PREFACE

PD 108/01 Rev. 3 (I) is the direct implementation of the rattan expert meeting conducted by FAO on 5-7 December 2000, Rome, Italy that identified 12 (twelve) problems and recommendations for the global rattan developments. One of the problems is a rattan resource in the natural forest in Indonesia that is being degraded due to over exploitation. The experts recommended follow up the project activities, taking into account the limited information and un-awareness of the government and rural communities and also rattan industry to use appropriate technologies for the efficient and diversified utilization of rattan that can conserve tropical forest.

Rattan industry contributed more than U$ 300 million annually to the national foreign exchange in 1998 and 1999 or about 6.5 % of the revenue coming from forest products industry in Indonesia. However, recent trends show that natural rattans, particularly most demanded species of large- and small-diameter, are getting short.

The decline of rattan products has been the result multifaceted factors of (1) unregulated harvest; (2) inefficient rattan material utilization; (3) inefficient trade with respect to distribution of benefit to local stakeholders; (4) the commercial-rattan focused of cutting; and (5) unfocused rehabilitation of rattan (natural forest and plantation).

The Project development objective is to enhance sustainable utilization of rattan through a secured raw materials and production flows from sustained-managed resources in order to increase multiple benefits to local communities. The specific objectives are: first, to develop sustainable utilization of natural and planted rattan in Indonesia; second, to improve rattan industrial competitiveness through a facilitation to improve grading system, product design and quality, market incentives and policy, as well as diversification of rattan products.

This Completion Report summarizes current conditions of commercial rattan stock in natural forest and plantation, market at farmer level, local market, semi-finished and finished-product rattan processing industries; the Project development achievements with regards to outputs, target beneficiaries involved, lesson learned; Project content, impacts, and sustainability; Project implementation and results; recent development in rattan-related policy; situation at project completion; conclusions and recommendations.

Acknowledgement is delivered to all the Project consultants engaged in this ITTO-MOF Project, the Project Steering Committee member and chairman, the Project Leader and dedicated staffs, the Association of Furniture of Indonesia (ASMINDO), Japan Government Embassy, Chief of *Cimanuk-Citanduy* Watershed Management Center, Chief of *Barito* Watershed Management Center, and others for the meaningful assistance and help. In this regard, Mr. Endang Setiawan beside his capacity as Project staff contributes technical reports and worked out the English editing.

I look forward that the Project reports, manuals, workshops, models of rattan plantation and industry would be meaningful lessons learned for future development.

Jakarta, February 2008

Director of Social Forestry Development,

BILLY HINDRA

TABLE OF CONTENTS

COMPLETION REPORT

Title	:	DEVELOPMENT OF SUSTAINABLE RATTAN PRODUCTION AND UTILIZATION THROUGH PARTICIPATION OF RATTAN SMALL HOLDERS AND INDUSTRY IN INDONESIA
Serial Number	:	PD 108/01 REV. 1 (I)
Executing Agency	:	Directorate General of Rehabilitation and Social Forestry Cooperation with Forestry Research and Development Agency, Ministry of Forestry, Republic of Indonesia
Host Government	:	Republic of Indonesia
Duration	:	36 Months
Starting	:	February 28, 2003
Budget	:	US$ 434,839

CHAPTER 1 EXECUTIVE SUMMARY

1.1 Background Information

PD 108/01 Rev. 3 (I) is the direct implementation of the rattan expert meeting conducted by FAO on 5-7 December 2000, Rome, Italy that identified 12 (twelve) problems and recommendations for the global rattan developments. One of the problems is a rattan resource in the natural forest in Indonesia that is being degraded due to over exploitation. The experts recommended follow up the project activities, taking into account the limited information and un-awareness of the government and rural communities and also rattan industry to use appropriate technologies for the efficient and diversified utilization of rattan that can conserve tropical forest.

On the economic sector, rattan industry contributed more than U$ 300 million annually to the national foreign exchange in 1998 and 1999 or about 6.5 % of the revenue coming from forest products industry in Indonesia.

Recent trends, shows that natural rattan, particularly the species most demanded by market, both large- and small-diameter canes, are getting scarce and difficult to find, indicating over exploitation in the past.

In some producer areas the farmers have changed their main activities into other commodities such as agriculture products and estate crops plantation.

The decline of rattan products was caused by complex factors such as: (1) harvesting higher than the annual allowable cut and inefficient rattan utilization; (2) unfair trade, higher benefit received by trader and large buyers compared with farmers, also the low bargaining power of farmers; (3) the commercial rattan species from natural forest is over-exploited; (4) rattan trade is ‘monopolistic’

system in that price is determined by buyers with unfair market system; (5) no rehabilitation to commercial species harvested from natural forest has been made.

Nowadays, only two small-diameter canes already planted intensively by farmers i.e. rattan Sega (*Calamus caesious*) and rattan Irit (*Calamus trachycoleus*). Meanwhile, some species harvested from natural forest, belong to manau (*Calamus manan*), pulut merah (*Daemonorops sabut*) or lacak merah (*Calamus flabelloides*), sarang buaya (*Calamus eriocanthus*), pulut putih (*Calamus flabellatus*) become extinct.

The Project objective is the development to enhance sustainable utilization of rattan through securing raw materials and production flows from sustainable managed resources in order to increase multiple benefits to local communities. The specific objectives are: first, to develop sustainable utilization of natural and planted rattan from sustainable sources in Indonesia; second, to improve rattan industrial competitiveness through improvement in rattan grading system, product designs and qualities, market incentives and policy, as well as diversification of rattan products.

