

ASSESSMENT OF LIVELIHOOD OPTIONS IN SUPPORT OF COMMUNITY BASED CONSERVATION IN THE SOLOMON ISLANDS

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Abstract — Community-based resource management (CBRM) where traditional and indigenous knowledge is combined with science to maintain resources has been widely used for inshore fisheries in the Pacific region. In Solomon Islands, CBRM is recognized as a strategy to enhance food security, adapt to climate change and conserve threatened species. However, even with its national recognition, rural communities are still faced with economic and social challenges while trying to manage their resources. Per se, it is vital that while communities are engaging in resource management, they should also be involved in sustainable supplementary livelihood activities that will sustain their living. With that notion, a study was conducted with the Sirubai Voko Tribal Association (SVTA) members at Pusiju village in South East Vella La Vella in Western Solomon Islands to assess what is working well for them and what is not so as to identify livelihood options that would be more appropriate to support their forest conservation initiative. The SWOT analysis protocol, pairwise ranking and the SLOPIC tools were used and six out of 11 livelihood options were considered as the most suitable for SVTA communities. From the study, we recommend that selection of livelihood options must be realistic based on what is available in the community in lieu of external sources. Thus, although the resources required for successful implementation of livelihood options may vary, the major goal is for the livelihood options considered to constantly support conservation into the future without failing.

Keywords — **Community-based organization, conservation, diagnostic analysis, Solomon Islands, supplementary livelihood options, sustainability**

INTRODUCTION

Throughout the Pacific region, coastal communities are experiencing dwindling supplies of natural resources exacerbated by both direct and indirect anthropogenic effects. In Solomon Islands, population growth, changing climatic conditions and unsustainable developments such as logging, agricultural activities, and human settlements among others pose a direct threat to both terrestrial and marine resources. Coupled with the challenges of limited access to financial resources, market, political instability, global economic downturn, and the recent COVID-19 pandemic, these hurdles create a huge challenge to the health and livelihood of rural communities. According to Solomon Islands National Statistics Office and World Bank, (2017) from a survey conducted in 2012–2013, 12.7% of the country's population live below the basic needs poverty line. This however varies accordingly for each province depending on the population size and poverty rate.

Successive governments over the years have developed centralized state control or top-down coastal protection and management approaches that are merely politicized and most often do not meet the requirements of rural communities. Consequently, the rural communities often have minimal engagement and support from the central government which also contributes to a number of failed projects in the past. Many commercial fish stocks, and terrestrial flora and fauna continued to dwindle in the islands while the management policies are collecting dust on office shelves. In most Pacific Island countries, the top-down resource management efforts and livelihood related approaches are too costly both financially and in terms of scarce human resources to be of much practical value for broad-scale national application (Ram-Bidesi et al., 2011). Incompatibility of inherited government systems with the social and geographical realities of some

independent Pacific island countries is also an issue (Govan et al., 2009). For Solomon Islands in particular, the diversity of cultures and remote islands increase the difficulty of developing a generic top-down approach that will be applicable for all the rural communities in the country.

A move from top-down to a locally based management approach that is more adaptive would be more suitable for rural Solomon Islands communities. While the emphasis is for the management to be driven by communities, most often communities collaborate with partner organizations and/or government representatives for technical support. This approach corroborates a study by Wheeler & Root-Bernstein (2020) which emphasized on co-management that leads to informed decision making when indigenous and traditional knowledge are combined with science in the process. Currently in the Pacific region, CBRM tends to dominate inshore fisheries management strategies. Specifically, for Solomon Islands, CBRM is recognized as a strategy that is adopted to improve food security, adapt to climate change, and conserve threatened species by facilitating rural participation and enabling local people to make their own plans for management of resources (Sukulu et al., 2016). With the recent Ecosystem Approach to Fisheries Management (EAFM), CBRM now takes a more holistic ridges to reefs approach which builds on customary land and marine tenure, traditional ecological knowledge, and existing leadership structures to maintain resources. The ridges to reefs approach recognizes that human activities occurring on the land has intense impact on streams, rivers and near shore areas. Nevertheless, even with this more holistic approach, communities are still faced with economic challenges in light of increasing population, food insecurity, higher food prices, loss of foreign currency from imports, changes of culture due to influence from inter marriage in the societies, and pressure

from destructive developments that seduce people with high incentives.

