



Towards
Sustainable
Natural
Resource
Management
in Vietnam



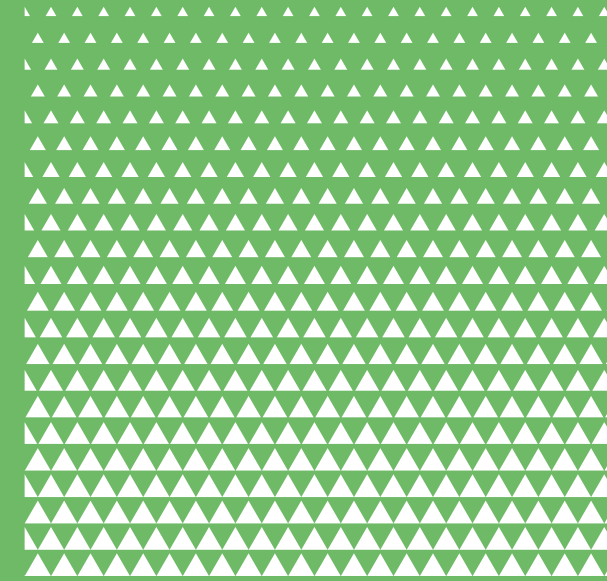
Casebook on good practices
of the SNRM Project



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SÁCH KINH DOANH

Photo by Bidoup Núi Bà National Park

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Preface

The Sustainable Natural Resource Management Project (SNRM Project), 2015-2021, is a technical cooperation project executed by Japan International Cooperation Agency (JICA) in collaboration with the Ministry of Agriculture and Rural Development (MARD), the Ministry of Natural Resources and Environment (MONRE), and five provinces, including Dien Bien, Lai Chau, Son La, Hoa Binh and Lam Dong.

The SNRM Project consists of the following four components with expected outcomes in order to achieve its objective of enhancing the national capacity for sustainable natural resource management by focusing on forests, climate change, biodiversity and people.

◇ Component 1: Policy support

Development and implementation of key policies on natural resource management is promoted.

◇ Component 2: Sustainable Forest Management and REDD+

Sustainable Forest Management, through development and implementation of Provincial REDD+ Action Plans (PRAPs), is promoted in the Northwest Provinces (Dien Bien, Lai Chau, Son La and Hoa Binh)

◇ Component 3: Biodiversity conservation

An integrated and collaborative ecosystem management system is established for sustainable conservation and management of the Lang Biang World Biosphere Reserve (LB-BR) in Lam Dong Province.

◇ Component 4: Knowledge sharing

Synthesis and sharing of the knowledge and lessons learnt generated from the SNRM Project are enhanced among key stakeholders.

Since its launch in August 2015 up to now, the SNRM Project has carried out and supported a wide range of activities under each component, such as the development of the Law on Forestry and other important policy instruments, promotion of private sector involvement, establishment of up-to-date forest and biodiversity monitoring system, facilitation of national REDD+ process, and improvement of local livelihood.

This casebook highlights some of the practices done by the SNRM Project for the purpose of sharing its experiences and lessons learnt. We hope this will be of some help and reference to those who are doing and/or planning similar efforts.



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Acknowledgment





Forest management and conservation

Forests provide a wide variety of goods and services necessary for human life and global environment. It is our role and responsibility to manage and conserve forests in a sustainable manner for the present and future generations.

[Case 1] VILLAGE-BASED FOREST MANAGEMENT

1. Background and Objective

Village-based forest management is one of the important activities promoted in the implementation of the Provincial REDD+ Action Plan (PRAP). The SNRM Project supported the strengthening of the institutional and technical capacity of the Village Management Board of Forest Management and Livelihood Development (VMBFMLD) and Village Forest Patrolling Team (VFPT) for forest protection and development at the village level.

2. Activities and Outcomes

- **Establishment of Village Forest Patrolling Teams:** With the support of the SNRM Project, a VFPT was established and strengthened in each target village of four provinces.
- **Village Forest Protection and Development Regulation:** Village Forest Protection and Development Regulation was developed through village participation and approved by the Commune People's Committee (CPC). Violating activities and penalties were specified in the regulation.
- **Afforestation, Forest Regeneration and Protection Forest Area in the target villages:** The total area of village forest activities in the target communes is shown in the following table.
- **Village Awareness Raising:** The SNRM Project supported a series of activities using various means

of communication to raise awareness and create a sense of responsibility on forest protection and development.

- **Village Boundary Delineation and Village Patrolling Route:** In order to specify the area for forest protection and development in each village, village boundaries were delineated in consultation with neighboring villages (in Dien Bien). In addition, the SNRM Project supported the identification of patrolling routes for VFPTs to clarify the area for forest patrolling.

- **Allocation of incentives for VFPTs:**

- + Payment of Forest Environmental Services (PFES) can be a sustainable funding source for VFPTs. In Son La, Dien Bien and Lai Chau, the SNRM Project encouraged the VMBFMLD to allocate a part of PFES to village forest management activity, especially village patrolling activity.

- + In the target commune of Hoa Binh, which is not a PFES target area, the District People's Committee (DPC) allocated a budget for village forest protection (VND 30 million in 2018).

- **Result of Village Forest Patrolling:** Village forests were regularly monitored by the VFPTs of each province. Since 2017, cases of violation — such as encroachment by animals, illegal logging and forest fires — were found and reported to Commune Forest Rangers for handling these issues. (Hoa Binh: 10, Son La:7, Dien Bien: 49, Lai Chau: 4)

The forest area for village forest management in the target communes

Province	Afforestation (ha)	Forest Regeneration (ha)	Forest Area for Forest Patrolling (ha)
Hoa Binh	146.4	-	760.9
Son La	94.9	295.4	5,349.9
Dien Bien	90.1	130	1,740.6
Lai Chau	2.5	70.4	4,230.5

3. Findings, Lessons Learned and Recommendations

- The CPC monthly meeting, with the participation of village leaders and VFPT leaders, is an appropriate opportunity for reporting forest status and patrolling activity. External support for them, including District Forest Rangers and the Forest Management Board, is also required to strengthen the VFPTs and link them to the Forest Resource Monitoring System (FRMS).
- Village consultation is critical for formulating regulations on forest protection and development so that villager participation becomes more proactive in compliance with the regulations.
- To keep VFPT members active in forest patrolling, the CPC should encourage VMBFMLD to allocate an appropriate amount of PFES for village forest management in order to make sure the funds can cover all expenses for forest protection.
- PFES can be a positive incentive for afforestation and regeneration activities. The expansion of forest area leads to increased payment amounts from PFES to villagers.



VFPT Training in Hoa Binh Province

For further details, please visit the JICA / SNRM website



Forest Patrolling in Lai Chau Province

[Case 2] COLLABORATIVE MANAGEMENT AGREEMENT (CMA) WITH BENEFITS SHARING MECHANISM (BSM)

1. Background and Objective

Currently, many forms of social forestry exist in Vietnam with the participation of legal entities such as communities, households, individuals, businesses, and cooperatives. One of such forms of the social forestry is a Collaborative Management (CM) which is a framework for sustainable protection/ management of forest in collaboration with relevant stakeholders. In the previous JICA project (2010~2013), "Strengthening of Community based Capacity of Bidoup Nuiba National Park "(BNBNP), CM Agreement (CMA) with Benefit Sharing Mechanism (BSM) was introduced in BNBNP. The CMA/ BSM was upgraded with support of the SNRM Project in the newly established Lang Biang World Biosphere Reserve (LB-BR) toward realization of the sustainable forest protection and development.

2. Activities

- Development of the upgraded concept of CMA/ BSM through its integration with forest protection contracts under Payment for Forest Environmental Services (PFES).
- Formulation and signing of the CMA among parties (forest owners, Commune People's Committees (CPCs) and PFES patrol villagers), which mainly includes ①activity plan for enhancement of forest management through improving PFES patrol, ②BSM through PFES scheme, and ③role/ responsibility of each party member.
- Improved PFES patrols including ①regrouping of PFES patrol teams according to the land use; ②delineation of boundaries between forest lands and cultivated lands; and ③development/ implementation of drone forest monitoring which provide clear images for early detection of land-use change in the target forests (Please refer to the case 2 of chapter 3 Forest Monitoring in this casebook for further details).



Delineation of boundaries between forest lands and cultivated lands

In addition to the benefit coming from PFES scheme, the SNRM Project also assisted villagers to introduce sustainable coffee farming and more profitable crops.

3. Findings, Lessons learned and Recommendations

- 80% of participants in the CMA/BSM activities agreed that forest violations including forest encroachment in the target forests is controlled



Socio-economic survey

Regrouping of the PFES patrol team members made the patrol activities more convenient and effective.



Mr. Cil Ha Chuong

(Leader of a PFES patrol team in Bidoup Nuiba National Park, core zone of LB-BR)

well. Over 90% of the participants want CMA/BSM activities to be continued/expanded.

- Some lessons learned/ identified from CMA/BSM implementation were as follows:

+ Close collaboration among CPCs, forest owners and other relevant stakeholders are key to success to the CMA/BSM. And the support from District People's Committees is also necessary to enhance the CMA/ BSM.