1.2 Current Condition

1.2.1 Current condition of commercial rattan stock in natural forest and plantation

Currently, most of raw material rattan production comes from natural forest, except for two species already been cultivated in Kalimantan. This, together with over exploitation results in that some species become extinct. The identified problems for rattan resources are:

1. The available standing stocks of commercial rattan resources in natural forest decreased year to year, it is caused by over exploitation.
2. Forest degradation following the decreasing rattan standing stocks took place rapidly, and further the species become scarce both for commercial- and non-commercial species.
3. The over-exploited commercial species result in that some species are currently endangered, scarce, and out of the markets such as: *Calamus manan, Calamus flabelloides, Calamus flabellatus, Calamus erioacanthus* and lacak merah (*Calamus flabelloides*.). In the near future this will be followed by *Calamus inops*, lambang (*Calamus diepenhorstii*) and batang (*Calamus zillingerii*) from Sulawesi origin.
4. Data of rattan standing stocks of Ministry of Forestry is of ‘gray feature’ and is not specific for commercial species and non commercial species.
5. Some commercial species do not grow naturally in all conditions due to the plant distributions. Some species grow abundantly, but some others do in limited in certain islands with low standing stock. Hence, each island has specific species that do not grow in other islands.

6. There is no awareness of the government to regenerate these species although rattan commodity contributes 6.5 % of total income from forestry sectors (US$ 300 millions) yearly.
7. The price of raw material rattan at grower level is low and regulation does not encourage rattan cultivation. It is related to the low bargaining position of rattan growers in this business. Meanwhile, the government of Indonesia earns income from taxes US$ 5.56 per tons for small-diameter canes, and of average US$ 0.22 per strips for large-diameter canes.

These commodities have to be managed in sustainable to guarantee a continuous supply of raw materials, in order that all parties as rattan growers, rattan industries, and the governments obtain best solutions. Regeneration of endangered commercial species mentioned above is needed.

1.2.2 Current condition of market at grower level

Farmers are the weakest element in rattan business, and nowadays they face the most difficult situation. Weaknesses identified mainly are:

1. Lack of good knowledge of harvesting process that results in low quality of canes and hence the low price.
2. Rattan grower/farmer is highly dependent to financial support from collector trader, and this condition put them in “low bargaining position”. It is the fact that most of growers are poor, in need of cash to survive.
3. Lack of guidance from buyer or government on standard of quality of rattan products resulted in a situation of “no standard of quality” applied by buyers. Rattan quality and the price of raw material rattans are decided by collectors or buyers based on their feeling,
4. Raw material rattans were collected from natural forest in seasonal and un-continuously. It is dependent to price in local markets.
5. Rattan growers’ motivation to cultivate rattan intensively gets at a low level, particularly considering that rattan commodities has low return compared with others such as oil palms.
6. Increase and decrease in rattan demand and the price did not affect the growers’ income.

These weaknesses will have impact on the quantity and quality of supply, which finally will influence market system in all stages.

1.2.3 Current condition of local markets

On trader side, positions in the middle of trade chain, there are also weaknesses. Traders are facing uncertain situations such as:

1. High transportation cost from production areas to catch regency buyers (poor area accessibility) and processing cost, persist. It is due to increasing fuel price and other costs.

2. Traders are limited in access to rattan industry since consumers and price are determined by the buyers from Java (center of rattan industry), provincial ban policy on inter-island trading.
3. Supply of large-diameter canes from farmers lowered as the productivity of forest went down caused by over-exploitation with harvest not based on the annual allowable cut.
4. Traders are limited in access to international markets, and so regency buyer is reliant on rattan processing industry in Java. Although at international market rattan price increased, the quantity sold by rattan industry did not increase,
5. District buyer of raw material rattans were dominated by the big rattan processing industry that are actually finished product producers from Cirebon or others from rattan industry centers.
6. District buyers are limited in capital; meanwhile their profits are low due to the high production cost attributed to the lengthy transportation and high tax payment both legal and illegal.

These factors had impact on the quantity delivered to the processing industries and on the path of flow of rattan supply.

1.2.4 Current condition of semi-finished rattan processing industries

Rattan processing industry has a strategic position as it played a real intermediary function to supply and demand. It is supported by greater access to market even to overseas markets. Nevertheless, they are also facing the following situation:

1. A high-cost economy in attaining raw material is facing semi-finished industry; this is worsened by scarce and uncertain raw material supply.
2. Furniture with substitution raw material enters the market although the product has lower quality compared with those made up from rattans especially large-diameter canes. It caused demand for the end product rattan declined.
3. Rattan species demanded by end product industries are limited. Although other potential rattans are abundant, but they are currently unutilized and in need to promote.
4. Most of local rattan industries can not maximize their production capacity caused by limited supply of raw materials.
5. The market of r*aw* rattan is 'monopolized' by rattan buyers in Java. In fact, they also sell raw rattan abroad.

Most of rattan processing industries are located in district or province; they are intermediary traders that sell their products to large-buyers in Java. The majority of the traders have limitation in financial resource, and hence they are dependent on large-buyers practicing 'monopoly' by directing raw rattan price.

This condition had impact on the quantity delivered and the path of flow of semi-finish rattan into industry producing finished-product.

