



# Social Impact Assessment of the Benefit Sharing Mechanism Pilot in Co-management of Special-Use Forest in Vietnam: Case Study at Bach Ma National Park

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**Abstract:** To enhance local participation in forest protection and sustainable development in Bach Ma National Park, Thua Thien Hue Province, Vietnam, a benefit sharing mechanism (BSM) based on principles of co-management has been piloted. This study aimed to evaluate socio-economic impacts of this pilot on people living in seven targeted villages of Thuong Nhat Commune, Nam Dong District, Thua Thien Hue Province after two years of implementation. Evaluation methods were household interview, in-depth interview, village meeting, focused group discussion and workshop with stakeholders at commune level. Results showed that: (1) the local community was strongly supported and involved in the BSM implementation, displaying a high level of demand for the measures; (2) local people's awareness of rights, responsibilities, forest protection and sustainable use of non timber forest products (NTFPs) has increased considerably; (3) the policy has also enhanced the awareness and participation of local people in cooperation with the park rangers to co-manage the forest. Additionally, this study provides a number of suggestions to improve the BSM, including: (1) raising local people's awareness; (2) simplifying BSM procedures; (3) clarifying incentives and responsibilities of BSM actors to enhance co-patrolling and monitoring activities; (4) creating good incentives either based on the livelihood program for those who actively comply with the BSM regulations or direct payments to those who join forest-protection activities.

**Key words:** Benefit sharing mechanism, Bach Ma National Park, special-use forest, co-management.

## 1. Introduction

Vietnam has more than 13.8 million ha of forest, including the system of special-use forests (SUFs), which comprises about 2 million ha distributed among 164 sites: 30 national parks, 58 nature reserves, 11 species-protected areas, 45 landscape-protected areas and 20 scientific practice and research forests [1]. According to the Law on Forest Protection and Development [2], the local people are not allowed to access and collect any natural resource in the SUFs. In most cases, the SUF management boards are staffed by officials assigned by the relevant provincial forest departments, but does not include representatives from

other sectors or stakeholders from the local communities [3].

To create the legal framework for the co-management policy development, in February 2012, the Prime minister issued decision No. 126 on the pilot policy of benefit sharing mechanism (BSM) in management, protection and sustainable development in SUFs in Vietnam. According to this decision, the Bach Ma National Park and the Xuan Thuy National Park were the two SUFs chosen as pilot sites for implementing the BSM in Vietnam. The BSM pilot aimed at setting up a legal platform for benefits, rights and responsibilities-sharing mechanisms between the SUF management boards and local communities based on the co-management principles [4].

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As sharing benefits and responsibilities in co-management of SUFs was a relatively new issue in Vietnam, the BSM pilot would have both positive and negative impacts on the local people [5, 6]. Hence, the research objective was to assess the impacts of the BSM pilot implementation on the social factors affecting the local people living in the pilot area. The research also aimed to identify local perspectives on the BSM's achievements, failures and challenges, and to propose ways of improving the BSM development and implementation, with the ultimate goal to scale up the BSM policy for SUFs in Vietnam in the future.

## 2. Methods

### 2.1 Study Site Selection

The Thuong Nhat Commune has been selected to research, because the BSM pilot took place in its communities (Fig. 1). Following the BSM plan approved by Ministry of Agriculture and Rural Development (MARD) in October 2012, the seven villages, including Ta Rin, Lap, Ta Lu, A Sach, A Tin,

La Van and Hop Hoa, located in the Thuong Nhat Commune would have the official rights and responsibilities to cooperate with the Bach Ma National Park management board to protect the forest and use sustainably non timber forest products (NTFPs) in the park.