+ Transparent benefit sharing is required to raise effectiveness of the PFES patrol.

+ The Collaborative Management Platform (CMP), which was developed as an official tool of the LB-BR Management Board to discuss local issues and to find/ implement solutions among the stakeholders including villagers, plays key role to realize CMA/ BSM.

+ CMA/BSM activities are effective in the area with high risks of forest violations.

[Case 3] PLANTATION ACTIVITIES

1. Background and Objective

In order to increase forest cover with enhanced forest management and generate income for livelihoods in a sustainable manner, the SNRM Project undertook a participatory pine plantation, a mixed plantation of native species and *Acacia mangium*, and fruit tree and forage grass contour cultivation on slopes. The SNRM Project supported the formation of Village Management Boards of Forest Management and Livelihood Development (VMBFMD) with the regulation of village forest management. All the activities were undertaken through them.

2. Activities and Outcomes

Pine plantation

Pine plantations (*Pinus mesoniana*) were established for 94.9 ha (25% village, 75% household allocated land) in four villages (Xa, Co Liu, Huoi Teo and Khop) in Muong Gion Commune in Son La Province. The survival rate was 99%, with an average height of 165 cm at two years (as of March 2019).

Mixed plantation of native species and *Acacia mangium*

In order to diversify monoculture acacia plantations and prolong the plantation cycle for higher product values, native species were planted (146.4 ha in total, 123.8 ha, with 20-30% mixed with acacia and 22.6 ha with only native species, 189 households (HHs) in 13 villages) in Thanh Hoi Commune, Hoa Binh Province. Seedlings were provided free of charge. Xoan ta (*Melia azedarach*), Gioi (*Michelia mediocris*, fruit bearing, non-grafted), and Tram trang (*Canarium album*, fruit bearing) showed good growth.

On farm agroforestry model: fruit/forage grass contour cultivation on slopes

In order to generate sustainable income through fruit production (by converting from shifting cultivation) and to reduce soil loss by making forage lines, an agroforestry model of fruit forage



Three-year-old Gioi (*Michelia mediocris*) after removal of acacia trees which provided shade (Hoa Binh, 2020.3)

contour cultivation was introduced on slopes in Muong Gion Commune, Son La Province. Mango, Son Tra (*Docynia indica*), lychee, coffee, longan and plum were planted horizontally on a contour with annual crops (corn, cassava and peanut) in between. Ghinea grass was cultivated as contour hedgerows (two lines) along the fruit trees (70 HHs, 19.9 ha).

3. Findings, Lessons Learned and Recommendations

Pine plantation

Compared with another plantation scheme that was planted nearby at the same time, the SNRM Project plantation showed a higher survival rate (99% against 86%) and better/

more uniform growth. Detailed planning, done in a participatory manner, and detailed technical support (providing seedling inspection, introducing a plantation method through a field demonstration, and close monitoring for maintenance) improved the plantation's performance.

Mixed plantation of native species and *Acacia mangium*

Native species (e.g. Xoan Ta, Tram Trang, and Gioi) can be introduced in some parts of acacia plantations, but a good plan is needed since they require more care and a longer period for timber production. These species diversifying the products with Non-Timber Forest Products (NTFPs) in the case of Tram Trang and Gioi, are

rationally more profitable in the long run, and are good for the environment (through water conservation and improved carbon stocks).

On farm agroforestry model: fruit/grass contour cultivation on slope

Good income is expected to be generated: VND 33 million/year/HH (94% of the average income/HH) from a mango/longan model (235 trees/ha, 50% of each kind, 0.2ha/HH) and VND 60 million (200%) from a grafted Son Tra model (294 trees/ha, 0.8ha/HH) in the fifth year, 2022.

Forage hedgerow supplies feed for cattle and buffalo, and prevents soil erosion by contributing to catchment protection for the Da River basin. On average the model supplied 7.7% of household forage demand.



Checking and supervision of the quality of seedlings at the nursery before distribution to villages (Son La, 2017.8)



Three-year-old mango/longan contour cultivation in Cut Village (Son La, 2020.3)



Thai women practicing tending longan trees in Cut Village (Son La, 2018.12)



Training with an A frame for contour planting (Son La, 2017.6)

For further details, please visit the JICA / SNRM website



Before the SNRM project, Commune People's Committee (CPC) was confused to seek a strategy direction for sustainable agricultural production on sloping land. The demonstration models introduced by the SNRM project are strategically oriented for socio-economic development of CPC in general and agriculture/forestry development in particular.

Mr. Hoang Van Hoc

(Chairman of Muong Gion CPC cum head of SNRM project facilitator team)



Livelihood improvement

In Vietnam, a large number of forest-dependent people are living in the mountainous areas. Livelihood improvement activities are of great importance for the people to realize poverty reduction while mitigating negative impact on the natural resource.

[Case 1] PROMOTION OF ORGANIZING PRODUCERS AND MARKETING OF PRODUCTS



Training on beekeeping techniques (Hoa Binh)

1. Background and Objective

In the pilot communes under the SNRM Project, some activities have been practiced by the local participants with a particular focus on the marketing of the products, which is not often given priority in livelihood improvement activities.

The organization of participants or producers was another crucial issue, particularly for promoting a market-oriented approach. The SNRM Project has actively supported the participants in organizing interest groups (IGs) or producers' groups (PGs) with the expectation of improving the fragmented small scale production/marketing situation.

2. Activities and Outcomes

Among a number of SNRM Project livelihood improvement activities, the following two cases can be highlighted in terms of organizing producers and marketing the products:

- Beekeeping in the provinces of Hoa Binh and Dien Bien

+ Three IGs (82 members) in Hoa Binh and eight IGs (40) in Dien Bien were organized;

+ IG members were assisted in establishing funds on their own initiative [Hoa Binh];

+ The IGs were assisted by the SNRM Project in the marketing of honey; for example, with study tours, the provision of bottles and labels, connections to potential buyers, registration with national quality certification, co-ordination with the One Commune One Product (OCOP) Programme, etc.;

+ The average income of IG members from beekeeping increased, with a skilled beekeeper's annual income reaching VND 72 million in 2018.

● Watermelon cultivation and vegetable cultivation in Lai Chau Province

+ Four IGs were formed, three with 46 HHHs from two villages for watermelon cultivation and one with 16 HHHs for vegetable cultivation;

+ The IGs were assisted by the SNRM Project in

officially registering as PGs with the Commune People's Committee (CPC);

+ The PGs were given marketing support; for example, the development of stickers for placement on watermelons, setting up of roadside stands, and preparation of signboards;

+ Collaboration with various institutions — for example, the Farmers' Unions, Women's Unions and Agricultural Extension Stations/ Agricultural Service Centers at different administrative levels — was facilitated by the SNRM Project for production, sales and institutional development;

+ Both the yield and income from the activities increased compared to those activities that did not have SNRM Project's intervention;

+ The net income from watermelons is estimated at VND 15 million/1.000m², approximately five times higher than that of non-participants in the SNRM Project.



Honey bottle and label (Dien Bien)

3. Findings, Lessons Learned and Recommendations

● Increasing production and sales by organizing participants or producers

+ The formation of IGs, as experienced by the Group Fund for beekeeping in Hoa Binh, was found to be significant in terms of strengthening financial capacity;

+ The IGs and PGs can play important roles not only in production and sales, but also in monitoring the overall progress of activities, including productivity, sales, cost, income, problems and constraints.

● Value addition for differentiation of products

+ Value-added products — for example, dehydrated honey, honey kept in standardized bottles with well-designed labels, and watermelons grown with fewer

chemicals and promoted with stickers — are evaluated highly by customers, and the prices of almost all of these products are higher than those of other ordinary products;

+ Official PG registration can help enhance the value of products, as customers tend to trust more in their quality.

● Expansion of sales opportunities

+ Roadside stands are rather small-scale and simple, but they can attract many customers, mainly due to advantageous locations and effective signboards;

+ Social networking services (SNS) can be effective tools for marketing, as proven by the fact that some of the watermelon growers and a commune Farmers' Union staffer in Lai Chau were able to promote their products through Facebook.





Roadside stand for watermelon sales (Lai Chau)



Sticker placed on watermelon (Lai Chau)

For further details,
please visit
the JICA / SNRM website



We can now enjoy 6 times higher income from watermelon than rice production, thanks to the Project's support.

Ms. Lo Thi Tinh

(Member of Nam Bon 2 Watermelon Producers' Group)



[Case 2] LIVELIHOOD IMPROVEMENT THROUGH COLLABORATIVE MANAGEMENT PLATFORM (Shiitake mushroom's case)

1. Background and Objective

Most ethnic minority villagers depend on coffee farming with low profitability in the target villages, thus diversification of crop cultivation is judged as a good benefit to villagers engaged in forest conservation activities. Shiitake was selected as a suitable crop because of its stable profitability and its eco-friendly nature suited to the Lang Biang World Biosphere Reserve (LB-BR) with less required land for production. After a small-scale-shiitake production model was successfully established, the model was expanded through Collaborative Management Platform (CMP), which had been officially established by LB-BR Management Board with the decision (No.199/QD-BQL) in January 2018 as a tool to discuss local issues and to find/implement their solutions among the stakeholders including villagers.