1.2.5 Current condition of finished-product rattan industries

1. To ensure the availability of raw material rattan, there is possibility that raw material rattans are stocked by finished-product industries in large amount for export at later time.
2. A high-cost economy is facing the industry in trade.
3. Local rattan industry utilization of raw material rattans is inefficient.
4. Demand is decreasing as the effect of competitor from other countries which sells their products at lower price for the same design and raw materials.
5. Low productivity and poor work ethos of human resources compared with competitor countries',
6. High interest rate of local bank, compared with those in competitor countries, made local rattan industry could not grow up.
7. Some kinds of product are produced by industry based on order from competitor countries including the product design.
8. The weakness of copyright law enforcement and lack of promotion contributed to the atmosphere that local design creativity did not grow well.
9. Market networking, market intelligence, and promotion in consumer countries are unavailable.

All these factors resulted in that rattan industry has a weak competitiveness in front of competitor countries'. This situation has created a disadvantage to Indonesia's brand finished products and finally a loss of added value in long term.

The project concept and activity in line with aims to improve skills of farmers and to enhance contribution of national economy through participation of smallholders in rehabilitation of rattan commodities to ensure sustainability of raw material rattan supply for rattan industry.

The key problems to be sorted out to realize these programs are: problems faced by farmers with regard to low bargaining position, land tenure problem, lack of financial support from the government, and farmers' shortcoming in plantation management technique and after harvest processing. Collaboration among rattan farmer, local trader, buyer, rattan industry and entire related government has to be encouraged. Besides, a national strategy plans and simple regulation, so that all parties in rattan basic business satisfy, must be made.

The government must control raw material rattan export or directly trade to the consumer countries with first priority to fulfill domestic rattan industry need, and promotion.

1.3 Project Development Achievements

1.3.1 Outputs achieved

The stated development objective of the project is to enhance the sustainable utilization of rattan through securing raw materials and production flows from resources that is managed sustainably in order to increase multiple benefits of rattan to local communities.

A number of project activities were made during the project period, i.e. preparation of data on rattan resources and trade, development of standard and manual for rattan planting and processing, analysis to trade policy (technical reports and manuals), training provision in rattan planting and processing, workshops in, development of rattan planting demonstration plots, and model of aid for smallholder industry.

1.3.2 Specific objectives achieved

Specific objective 1

Stated objective: to develop sustainable utilization of natural and planted rattans from sustainable sources in Indonesia. The outputs are:

Output: 1.1. Report on rattan supply and demand in Indonesia, it covers survey on rattan potency, rattan processing, rattan production and their management options

Output: 1.2. Report on existing natural rattan management and utilization

Output: 1.3. Two demonstration plots of intensive rattan plantation trial at the Forestry District Tapin and Hulu Sungai Selatan (South Kalimantan). The first plantation trials cover a model of management scheme on rattan plantations on natural forest managed by the local community organization. The second plantation trial was developed as a model of rattan plantation within plantation forest located in Kuningan (West Java); this rattan plantation is managed by a state-owned forestry company

Specific objective 2

Stated objective: to improve rattan industry competitiveness through improvement on rattan grading system, product design and quality, market incentives and policy, as well as diversification of rattan products. The outputs are:

Output: 2.1. Report on market preferences of rattan products types, designs, and qualities. The constraints and options on achieving product preference will be identified

Output: 2.2. Appropriate technology to achieve better qualities of rattan products

These include technological innovation on processing techniques (preservation, drying, bending techniques, etc), design, grading system, and product diversification.

Output: 2.3. Recommendation on socio-economic and policy of rattan market systems

Output: 2.4. Establishment of two small-scale rattan processing factories involving active participation of local communities. The two model-factories are the selected existing factories whose facilities were upgraded.

Output: 2.5. Two short training courses to advance farmers and smallholders' knowledge in rattan cultivation and rattan processing (Each course was participated by 30 farmers and smallholders within 15 days)

Output: 2.6. National workshop. It will cover cultivation, processing, socio economic, marketing and policies of rattan products. The workshops will participated by around 50 persons within 3 days

The situation prevailing at the time of project completion is that participated rattan farmers have an improved rattan processing knowledge and capability. With regard to processing for semi-finished rattan and furniture, however, the technique farmers obtain needs support of capital to run the business. The same situation is true in the farmer ability to directly sell rattan product to rattan industry in the country.

1.3.3 Target beneficiaries involved

Target beneficiaries of the project are both direct- and indirect beneficiaries, i.e. all parties engaged in the business of rattan product especially farmers, rattan industry, and the government.

Farmer involved

Through the activity the project has stimulated rattan farmers to improve their rattan product quality to earn higher from selling processed raw material rattan. With regard to better farm-gate price of raw material rattan, however, farmers remain in need of further assistance.

Rattan industry

Benefit to rattan industry is in term of guaranteed and secured raw material supply continuously from sustainable sources; it is a definite benefit that is obvious in long-term basis.

The Government

Central government, in particular Ministry of Forestry, benefit from the project in terms of:

- Availability of reliable data on rattan resources as the basis in the formulation of government strategic plan and program;
- The recommendations made by the project that can be used as the basis in the formulation of government strategic plan and program;

The implementation of the project through various activities involving local authority and local people has impact on the emergence of, for some local governments, the policy sustaining rattan resources.

In fact, these beneficiaries would not be confined only to Indonesia, but also to other ITTO member countries.