Some partner organizations advocate that communities should be incentivized with alternative livelihoods to effectively manage their resources, however the sustainability of such an approach will depend entirely on the affiliation of the partner organization to the project (Govan et al., 2009; O'Garra, 2007). Therefore, unless community driven sustainable supplementary livelihood options are in place, exploitation and dwindling of resources will continue due to limited economic activities available for communities to have an adequate lifestyle. As articulated by Blythe et al. (2014); Collins et al. (2009); Finkbeiner (2015); Hanh & Boonstra (2018); and Mills et al. (2017), sustainable livelihood options can improve living standards of rural households and empower their capability to face uncertainties. It is therefore important that while communities are actively engaged in resource management, they should also participate in sustainable supplementary livelihood activities that would help improve their wellbeing.

In this article, we present an investigation of how livelihood options are assessed in a four days' interactive workshop with Sirubai Voko Tribal Association (SVTA) communities using participatory diagnostic tools. SVTA is a community based organization (CBO) located in South East Vella La Vella in Western Solomon Islands. It is one of the few CBOs that firmly stand against unsustainable developments such as logging to effectively conserve its rainforest. To date, the rain forest has been under protection for almost a decade with no human disturbance. In the analysis process, helpful and harmful factors in the communities were identified using Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis followed by assessment of six existing livelihood options using the Supplementary Livelihood Options for Pacific Island Communities

(SLOPIC) tool. We draw on this investigation to explore how supplementary livelihood options would be supported by identifying what makes a livelihood option worth undertaking or rejecting (O'Garra, 2007). This simple process can be replicated to other contemporary Pacific Island communities which are also challenged with pressures of resource degradation, climate change and with limited options to sustain their livelihoods.

MATERIALS AND METHODS

SWOT Analysis

The diagnosis exercise was conducted in January, 2021 by 42 individuals from Pusiju and Valapata communities who were selected based on their affiliation to SVTA. The respondents were separated into three groups according to men, women and youths to identify factors that are helpful and/or harmful to their communities following the SWOT analysis protocol described by (Sarsby, 2012). We conducted the SWOT analysis to assess the communities' strengths, weaknesses, opportunities and threats which is very important to help them make the most of what they have to their best advantage, and to reduce the chances of failure by guiding them to understand what is lacking, and eliminating potential hazards that may likely jeopardize their development plans. Information from the SWOT analysis was then used to develop the following action strategies: Growth strategies, internal development strategies, External development strategies, and Survival strategies. These generic strategies should be established before the two communities plan to seriously engage in supplementary livelihood activities.

Pairwise Ranking

Following the initial diagnosis above, the three groups ranked the threats from the SWOT to help facilitate development of the action strategies. Here we used the pairwise

ranking tool described by Govan et al. (2008) to compare threats in pairs to choose which is the most critical over the other. The most critical threats were identified by each group to help us match and convert the harmful factors from the SWOT into helpful factors. Thus, the pairwise ranking will help to direct where SVTA management should focus their efforts and time to prevent the threats identified from undermining their progress.

Supplementary Livelihood Options for Pacific Island Communities (SLOPIC)

A total of 11 livelihood options were identified but only six were considered for their relevance to the SVTA communities. The assessment was conducted following the protocol described by Govan et al. (2008). Basically, the SLOPIC tool is used to assess supplementary livelihood options that are appropriate and sustainable for communities. While it is seen as a guide towards success, the critical perception advocated in this tool is building on what the community have and not so much about depending on external sources. According to O'Garra (2007), most projects that are ongoing without relying on subsidies are those that have involved baseline studies and continuous monitoring all throughout. As highlighted by Govan (2011) in the SLOPIC guide, this tool is used to assist community people choose different livelihood options most of which maybe existing options and assessing these options to see how promising they are for their communities. A promising livelihood option is one that continues into the future coping with changes and disasters and without losing the things that make the livelihood possible.

Livelihood Options

The assessment for sustainability of supplementary livelihood options was conducted by analyzing for the following resources: Natural Resources, Equipment, People and skills, Market and Transport, Finances, and Support and Information

(Govan et al. 2008).

RESULTS AND DISCUSSION

SWOT Analysis and Pairwise Ranking

We choose to analyze only the most critical threats based on how they are ranked using the pairwise ranking tool, and the common opportunities, weaknesses and strengths. Outlined in figure 1 are the generic strategies formulated from the diagnosis exercise.