2. Activities

● Trial and expansion of shiitake mushroom production model through CMP

+ Confirmation of sufficient profitability in shiitake production model (the Model) and of fast investment recovery through the trial production with two households affordable to construct a mushroom-house. Voluntary entry of some villagers into the Model who became interested in its profitability.

+ Organization of a CMP in May 2019 to discuss the Model expansion among the stakeholders such as the villagers, provincial departments/ organizations, and a private company, resulting in an agreement stipulating their roles and responsibilities on the Model expansion.



+ Conduct of collaborative works among the stakeholders based on the above agreement. Major activities by some of main stakeholders as follows; Provision of mushroom media and training on its production techniques by Department of Natural Resource and Environment, Provision of equipment and media by DPC, Provision of cultivation/harvest techniques, purchasing mushroom produced in the Model, and building of supply chain by the company, Mushroom-house construction by the villagers and Provision of study tours /equipment and support for VietGAP certification by the SNRM Project.

● **Improvement of mushroom cultivation with equipment**

Provision of guidance on humidity control using the above equipment as humidity affects significantly the productivity /quality of shiitake mushrooms.

● **Expansion of shiitake media production capacity in a collaborative manner**

Collaboration between the company and DPC for expansion of media production capacity through provision to the company of land-use right of neighboring land of the media plant in response to the expanded Model

3. Lessons learned and Recommendations

● **CMP as a very effective tool for expansion of small-scale livelihood model**

The Model was expanded through the collaborative works among the stakeholders for increased benefits with raised productivities/ qualities of the mushroom to the increased villagers, which certainly create positive impacts on villagers' livelihood within the LB-BR. Thus, CMP is a very effective for expansion of good practices.



Installation of humidifier in the mushroom house



Harvesting the shiitake mushroom

● **Crop selection in terms of suitability for local climate and fast recovery of investment**

Crops suitable for the local climate are more productive and competitive. And the mushroom is a crop with fast recovery of the investment as its harvest starts from 10 days after installation of the media with payment back commenced in the following month. Therefore, the investment in the mushroom-house construction could be

returned in several months. Thus, it is suggested that crops should be selected in terms of climate suitability and fast recovery of investment. Besides, the mushroom production could provide an opportunity to reduce villagers' dependence on high-interest loans provided by local shops/ middlemen.

[Case 3] SUSTAINABLE COFFEE FARMING DEVELOPMENT

1. Background and Objective

Realizing a long-term benefit for villagers engaged in conservation activities is a critical part to make the Collaborative Management Agreement (CMA) functional. Through a survey conducted in the target villages, it was found out that coffee farming, the most important income source in the region, is not always profitable due to high cost and low productivity of the coffee farming. Thus, the SNRM Project took the following approaches for sustainable coffee farming development;

- 1) Minimization of chemical fertilizer application through production/application of organic compost using locally available materials to reduce the production cost (the survey indicated chemical fertilizer occupies 40% of the total cost) and to improve soil fertility, for raising the productivity
- 2) Enhanced collaboration between villagers and a coffee company to sustain profitability

2. Activities

● Soil analysis for fertility check

Soil analysis conducted in collaboration with a university in Japan to compare the fertility between forests and coffee fields showed much lower soil fertility in the coffee fields.

● Development of local organic compost for sustainable coffee production

Trainings/ demonstrations on making/application of organic compost were made with key farmers toward sustainable coffee farming in the LB-BR as follows.

- + A series of trainings with key farmers on compost making with use of manure available and demonstrations on its application at coffee fields
- + Trainings with key farmers and Department of Natural Resource and Environment (DoNRE) on



Cowshed improvement

compost making using outer skin (pulp) abundantly discharged from a coffee processing plant, which is currently causing pollutions.

+ Arrangement of continuous and stable supply of coffee pulps on a business basis from a coffee processing company to the villagers, and promotion for reuse of shiitake mushroom media for compost making.

+ Construction of improved cowsheds for villagers engaged in forest patrol to ease their burden for manure collection and for reducing pollutions.

● Enhanced collaboration between villagers and a coffee company

The SNRM Project supported to enhance a coordination among a private coffee company, PFES group members (villagers) and CPC for profitable coffee farming. As a result, direct sales of coffee beans from the villagers to the private company have been arranged with premium prices. In addition, the company is planning to establish its directly-managed coffee farm which provides job opportunities for the villagers to increase their income.

3. Lessons learned and recommendations

● Minimization of chemical fertilizer application has been taking place in wider scale because villagers are aware of the advantages of compost use, such as cost reduction, increased soil fertility, better productivity and less negative environmental impacts.

● Demonstration activities with key farmers are indispensable to improve the level of activities through sharing the results and lessons learned with others.



Training on compost making



Harvesting coffee beans

I have learned how to make organic compost through the trainings from the Project and shared my skills with other villagers. The method helps to improve the quality and quantity of coffee beans.



Mr. Ko Sa Ha Dang

(Da Ra Hoa village)

[Case 4] PROMOTION OF IMPROVED COOKING STOVES

1. Background and Objective

In the northwestern provinces of Vietnam, many people use wood as the main energy source for cooking and heating. Wood is one of the renewable energy sources used; however, overuse may lead to forest degradation, while collecting wood is time-consuming, particularly for women and children. As solution activities for promoting forest protection and the sustainable use of forest resources proposed in the Provincial REDD+ Action Plans, the SNRM Project supported the promotion of the wider use of Improved Cooking Stoves (ICS) in pilot communes to reduce the pressure on forest resources, ensuring the efficient use of fuelwood and sustainable village forest management, and to support the health and education of women and children.

2. Activities and Outcomes

● In Son La Province, a preliminary survey was conducted on what kinds of ICS were available at the local market and how to use fuelwood for cooking in Muong Gion Commune. Following the survey, a consultation workshop was organized to assess existing ICS models with three ethnic groups (Thai, Khang, and Hmong) and then the most appropriate model was decided for promotion.

● The SNRM Project supported the making of mold frames and technical training on production methods and the necessary materials. Each participating household (HH) contributed 50% of the cost of materials to the village fund.

● Thirteen technical trainings were conducted for 618 HHs, of which women accounted for 30%, and 579 HHs received SNRM Project support. As of March 2020, the new ICS model has spread to 774 HHs, including 195 non-supported HHs in and outside of the target villages.

● In Dien Bien Province, the SNRM Project supported 189 HHs in 13 target villages with 198 Lao cooking stoves, which are the same model as the cooking stoves supported by SUSFORM-NOW, a previous JICA project. Based on the monitoring results, the participants could save 1/3 of the amount of firewood normally used, but this was constrained by the fact that Lao cooking stoves are rather small for cooking. Therefore, as additional support, the SNRM Project supported the use of the ICS model of Son La so that villagers will be able to cook with bigger pots and pans and do not have to cut firewood into small pieces.



New ICS designed in Son La Province



Technical Training on ICS Production (Son La)

● The SNRM Project prepared ICS frame molds and supported 90 ICS in 10 villages. As of January 2020, besides the 90 HHs supported by the SNRM Project, it was confirmed that 91 other HHs had already made ICS without support from the SNRM Project. The mold frames are still being shared among the HHs in the commune for the continual production of ICS.

● Additionally in Hoa Binh province, the SNRM project supported homemade (permanent with two cooktops) and pre-made (mobile with one cooktop) ICS for 1,053 HHs (2,189 stoves in total), accounting for 97.7% of HHs in 13 target villages of the pilot commune. All of the households contributed 50% of the stove value to village funds. According to a test and survey, the ICS save 40-60% of firewood in comparison to traditional stoves.



A traditional cooking stove in which firewood burns out for shorter time

3. Findings, Lessons Learned and Recommendations

- The important point to note is that the SNRM Project did not provide ICS directly to the HHs, but rather provided them with a do-it-yourself kit and technical input so that they could produce ICS through their own efforts. This approach has led to the development of human resources — for example in order to extend the approach, local key persons, who are able to produce high quality ICS, gave voluntary support to other HHs.
- Different model sizes are recommended so that they can fit users' needs. The SNRM Project supported making a bigger ICS due to the demand

for cooked animal feed and distilled alcohol. Villagers also developed a bigger ICS through their own efforts (Son La).

- It is not appropriate to install ICS in areas where people do not use fuel wood as their main energy source. In the target commune of Lai Chau, many HHs are gradually starting to use gas for cooking and demand for the ICS was not high. On the other hand, in Dien Bien, the villages that are facing difficulties in collecting firewood from the forest tend to be more enthusiastic about this activity.