1.3.4 Lesson learned

Development lessons

1) The design of the project gave contribution in dealing with the objective of carrying out successful implementation and development of the project activities in the field.
2) Links in intersect gave significant affects to the success of the project through providing rattan farmers' participation in training and workshops conducted by the project.
3) Additional arrangement with the Ministry of Trade, Ministry of Industry and Ministry of Finance cq. Directorate General of Custom, local and foreign investors, and others should have been made for the maximum result of project implementation in the field.
4) The sustainability of project depended on the government's action programs (cq. Ministry of Forestry) within which cooperation with farmers, local traders, rattan industry, the government, and financial support from donor countries is of importance.
5) The government must provide lands, solution to land tenure problem, improve area accessibility, improve capability of rattan farmers, seed orchard development, and rattan cultivation based on species priority (in particular, commercial species that become extinct).

Operational lessons

1) Project organization and management have to be simplified and too many units involved in the implementation of the project avoided. Responsibility for the success the project be stressed to all staffs and experts involved in the implementation.
2) The Project Implementation Documentation is sufficient to support the implementation of the project. The project leader should have capability to analyze the project document and to decide on action programs in the field implementation of the project.

3) The executing agency should prepare action plan programs (time schedule) within which each personnel or institution responsibility is stated clearly. It is to make project leader easy to monitor and evaluate the project progress. Prior to the implementation of action plan programs, the executing agency or project leader should explain clearly all that involve on their role and responsibility in the project.

4) The executing agency to give notice that the project leader works based on expertise, knowledge and experience in rattan field, and his/she to manage team in project implementation, and strictly follow the action program.

10. The project leader should focus to the project and free from all duties as government services along the project duration period and review and discuss the progress of all project activities together with all team members.

11. In the implementation of the project there are no external factors that influence the project activities.

1.3.5 Recommendations

For similar project, it is important to select project staffs and hire them based on project requirements on the field, expertise, knowledge and experiences. The jobs description of each staff must include their responsibility, compensation, time duration and it is important to avoid many staffs without clear responsibility.

Project staff must prepare working plan and propose a financial support for his/her activities to project leader. All staffs (team) to regularly have meeting to review their activities, exchange experiences and assessment of their activities in the field. By doing so, if there is activity out of the track, the project leader can easily take action to keep the project accomplishment.

CHAPTER 2 MAIN TEXT

2.1 Situation Existing at Project Completion

The project shows the ample potency of raw material rattans of about 350 species, but only 54 to 60 species of them are currently commercial and accepted by rattan industry. The rests are still unutilized or less-utilized. There is ample room for researchers to promote unutilized rattan species.

Harvest of commercial rattan species from natural forest currently is not based on annual allowable cut. It caused a steep decline trend of rattan production from natural forest. Some of commercial species become extinct and become out of the markets and there is enough warning the species will possibly disappear.

Regeneration of commercial rattan harvested from natural forest is nearly neglected, except for two species of small-diameter rattan, Sega and Irit, that are planted by farmers in Central Kalimantan. Planting of these two species by farmers in Central Kalimantan has begun as early as 1885 during Dutch era. Meanwhile, there is no other commercial species that are harvested from natural forest, been made.

Trading of rattan commodities is 'monopolized' by large buyers from Java without standard of quality applied and with price controlled by large buyers and regional traders. The lengthy trade chain made farmers weak in bargaining position of pricing.

2.2 Fact Finding in the Field

2.2.1 Harvesting techniques

The process of harvesting rattan can be identified into: harvest in natural forest, and harvest in planted areas. For most of large-diameter rattans, the length of the mature canes left-over in the field or unused was about 20 to 25 % or more. From one large-diameter cane are about 5 to 7 meters from the bottom with diameter 5 to 10 mm and the top parts about 10 to 15 m also left-over in the field.

For large-diameter canes, the length of cane cut depends on the difficulty (to what high) the cutter (workers) can reach the upper parts by climbing since most species reach up to the top of highest tree canopy. Difficulty in pulling the canes is caused also by the environment where canes scramble tightly to the branches of trees. The leaf-sheath has cirruses and flagellas with the thorn sticks tightly to tree branches also causes difficulty in pulling the canes. Meanwhile, using four-wheel drive car is not efficient, especially in natural forest with large canes growing in hilly and slopes areas. In areas with limited accessibility, to reach rattan areas in natural forest farmers cut and drag the canes to the forest borders. This often makes cane surface scratched or attached by fungi (results in low rattan quality).

Small-diameter canes in natural forest are easier to harvest forest compared with large-diameter canes since these species reach only the second or the third stratum of trees. Most small-diameter canes are clustered in which for one clump

Figure 2.1. View of large-diameter canes reach on the top of tree canopy

Figure 2.2. View of rattan canes climbing on the tree

hundreds of canes stack or cross over each other. So, when mature canes are pulled then immature canes will be damaged or cut off. For these canes cutting operation leaves the top parts in the field unused. The left-over parts account for 5 to 10% of total cut canes depending on the degree of difficulty faced in pulling the canes.

Figure 2.1 and 2.2 show the view of large-diameter canes and the top parts of mature rattan attached tightly to the top canopy of tree; these typify the difficulty the workers faced in pulling down rattan canes.

Figure 2.3 shows defect surfaces of large canes caused by dragging in transporting from producer areas, and figure 2.4 shows canes that were not treated after harvested such that water content made a suitable environment for fungi. It affects the cane quality especially the surface color that is not bright after the process of boiling and sulfuring.

Figure 2.3. Scratched surface of large canes caused by dragging in transportation

Figure 2.4. View of rattan canes attacked by fungi

2.2.2 Rattan farmers

Rattan farmers are poor, lack of capital, and limited opportunity for obtaining training in rattan treatment to obtain high quality canes. Meanwhile, for those who have skill to improve rattan quality, the need to earn cash money as soon as possible to fulfill daily life is stronger than waiting for a few week to dry rattan canes for higher price. Current rattan farmer's financial support comes from local traders (sub- district or region), and thus it makes the traders control rattan price.