SLOPIC Exercise

The six options identified in the SLOPIC exercise include betel nut, canteen, banana, piggery, kava and fishing. These were selected based on their suitability in terms of the availability of the resources that will make them work. We assessed to find out the resources that each livelihood option being considered will rely on to be successful. Figure 2 shows some important resources that the livelihood options being assessed will require to succeed. Most of the needs identified from the assessment are also covered under the four generic strategies shown in Figure 1.

The SWOT analysis indicated a number of helpful factors which in principle form the basis of the success of SVTA and previous community projects implemented by Pusiji and Valapata communities. Cooperation and/or oneness, good leadership, information sharing, and consultation were found among others to be the key strengths of the two communities. These could be so because every individual in Pusiji and Valapata communities are closely related through common ancestry and inheritance. A study by Ross et al. (2019) corroborated with these findings by highlighting that community participation and collaboration is an important element in supporting management and sustainability in many communities of the Asia-Pacific region.

On the contrary, community weaknesses diagnosed during the exercise include issues of weak leadership, lack of communication, lack of education, and laziness. Weak leadership in this context include certain SVTA leaders who do not get feedback to improve in contrast to those others who listen to their community members, delegate work, communicate effectively and most importantly strive for improvement. Weaknesses usually lead to poor management that often affect the demand for a desired resource and weaken the cohesiveness of a community (Singleton, 2000). Such situations may pose challenges to management in rural Solomon Islands communities, yet some of these associated weaknesses can be converted into strengths to expedite development of internal factors that will help the community to progress. As highlighted in the internal development strategies in Figure 1, when weaknesses are converted into strengths, a number of new opportunities will open up for the community to improve (Sarsby, 2012). Moreover, the communities can move forward with internal developments by capitalizing on the concept of “social capital” as proposed by Malherbe et. al. (2020). Social capital in this context basically involves the norms and networks which allow people to work together towards common goals. The key attributes of social capital are oneness/social cohesion and good leadership which for the case of SVTA are key strengths. Thus, according to Gutiérrez et al. (2011) and Jupiter et. al. (2017) these attributes coupled with effective implementation and community ownership of the process will determine success in resource management.

In rural communities, deliberation on opportunities is sometimes overrated and often raise a lot of expectations. Nevertheless, for SVTA; the most important opportunities identified during the analysis were: access to new technology, assets and information; support from the national government; capacity building in terms

of human resources and infrastructure; higher education; and sport and music. These can be successfully matched with existing strengths previously highlighted to develop growth strategies that would lead to actualization and progress in the community. Essentially, progress will only happen when the community do more on what it is good at and invest on those factors that enhance its capability (Sarsby, 2012). Given the technical capacity of SVTA to lead development initiatives, it is auspicious that enthusiastic individuals especially youths in both Pusiju and Valapata communities can develop higher in various social activities. When our team visited the two communities, it was obvious that SVTA is investing more in education and sports which are crucial for their progress. Actually social activities such as sports help to promote strong cohesiveness by increasing self-esteem, community identity, and unity that can advance other developments in the community (Skinner et al., 2008).

Rating the threats identified from the SWOT analysis using a pairwise ranking tool; land dispute, high illiteracy, poor leadership, and poor management stood out as the most critical threats that SVTA management must prevent at all costs. Land is a very important natural resource that all livelihood options will depend on to actually operate (Govan, 2009). In Solomon Islands, land is a tribal inheritance however, this descent-based land ownership hindered quite a number of developments in the past when disagreements arose from unfair distribution of livelihood assets (Hviding, 1993). To prevent land dispute, SVTA must be proactive to establish cordial working relationships with sister tribes as indicated in the survival strategies in Figure 1. Correspondingly, rural communities like Pusiju and Valapata will move away from threats on poor leadership and poor management when their leaders are empowered with the appropriate capacity (Warner, 2000).

