



# Rattan: from Research toward Sustainable Development and Use

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# I. Background

## ❖ **1992-1996 Rattan and Bamboo Research Project**

- Cooperated between Department of Forestry (DoF) with INBAR/IDRC

## ❖ **1997-2000 Darwin Initiative Rattan Research Project**

- Cooperated between National Agriculture and Forestry Research Institute (NAFRI) with Royal Botanic Garden, Kew and Forest Institute in Oxford University. Funded by UK Government

## ❖ **Sustainable rattan and bamboo harvesting and production project**

- from Phase I, II, III, IV (2006-2017) now continue phase V (2018-2020)

- Cooperated between National Agriculture and Forestry Research Institute (NAFRI) with WWF-Lao

- Donors by IKEA and the Swiss Agency for Development and Cooperation (SDC)

## II. Objective

- To research on rattan taxonomy in Laos.
- To develop pilot models on rattan certification (rattan FSC) in participation with farmers for sustainable rattan management, processing and marketing.

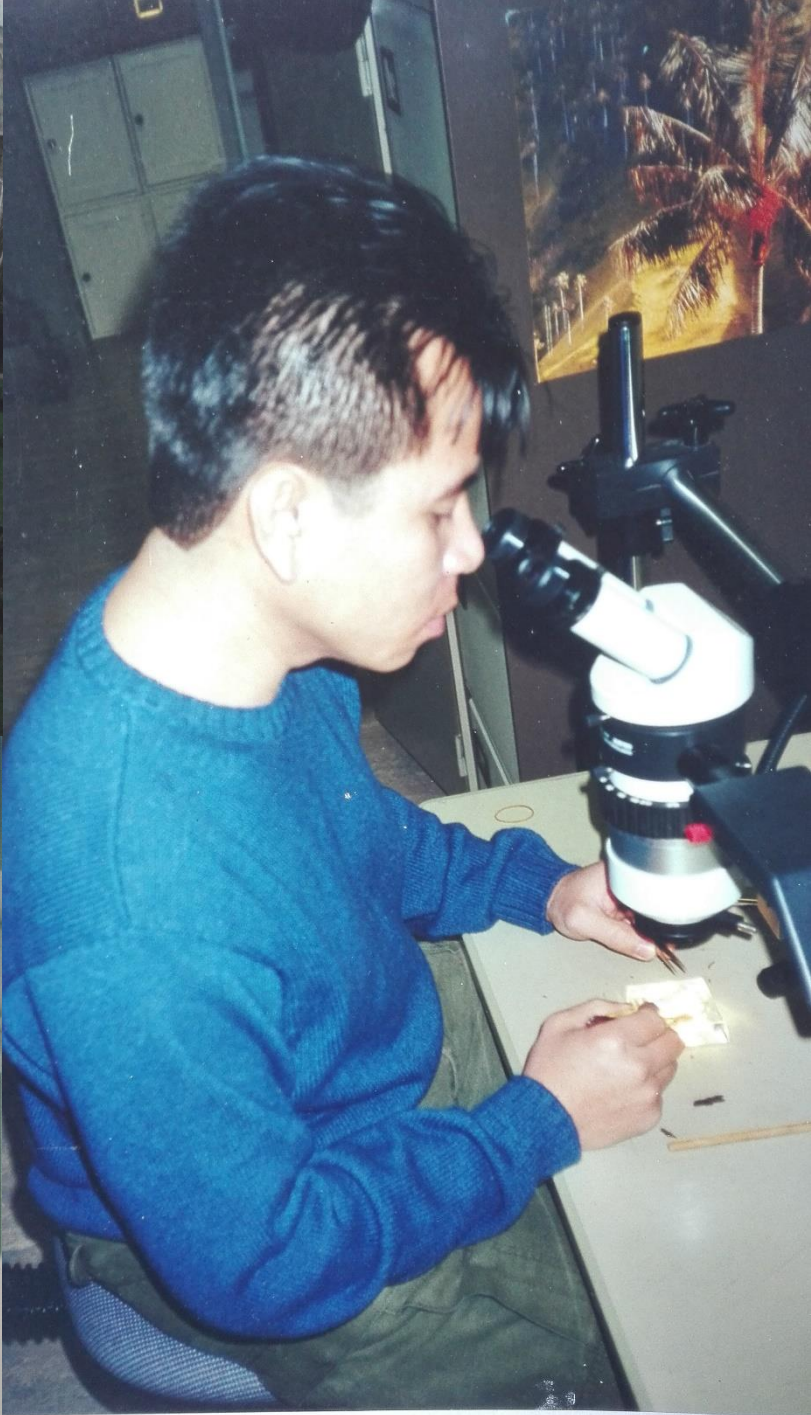


# III. Activity

## A. Rattan Taxonomy:

1. Preparation:
  - Planning, studying maps
  - Equipment and tools for collection specimen
2. Collection specimen. Where ?
  - National Conservation Forest, National Protection Forest, Production forest ...
  - Record data (GPS, data sheet)
3. Keeping specimen
  - Drying specimen
  - Packing specimen
  - Keep in boxes
4. Rattan data base
  - Inter rattan data from record sheet into computer.
5. Rattan identification. Where ?
  - Send rattan specimen to Kew Herbarium, UK.
  - Compare with type specimen
  - Specified name of rattan (local and scientific name)