### 2.2 Data Collection

In this study, both qualitative and quantitative data were collected. Firstly, the author gathered relevant documents of the BSM pilot policy, related research on BSM and co-management in Vietnam and the world wide, and open-access information on the study sites of the Bach Ma National Park and the Thuong Nhat commune. The information and research collected were reviewed to develop the research objectives and research questions. Then, the author held a group discussion with experts in June 2013 to get their advice on developing factors for impact assessment of the BSM pilot policy. The experts involved in this consultant group discussion included the two lecturers from the Hue University of

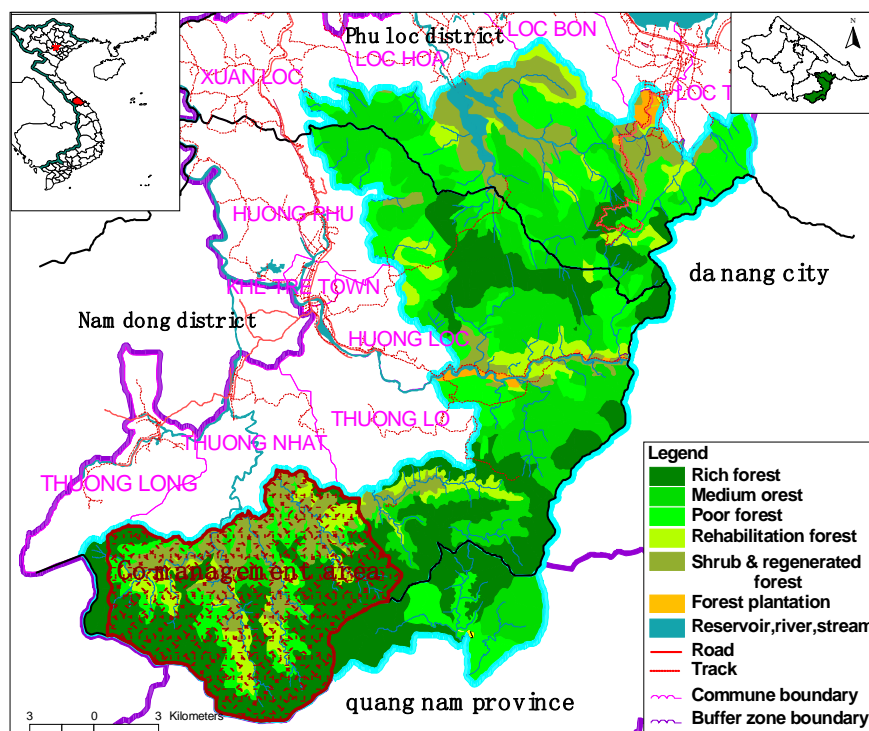


Fig. 1 Map of Bach Ma National Park and the co-management area under the BSM [7].

Agriculture and Forestry who undertook consultant work for developing the BSM plan, the BSM project coordinator, the president of Thuong Nhat People's Committee, the village head of Talu Village in Thuong Nhat and the head of the Thuong Nhat forest-ranger station.

The discussion output was a framework of factors used to assess impacts of the BSM pilot policy and the policy implementation. Based on this framework, the open and closed questionnaires were designed, tested and used for household interview surveys. There were 112 semi-structured and structured household interviews undertaken during two periods in December 2013 and December 2014. The closed questions were used to measure the level of local support, demand and participation in the BSM implementation, the local people's awareness of their benefits, rights and responsibilities when participating in the BSM, and the BSM impacts on NTFPs dependence. The open and mixed (closed and open)

questions were used to clarify advantages, disadvantages, conflicts, and inequity and risks of the BSM, as well as the local perspectives on the BSM implementation's achievements, failures and potentials. Further information was gathered by means of village meetings, group discussions, in-depth interviews, a consultant workshop, and village and forest transects. The summary of the primary data collection process is described in Table 1.