For further details, please visit the JICA / SNRM website



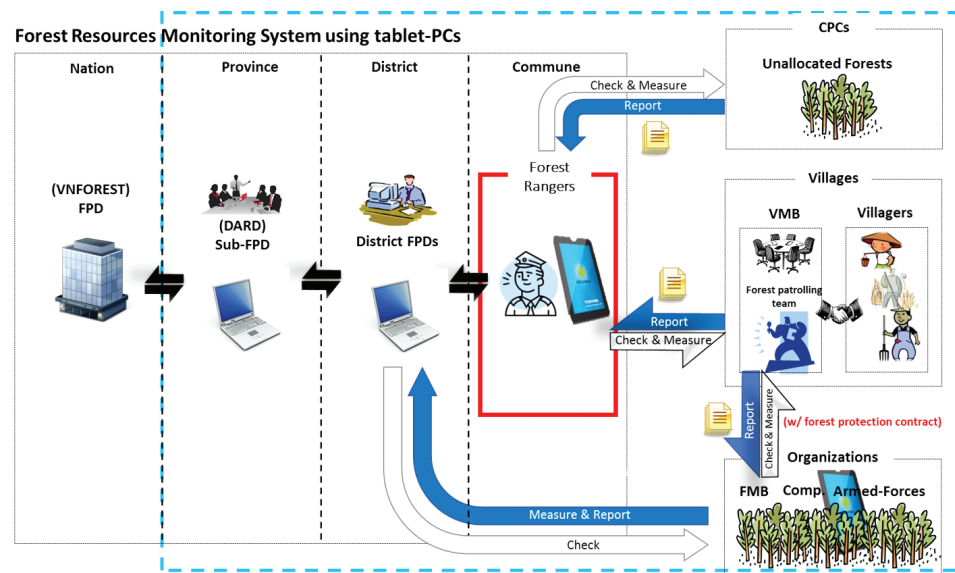
New ICS for cooking in Dien Bien (the cooking stove on the right side of picture is an older style of Lao cooking stove)



Forest monitoring

Over the past decades, forests in Vietnam have shown dynamic changes. Establishing the robust, accurate and user-friendly forest monitoring system makes it possible to update the real state of forests.

[Case 1] FOREST RESOURCE MONITORING SYSTEM (with Tablet PC including Mobile Application and Google Earth Engine)



Overall structure of FRMS

1. Background and Objective

The SNRM Project improved innovative ICT tools for forest resource monitoring that are originally developed during previous JICA project, called “SUSFORM-NOW”, in Dien Bien province (2010-2015).

The tablet-based data collection tool provides all-in-one solution to its users. An application, called Forest Resource Monitoring System (FRMS) Mobile Application, that runs in the tablet, comes with digital base maps for easy field navigation, GPS for area measurement, GPS camera for proof recording, digital field notes for direct data input in the field and a capacity to report directly from the field to the managers. Together with the FRMS Mobile Application, the SNRM Project developed and installed satellite-based forest change detection application using Google Earth Engine, which makes semi-real time forest monitoring possible. Combination of these tools replace visual measurement of forest changes to digital one.

2. Activities and Outcomes

The SNRM Project in collaboration with Forest Protection Department (FPD) under Vietnam Administration of Forestry (VNFOREST) organized and supervised trainings for using Tablet PCs with FRMS Mobile Application for FPD staffs at central, regional, provincial and district-commune levels. In total, 259 trainings were organized and 2886 staff were trained. Field data collected and reported using the tablet PC with FRMS Mobile Application are sent to and stored in FRMS database server through internet, which is the official forest database system in Vietnam.

By now, this initiative has been replicated to total 16 provinces including Lai Chau, Son La, Dien Bien, Hoa Binh, Lao Cai, Bac Kan, Thanh Hoa, Nghe An, Ha Tinh, Quang Binh, Quang Tri, Thua Thien-Hue, Quang Nam, Lam Dong, Binh Thuan and Ca Mau in collaboration with other projects such as VFD/USAID, GA/USAID, UN-REDD2/FAO and FCPF/WB.

As a result, the MARD’s Circular No. 33/2018/TT-BNNPTNT dated on November 16, 2018 stipulated data from tablet PC with FRMS mobile application as one of the major data sources for FRMS. In addition, the satellite-based forest change detection application has been running officially on the FPD’s website (<http://canhbaomatrung.kiemlam.org.vn/>) and its data have been widely used by all FPD staffs in order to monitor the activities of provincial FRMS.



Forest monitoring by tablet PC with FRMS mobile application

3. Findings, Lessons learned and Recommendations

Forestry sector in Vietnam is contributing a large portion to the economy and playing a vital role in the mitigation and adaptation of climate changes. It is critical to ensure the accuracy, consistency, and robustness of forest monitoring data.

It is recognized that innovative tools by the SNRM Project are effective for both managers and field rangers to minimize their cost for data collection and submission while to enhance the quality of the annual forest change data. However, the further success shall be depending on the initiatives and

administration of the managers at central and province levels.

It is advisable to document the regulation on implementation of the FRMS each component including the SNRM’s innovative ICT tools and to secure budget and human resources for FRMS’s management as well as to raise awareness of FPD staff for implementing appropriate forest monitoring through FRMS for successful forest management.



Forest change detection application by Google Earth Engine

[Case 2] FOREST MONITORING BY DRONE



Drone operation by rangers

1. Background and Objective

While the core and buffer zone of Lang Binag World Biosphere Reserve (LB-BR) in Lam Dong province have rich forest ecosystem with high biodiversity, the forest area has continuously decreased/degraded during the past decades due to several factors including illegal conversion of forests into agriculture uses (encroachment) as one of the key issues to be dealt with. Although forest owners conduct regular patrolling activities by themselves and by patrolling teams consisting of villagers based on contracts made under the Payment for Forest Environmental Services (PFES) program, its effectiveness is not necessarily high. For further enhancement of the activities with limited human and financial resources, the SNRM Project introduced a drone monitoring system to Bidoup NuiBa National Park Management Board (BNBNPMB) /Da Nhim Watershed Protection Forest Management Board (DNWPFMB) responsible for the conservation of LB-BR with the following primary objectives:

- + Early detection of forest resource changes
- + Effective/ efficient human resource mobilization on patrolling activities
- + Improvement of the evaluation accuracy of the PFES contract performance

2. Supported Activities

The following support activities were conducted for the introduction of the drone monitoring to the forest owners.

- Identification of the appropriate equipment for above objectives through feasibility study with BNBNPMB and DNWPFMB, namely, drone (DJI Phantom 4 Pro)/ autonomous flight app (Litchi)/ photogrammetry software (Pix4DMapper Pro)/ tablet (iPad mini)/ laptop (recommended: CORE i7 (4 core), RAM 16GB) and other accessories
- Provision of technical supports on overall design and a series of hands-on trainings as well as follow-up activities to enhance the capacities required on

the drone operation and images utilization for technical officers and rangers.

- Formulation of a draft regulation on its operation and management
- Formulation of a comprehensive drone monitoring manual based on the drone operation in the fields which is available from the SNRM website (<https://www.jica.go.jp/project/english/vietnam/037/materials/index.html>).
- Information sharing with PFES Forest Protection Development Fund in Lam Dong province and other national parks such as Phong Nha Ke Bang and Bach Ma for their budget proposal on procurement of drones and its operation.

3. Findings and Recommendations

- Since June 2018, after the equipment was handed over, BNBNPMB and DNWPFMB have been regularly operating drones, resulting in quick identification of an encroachment in the area which was difficult to access previously. The tool

has been utilized for PFES contracts evaluation with high precision as trustable data source as well as applied on the forest restoration activities (planning and monitoring), implying that this tool is effective for multi-purpose of forest conservation activities.

- With current specifications of DJI Phantom 4 pro, flight time and coverage area are limited (around 20 minutes=40-60 ha per flight). In order to cover wider area, combination with satellite images or other UAVs (fixed wings) are recommended.

- Trainings are highly required before the flight operation and fully capacitated staffs in an organization should be assigned to handle the equipment.

- Budget for regular maintenance needs to be secured and use of PFES management fee flowed into forest owners would be one sustainable fund source for the purpose. Also, latest administrative procedures on drone operation in the country need to be carefully checked.





Identification of encroachment by drone image



Previously, patrol on a 4km-long area took many hours, but with the drone, it just takes around 20 minutes which save lots of labour work.

Images by drone



Mr. Pham Xuan Dam

(Officer of Ranger Division, Bidoup Nuiba National Park)



Public-Private Partnership

Active involvement of the private sector is a key to promoting better management of natural resources including forests. It has huge potential to bring a wide range of social and financial benefits for all relevant stakeholders.

[Case 1] CSR INVESTMENT

1. Background

There are many ways to involve the private sector in sustainable management of forests. Attracting Corporate Social Responsibility (CSR) support into sustainable forest management projects and programs is definitely one of them. Although the CSR support is less proactive way of advancing sustainable management of forests than having direct business investment in such, the CSR support, either financial or in-kind, would be a valuable and probably relatively easily executable form of involvement by the private sector.

Although many private companies would be willing to offer their CSR support, they also have their own limitations – they are usually not used to plan and implement development cooperation-type of field projects or activities including forest conservation, natural regeneration, reforestation, and livelihoods improvement for local populations.

This puts JICA in a good position to work with private companies in planning and executing their CSR activities on their behalf through its field project, utilizing its existing political and institutional infrastructures.