  - Recorded for new species





# III. Activity (Cont.)

**B. Develop pilot models on rattan certification (rattan FSC) in participation with farmers for sustainable rattan management, processing and marketing :**

## **1. Sustainable Rattan Management**

- ✓ **Rattan seedling production**
- ✓ **Rattan plantation for shoot and enrichment planting**

## **2. Rattan Management plan for certification (FSC)**

## **3. Rattan harvesting, processing and marketing**





# III. Activity (Cont.)

## ✓ Rattan seedling production

- Set up 13 rattan nurseries in 5 villages with 105 households.
- Training on nursery technique such as seed germination technique, potting, trans planting, maintenance (watering, fertilizing, weeding, etc...)



# III. Activity (Cont.)

## ✓ Rattan plantation for shoot and enrichment planting

- There are 16 villages with 170 households planted rattan for shoot production in area 135 hectare.
- Rattan enrichment planting was planted in natural forest where low density of rattan population.



# III. Activity (Cont.)

**B. Develop pilot models on rattan certification (rattan FSC) in participation with farmers for sustainable rattan management, processing and marketing:**

## **2. Rattan management plan for certification (FSC)**

**Followed Interim Standard Structure (10 principles of FSC):**

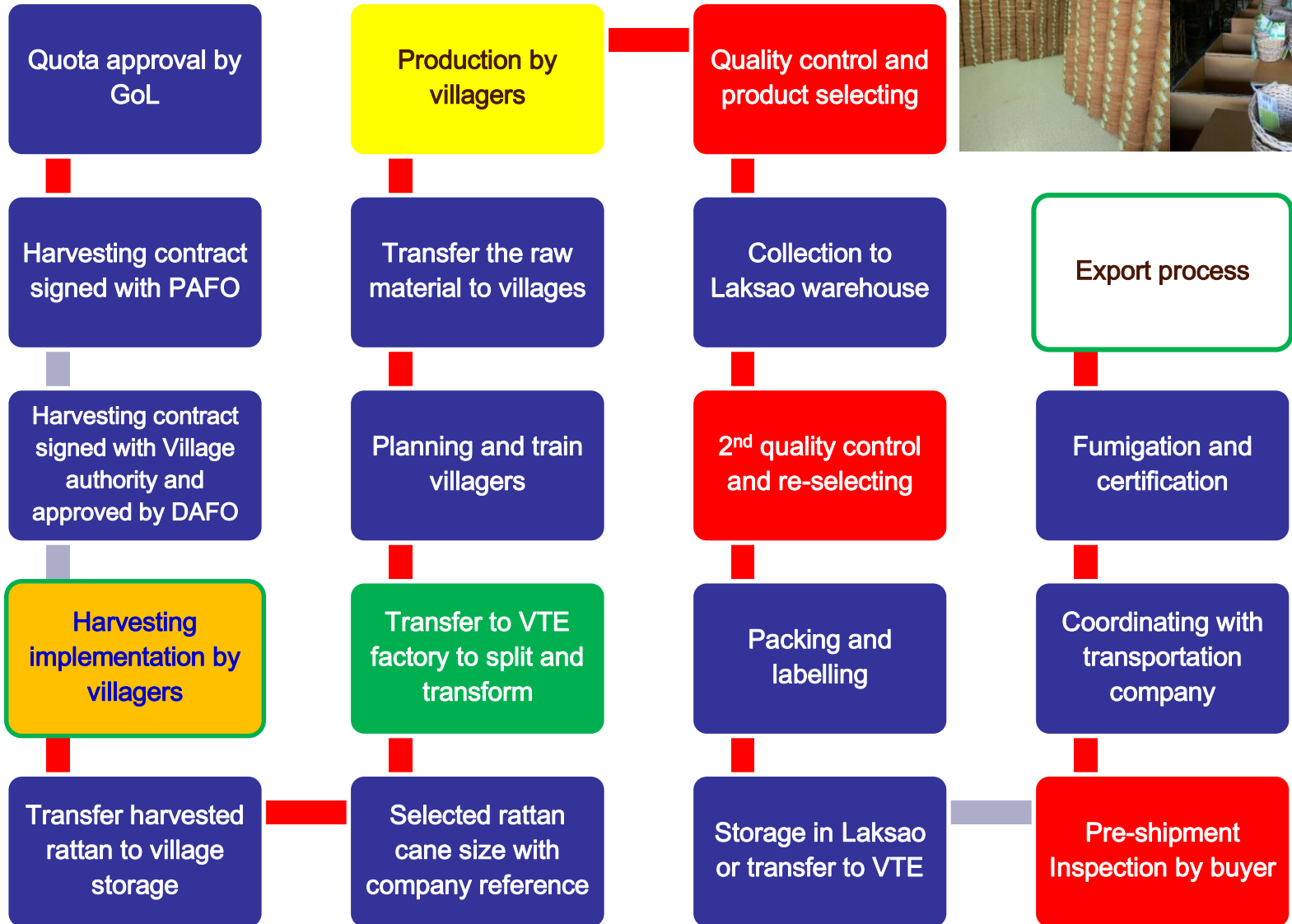
1. Compliance with Laws and FSC Principles
2. Tenure and Use Rights & Responsibilities
3. Indigenous Peoples' Rights
4. Community Relations and Workers' Rights
5. Benefits from the Forest
6. Environmental Impact
7. Management Plan
8. Monitoring and Assessment
9. High Conservation Value Forests
10. Plantations