### 2.2.1 Household Interviews

One socio-economic baseline study of the Thuong Nhat Commune in November 2012 showed that about 65% of the households (Hhs) were harvesting NTFPs in the Bach Ma National Park and 35% of them were not. The study revealed that 36% of the Hhs were poor and sub-poor, and 64% were non-poor [8]. To ensure the accurate representation of the Hhs in the interview survey, based on the participated household name lists of the seven villages, the authors randomly selected those to be interviewed according to the current ratio

**Table 1 Summary of the primary data collection process.**

Data collection process			Main issues
Methods	Quantity/description	Time/place	
Household interviews	40 randomly selected households (first collection)	Dec. 7-12, 2013; interviewee's house	-Local awareness of the benefits, rights and responsibilities of BSM; -BSM advantages/disadvantages; -Conflicts, inequity and risks; -Local perspectives on the BSM's achievements, failures, potentials.
Village meetings	7 meetings × 20 participants/each village (7 villages) = 140 participants	Dec. 15-17, 2013; village communal houses	-Level of local support, participation in the BSM policy; -Impacts of the BSM on social schemes; -Level of local dependence on NTFPs (number of NTFP users); -Issues and solutions of BSM.
Group discussions	3 group discussions × 6 NTFP-based villagers = 18 participants 19 key informants: 7 village leaders, 2 local NTFPs traders, 2 rangers, 7 VFP team heads and 1 local official	Dec. 19-20, 2013; village communal houses	-Failures and solutions when implementation of BSM; -BSM management and illegal cases' treatment status; -Social vulnerabilities: risks, inequities, conflicts.
In-depth interview	5 local agencies + 5 Bach Ma National Park + 22 BSM actors + 14 VFP team members + 35 villagers	Dec. 26-28, 2013; Interviewee's houses or office	-Individual perspectives on the BSM failures, risks, conflicts and future potentials: reasons and suggestions for improvement; -Crosscheck of the BSM issues that arose in village meetings.
Consultant workshop		Mar. 2014; Thuong Nhat communal house	-Awareness and feedback of the BSM from stakeholders; -Suggestions, solutions for BSM implementation.
Household interviews	72 randomly selected households (second collection)	Dec. 16-25, 2014; interviewee's house	-Local awareness of the benefits, rights and responsibilities of BSM; -BSM advantages/disadvantages; -Conflicts, inequity and risks; -BSM impacts on NTFP dependence and the local people's participation in forest protection; -Local perspectives on the BSM's achievements, failures, potentials.

of Hhs types mentioned above. The interviewees were all above 18 years old and mostly gender balanced, as the author interviewed both spouses of the households. The profile of the Hhs interviewed is shown in Table 2.

Questionnaires were designed and pre-tested with five Hhs to verify and validate the Hhs survey instrument in Thuong Nhat Villages on December 3-4, 2013 (for the first household interview survey) and December 10-11, 2014 (for the second household interview survey).

The first Hhs interview survey in December 2013 was implemented with the questionnaire, including 10 open (semi-structured), 18 closed multiple-choice and open (mixed) and nine closed multiple-choice questions. The questionnaire for the second Hhs interview survey in December 2014 included five open (semi-structured), 24 closed multiple-choice and open (mixed), and 12 closed multiple-choice items.

The closed questions were used to measure the level of local support for and participation in the BSM implementation, the local awareness of their benefits, rights and responsibilities when participating in the BSM, and the BSM's impacts on the local income and NTFP dependence.

The open (and mixed/closed and open) questions were used to clarify advantages, disadvantages, conflicts, inequity and risks of the BSM and the local perspectives on the BSM's achievements, failures and future potential.

The questionnaire was used to interview the responders at home. The closed-questionnaire interviewees were asked about: (1) their support and

participation level in the BSM, (2) their awareness of the benefits, rights and responsibilities when participating in BSM, (3) NTFP dependence of local people, (4) perception of forest-protection status and (5) perception of NTFP sustainable use.

For each factor, the response multi-choice options were based on the responder's agreement level, e.g., "strongly agree", "agree", "agree normally" "disagree", "strongly disagree" and "I don't know". The results were analyzed by creating simple graphs in Excel that presented the distribution of responses among the given response options.