A replanting event in 2016, supported by the private companies in Japan

2. Supported Activities

The SNRM Project in collaboration with Sumitomo Forestry Co., Ltd. and ASKUL Corporation assisted the following CSR activities in Dien Bien Province over years:

- Signing of the MOUs on the CSR activities implementation through the SNRM Project between JICA and the private companies.
- Coordination with local authorities at provincial, district, and commune levels.
- Annual planning and monitoring of field activities in coordination with the private companies in Japan.
- Implementation of reforestation and natural forest regeneration with animal protection fence through a field coordinator.
- Implementation of livelihoods improvement through sustainable coffee production and processing through a local coffee company.
- Facilitation of joint field monitoring with the private companies annually.

- Installation of signboards of the CSR support for better visibility.
- Creation of a movie clip showing the CSR support to wider audience.

3. Findings

- Although companies might be able to offer some financial support as a part of their CSR activities, they require a capable counterpart in the field that can actually plan and execute the field activities. Donor projects like the SNRM Project provide a perfect platform for this purpose.
- By integrating the CSR support into an ongoing donor project, the private companies do not need to obtain an independent approval from the authority to implement the CSR activities in the field, saving tremendous amount of time and efforts before starting the activities.
- The donor agencies are often not able to receive funding from the private sector directly. In such case, the establishment of a local financial window or partner (either a local organization or trusted individual) would be also important in facilitating

the smooth financial flow and operation of the CSR activities.

- As the CSR support is often time-bound and cannot be indefinite, more sustainable forms of support, e.g., through direct investment or profit-making business activities, should be sought out in a mid- to long-run.
- Visibility is often an important part of the CSR support and should be integrated into the project design.



The same area after three years during the monitoring in 2019. Trees were getting taller.



The land right after replanting in 2016.

[Case 2] SDGs SCHEME TO INVOLVE PRIVATE SECTOR

1. Background

There are many ways to involve the private sector in sustainable management of forests. Attracting the private sector investment into sustainable management of forests is definitely one of them though there are certain challenges to overcome.

When the president of Usui Nouchikusan, a Japanese private company, traveled to Dien Bien Province, he observed a lot of bamboos in local forest that were underutilized. Feeling pity, the company president got the idea of supporting income generation for the local populations through sustainable utilization of these local resources. The company provided funding to establish a small factory to process local small-diameter bamboos into the poles for agriculture purposes. All products from the factory have been exported to and sold in Japan by Usui Nouchikusan.

Although the initial factory operation went well, the issue of resource sustainability soon got prominent. As the majority of pre-existing bamboo forests had been already converted into farmlands, the area of natural bamboo forests that could be harvested was limited for mid- to long-run operation of the factory. The company thus realized that the recovery of bamboo forests was critical for the sustainable operation of the factory, i.e., income generation for local people. However, this was beyond the scope and the capacity of a single private company.

This was exactly where JICA could come in. JICA had different schemes to support the private sector that could contribute to the sustainable development in developing countries through their business activities. Using the SDGs scheme, JICA, in coordination with the SNRM Project, provided the funding for the company to experiment and identify appropriate seedling propagation and planting techniques in Dien Bien Province, starting from 2018.



The experimental bamboo planting site. Different treatments were tested here.

2. Supported Activities

The JICA's SDGs scheme funded the following activities with the private company:

- Experiment on different bamboo seedling propagation techniques
- Experiment on different bamboo planting techniques
- Experimental village-based bamboo processing

The SNRM Project supported the following:

- Coordination with local authorities at province, district, and commune levels
- Technical inputs into the project design and implementation
- Experimental bamboo planting as a part of livelihoods development activities in the project's target area in Dien Bien Province



A factory buying and processing harvested bamboos for export to Japan.

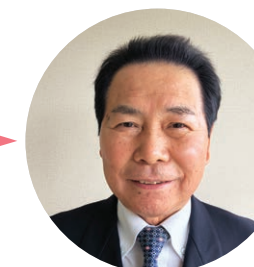
3. Findings

- Although the private sector activities have to be market-based in a mid- to long-run, the development of business models through sustainable utilization of forest resources would, at least initially, require some external support. Development assistance organizations, or their field projects, would be in a good position to collaborate with the private sector in developing these models.
- Business models with forest products should assess properly the competitive advantage of

these forest products in the market. In this case, small-diameter bamboo only existed in southern China and northern Vietnam while the market was large. No competition existed with low land areas.

- It is critical for the local authorities to minimize red tapes, streamline the procedures, and ensure the smooth overall operation of the business models in order to have bigger and sustainable impacts on poverty reduction and forest management in the province.

The partnership with JICA made it possible for us to undertake an important propagation, etc., which otherwise could not be implemented by us alone. We continue striving for the development of a local industry and better natural resource management.



Mr. Masaaki Usui

(President, Usui Nouchikusan)

[Case 3] MARKETING AND SUPPLY CHAIN ESTABLISHMENT (Shiitake mushroom's case)



Harvesting in a package for high end customers

1. Background

In order to ensure its high and sustainable benefits to the farmers, building a stable supply chain to meet the demand from markets is one of key factors. Taking advantages of good images of highland agriculture products in Dalat and relatively good access to HCMC, various types of marketing activities to promote and disseminate the value of shiitake mushroom product together with the story of the Lang Biang World Biosphere Reserve (LB-BR) and high standard supply chain development were made involving private sectors such as agricultural logistics/ production companies and retails like supermarket and restaurant.

2. Activities

● Photobook preparation

Photobook "Reconnect Human and Nature" was prepared to convey the story of shiitake mushroom delivered from rich ecosystems in LB-BR, introduction of the shiitake mushroom producers, etc. This photo book was utilized as a promotional tool at events, restaurants and retail stores.

● Test sales and promotion activities

Test sales were conducted with the support of Lam Dong Province Commerce and Industry and affiliated restaurants to promote shiitake

mushroom to consumers and retailers. Attracting the interest from its unique story, Japanese chefs, for example, visited production sites and introduced the product at a dinner show in HCMC.

● Supply chain development and post-harvest improvement

The SNRM Project worked with Dalat Ecology Co.,Ltd., a newly-established private company operating logistics for agriculture products, and Nguyen Long Joint Stock Company, a shiitake mushroom company that have contracts with farmers, to develop a supply chain and improve post-harvest activities, including packaging. Especially, in order to prevent downgrading qualities of the fresh products, the mushroom is transported by refrigerated trucks and then kept in a refrigerated warehouse in HCMC (cold chain storage-transportation development). Even with a small-scale business, a high-quality supply chain was developed through collaboration with partner companies.

● Production adjustment with application of IT technology

Stable supply is important for securing customers' profit. Monitoring the overall production status is necessary to adjust the production by each farmer, and a data file was developed that aggregates



Photobook "Reconnect Human and Nature"

the production data, which is stored on the cloud network and can be viewed by the company for adjusting the production volume in communicating with the demand side.

● Utilization of LB-BR logo

The LB-BR logo was designed. The Intellectual Property Office of Vietnam has issued trademark certificates for products of mushrooms, coffee produced and tourism in LB-BR. Thus, once operation guideline is developed / approved by LB-BR Management Board, companies in LB-BR would utilize the logo based on the agreement to promote their local products from LB-BR and shiitake mushroom and eco tour activities would be highly potential products.



Test sale of shiitake mushroom at Pizza 4P's



Logo of LB-BR

3. Findings

● The story can explore markets and stable supply can expand the market. By branding shiitake mushrooms as a valuable product contributing to the forest conservation in LB-BR, the market for high-end customers was explored and the products has been delivered to the customers such as AEON and Pizza 4P's in HCMC. For further expansion of the market, capacity enhancement on production management by the companies as well as farmer groups to ensure continuous quality control and stable production would be a key.

● In accordance with the One Village One Product (OVOP) Promotion Policy, the registration of the LB-BR derived shiitake mushrooms in OVOP was made. With VietGAP certificate approved to many producers of the mushroom as well, it is expected that the promotion budget / governmental supports on the product will be secured.



photo by Ecologic Masa Shintani



photo by Tran Nhat Tien



Biodiversity conservation

Vietnam is known as one of the countries with the richest biodiversity in the world. Various efforts are being undertaken by relevant organizations and individuals to conserve this national asset.