Regional or provincial buyers depend on large buyers from Jawa especially Surabaya, East Java and Cirebon, West Java (the two main centers of rattan industry). The long trade chain makes rattan farmers weak in bargaining the price of their products. Local traders take advantage of this situation by pushing rattan price in the grower levels to the lowest possible.

Figure 2.5. Selection of mature canes

Figure 2.6. Discussion with rattan farmers

Figure 2.5 shows workers selecting mature canes by cutting the bottom of clump since pulling the canes by climbing to the top parts is difficult as the cane stacks to the others at the top of canopy. Figure 2.6 shows discussion between ITTO Team and rattan farmers on pre-treatment for after-harvest of rattan canes. It reveals that most farmers do not apply pre-treatments, rather they dips rattan canes into muddy soils. Two reasons for applying this are to increase weight of rattan canes and to wait for local buyers. Although, the weight does increase, there are consequence of lowering canes quality and creating a grey or black color of cane surfaces.

Figure 2.7 below shows rattan canes that were dipped into muddy soils.

Investigation concludes that training farmers in rattan preservation technique to improve quality but financial support from government are needed to apply the technique in their business.

Figure 2.7. Rattan covered by muddy soils

Figure 2.8. Grey color of after-wash rattan cane surface

2.2.3 Rattan processing at trader level at producer areas

Most of waste in manual deglazing is due to natural defect or rotten. In mechanized deglazing waste can also be resulted by a too-high machine speed beside by the two factors. Figure 2.9 and 2.10 show the waste of rattan canes produced in deglazing process, manually and using deglazing machine. In both cases waste amounts to approximately 5 %.

Figure 2.9. Waste from a manual deglazing process

Figure 2.10. Waste after manual deglazing process

Most of medium-diameter rattan canes do not require boiling process. After cleaning- (washing) and drying process they are sulfured to generate surface brightness of canes and for protecting them from insect attacks.

Figure 2.11 and 2.12 on next page show waste from boiling process, fumigation and selection process, they normally are used as fuel in boilers or dumped to rattan planted areas as litters to then become humus (rotten) functions as fertilizers. Although rotten cane waste functions also in keeping the moisture of soil ground surface, but in dry season it is risky since it is easy to burn.

Figure 2.11. Rejected medium diameter canes after processing and selection

Figure 2.12. Rejected small-diameter canes after processing and selection

2.2.4 Rattan industry and international trade

Currently, rattan industries are facing the problems of no guarantee that supply of raw material is sustainable and in continuity. To anticipate the decline of rattan supply rattan industries substitute lower quality rattans especially for those large-diameter as on frame, or substitute iron, wood and water-hyacinth. So, the rattan content decreases and are replaced by those materials. At present the furniture from water-hyacinth has a good market in Middle East countries.

There is a tendency that rattan industry exports raw rattan of high quality to obtain cash money in short time rather than process them into furniture that would take at least three months. Further, export of raw rattan is also taken at times when order from abroad lessens.

Other finding in rattan industry and international trade is the case of rejection to furniture produced on order basis. Although there has not been formal complain from furniture industry, from business interest it is an unnecessary loss to the producers. This problem has to be addressed; the government has to role in setting up a fair business regulation that protects local producers.

Based on fact finding in the field rattan trade chain is long and rattan farmers have been the suffering stakeholder in this situation.

In the field of semi-finished processing, investigation on small-holder processing industry in South Sumatera concludes that smallholder industry processing raw rattan to semi-finished product is a profitable investment (see ITTO publication *Financial Analysis on Semi-finished Rattan Industry in South Sumatera, 2007*). Since this industry does not require high investment and uses simple technology, it is one option to take by the government program. The reason for this is that a developed smallholder industry would, in turn, drive rattan cultivation by farmers. Along with this, a government policy supporting smallholder rattan industry is required.

Rattan harvest especially for rattan from natural forest currently is not based on the AAC (annual allowable cut), and it has caused a situation of no accurate data available. Beside, there is no data on specific rattan (species) both for non- and commercial species, rather most data are presented in general term.

Existing situation in rattan development are as follows:

1. There is no data available on rattan potency (available standing stocks) from natural forests and planted areas to determine annual allowable cut especially for commercial species.
2. There are only two species of rattan that have been planted in Kalimantan, small-diameter species, meanwhile large-diameter species have not been planted yet in commercial scale. On the other side, rattan production from natural forest has been declining on yearly basis and some of them become extinct species.
3. Low quality of raw material rattan in the grower levels is attributed to limited knowledge in preparation of canes after harvested, beside that they need “cash money” to support their daily life.

4. Rattan trade has a long chain characteristic with the consequence rattan farmers receive the lowest benefit, and local traders and large buyers get more.
5. Farmer ownership status on land with rattan growing on it is currently uncertain although the land has been occupied for a long time. Solution to the problem has to involve institution having the capacity on lands (National Land Agency) as well as Ministry of Forestry.
6. Lack of stakeholders' concern to rattan farmers would cause the consequence that the commodity would be scarce in the future.

2.3 Project Description

2.3.1 Project content and impacts

The project provides information of current rattan resources status, and all business agents involve (rattan farmers, trader, rattan industry), rattan commodity market situation including market chain, and the government policy on rattan.

