sites. Both experts from China and Indonesia visited these regions and conducted field survey. The differences on bamboo forest management and various bamboo products production were discussed by Chinese and Indonesian experts, information were exchanged on the sites.

Main work includes:

- 1) Literature review to collect general information on bamboo, such as area, growing regions, species abundance, industrial utilization types, policy and regulations, institutional arrangement, development plan etc.
- 2) Meeting with staffs from local forestry bureau and collection on general information of case study area.

- 3) Visit bamboo farmers, bamboo product manufacturers, intermediaries, bamboo related association and cooperatives, interview and discussion.
- 4) Data arrangement and analysis, report drafting to elaborate the detailed situation about bamboo development model of Indonesia based on the selected case in Bali province of Indonesia.

3. Bamboo development model in Vietnam

Vietnam is an uprising country in terms of bamboo industrial development. It is located in the tropical region and has very favorable climate conditions for bamboo growth. It is rich in bamboo resources and bamboo biodiversity. Bamboo is also traditionally used by local people for centuries. And there is also industrial utilization of bamboos with very fine design.

The research team collected information on bamboo resource abundance, species diversity, distribution, management level, output, utilization types, products ranges, institutional arrangements, cooperatives and associations, national and local policies and regulations, marketing formation etc. A general picture of bamboo development pattern is provided in the report.

For case study, Thanh Hoa province and Nghe An province of Vietnam are selected for field survey. The social and economic conditions are examined, and general information on bamboo resources, policy supports for bamboo development, ownership structure on bamboo resources, income generated by bamboos, supply and demand of bamboos, output and values of bamboo in both study sites.

In general, Vietnam's bamboo industry is less developed than China. Its research funding, technical supports, government attention for bamboo development, institutional arrangement, cooperatives and association are less than China. Therefore, China could provide a good example for Vietnam to further develop its bamboo sector in many aspects such as resource management, organizational structure, products design, industrial utilization, production efficiency, regulations and policy supports, funding supports, research work etc.

Main work includes:

- 1) Literature review to collect general information on bamboo, such as area, growing regions, species abundance, industrial utilization types, policy and regulations, institutional arrangement, development plan etc.
- 2) Meeting with staffs from local forestry bureau and collection on general information of case study area.
- 3) Visit bamboo farmers, bamboo product manufacturers, intermediaries, bamboo related association and cooperatives, interview and discussion.
- 4) Data arrangement and analysis, report drafting to elaborate the detailed situation about bamboo development model of Vietnam based on the selected case in Thanh Hoa province of Vietnam.

III. Discussion

PGTF provided good opportunities for developing countries to share their lessons and experiences on social and economic development. Many beneficiaries benefited from it, particularly small holders such as rural farmers, businessmen, researchers etc.

In this project, bamboo is normally related to thousands of rural farmers and even it is industrially used, most of the bamboo industries are based in rural areas, which helps to solve the employment of numerous rural labors. A PGTF supported bamboo development model research project is in line with the vision of PGTF.

The project gave three implementers good opportunities to examining the outlines of bamboo development patterns in their respective country through an integrated view. Three parties did thorough studies based on field surveys in China, Indonesia and Vietnam. Through project implementation, local farmers, bamboo forest managers, bamboo product producing factories or family workshops, local governmental officials, cooperatives and associations, research organizations etc. were connected and got involved into the project, information were collected and exchanged, some technical supports were provided to the needed groups. The Chinese experts visited Indonesia and joined the field visit in Indonesia, which contributed to the technical know-how of Chinese experience to Indonesia. A very good experience sharing and information exchanging were conducted between Chinese experts and experts from Forestry and Environment Research Development and Innovation Agency of Indonesia.

China National Bamboo Research Center as the project leader, aimed at providing more information and successful stories on bamboo development patterns for other bamboo rich developing countries to enhance their resource management level and industrial utilization level. Through this cooperative research work, the following achievements have been made.

1. Provided the general bamboo development pattern and identified the strength, weakness, opportunities and threats (SWOT) of three participating countries. By looking at the bamboo development model in China, both Indonesia and Vietnam have big opportunities to improvement their bamboo sector's development through learning from Chinese experiences.
2. Establishment of a more firm network among three countries. A joint study provided more opportunities for different countries to share each other's information a current situation. Through communication and experiencing sharing, firm network is setup and further cooperation shall be developed in the future.
3. Consultative network. Under the current situation, China has accumulated rich experiences on bamboo sector's development, and it is also very willing to sharing the experiences and lessons to other developing countries. Through various types of studies and cooperation, China is able to provide more consultations to its partners and therefore, contribute to bamboo sector's development in a bigger scale.

4. Three detailed reports on each other's bamboo development pattern in China, Indonesia and Vietnam are provided through the study. And a SWOT analysis on three countries' bamboo development is also provided after the study.

Annex: Breakdown of Expenditure

Expenses covered by the PGTF

1. Sub-contractor	US\$17,000
1.1 sub-contractor in Indonesia	US\$ 4,050
1.2 sub-contractor in Vietnam	US\$ 11,650
1.3 taxes for sub-contractors	US\$ 1,300
2. Local travel	US\$ 2,000
2.1 local travels	US\$ 2,000
3. International travel	US\$ 10,520
3.1 Travel cost to Indonesia	US\$ 10,520
4. Formality fee	US\$ 1,120
4.1 Visa etc.	US\$ 220
4.2 Insurance fee	US\$ 900
5. Equipment	US\$ 400
5.1 Printer	US\$ 400
6. Miscellaneous	US\$ 500
7. Subtotal	US\$ 31,540
8. Overhead	US\$ 1,460
TOTAL	US\$ 33,000