ASSESSMENT THE IMPACT OF A NATURE RESOURCE MANAGEMENT PROJECT ON THE LOCAL LILIVEHOOD IN RURAL AREA

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Abstract

The study provides evaluation method assessing the impact of a natural resource management project on the target group and respective natural resource base. The study was conducted in Backan province to evaluate livelihood changes of target groups on selected project sites and key indicators identified. Livelihood changes were specifically related to the impact of a natural resource management project and separated from outside influences. The project's impact was proven to be of substantial support by the livelihood pathway approach, while common repetitive household questionnaires did not produce significant results. Moreover, the impact of 'development-and-conservation' schemes by an improved utilisation of non-timber forest products was demonstrated to be unsuccessful, but successful by project activities like provided on-farm activity support.

Keywords: *Impact assessment, Natural Resource Management, Livelihood.*

1. Introduction

With each passing year, more forests, wetlands, and species come under threat from escalating pressures of exponential increases in human populations and the inevitable associated development. Every year, billion of dollars are spent on so-called 'conservation-and-development' projects intended to mitigate those pressures [1]. Whereas eco-centric project approaches intent 'to protect those last precious few natural treasures' while attempting to 'satisfy the livelihood demands of the people who depend on the resources those treasures offer'; more ethno-centric approaches focus on improved management and utilisation of natural resources for an enhanced productivity by basically incorporating sustainability and resource protection as a basic requirement [3]. A balance between those trade-offs in the use of natural resources for conservation and development 'win-win' purposes often enough is hard to be determined as the critical interlinkages are rarely identified. It is of fundamental importance to identify and describe the impact of a natural resource management project along the livelihood pathway of a target group or community [4]. Only by the assessment of the target group's genuine motivation and development interests, and the impacts of project interventions on the specific livelihood pathway, it is

possible to determine those critical interlinkages of a specific conservation and development project. By that, the methods allow the identification of potential triggering points or recommendable adjustments within the active time of a project [6],[7].

The specific aim of the research was to test the method assessing the impact of a natural resource management project on the target group and respective natural resource base.

2. Method

Located in the Northeast region, due north of the capital Hanoi, Bac Kan is the only town of the province which is the capital of the province and is a municipality. The province covers an area of 4,859.4 square kilometres and as of 2019 it had a population of 313,905 people [2]. It is a mountainous terrain with rich natural resources of minerals and forests. It has numerous mountains, rivers and lakes which are very scenic. Ba Be National Park and Ba Be Lake lie within its borders.

With the success of the pilot project on allocating land and forests to the community for management, experts believe that the "community forest" is really the good mechanism for sustainable forest management. Bac Kan province proves to be one of the first localities applying the model on a trial basis, which has been allocating land and forests to local residents for management for the last few years. Under the mechanism, local authorities assign the task of managing and protecting the land and forests to local residents and pay for the management. The model not only has helped residents settle down in their land, heighten the awareness of protecting the land resources, but also created a premise for the sustainable forest management.

In Bac Kan, the model has been applied in the communes of Ban Thi and Xuan Lac in Cho Don district, and four hamlets belonging to Van Minh commune of Na Ri district. In Ban Thi and Xuan Lac, where the model of community forest management developed by CARE has been implemented, and nine teams in charge of managing and protecting forests have been established [5]. The members of the teams attended the training courses to improve their capability, and they were introduced how to build up the action plans and operation regulations (the regulations were recognized by the district authorities).

After three years of implementing the mechanism, in 2006-2009, under the project, nearly 1000 hectares of forests have been allocated to local residents, who will protect and cultivate for five years. Meanwhile, in Van Minh and Lang San communes, under the project funded by AusAID for three years 2007-2010, four hamlets could build up the models of "nursery gardens" at hamlet and village levels. The most outstanding outcome of the project is that the illegal exploitation has been eased significantly. The satisfactory result has been explained by the reasonable management mechanism, under which, the effectiveness in forest management is always associated with the benefits of managers and protectors.

Especially, the Na Ri district's authorities have granted local residents the certificates on the land use right on the forest area put under their management. A forest fund management with the initial capital of 13 million dong has also been set up in the communes, which have been used to pay for the forest patrolling, equipment purchases and to lend to local residents at preferential interest rates.