From plantation in Kalimantan, rattans currently produced by farmers are only two species, while other species are produced from the natural forests of Sumatra, Sulawesi and also Kalimantan. Raw rattan supply from natural forests has been declining during the last several years; it is caused by over cutting, followed by forest degradation. There is rarely rattan cultivation in commercial scale. The result of this situation is that no guarantee of rattan supply for rattan industry continually from sustainable sources. All business agents in rattan business have to role to solve the problem to guarantee raw material supply for rattan industry in the future.

Training activities have positive impacts to rattan farmers in enhancing their knowledge in raw rattan preparation after harvesting to obtain high quality rattan canes as well as in rattan silviculture and plantation management. The trainees gave positive respond to training conducted by the ITTO project.

With regard to the Workshop (two workshops), the participants as well as Indonesia Central Bank and Bank of BNI (Bank Negara Indonesia) gave positive responds in rattan business. However, the constraint of access to bank loan remains unsolved. Along with this, rattan farmers are not familiar with loan procedure.

Rattan farmers are expected to produce high quality rattan canes by processing the after harvest and sell them to rattan industry in Cirebon. The MOU between farmers and rattan industry in which the industry will buy raw rattan at applicable market price seems to not work.

The government, Ministry of Trade, issued the regulation through the decree Nr.12/M-DAG/Per/6/2005 that allows export of planted rattan. In this relation, the project recommended the Ministry of Trade that export of plantation rattan has to be subject to first fulfilling raw material demand of local rattan industry.

From the project the government benefit in term of data of rattan standing stock in natural forest and plantation although they are only for three areas, Sumatra, Kalimantan and Sulawesi. It is expected that theses data would allow decision makers to make realistic program and action in rattan development.

Academicians and researchers, as well as rattan furniture association (*ASMINDO*) and ITTO member countries, gain an in-depth understanding of the problems faced by rattan farmers for further resolve of the problems and constraints.

2.3.2 Project sustainability

Through the implementation of the Project PD 108/01 REV. 3 (I) the ITTO team has encouraged rattan farmers' motivation to cultivate rattan. It is a good starting point in encouraging Indonesia government commitment in rattan development and proper maintenance of rattan resource to obtain high added value. These, to a certain extent, would maintain Indonesia leading position in rattan commodity.

To improve the rattan farmer capability in plantation management, after-harvest handling, rattan quality improvement and industry, and establishment of training center in producer areas is recommended. The training center is to be utilized for farmer learning process, exchange of information and experiences among farmers.

Farmers' land ownerships legal status needs to resolve to provide farmers a certainty in rattan farming. Solution to the problem has to involve institution responsible in lands (National Land Agency) as well as Ministry of Forestry.

The government is required to put into practice action programs, to resolve existing problems faced by rattan farmers, rattan traders, and rattans industry, simplify regulations and encourage all business agents in rattan basic business. To guarantee sustainable raw material supply continually for rattan industry, the government is required to prepare national action programs, and in line with it, formulate project proposal for ITTO funding.

Through the ITTO project all data that are required to develop rattan commodity is made available. They are required in formulating the national strategy plan and action program. This action program is in line with rattan expert meeting of FAO-Expert Meeting held on December 5-7, 2000, Rome, Italy.

2.3.3 Project design and organization

The project design gives preferable results and adequate of time to execute the project implementation, with the objective and specific objectives to solve the problems in rattan production at current situation.

The concept of and principles in project implementation, in relation to the aims of the project, is prepared properly. However, the project achievement would depend on the executors' capability, in that how they implement the activities in the field given their role and responsibility.

The project organization is required to be made simple, staffs involved are hired, both personnel and institution be selected in proper way referring to their relevant knowledge, and experiences. The implementation of the project should follow the principle of “the right man on the right place” and every personnel responsible to the success of the project.

The roles and responsibilities in the implementation of the project are clear and understandable, but personnel that are selected are not professional.

The project output provides sufficient data and information for the formulation of the national strategy, and it rests to the government to realize.

2.4 Project Implementation

There has not been a significant difference between planned and realized activities of the project in the field with regards to costs, time schedule and outputs achieved.

To avoid divergence in the project implementation all staffs involved should have made “work plans and budgeting” submitted to project leader for approval. After field works, then each report be reviewed and discussed with all staffs. Correction to field data has to be made before reports finalized, as stipulated in the minutes of meeting.

There are impacts of the project results to regional and central governments in a way it contributed to the formulation of action program although it runs slowly because of lengthy administration procedure, shortcomings in cooperation and collaboration with related institutions.

The result’s of the project is potential to be continued to ensure a continuous supply of raw material rattans to rattan industry from sustainable sources. Cooperation and collaboration with all stakeholders of rattan business, related institutions, and support from donor countries are needed.

2.5 Project Results

At the time of its completion the project provides data on rattan stock (potency) based on species (commercial- and non-commercial species); species that are extinct; current condition of rattan business stakeholders; market situation; and lesser-used species. It is a progress to pre-project’s generalized data presented by Ministry of Forestry.

The project can be extended to cover specific objective as to establishment of training center in producer areas for farmer’s interest. It is to conduct training to farmers in plantation management, after-harvest handling, rattan quality improvement, industry, and establishment of “seed orchards” for large-scale commercial plantation program.

The project provided advice to the government to allow export of planted rattan (raw material) through a ministerial decree of Ministry of Trade.

The project results provide significant impact to farmers with regard to the possibility of improved income from rattan in the time to come. It is enabled through quality improvement of rattan canes, direct sell to industry, and facilitating MOU with rattan industry, of local and international.

The project has the impact in regional program development in rattan resource and industry and in facilitating rattan farmers to produce high quality canes. These have contributed to better sell to regional rattan industry.