[Case 1] DEVELOPMENT AND IMPLEMENTATION OF THE MANAGEMENT PLAN OF THE LANG BIANG WORLD BIOSPHERE RESERVE

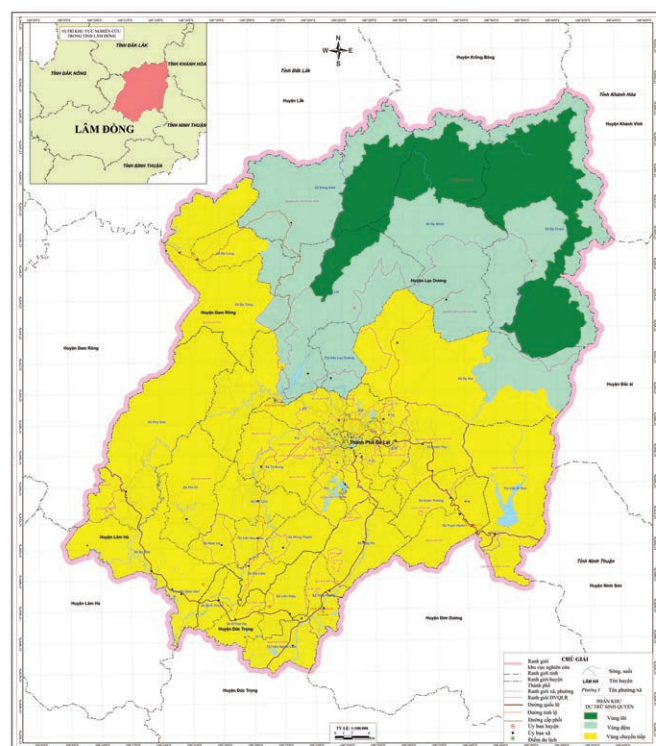
1. Background and Objective

Lang Biang Plateau and its vicinity covering 275,439 ha in Lam Dong province was recognized as the Lang Biang World Biosphere Reserve (LB-BR) in June 2015 by the United Nations Educational, Scientific and Cultural Organization (UNESCO). In order to appropriately manage the LB-BR, the LB-BR Management Board (MB) was established in June 2016 with a vice chairman of the Provincial People's Committee (PPC) as the Chairman and leaders of related provincial departments/ organizations as Board members in accordance with the decision (No: 1164 /QĐ-UBND) of the PPC. In response to the UNESCO's request for developing its own

management plan, the Management Plan of the LB-BR (MP) was developed and implemented for the sustainable conservation and development of the LB-BR as follows.

2. Activities

● Development of a draft 5-year MP (2018~2022) in harmony with national/ local social-economic development plan and land use plan etc., which has a vision with 5 objectives and 9 programs with 35 sub-programs. The draft MP was endorsed in the 3rd LB-BR MB meeting in July 2017 and approved by the PPC with the issuance of Decision (No: 786/ QĐ-UBND) in April 2018.



Map of LB-BR



Transition zone

● Development of 2018 Annual Action Plans (AAPs) for the implementation of the MP in a way to use some of the below organizations' 2018 regular budgets appropriate to the LB-BR by 12 provincial organizations nominated in the above PPC Decision. The AAPs were compiled by the LB-BR MB secretariat and implemented and monitored by the organizations concerned.

● Development, implementation and monitoring of the 2019 AAPs in an improved manner by the organizations concerned.

● Contribution by the SNRM Project to develop tools and models for the sustainable management of the LB-BR which is compiled in this casebook.

The correspondence relation between the MP and each tool/ model is indicated as below.



3. Findings, Lessons learned and Recommendations

● Appropriate/ sustainable AAP formulation/ implementation requires strengthened coordination function of the LB-BR MB with support of the PPC, considering that the LB-BRMB is not authorized to direct the provincial departments/ organization for action;

● The MP of the LB-BR is a multisectoral collaboration plan which is consistent with the

existing plans /strategies. The MP in the LB-BR is a new approach for governmental organizations in the country, thus appropriate guidance/ information provision as well as the instruction from the PPC are required to ensure active participation of stakeholders.

● The LB-BR MB secretariat has crucially important roles for the formulation and the monitoring of the MP/AAP, thus its further capacity enhancement on the coordination and facilitation is the key for the sustainable operation.



[Case 2] ENVIRONMENTAL EDUCATION

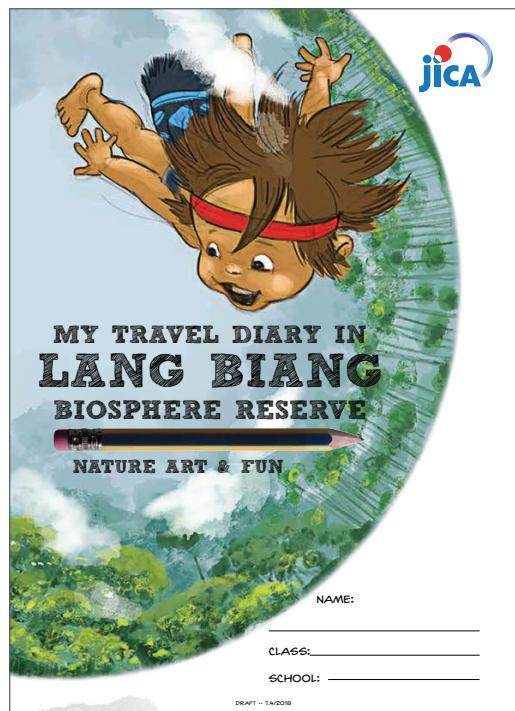


1. Background and Objective

The 5-year Management Plan (MP) of the Lang Biang World Biosphere Reserve (LB-BR) sets 5 objectives followed by 9 programs with 35 sub-programs for its realization. One of its objectives is the "Contribution to Environment Education (EE)", therefore, the LB-BR MB was required to develop the EE program in LB-BR for the implementation of the MP. At the same time there is a situation where forest violations including encroachments have been continuously taking place within the LB-BR due probably to the fact that the value of the LB-BR is little understood among Vietnamese people including its stakeholders although the LB-BR was established for sustainable conservation. Since the EE development /implementation is expected to promote the understanding on the value of the LB-BR among the stakeholders, it contributes to raising their awareness, thus improving the above situation. Besides, the EE could affect positively products in the LB-BR in terms of expansion of their markets..

2. Activities

- Development of the EE implementation plan through surveys and discussions among its stakeholders and set of its target groups as secondary school students with the expectation of possible application to other BRs in Vietnam.
- Development of two types of the EE books (one for students and another for facilitators) with main theme of Nature and K'Ho ethnic minority culture of the LB-BR which are enjoyable and easily understandable to the target groups with arts and experience on the content.
- Conduct of trainings for the staffs and rangers of Bidoup NuiBa National Park (BNBNP) and local



EE Book



EE test tour

guides on the interpretation and the guiding skills, followed by successful test trials inviting secondary school students from HCMC and Dalat.

- Sharing of the EE activities with MAB Vietnam and other Biosphere Reserves for possible application.
- Set-up of a water purification system to provide purified natural water to EE/Eco tourists partly for understanding important services of forests as well as for educating the tourists through stopping their custom of discarding plastic bottles in forests which they brought in for drinking purpose.
- Renovation of a guest house in BNBNP for further development of the EE to meet diversified demands of EE tourists. And set up of a model glamping tent facility which provides comfortable/luxurious space to the tourists although it needs much lower cost in its establishment than the guest house.

3. Findings

- A series of the EE test tours with secondary school students in HCMC/ Dalat were highly appreciated as enjoyable and knowledgeable activity by the participated schools and the understanding of the students on the values and importance of the LB-BR was deepened.
- The EE with enjoyable contents through experiences makes the EE well acceptable to its participants. And accommodation facility suitable for its surrounding environment and use of natural water available in nature surely deepen understanding on the benefits from the rich forest ecosystems as well as raise satisfaction of EE participants.
- Know-how and capacity of the staffs of the BNBNP/ villagers on the EE implementation were raised enough to conduct the EE by themselves.



Water purification system



EE test tour

I am happy to share the culture of K'Ho, especially on my weaving skills to the young generation through this EE program.



Ms. Kon Sa Da Ny
(Da Blah Village)

[Case 3] BIODIVERSITY MONITORING SYSTEM FOR LANG BIANG WORLD BIOSPHERE RESERVE



Installation of the trap camera

Large-antlered muntjac (*Muntiacus vuquangensis*)

1. Background and Objective

The forest area in core and buffer zone of the newly established Lang Biang World Biosphere Reserve (LB-BR) including Bidoup Nui Ba National Park (BNBNP) has continuously been decreased/degraded during the past decades, probably affecting the biodiversity negatively despite the fact that BNBNP is internationally recognized as one of the most important biodiversity hotspots in Southeast Asia. In response to the above situation, the SNRM Project together with the Management Board (MB) of BNBNP developed a Biodiversity Monitoring System (BMS) to monitor the healthiness of its important forest ecosystems, and to detect changes of environments in a scientific and adaptive manner for the MB to plan and develop suitable measures for biodiversity conservation.

2. Supported Activities

The BMS was designed to conduct the biodiversity monitoring in “easy to use” and “less costly” manners and the following activities were supported by the SNRM Project.

- Development of a BMS in the core and buffer zone of LB-BR, focusing on the monitoring of key indicator species identified and selected from plants, mammals, birds, amphibians and insects which were formulated through a biodiversity baseline survey and a series of consultation with relevant stakeholders.

- Establishment of monitoring sites in the field including 6 monitoring routes and 1ha permanent plot, all of which were surveyed on their baselines and with installation of 35 trap cameras in accordance with the BMS implementation plan.

- Provision of OJT/Off-JT training courses for rangers/ technical staffs of BNBNPMB on techniques of monitoring biodiversity in the field and database management.