In 2020, the research team organised a comprehensive questionnaire for assessing baseline information within 3 villages in Van Minh commune, Na Ri district, aiming on two goals: Firstly, to enable the comparison of the current situation to the baseline information, secondly, to gain more specific data about socio-economic backgrounds. The questionnaire comprised 30 structured questions on the household, income and employment situation, the use of natural resources and awareness of the conservation status relating to nature resource management activities. This questionnaire was carried out in the same project and control villages like the previously described indicator assessments.

3. Results

The quantitative assessment with 80 households within three villages (two 'treatment' and one 'control') in Na Ri District were assessed for this study as described in Table 1. The incidence of poverty is determined by the Vietnamese Government, while a self-evaluation must be considered with more care as 'poverty' underlies to a certain extend individual and subjectively rated parameters. According to Table 1, the control village comprises relatively more 'poor' households (54.2 %) than the project villages (44.6 %). As the study aims on improving livelihood, this could be taken as an indication of project success. In this light, Table 1 are reflecting the downside of an evaluation by quantitative data, especially in the situation of evaluating only a small subpopulation within the formerly evaluated households.

Table 1: Characteristics of study households involved

	Treatment	Control	Total
Number of villages	2	1	3
Number of households (hh)	56	24	80
Number of ethnic minority households	13	7	20
Number of poor households	24	14	38
Ethnic minority hh as % of total households	46.4	41.7	44.1
Poor households as % of total households	44.6	54.2	49.4

In fact, neither is a statement on an improvement or worsening of the income situation acceptable, nor is a change to be related towards project activities. On top of that, changes on the monetary income or the living conditions are hard to be recognised within several years of project activity. Table 2 reflects the impact of the establishment of the nature resource management towards related changes on the monetary income and the living

conditions. Table 3 illustrates the sources of income as recorded by the respective inventories.

Table 2: Impact of the establishment of the resource management project on the monetary income and the living conditions of assessed households within Na Ri District in 2020

	Income (%)		Living conditions (%)	
	Treatment	**Control**	**Treatment**	**Control**
Increased	23.2	12.5	41.1	29.2
Unchanged	48.2	62.5	39.3	45.8
Decreased	28.6	25.0	19.6	25.0

Table 3: Sources of income (VND per year) in the project villages (2020)

Sources of income	**Khuoi Tuc (treatment) Million VND**	**%**	**Na Deng (treatment) Million VND**	**%**	**Na Muc (control) Million VND**	**%**
Agricultural activities	2.36	6.7	0.71	2.9	2.28	8.1
Forestry-related activities	23.04	65.4	14.92	61.1	12.54	44.5
Employment	7.60	21.7	6.62	27.1	9.47	33.6
Other sources	2.17	6.2	2.14	8.9	3.89	13.8
Average total	35.17	100	24.38	100	28.17	100
SD	13.84		4.29		4.72	

Here again, the results of the study questionnaire do not reflect an clear tendency: While the first project village (Khuoi Tuc) does have an average income clearly above the district's average of 2020, the second project village (Na Deng) reveals an average income of below that 2020 average. On top of that, the average income for Khuoi Tuc is even smaller than the non-project village's (Na Muc). Again, in this line the quantitative data alone are not suitable for indicating an improvement of the income conditions between 2018 and 2020. Nevertheless, it must be emphasised again that this result may as well be based on the fact that the data can actually not be rated as being representative for comparing an average of 421 villages (Survey in 2018) with a small subpopulation in 2020.

Figure 1 pictures the income sources by forest products and forest-related activities in 2020 and 2018: Here again, the indication of a more diverse forest product utilisation could reflect an impact of the resource management project activities. But it can not explain why the project villages are utilising more different forest products than recorded in 2018.