# III. Activity (Cont.)

## 3. Rattan harvesting, processing and marketing

Supply Chain of rattan basket production in regular order



## IV. Result

### A. Rattan Taxonomy:

✓ Found 6 genera of rattan:

1. *Calamus*
2. *Deamonorops*
3. *Korthalsia*
4. *Merialepis paradoxa*
5. *Plectocomia*
6. *Plectocomiopsis*



✓ There are 32 species and with 5 new species

# Rattan for 5 new species

ຫວາຍກະໂຕກ, ຫວາຍວະ  
(*Calamus laoensis*)



ຫວາຍຫາງໝູ່ນ້ອຍ  
(*Calamus bimaniferus*)



ຫວາຍຫຼິ້ມ  
(*Calamus evansii*)



ຫວາຍກະທົງ  
(*Calamus oligostachys*)



ຫວາຍທອກ  
(*Calamus solitarius*)



# IV. Result (Cont.)

1,000 sets of Books and Journal were publish

Forest Ecology and Management 306 (2013) 23–30



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Contents lists available at SciVerse ScienceDirect

Forest Ecology and Management

journal homepage: [www.elsevier.com/locate/foreco](http://www.elsevier.com/locate/foreco)



## Growth of wild rattans in Cambodia and Laos: Implications for management



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## IV. Result (Cont.)

**B. Develop pilot models on rattan certification (rattan FSC) in participation with farmers for sustainable rattan management, processing and marketing:**

### 1. Sustainable Rattan Management

#### Yield study from 2006-2010

	All canes			Commercial canes ( $\geq 5.0$ m tall)	
	N <sup>A</sup>	Height (m)	Growth (cm year <sup>-1</sup> )	N <sup>A</sup>	Growth (cm year <sup>-1</sup> )
<i>Calamus palustris</i>	122	0.4–19.4	78.7 ± 4.8 <sup>a</sup>	14	140.8 ± 15.0 <sup>a</sup>
<i>Calamus solitarius</i>	352	0.7–8.7	80.3 ± 2.1 <sup>a</sup>	97	109.2 ± 4.3 <sup>a</sup>
<i>Calamus tetradactylus</i>	437	0.4–8.9	65.0 ± 1.2 <sup>a</sup>	35	78.3 ± 4.6 <sup>a</sup>
<i>Calamus viminalis</i>	173	0.4–16.1	138.7 ± 6.5 <sup>b</sup>	73	184.5 ± 8.1 <sup>ab</sup>
<i>Myrialepis paradoxa</i>	60	0.6–15.3	129.0 ± 14.2 <sup>b</sup>	20	229.7 ± 29.8 <sup>b</sup>
<i>Plectocomia pierreana</i>	62	0.4–16.8	169.2 ± 12.2	26	221.5 ± 17.9 <sup>b</sup>

<sup>A</sup> Number of annual growth measurements over 4-year sample period.