The mixed questionnaire (between the closed and open questionnaires) was also used to ask the interviewees for their responses to the multiple-choice or Yes/No questions. Then the interviewer asked the individuals why they had selected the specific option. The answers to these questions and the open questions were classified and coded as "a", "b", "c", "d", etc., based on the category of the relevant answer for each question. The Countif formula of Microsoft Excel 2007 was used to calculate the percentage of each answer category.

The results of the Hhs interview surveys were often quantitative types, such as average number, total number and percentage. The calculated results of the first and second Hhs interview surveys were compared question by question to clarify the changes in local perceptions on relevant issues. The qualitative data collected from the focus group discussions or the in-depth interviews were used to crosscheck and triangulate the results of the Hhs interview surveys and the results of the village meetings.

**Table 2 Interviewee profile of the household interview surveys.**

Total number of Hhs interviewed	Age		Households' dependence on NTFPs		Household type	
	18-40	> 40	Harvesting	Non-harvesting	Poor/sub-poor	Non-poor
40 (9% total Hhs population) (December, 2013)	36	4	30	10	15	25
	90%	10%	75%	25%	37.5%	62.5%
72 (15% total Hhs population) (December, 2014)	62	10	46	26	26	46
	86%	14%	64%	36%	36%	64%

Source: Hhs interview survey in December 2013 and December 2014.

### 2.2.2 Village Meetings

After finishing the first Hhs interview survey, the researcher, along with the village heads, conducted seven village meetings in the villages investigated in Thuong Nhat to gain information on levels of local support and participation in the BSM policy, impacts of the BSM on social schemes and levels of local dependence on NTFPs.

There were seven village meetings, each involving the participation of 20 villagers. The village meetings took place in the village communal houses from December 15 to December 17, 2013. The questionnaire designed and used for village meetings included only open questions. At the village meetings, the researcher and the village head raised questions (if needed explained them to the participants). The frequency of each reply to each question was recorded on sheets of paper. The results of the village meetings were used to clarify the issues when interpreting the results of Hhs interview surveys.

### 2.2.3 Focus Group Discussions

After completion of the household surveys, the village meetings and focus group discussions were organized to clarify the issues of failures and solutions in the implementation of BSM and social vulnerabilities, such as risks, inequities and conflicts. There were three group discussions. Each group included six villagers, who were involved in various main types of NTFP exploitation (rattan group, lingzhi mushroom group and honey group). Issues were presented one by one to the participants for discussion, and both the issues and the answers were written in brief form on a notice board during the exchange of opinions. Notes were taken in regard to all answers in order to support the data analyzed from the household survey. The group discussions took place in the village communal houses from December 19 to December 20, 2013. Each group session took about 2 h.

### 2.2.4 In-depth Interviews

The researcher also undertook in-depth interviews with the leaders of the seven villages investigated, two

local NTFPs traders, two forest rangers (one of them is the head of the Thuong Nhat Forest Protection Station), seven VFP team heads and the president of Thuong Nhat People's Committee (who is also the vice-head of the BSM management council). The purpose of the in-depth interviews was to crosscheck the information gathered from the group discussion and the household interview surveys. The in-depth interviews were conducted with 19 key informants from December 26 to December 28, 2013. Based on the role of the interviewees, the interviewer asked specific questions to deepen the individual perspectives on the BSM failures, risks, conflicts and future potential. Notes of the responses were taken in order to support the data triangulation of the respective issues. Each in-depth interview took about 30 min.

### 2.2.5 Consultant Workshop

In order to share the study results, the researcher took part in a workshop to evaluate the BSM one year after its implementation. The workshop was held in the Thuong Nhat Commune in March 2014. The workshop participants were from the provincial forest protection department (five people), the Bach Ma National Park Management Board (three people), the Thuong Nhat Forest Protection Station (two people), the BSM management council members (12 people), the monitoring group (10 people), the village forest protection teams (14 people) and residents of seven villages (35 people). The authors of this research attended the workshop to present the initial results of the research in order to get feedback from different stakeholders and to take notes of ideas or suggestions from the participants for data triangulation.