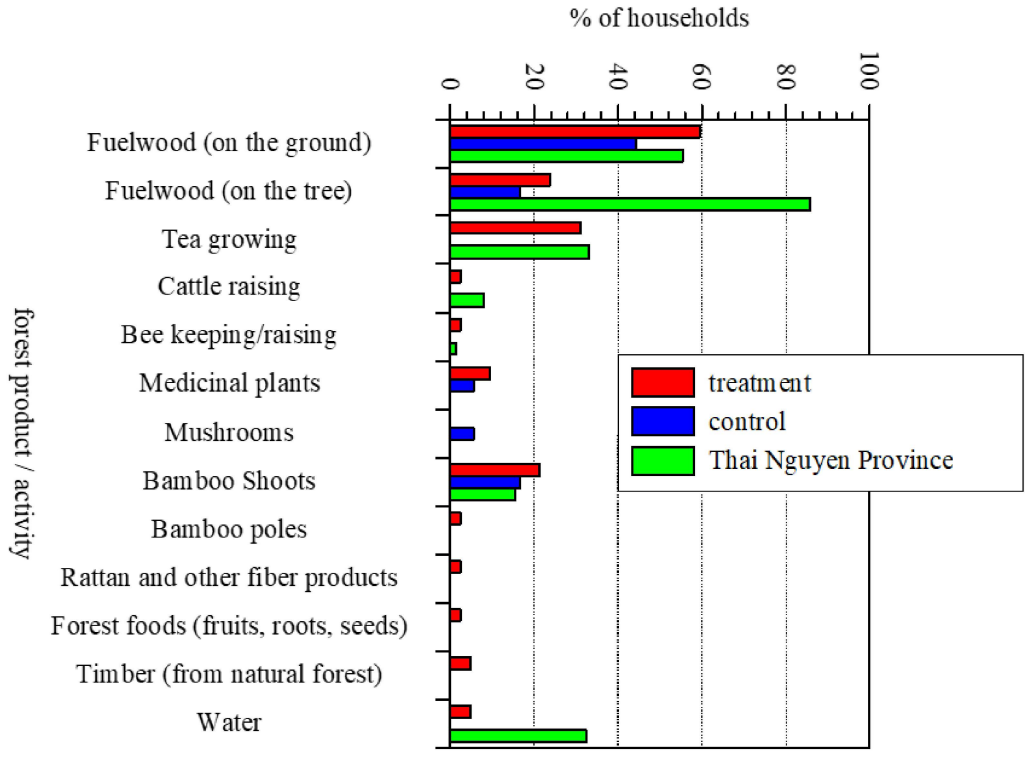

Figure 1: *Income sources by forest products and forest-related activities in 2020 (treatment and control villages) and in 2018*

Table 4 indicates the different expectations of project and non-project village and communities' environmental situation in 10 years from 2010. Those answers reflect the awareness-rising activities of the resource management project: The project villages are obviously expecting an improvement of the conditions due to the resource management project, as well as a worsening of the communities' environmental conditions due to environmental pollution and over-utilisation of natural resources (the reasons for the expected changes were assessed but are not illustrated in the Table).

Table 4: Households awareness of resource management project condition and environmental condition in 10 years (%).

	Resource management project condition in 10 years		Environmental condition within the community in 10 years	
	Treatment	**Control**	**Treatment**	**Control**
Better off	60.7	29.2	16.1	29.2
No change	14.3	20.8	12.5	25
Worse off	17.9	33.3	67.9	45.8
No idea	7.1	16.7	3.5	0

4. Discussion and Conclusion

From these results, it is obvious that an evaluation by quantitative data (a repetition

of the household survey carried out in 2018) did not produce comprehensible and convincing figures on the impact of the the resource management project on the livelihood of the target group. Nevertheless, it must be considered that this is based on the specific evaluation procedure and shall not be used for valuing the approach and success of a the resource management project like project in Bac Kan.

In addition to that, the pilot study did demonstrate the impact of 'conservation-and-development' approaches, like the improvement in non-timber forest products business, as a model based on the labour opportunity costs and forest product value assessed within the study area. According to the specific conditions within the study area, it was proven that such non-timber forest products business improvement did rather harm than help forest-dependent households as well as the conservation aims. Here again, the resource management project approach of improving on-farm business possibilities instead off, was proven to be beneficial to the target group of that specific activity as well as to the conservation aims of the project.

Summarising those results, it can be stated that the impact of the resource management project is not easily to be assessed by conventional methods within a short project term, but can be judged by the 'livelihood pathway approach' as being fairly successful. More detailed investigations in the same line, especially in a larger extend within the the resource management project project area are recommended. Further field studies are planned in 2021 and 2022.

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5. References

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