- Technical inputs on BMS implementation such as data collection from the trap cameras, data analysis and input into database (BRAHMS) and sharing to National Biodiversity Database System (NBDS) under MONRE as well as MARD.

- Formulation of a comprehensive biodiversity monitoring manual at manager level and a handbook at field level which is available from the SNRM website (<https://www.jica.go.jp/project/english/vietnam/037/materials/index.html>).

3. Findings and Recommendation

- A new species of snake (*Oligodon rostralis*) was found out from biodiversity baseline survey conducted in 2017 and many precious species registered in IUCN Red List as well as Vietnam Red Data Book were confirmed through the implementation of the BMS including large antlered muntjac (*Muntiacus vuquangensis*), critically endangered species in IUCN Red List.

- The established BMS is one of the most effective and affordable biodiversity monitoring system appropriate to protected areas in Vietnam.



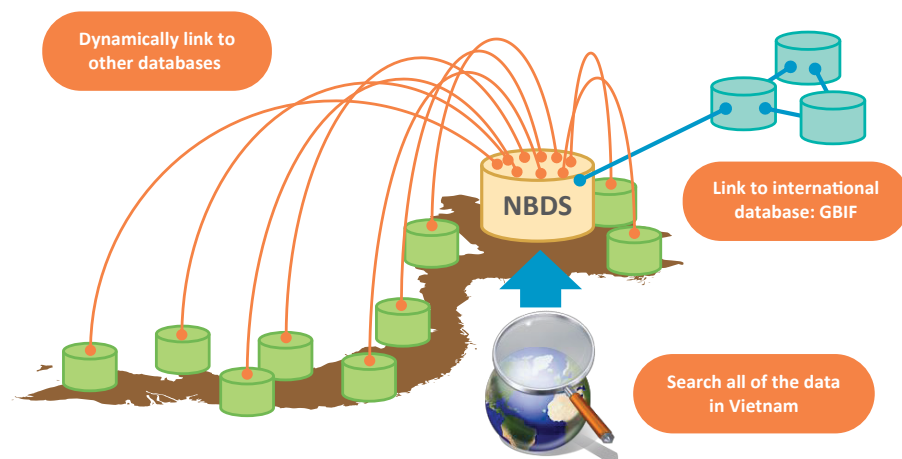
Photo by Tran Van Bang

A new species of snake (*Oligodon rostralis*)

Therefore, it is recommended that BMS should be shared with MONRE and MARD for possible application to other national parks and nature reserves with similar natural conditions.

- Biodiversity monitoring must be implemented continuously with designed frequencies of the indicator species to contribute to biodiversity conservation in LB-BR. However, BMS in LB-BR has currently been conducted mostly on mammals and birds due to the limited financial resources although BMS was designed as simple, easy-to-apply and less costly system. Thus, it is recommended that the budget for the BMS implementation should be fully secured. And relevant implementors are also recommended to take initiative to search for collaboration on biodiversity conservation including BMS with international donors, private companies, NGOs, and academic institutes.

[Case 4] NATIONAL BIODIVERSITY DATABASE SYSTEM (NBDS)



1. Background

Vietnam is a country of rich biodiversity with a variety of ecosystems, species and genetic resources which bring benefits to the people. Over the past decades, a lot of valuable data and information related to biodiversity were collected by national and international institutes in many protected areas (PAs). However, most of these collected data and information have been scattered over the country due to the lack of information sharing system. Furthermore, these collected data and information have rarely been updated regularly due to insufficient capacity and resources of PAs management units and other related government offices. The National Biodiversity Database System (NBDS) is a common platform accessible through internet (<http://nbds.ceid.gov.vn/>) for multiple users to share all biodiversity related data and information in the country that provides comprehensive dataset and information necessary for country's policy formulation and implementation on biodiversity conservation.

2. Activities and outcomes

● The SNRM Project together with the Nature and Biodiversity Conservation Agency (BCA) of the Ministry of Natural Resources and Environment (MONRE) collected species data from 36 PAs representing the most important terrestrial, wetland and marine ecosystems in the country designated as biodiversity monitoring spots by the Prime Minister's Decision (No. 90/QĐ-TTg, 2016). In total approximately 65,000 species datasets, which include mammal, bird, reptile, amphibian and plant, were collected and stored into NBDS.



● The SNRM Project in collaboration with BCA organized a series of training courses for provincial government officers, PAs staff, research institutes and other related organizations on biodiversity monitoring and NBDS management. In total, over 200 PAs staff and other government staff were trained and equipped with the knowledge and skill necessary for updating biodiversity data. After the trainings, the PAs staff continuously trained other staff in their PAs in order to make effective use of NBDS for management of biodiversity data and also for their works on biodiversity conservation.

● The SNRM Project in cooperation with the National Museum of Nature and Science of Japan assisted BCA for building national capacity to be a member of the Global Biodiversity Information Facility (GBIF) which is an international open data infrastructure that allows anyone to access data about all types of life on earth. In 2017, the Government of Vietnam and GBIF signed MoU to further enhance the data and information exchange on biodiversity.

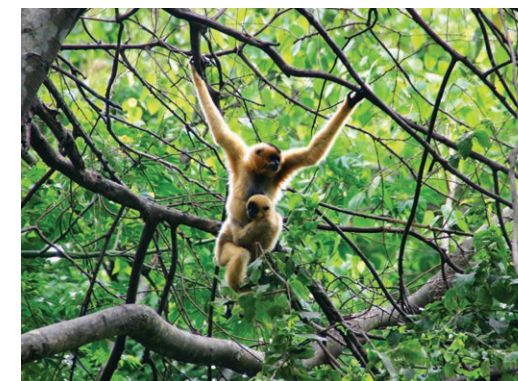


photo by Bidoup Nui Ba National Park



NBDS training Workshop in Da Nang

3. Findings

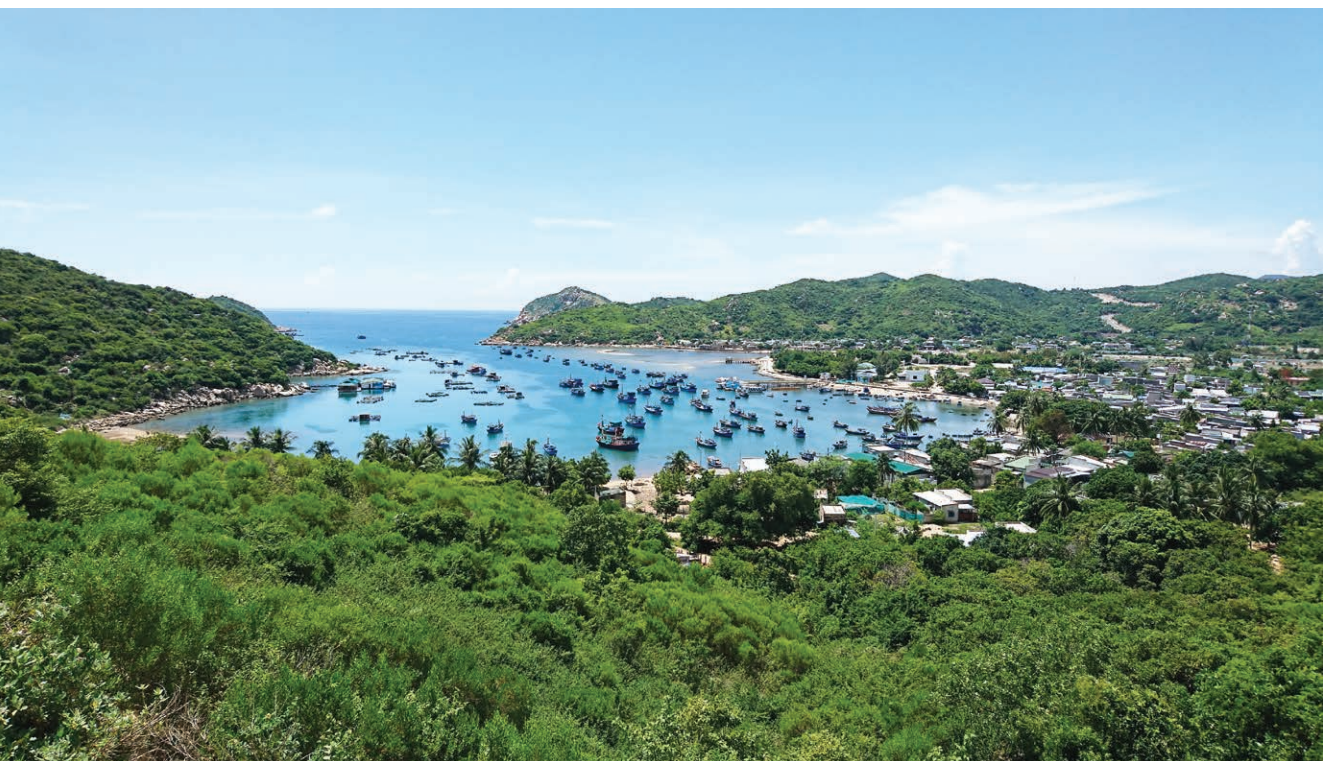
- Some of the major issues identified through species data collection from 36 PAs were as follows:
 - + Lack of clear strategies and plans in the development and management of biodiversity data;
 - + Insufficient number of trained staff in charge of biodiversity data management; and
 - + Inappropriate data recording and management, such as unknown data source, few images and photos, paper-based record (not digitized), no standard format, data duplication and inaccurate taxon and species name.
- The Law on Biodiversity in Vietnam (2008) stipulates that PAs management units or related organizations shall report on the current status of biodiversity in their respective area every three years (Article 33). In order to fulfill this objective, sufficient human and financial resources need to be secured at both central and provincial governments.