The project is environmentally-friendly. It is obvious from the ecological requirements of rattan, in that rattan plant needs tree plants that would support structurally in getting direct sunlight.

2.6 Recent Development in Rattan-related Policy

At strategic-national level there are two national policies related to rattan business:

1) Presidential Regulation Nr. 77 of 2007 concerning Lists of Negative and Positive Sectors of Foreign Investment; and
2) Ministerial Regulation Nr. P.35/Menhut-II/2007 concerning Non-timber Forest Products.

2.6.1 Presidential Regulation on the negative and open to foreign investment

This policy, Presidential Regulation of 77 of 2007, has been complied with the ITTO Project findings in which reporting that certain species has been scarce (extinct) and that rattan potency on the whole has been declining. The regulation clarifies the classification of sectors that are opened and not permissible to foreign investment. In this term the investment in rattan processing industry is one of those categorized as conditionally-open to foreign investment, meanwhile rattan planting is the one open to foreign investment.

From one view, the two investments are opportunities for the country for improving rattan resources availability and hence the added value. The question remains is to what extent total added value converts to community income in real business.

Along with this, investment in industry that will process small-diameter rattans, except for extinct species, has to be allocated to those areas where farmers produce large quantity of small-diameter rattans so that market improvement can be expected. Meanwhile, for industry that will process large-diameter rattans, the investment has to be made in combination with investment in rattan planting. In both cases of plantation investment, annual allowable cut has to be applied.

2.6.2 Ministry of Forestry Regulation on non-timber forest products

The Ministry of Forestry Decree of Nr. P.35/Menhut-II/2007 would be advantageous in two roles. First, it strengthens Ministry of Forestry authority in regulating how the products should contribute to people economy. Second, it adds fundamental for the Ministry in executing rattan development programs.

2.6.3 Ministry of Trade Regulation on rattan export

The Ministry of Trade Regulation Nr. 12/M-DAG/Per/6/2005 on Rattan Export Regulation basically opens export trade for certain type of rattan products categorized as raw material which by previous regulation is banned. It is a substitute to The Ministry of Trade Regulation Nr. 355/MPP/Kep/5/2004 controlling or disallowing export of natural forest rattan of Manau, Batang, Lambang, Pulut, Tohiti, Semambu, and others in the form of wet-, deglazed-, polished- or not, sulfured rattan.

The Ministry of Trade regulation to some degree has had effect to local economy and hence to local government outlook in rattan business especially for South East Sulawesi Province, East Kalimantan Province, and Katingan District. Current policy of South East Sulawesi is that disallows raw rattan trade with other provinces' traders. Meanwhile, East Kalimantan program in rattan allocates 100,000 hectares of land for a large-scale rattan planting, and Katingan prepared the program "*One Million Manau Rattan Planting*".

2.7 Collection of View Points of Key Stakeholders

View points from key stakeholders regarding rattan sector development are diverse to a significant extent. The main view points are represented by Indonesia Furniture Association (ASMINDO), local farmers, the Government of Japan, and an NGO, as summarized as follows.

2.7.1 Indonesia Furniture Association (ASMINDO)

The association, that previously reasons rattan planting program as not required with the presence of substitution materials (as plastic and water-hyacinth) shares a common concern with the government on the need to advance Indonesia rattan business. In campaigning Indonesia rattan the association will hold international rattan furniture and craft fair in the coming March 2008 in Jakarta.

Although its concern is more on advancing rattan marketing, but it implies logically that the association shares common view on the need to develop rattan in resources side.

2.7.2 Local farmers

Very frequently farmers express the expectation of the availability of low interest credit. Along with this, are expectations for opportunity to improve their know-how through training in plantation management, harvesting, after-harvest processing as well as for an information center that would serve as the support to rattan farmers. Meanwhile, rattan home industry demands continuity of raw material and the channel for marketing (export in particular).

2.7.3 The Government of Japan

Beside the conflicting views, Japan Government keeps on support rattan development in Indonesia especially considering it is one of the efforts in sustaining the environment.

2.7.4 Non-government Organizations (NGOs)

Both to local NGOs as *Teropong* (Katingan, Central Kalimantan), *SHK East Kalmantan* (Samarinda, East Kalimantan) and national NGO, as a whole rattan development are perceived as important for rural people interest. Indeed, the two NGOs have made important practical works with rural people in advancing rattan as income source. *Teropong* stress the need for the Government to resolve land conflict between formal land status and the agreed custom (people) lands. Meanwhile, *SHK East Kalimantan* proposes a strengthening of people bargaining position through capital support, union or cooperative development, and market information. A representative of national NGO emphasizes a need for a clear vision in a foreseeable future in rattan development.

2.8 Synthesis of the Analysis

1) Specific objectives of the project were realized.
2) Outputs of the project were realized.
3) Schedule of the project preparation in the field visit work plan and data analysis were on time.
4) The actual expenditure is about 10% above planned.
5) Potential for replication of the project results is significant in both Indonesia and other ITTO member countries.
6) Potential for scaling up, there are significant potentials for scaling up the project outputs for the improvement of rattan farmer capability in rattan cultivation. There is a commitment of the government and stakeholders to support the implementation of action program and development of rattan farmer plantations in ITTO assisted project.