The researcher also joined and shared the study results at the workshop to evaluate the BSM after two years of implementation in Ha Noi in March 2015. The workshop participants were from the different governmental agencies of MARD, BSM implementation partners, such as local authorities and national parks, and the relevant non-governmental organizations (NGOs)

working in Vietnam. The workshop was held by the Vietnam Forestry Administration (VNFOREST) with the purpose of evaluating the BSM pilots and discussing the possibilities of extending the pilots and the co-management policy development for the SUFs in Vietnam.

### 3. Results and Discussion

#### 3.1 Impacts of the BSM on the Rights and Responsibilities of Local People

Later on one year of BSM implementation, through the efforts of Bach Ma National Park and the local authority, the local awareness of people's rights and responsibilities increases considerably. Table 3 showed that local people have understood mostly the rights of "harvest NTFPs legally" (100%), "remind or chase away the outsiders when entering into the forest" (93%), "remind others of sustainable NTFP extraction" (73%) and "monitor the village fund" (81%), which were a good deal higher than the results surveyed one year ago.

Regarding local awareness on their responsibilities in the BSM implementation, the results showed that the awareness has increased considerably after two years of participation in the BSM (Table 4). This

proved that the BSM or co-management was a learning process, and local people, especially the ethnic people of Catu, could learn by doing. Therefore, the protected area management board and the BSM management council need to do well the outreach program of BSM/co-management propaganda in order to let local people fully understand their rights and responsibilities not only through village meetings but also through facilitating their engagement and information sharing in the BSM.

#### 3.2 Impacts of the BSM on the Local People's Participation in Forest Protection

The BSM pilot based on the co-management principles aimed to enhance the co-operation of local community in forest protection. The research clarified from the work record books of the Thuong Nhat Forest Protection Station that the number of logging cases decreased significantly after two years of BSM implementation (Table 5). Additionally, Table 5 showed that the number of local messages delivered to the park rangers to stop the illegal activities in the forest increased after two years of the BSM implementation (12 times in 2012, 19 times in 2013 and 25 times in 2014).

**Table 3 Awareness of rights after two years of the BSM implementation.**

Parameter	Year 2013 (%)	Year 2014 (%)
Harvest NTFPs legally	65.0	100.0
Remind or chase away the outsiders when encroaching the forest	62.5	93.0
Remind others of sustainable NTFP extraction	47.5	73.0
Monitor the village fund	52.5	81.0
Protect the forest	42.5	36.0

Source: empirical survey data, December 2013 and December 2014.

**Table 4 Awareness of responsibilities after two years of BSM implementation.**

Parameter	Year 2013 (%)	Year 2014 (%)
Apply for harvest permission paper	65.0	95.4
Follow of the NTFP extracting regulations	55.0	93.2
Deduction for the village fund after harvest	40.0	81.8
Deliver of messages for rangers	0.0	72.7
Village fund oversees	0.0	56.8
Sustainable NTFP extraction reminds	0.0	95.4

Source: empirical survey data, December 2013 and December 2014.

**Table 5** Illegal logging status in the co-management area.

Category	Total of illegal logging cases	Total of wood confiscated (m <sup>3</sup> )	Total of messages delivered by locals
Year 2012	14	14.06	12
Year 2013	6	11.59	19
Year 2014	8	5.737	25

Source: work record book of Thuong Nhat Forest Protection Station, 2012, 2013, 2014.

**Table 6** Conflicts when implementation of the BSM.

Parameter	Agree (%)
No conflict when BSM implementation	83.3
Conflicts when BSM implementation:	16.7
NTFP exploitation zones	50.0
Social arguments among villagers and traders	16.7
Deduction for the village fund after harvest	16.7
Registered and non-registered harvesters	8.3
Procedures of application for harvest permission paper	8.3

Source: empirical survey data, December 2014.