Dr. Nguyen Xuan Dung

(Deputy Director, BCA/VEA, MONRE)

NBDS is a very important information source for policy formulation/implementation related to biodiversity conservation.



REDD+

REDD+ is a mechanism to mitigate climate change by reducing greenhouse gas emissions from forests and by enhancing forest carbon stocks. Vietnam has shown steady progress on REDD+ through active participation of relevant stakeholders.

[Case 1] FROM READINESS TO RESULT-BASED PAYMENTS (RBPs)

1. Background

REDD+ stands for “reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks in developing countries.” In short, it is an international mechanism to pay for the results achieved in terms of reducing greenhouse gas emissions and enhancing carbon sequestration in the forestry sector in developing countries.

In order to receive the payment (called result-based payment, or RBP), a country has to fulfill four key requirements. The first is a national policy on REDD+ - a country need to have a national strategy or action plan on REDD+, showing the political commitment and specific plan of actions to advance REDD+. The second is the baseline, against which the results are measured – this is called Forest Reference Emission Level / Forest Reference Level (FREL/FRL). The third is a robust and transparent national forest monitoring system (NFMS), based on which the achieved results will be calculated. The last is the safeguard information system in order to ensure the proposed and implemented REDD+ activities do not cause adverse impacts on the people and the environment.

Vietnam has been a part of the REDD+ process over 10 years since 2008/2009. By end of 2018, Vietnam has successfully fulfilled all four requirements and is now moving towards RBP.

2. Supported Activities

JICA has been supporting the country in advancing REDD+ since 2009 with a series of projects including the SNRM Project. Key supports provided are as follows:

[REDD+ Policies]

- Provision of technical inputs into the National REDD+ Action Program (NRAP) formulation and revision process (2012-2017)
- Development of the Provincial REDD+ Action Plan (PRAP) in six provinces

[FREL/FRL and NFMS]

- Standardization of national forest monitoring data over time (2009-2012)
- REDD+ potential assessment (2009-2012)
- Development and revision of FREL/FRL (2012-2018)
- Improvement of NFMS (2012-2020)

[RBP]

- Provision of technical inputs into the REDD+ result calculation and reporting (2018-2020)
- Formulation of a concept note and a funding proposal for RBP for Green Climate Fund (GCF) (2018-2020)

* The support after 2015 has been provided through the SNRM Project.

3. Findings

- Nationally standardized and consistent forest monitoring system and associated data are fundamental not only for FREL/FRL or REDD+ result calculation but also the effective monitoring and evaluation of sustainable management of forests in the country. As the development NFMS takes significant time and effort, early work on NFMS is highly recommended.
- For RBP providers such as World Bank's Carbon Fund or GCF, safeguard requirements are quite extensive while some of these requirements are often not institutionalized in developing countries. Early gap assessment and adoption of safeguard requirements should be essential steps for both

the REDD+ readiness preparation and the RBP application especially as it takes significant time and effort.

- For the GCF RBP application, the comprehensive review of the scorecard (assessment criteria) as against the country situation at early stages of preparation is quite beneficial to identify the gaps. Limited resources should be concentrated into filling these gaps in order to access the RBP.
- Investment plan with RBP, or use of proceeds, should be designed a way that it will further reinforce the policies and institutions to advance REDD+ in the country to sustain impacts.



Deforestation and forest degradation cause significant greenhouse gas emissions to the atmosphere.

[Case 2] PROVINCIAL REDD+ ACTION PLAN (PRAP)

1. Background and Objective

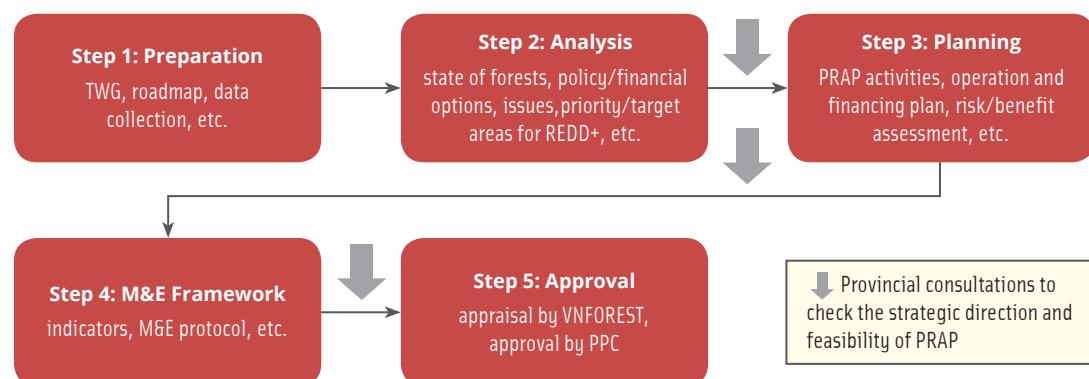
The National REDD+ Action Program (NRAP) requests that each forested province formulate a Provincial REDD+ Action Plan (PRAP) for the implementation of REDD+. The SNRM Project provided support for the development, implementation and monitoring of PRAPs in the target provinces (Hoa Binh, Son La, Dien Bien and Lai Chau).

2. Activities and Outcomes

a. PRAP development

● Process

PRAP development started in October 2016 with the following key steps:



● Consultations

In order for a PRAP to be a feasible plan, the interests, opinions and benefits of all stakeholders need to be incorporated. A number of consultations were organized targeting different stakeholders at the provincial, district, commune and village levels in different stages. Third party facilitators were mobilized to enhance equity and transparency, particularly at the commune- and village-level discussions. In the end, nearly 2,500 people were consulted.



Representatives from the four provinces met in Hanoi to kick-off PRAP development (October 2016)

● Drafting and approval

After a series of discussions and revisions, draft PRAPs were completed in May 2017. Thereafter, the drafts were reviewed by the central government and the provincial governments before officially being approved in September 2017.

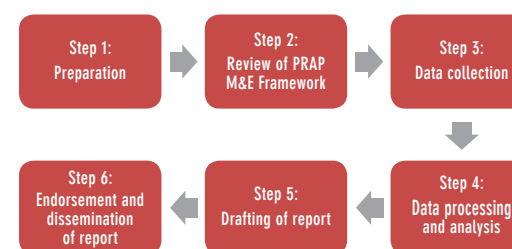
● Dissemination

Following approval of the PRAPs, a joint workshop and provincial workshops in each province were held to discuss how to effectively implement the PRAPs.

b. PRAP implementation and monitoring

● In the case of the SNRM Project, PRAP implementation was supported through the activities in the pilot communes and provincial forest monitoring. The Department of Agriculture and Rural Development (DARD) acted as a hub to link the PRAP and pilot commune activities in their own provinces.

● The SNRM Project supported PRAP monitoring for the year 2018 (the steps of which are shown below). From this experience, a guide for PRAP monitoring was developed.



● For the year 2019, the provinces of Hoa Binh, Son La and Lai Chau conducted PRAP monitoring without technical and financial support from the SNRM Project.

● The experience of the SNRM Project also contributed to national level discussions on PRAP development, implementation and monitoring.

References for further understanding

- PRAP of Hoa Binh Province for the period from 2017 to 2020
- PRAP of Son La Province for the period from 2017 to 2020
- PRAP of Dien Bien Province for the period from 2017 to 2020
- PRAP of Lai Chau Province for the period from 2017 to 2020
- Hoa Binh 2018 PRAP M&E Report
- Son La 2018 PRAP M&E Report
- Dien Bien 2018 PRAP M&E Report
- Lai Chau 2018 PRAP M&E Report
- A Guide for Provincial REDD+ Action Plan (PRAP) Monitoring, April 2019.

3. Findings, Lessons Learned and Recommendations

● Although the four provinces are commonly grouped as “Northwest Provinces”, their forest-related issues and development contexts were quite different. However, the need for a multi-sectoral approach was a commonly recognized issue.

● In most cases, the team involved in PRAP development also engaged in PRAP implementation and monitoring. This greatly enhanced consistency, efficiency and the accumulation of institutional capacity.

● The PRAP should further build in activities that not only mitigate impacts but also enhance social and environmental benefits. The findings from PRAP implementation and monitoring are expected to facilitate such a progressive approach.



Consultation with a local community in Son La Province (January 2017)

Hoa Binh province uses PRAP when discussing its forestry policies and plans. I feel the awareness of the local communities and authorities on forest protection have raised, particularly in the areas targeted in PRAP.



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