In this project, two reports of two national workshops (proceedings) and the report on training activities are prepared. Besides, it prepared manuals (rattan inventory,

nursery, harvesting etc), technical reports on inventory, plantation management, harvesting, and quality improvement as demanded by market, financial analysis on semi-finished rattan processing industry, and marketing. Along with this, it facilitated two small-scale rattan industries in two producer areas through provision of processing equipments. The reports and activity models are of beneficial not only to decision makers, academicians and researchers, farmers, but also the ITTO member countries.

CHAPTER 3 CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusions

3.1.1 Development lessons

1. The project design and organization provides important data and information to allow decision makers in formulating a national strategy and working plans to solve the problems faced by stakeholders in current situation of rattan commodity.
2. Establishment of rattan plantation should be based on the priority, which demanded by industry especially extinct commercial species both of small- and large-diameter cane rattans.
3. Inter-sector links and cooperation with rattan farmers, rattan traders, and rattan industry is required, through an action program to improve rattan cultivation.
4. The government is required to provide lands for rattan plantation and guarantee that farmers are legally allowed to use the lands for sufficiently long period. Along with this, establishment of “seed orchard” especially for extinct commercial rattan species, to produce seeds in large amount for large scale cultivation, is required.
5. Smallholder industry processing raw rattan to semi-finished product is a profitable investment. This industry does not require high investment and uses simple technology
6. There is ample room to promote lesser-used rattan species that are found abundantly in natural forests.

3.1.2 Operational lessons

1. Simple organization and management of the project is crucial to avoid abundant institution involved without responsibility to the success of project implementation.
2. Project staff selection should be based on their field of competence and selected person to present high responsibility to the success the project implementation. The project leader should focus to the project and be

released from all duties as government services along project duration, and he (she) reviews and discusses project activity progress with all team members.

3. Project staffs, before the implementation, to prepare working plans and budget, then submitted to project leader for approval. After collecting field data, he (she) reports and discusses with all staffs.
4. Publications, among the project output, are sufficient to support the final reports in line with the project aims. The project leader should have capability to analyze the project document and prepare action programs on project implementation in the field.

3.1.3 Technical aspects

1. Lack of knowledge, information and training opportunity, harvesting techniques and plantation management. This situation give impacts to the quality raw material products and utilization especially for the large-diameter canes leaving in the field some 20 to 25 % instead of processing them in industry. Meanwhile, for small-diameter canes the amount left-over are about 5 to 10%.
2. Low accessibility to catch rattan producer areas made a high transportation cost, on the other hand no treatment applied to rattan canes after harvest.
3. There is no available “seed orchard” especially for commercial rattan species that become extinct to supply large amount of seeds for rattan cultivation, worse for commercial scale plantation.
4. The allocation of suitable and legal lands based on the ecological requirements of rattan species is required, to be used by the rattan farmers for sufficiently long period of time.

3.1.4 Marketing

1. Rattan industry should be promoted local design that can be accepted in the international market instead of design from the buyers through find out the market, build out let of production and market strategy in the consumer countries.
2. The Indonesian rattan industry rarely exist in the international market as leader, it caused by they are lack in market information and market intelligent, lack of net working in marketing strategy, promotion, out let of finished products in the consumer countries, skill in design or local design promotion and market entrepreneurships.
3. Low price of raw material rattans in the grower levels is caused by several factors as to very long distribution chain of rattan trade, no standard quality, farmers’ low investment and in need of cash immediately to support their life, and the larger buyer-monopolized price.

4. Collaboration between rattan farmers and rattan industry through MOU is needed and to create fair-play business.

3.1.5 Policy development

1. Current regulation makes investment in rattan plantation open to foreign investment and in rattan processing industry conditionally-open. It is an opportunity for the country for improving rattan resources availability and hence the added value. The question remains is to what extent total added value converts to community income in real business. In this regard, a comprehensive policy measure is required.
2. The Ministerial Decree that places rattan products (semi-finished) as products of Forestry authority would strengthen the Ministry of in regulating rattan products and in implementing rattan development programs.
3. Despite the fact that substitution materials have been in place, rattan planting remains an important option with respects to income generation for the people and sustaining natural resources. Follow-up or implementing regulations remain requisite to put the two mentioned policy into practice.

3.2 Recommendations

1. The project results provided data available to use to continue this project through participation of rattan smallholders to improve their capabilities in rattan business from raw material to semi-finished products as well as to finished-products. It is recommended that the government prepares national strategy plan and action program and allocate lands for commercial scale rattan cultivation.
2. Cooperation and collaboration with all stakeholders in rattan business and financial support both from Indonesia central government and donor institution are needed to realize then project results in the future.
3. To improve capability of rattan farmers to enhance their position in rattan business, establishment of training center in the producer areas is recommended, as well as “seed orchards” development with species-priority consideration.
4. In the coming project, project implementation shall be preceded by identification of project requirements clearly and specifically prepared. It such that executing agency and filed officers are easy to follow, and the requirements are relevant to the objectives to get maximum project achievement.
5. It is recommended that the project organization be arranged in a simple form, not many institutions and staffs involved in the project. Besides, project staffs are recruited based on field compliance with high sense of responsibility, and the project leader must be selected based on his/her knowledge and experience to manage the project activities in related field.

6. In coping with the problem in international trade faced by local industry, it is recommended the government to facilitate industry and crafters for a fair business practice. Along with this, law enforcement of among others anti-trust and monopoly law and environment law, is considered important to enforced.
7. A government policy supporting smallholder rattan industry that processes raw rattan to semi-finished is required. The reason for this is that a developed smallholder industry would, in turn, drive rattan cultivation by farmers.
8. It is imperative that the Government of Indonesia to prepare a national strategy to improve the contribution of rattan commodity to national economy.