It was also assessed by the rangers when doing the in-depth interviews that even the number of message delivers was not yet high, but much more than the years before the BSM implementation. They said that it was more important to have exact rather than many messages, and for the year 2013 and 2014, they felt happy and supportive for their work due to the right messages and the increasing number of messages they could get from the local people than before. This was a positive sign to prove that the BSM pilot policy has brought the more co-operation of the local people, when they aware of their rights, benefits and responsibilities from the BSM pilot.

The above results were similar to the research conclusion of Minh et al. [9], who reported that there was no encroachment on forestland in the co-managed area, which happened before in some places along the park boundary and the Thuong Nhat Commune, and no significant impacts on the forest vegetation.

From the above analysis, we could say that thank to the BSM policy, the local awareness and actions in cooperation with the park rangers in forest co-management have increased annually after the BSM implementation. Nevertheless, it was necessary to deliver a clear mechanism for local people, when they delivered serious messages. In addition, it was also important to set up a good working mechanism,

budget and training of necessary skills for the village forest protection (VFP) team members to be more active in implementing their full responsibilities as required.

### *3.3 Impacts of the BSM on the Social Vulnerability*

During the BSM implementation, some social issues, such as conflicts and inequities happened, should be assessed in order to promote the co-management's effectiveness. The results of impacts of the BSM on conflicts are seen in Table 6.

Table 6 indicates that only 16.7% of the interviewees said that there were conflicts regarding implementation of the BSM. Although this number is low, it needs to explore what these issues were, because they are the source of potential conflicts in future. The Hhs interview also showed that many conflicts (about 50% of total number) were on the boundary demarcation of the NTFP exploitation zones of each villages. This was because in some cases, villagers exploited NTFPs in places managed by other villages, especially in the case of honey and lingzhi mushroom collection. Conflicts between registered and non-registered harvesters only account for 8.3% of total conflicts. In addition, the research results of impacts of the BSM on inequity are also presented in Table 7.

According to results of Hhs interview in December 2014, 54% of interviewees said that the BSM implementation was equal, while 32% said that it was unequal. Most of the cases of inequality happened in the treatment methods of the registered and non-registered harvesters, which accounted for 61% of the total number of cases. The other inequality when implementation of the BSM was the “difference of harvested amount among harvesters”, which accounted for 26%. Due to no regulation to balance the harvest amount among harvesters, some Hhs with stronger labour force, e.g. young male, could harvest a lot more of NTFPs, while other Hhs could not. Adding in to the statement of inequality, people who lived in other communes, such as Thuong Long, Huong Huu, Huong Giang, and who used to exploit the NTFPs in the co-management forests of Thuong Nhat Commune at the Bach Ma National Park said that it is unfair, when the government had a decision

to give only people from Thuong Nhat Commune an official right to manage and harvest the NTFPs in the forests.

### 3.4 Local People's Perspectives on the BSM Continuation

The BSM pilot has encouraged local people to participate in forest protection and sustainable use of the NTFPs at Bach Ma National Park. Therefore, this pilot should be continued in the near future.

Results from the Hhs interview survey about potential impacts of the BSM implementation on livelihood and the forest protection in the coming years are summarized in Table 8.

Table 8 showed that 96% of interviewees expected that the policy needed to be continued, because the BSM would give more benefits and income to local people (37.7%), provide long-term NTFPs exploitation (23%) and lead to better forest protection (13%).

**Table 7 Inequity when implementation of the BSM.**

Parameter	Agree (%)
Equity	54
Do not know	14
Inequity:	32
Treatment of registered and non-registered harvesters	61
Difference of harvest levels among the harvesters	26
Compliance of deduction for village fund after harvest	9
Classification of NTFPs exploitation areas	4

Source: empirical survey data, December 2014.