## IV. Result (Cont.)

### ✓ Income from rattan seedling production:

- There are 9 families in Ban Sop Puane can produce rattan seedling of *Calamus siamensis* 77,000 seedlings and generated income 192,500,000 kip.

### ✓ Income Rattan for shoot plantation:

- There are 16 villages, 170 families planted rattan for shoots in area 135 hectare.
- There are 45 families in Sop Pouan village can generate additional revenue from selling rattan shoots, with an average annual income of 600,000-15.000,000 kip per year.



# IV. Result (Cont.)

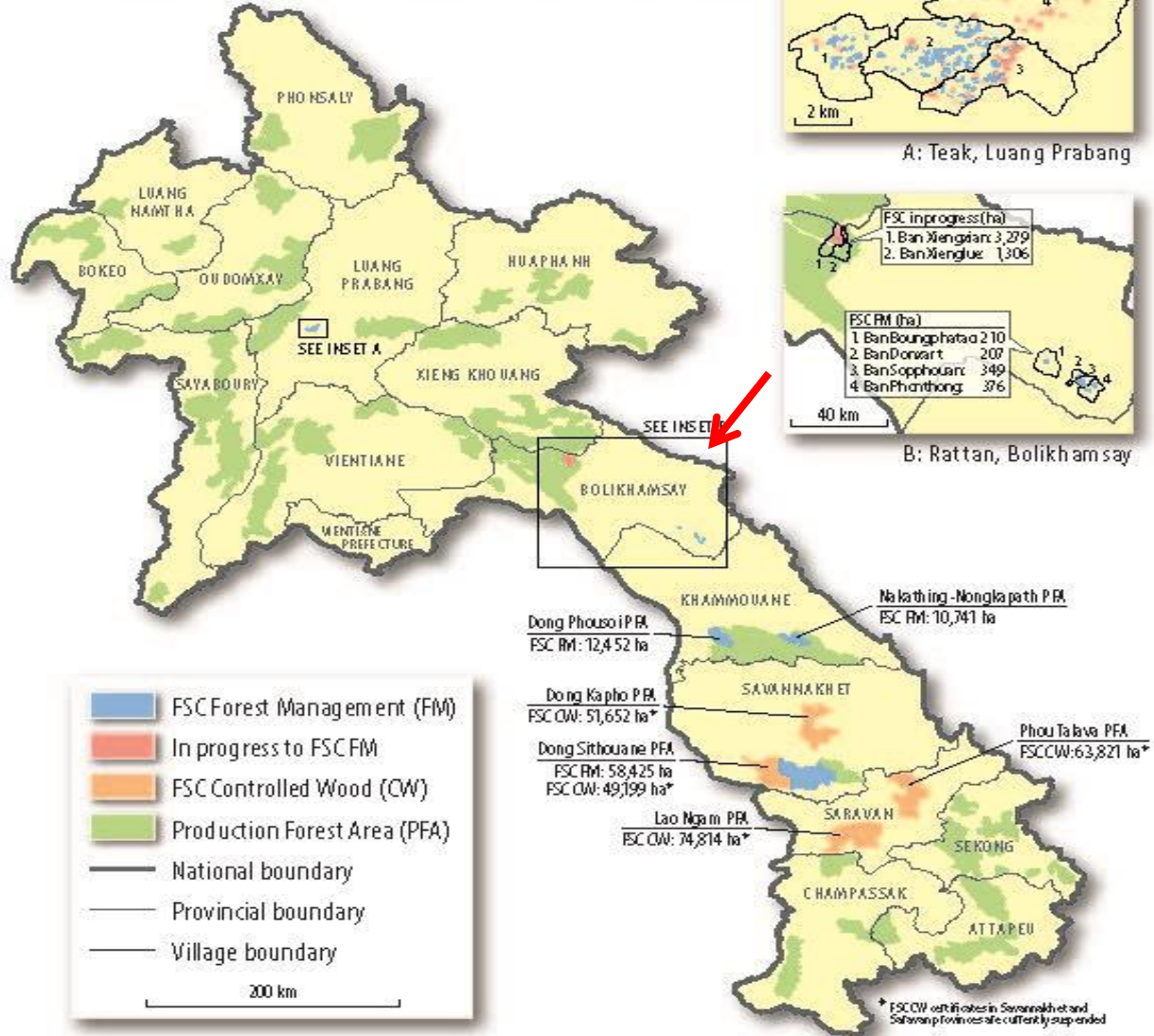
## 2. Rattan management plan for certification (FSC)

### Bolikhaxay Province:

- **Khamkeud District:** 4 villages (Soppuan, Phonthong, Donexard, Boun Patao)
- **Bolikan District:** 2 villages (Xiengxian and Xiengleu)

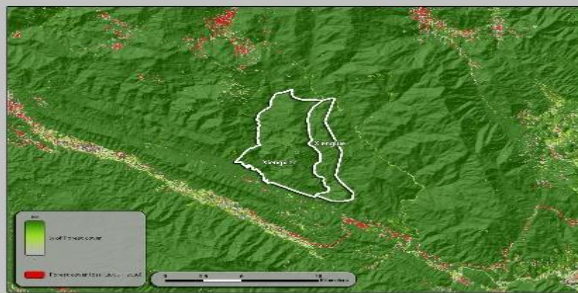
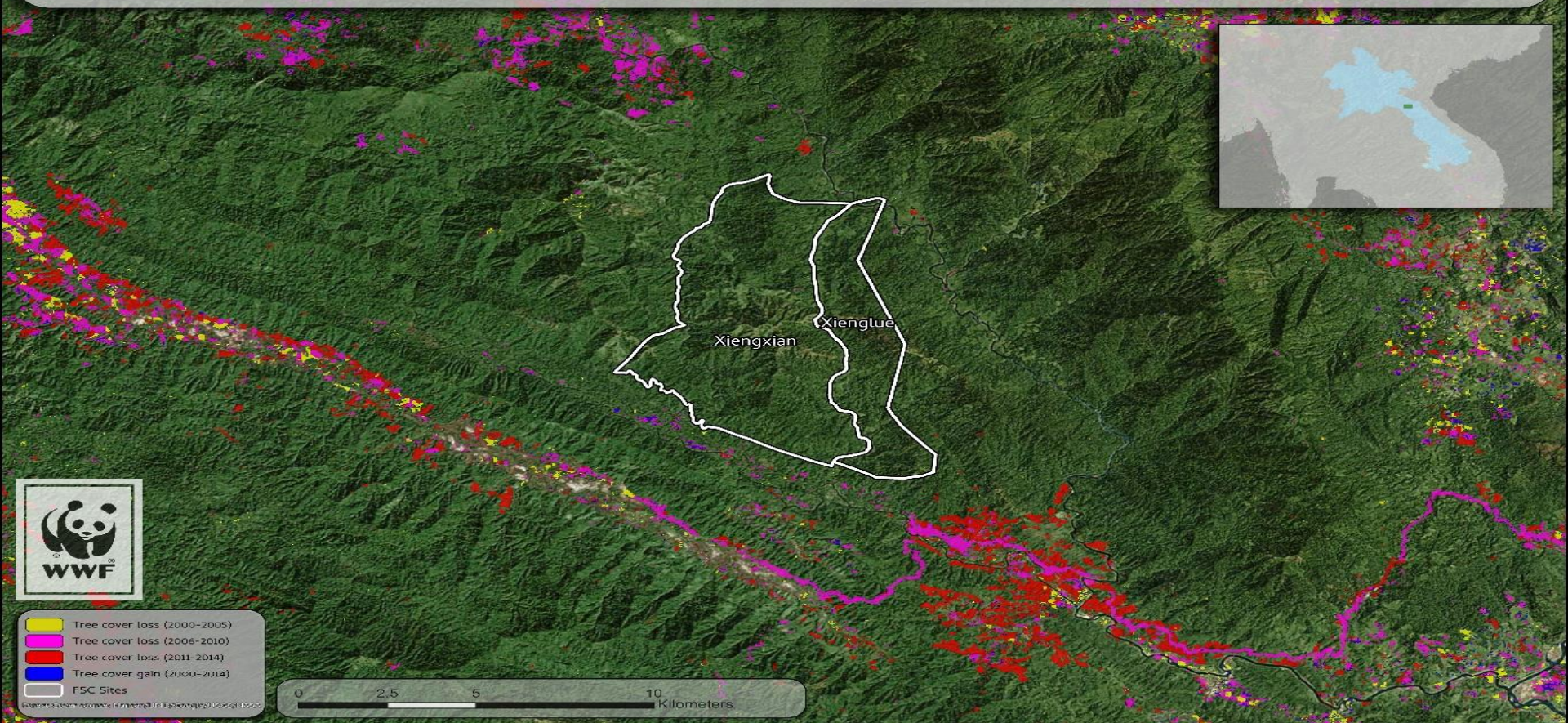
✓ There are 34,812 hectares of certified forest for rattan-related projects, 10,949 hectares of which include rattan