**Table 8 Impacts of the BSM on livelihood and the forest protection for next years.**

Agreement	Reasons to continue/not continue the BSM	Rate of agreement (%)
Continue to implement the BSM (96%)	Increase of local Hhs income	11.50
	Better forest protection	13.04
	Better forest protection	13.04
	Long-term NTFPs exploitation	23.19
	Give more benefits to local people	26.09
	Not so clear but need to continue the BSM	23.19
	Others	2.90
Not to continue the BSM (4%)	Rarely or not go to the forests	66.67
	Don not know	33.33

Source: empirical survey data, December 2014.



**Table 9 Local perspectives on the better BSM implementation.**

Activities need to do	Rate of agree (%)
Raise the local awareness and mobilize the locals to join the BSM	6.0
Support the seedlings and trainings to improve the livelihood	28.6
Simplify the procedures to register and apply for harvest permission paper	17.9
More allowance supports and incentive policies for the VFP teams and good participants of the BSM	11.9
More serious enforcement and monitoring of the rangers and the VFP teams under the clear mechanism	21.4
Don not know or other ideas	14.3
Total	100.0

Source: empirical survey data, December 2014.

### *3.5 Local People's Perspectives on the BSM Implementation Improvement*

Local people suggested several ways to improve the BSM, if it continued in the future. From the Hhs interview survey results stated in Table 9, most of the interviewees mentioned that the BSM should pay more attention to the livelihood program to reduce dependence of local people on the forest resources (28.6%). They said that they needed to have good seedlings, animal breeds and trainings to improve their livelihoods. The interviewees also recommended enhancing the law enforcement and forest monitoring of the park rangers and the village forest protection teams under a clear mechanism (21.4%). As analyzed in the above sections, this activity was necessary to increase the local compliance with the law/regulations and the local autonomy in the BSM implementation.

Additionally, 17.9% of the interviewees suggested that the BSM management council should simplify the procedures of registration and application for NTFPs harvest. The village meetings also had similar ideas on this issue, because it was time consuming and complicated, when local NTFPs users have to pass three steps to get the harvest permission paper. They recommended that, instead of three steps, a two-step application process should be applied under the delegation of the BSM management council to the village heads and the ranger stations. On the other hand, 11.9% of the interviewees expected to have more allowance support and incentive policies for the VFP teams and the participants, if the BSM continues to operate.

## **4. Conclusions**

The present research showed that the BSM pilot in the Bach Ma National Park produced various achievements, failures and challenges. The BSM pilot has achieved some definite successes, including: (1) high support, demand and involvement by the local people during the BSM pilot-policy implementation; (2) improvement of the local people's awareness and practices in NTFP sustainable use and management; (3) increase of the local people's awareness and participation in forest protection; (4) improvement of natural-resource conservation in the co-management area during the BSM pilot. However, the process of the BSM implementation still faced a number of challenges, such as: (1) the complexity of NTFP harvest procedures; (2) the low local self-management (autonomy) in compliance with the BSM regulations; (3) the conflicts arisen between NTFPs users from village to village and between local traders and NTFP collectors in Thuong Nhat; (4) some inequities happened when implementation of the BSM pilot.

According to the local people's perspectives, the BSM pilot needed to be continued, because it would give more benefits and income to local people, provide long-term NTFPs exploitation and lead to better forest protection. Additionally, for better implementation of the BSM, it needed to pay more attention to the livelihood programs, to enhance the law enforcement and forest monitoring under a clear mechanism, to simplify the procedures of registration and application for NTFPs harvest and to secure more allowance support and incentive policies for the BSM

participants.

Furthermore, the research ascertained that the BSM implementation techniques and sustainability were considered as significant barriers to wide-spread adoption in the near future. As the case study in the Bach Ma National Park showed, it remained a challenge to be able to perfect the management system, to empower the BSM participants' capabilities and to create the autonomy of local communities to co-manage the SUF. Therefore, the BSM pilots need to be continued and adopted to well-managed SUFs under the MARD regulated guideline to have more assessment to develop the appropriate BSM policy for SUF co-management in the future.

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