## STATUS OF FSC FOREST MANAGEMENT CERTIFICATION IN LAOS, MAY 2013



# ພື້ນທີ່ຢັ້ງຢືນປ່າຫວາຍ FSC ຢູ່ ບ້ານຊຽງຊ່ຽນ ແລະ ບ້ານຊຽງລີ, ເມືອງບໍລິຄັນ

## Tree Cover in WWF FSC Rattan sites in Bolikhan District, Laos



# The Rainforest Alliance

## DEPARTMENT OF FORESTRY, LAO PDR (DOF)

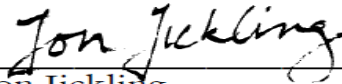
Director for Production Forest and Timber Business Division  
Ministry of Agriculture and Forestry  
Department of Forestry  
PO Box 6238, Vientiane, Lao PDR

### IS CERTIFIED FOR FOREST STEWARDSHIP COUNCIL FOREST MANAGEMENT

Certificate Registration Code: SW-FM/COC-001711  
Valid from: December 6, 2010 to December 5, 2015

#### CERTIFICATE SCOPE:

Group Forest Management certificate based on Rainforest Alliance/SmartWood Interim Standard for Assessing Forest Management in Laos, version June 2008 and group certification requirements. The certificate scope is representative of the network of Participating Members as listed on [fsc-info.org](http://fsc-info.org). Additional details regarding the certificate scope, including products and species, are found at [fsc-info.org](http://fsc-info.org).



Jon Jickling  
Director

SmartWood Program of the Rainforest Alliance  
65 Millet Street, Suite 201, Richmond, Vermont USA 05477

### SMARTWOOD IS A PROGRAM OF THE RAINFOREST ALLIANCE ACCREDITED BY THE FSC

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## IV. Result (Cont.)

### 3. Rattan harvesting, processing and marketing

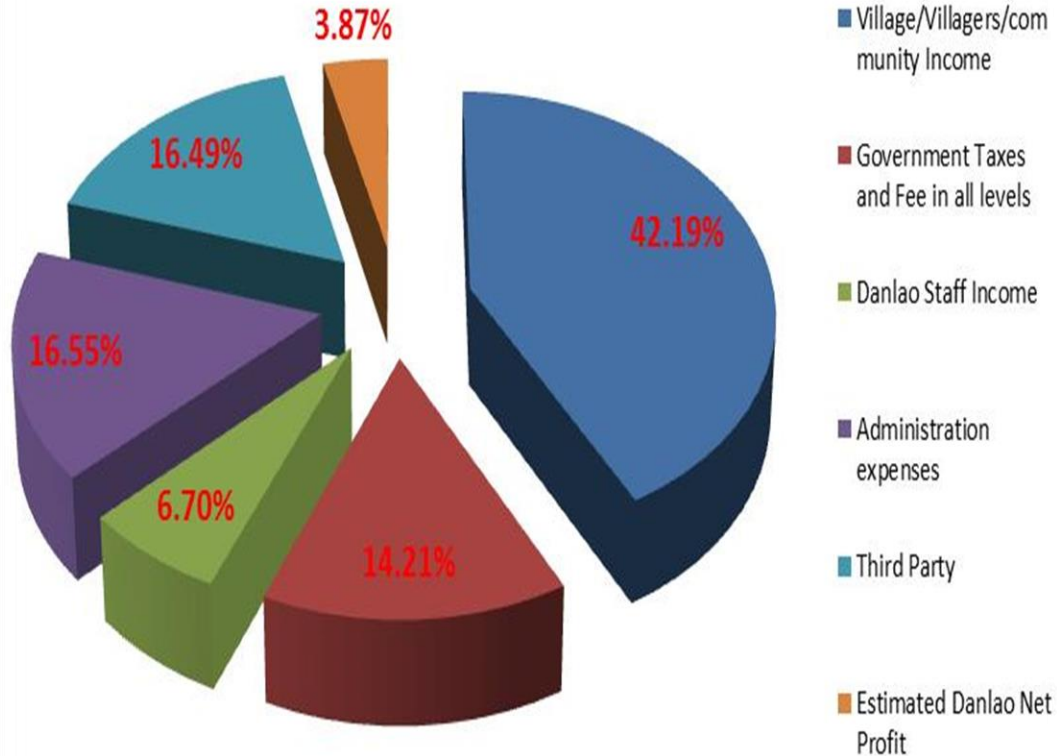
- ✓ Handicraft groups have exported rattan baskets as finished products to European markets such as Switzerland. These groups have also sold their products throughout Laos a total of six times, from 2011-2017. Sales occurred among nine villages in the Khamkeud and Bolikhan districts of the Bolikhamxay province. 125 villagers participated in the rattan basket production to produce 15,000 baskets. The total value of all rattan basket exports (\$166,820.00) equals 1,417,970,000 kip. Per-person generated income was 42.19% of the total value (\$70,381.00), which equals 598,241,543 kip.



# IV. Result (Cont.)

## 3. Rattan harvesting, processing and marketing (Cont.)

Revenue sharing to all key actors



# IV. Result (Cont.)

## 3. Rattan harvesting, processing and marketing (Cont.)

1. Internal market: In city and local market.
2. Abroad market:

Switzerland

Germany

USA

Vietnam

Thailand

Japan

### Vietnamese companies eye Lao rattan potential

Khonesavanh Latsaphao

Lao and Vietnamese businesses are keenly interested in the potential benefits of sustainable rattan cultivation in Khamkeuth district, Borikhamxay province.

Representatives from Lao businesses and nine Vietnamese rattan processing companies travelled to the central province on May 17. The trip was organised by the Khamkeuth district Agriculture and Forestry Office (DAFO) and World Wildlife Fund (WWF), and supported by the European Union.

"I'm so proud that the Lao and Vietnamese businesses visited the sustainable rattan management area to discuss rattan processing and trading with Khamkeuth district authorities and Lao rattan processors," said DAFO head Mr Maychome.

The sustainable rattan model has been such a success that DAFO plans to replicate it in other areas, improving local livelihoods and supporting reduced cutting of the plant. Its success has also caught the interest of Vietnamese rattan companies.

The district's Sopphouan and Phonhong villages are two of several areas targeted by WWF for community-based sustainable rattan management, Mr Maychome

Vietnamese company representatives also met with the Lao National Chamber of Commerce and Industry (LNCCI) and the Borikhamxay Chamber of Commerce and Industry (BCCI) to discuss rattan import-export procedures.

BCCI president Mr Khamxay Maymany encouraged the Vietnamese companies to invest in the Lao rattan industry.

"We are ready to support trade in rattan between Lao and Vietnamese companies," he said.

Vietnam currently imports more than 40 percent of its rattan from Laos, with significant amounts also sourced from Cambodia. Vietnam has a shortage of commercially valuable rattan species, which are available in Laos, particularly in the rattan project areas.

"Industry players are fully aware that rattan resources in Vietnam are dramatically reduced due to high demand and unsustainable exploitation. The most important species are now rare and often bought from Laos," said WWF's Vietnam Rattan Project Manager Dr Anh Vu Que.

Rattan processors in the south of Vietnam have now started to subcontract to northern processors, or cease operations altogether, according to Dr Vu Que.



A villager demonstrates sustainable rattan harvesting methods.

"We would like to supply only finished or semi-finished products from sustainable management areas," said the deputy director of Chaemchanh Rattan Furniture, Ms Thippaphone Insixiangmay.

WWF Rattan Programme Manager Mr Thibault Ledecq described the project's goals. "The aim is, by the end of 2011, to establish a

applying cleaner production techniques," he said. There are 600 rattan species in the world, with 54 species in this region. Rattan is a climber from the palm family and a valuable non-timber forest product available in forests throughout the Greater Mekong region.

Its stems are used for a variety of purposes, including as food and in housing and

## Laos exports rattan products to Switzerland

Khonesavanh Latsaphao

The first batch of rattan baskets made from sustainable materials in Khamkeuth district in Borikhamxay province is heading to Switzerland via the Vietnamese port of Da Nang, according to the World Wildlife Fund (WWF) yesterday.

It is the first time that Laos has exported sustainably sourced rattan products to Europe.

WWF's rattan project, co-funded by the European Union, International Home Product Retailer (IKEA) and German Development Furniture (DEG) has been promoting sustainability and market links since 2009.

The main objective of the project is to set up sustainable rattan forest management models in Laos, Vietnam and Cambodia and to engage small and medium rattan enterprises towards cleaner production mechanisms.

Furthermore the rattan processors and buyers are able to meet and get a first impression of the product portfolios.

Sourcing rattan from villages which apply sustainable forest management is important to ensure that natural resources will be available in the long-term - therefore we need the commitment of national and international buyers to source sustainable products, WWF Sustainable Rattan Project Manager Mr Bouaphet Bounsourath said.

A purchase order was completed in March 2011 via Leudnulan Agriculture Promotion Company that engaged seven villages to produce 2,640 sets of sustainable rattan baskets.

Leudnulan is the only rattan company in Laos that presently holds a Forest Stewardship Council Chain-of-Custody certificate. Leudnulan hired 120 villagers to produce the

that has no exporting experience is very challenging," General Secretary of Bolikhamxay Provincial Chamber of Commerce and Industry Kongschan Douangsongkham said.

Rattan companies need guidance with international exporting matters such as packing, documentation and transportation. The experience and lessons learnt will help Lao SMEs to handle future international orders, Mr Kongschan stressed.

There are around 600 rattan species in the world, including 54 species in the region. Rattan, a climber from the palm family and a valuable non-timber forest product grows naturally in forests throughout the Greater Mekong region. Its stems are used for a variety of purposes, including food, shelter and making furniture. Village communities in Laos, Cambodia and Vietnam rely heavily on the rattan trade,

# V. SWOT Analysis

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>• Rattan available in the area (Raw material)</li> <li>• Yield study of rattan is necessary for harvest circle</li> <li>• Rattan nursery and for shoot plantation</li> <li>• Additional income from rattan production</li> <li>• Good cooperation in the group</li> <li>• Strengthening in the village</li> <li>• First FSC certified forest in Laos</li> <li>• Sustainable harvesting according to the forest management plan (by village harvesting group)</li> <li>• FSC certification allowed Rattan Lao Products to reach European market</li> <li>• Rattan FSC can contribute forest conservation in long term</li> <li>• High benefit to villager, increasing villager income and contribute to rural poverty</li> <li>• Reduce negative impact to forest ecosystem</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of excellent skill</li> <li>• Lack of community participation in majority</li> <li>• Lack of project objective understanding and quality</li> <li>• Insufficiency budget to implement</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• Project support</li> <li>• Company support</li> <li>• Promotion policy from government</li> <li>• Improvement of living life in rural area</li> </ul>	<ul style="list-style-type: none"> <li>• Production defects</li> <li>• Not sufficient participation of community in majority</li> <li>• Not sufficient good cooperation in the group</li> <li>• Low skill of SME staff and villager in rattan processing and weaving (FSC rattan product still low quality)</li> <li>• Low communication skill and difficult to access the market</li> <li>• The product quality will be controlled by the international inspector</li> <li>• High cost of CoC annual auditing</li> </ul>



## VI. Conclusion

- ✓ Species selection, rattan population inventory, yield study (growth rate), rattan management plan and fully participation of communities are the key factor for sustainable rattan management.
- ✓ Sustainable rattan management, harvesting, processing and rattan marketing for export was increased and developed which relates to communities work more than 90% of total labors, it can be improved living of local people in the forest management area and to the conservation of forest resource for sustainable. It can be the model and expansion to other villages.
- ✓ Rattan management and certification can help villagers to have and increased NTFPs by production from household. It was a method to reduce cutting rattan canes and shoot from natural forest. Many households in target villages think of the future impact of natural forest resources.

## VI. Conclusion (Cont.)

- ✓ Lesson learn from succeed families in rattan production in the village. There were many households interested to invest by themselves in rattan seedling production and for shoot plantation to get income for family.
- ✓ There were many villagers, foresters and guests from abroad to visit the site and shared experience from model villages and bought rattan product from villagers
- ✓ Rattan production group in target villages have got opportunity to learn on rattan handicrafts, harvesting techniques and study tours to exchange experience.

# Thank you