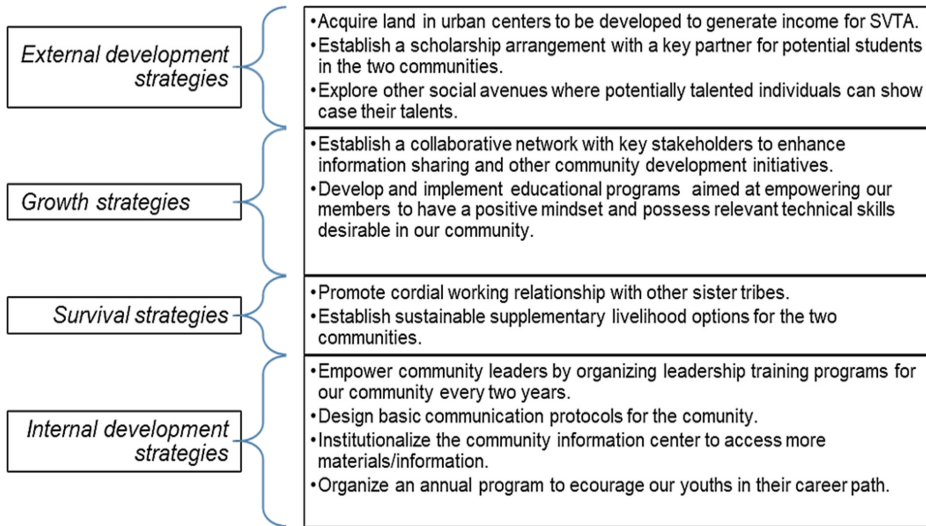


Fig. 1. Four generic strategies formulated from the diagnosis exercise.

Besides the SWOT analysis above, quite a number of requirements were identified from the assessment of livelihood options using the SLOPIC tool (Figure 2).

The most common requirements highlighted were basically; sea transport, farming/fishing equipment and tools, communication, relevant information, capacity building and establishment of a sustainable trust fund. While, the latter is

paramount for the sustainability of the rest of the other requirements, yet information and capacity building are equally important to ensure technical knowledge and skill is available in the community (Warner, 2000).

Although it is important to specify the resources required for each livelihood option, the usefulness of a resource to a livelihood option also depends on the personal judgment of whoever is doing the assessment. Often respondents tend to

Betel nut	Banana	Kava	Canteen	Piggery	Fishing
<ul style="list-style-type: none"> • Sustainable trust fund • Communication device for marketing • Boat & OBM • Financial management training 	<ul style="list-style-type: none"> • Raise funds to buy more tools • Agriculture training workshop on farming 	<ul style="list-style-type: none"> • Chemical for pest control • Acquire right tools • Boat & OBM • Start-up capital • Information on kava 	<ul style="list-style-type: none"> • Permanent house • Start up capital • Boat & OBM • Business management training • Financial management training • Relevant information 	<ul style="list-style-type: none"> • Permanent fence • Sustainable trust fund • Start-up capital • Boat & OBM • Training on animal husbandry 	<ul style="list-style-type: none"> • Information on fisheries • Boat & OBM • Local skilled people • Deep freezer • Start-up capital • Communication device

Fig. 2. Resources identified during the assessment that will make the livelihood options more successful.

predetermine the suitability of certain livelihood activities prior to assessment which may result in turning a blind eye to important resources that should be involved for the livelihood option to be feasible. Despite minor variations in the assessment process, the important prerequisite for sustainability is that communities build on what they have instead of depending entirely on external sources. Apparently, some of the requirements must be acquired elsewhere outside of the community, however, the generic strategies in figure 1 should offer a useful guide to focus only on what is more appropriate for the community. Thus, livelihood options which are community-led, and builds on community innovations will very likely to be successful.

For the case of SVTA, assessing for sustainable supplementary livelihood options is very important as they had already been bombarded twice in the past 10 years to give in to logging. With the recognition of appropriate livelihood options from this study, SVTA members can actively participate in these livelihood activities to improve their wellbeing while at the same time prevent external pressures that may lure them to destabilize their firm confidence in forest conservation. Hence in order to progress further, SVTA must capitalize on its key strengths which corroborates to Albert et al. (2010), who also emphasized that community support and leadership are key factors for success in resource management.

Specifically, from the assessment; Betel nut, Banana and Kava indisputably meet most of the required resources including natural resources, equipment, people and skills, market and transport, and support and information although they will require some reasonable funds to set-up. For Canteen, Piggery and Fishing; while most of the required resources such natural resources, people and skills and market may be available, they will require some initial capital to start and to actually operate.

Even with environmental challenges cause by changing climatic conditions, banana is a very sustainable livelihood option for SVTA communities because they have two (2) types: the first one which is quickly harvested (meqora naka) is very suitable for bigger households and the other which takes longer to be harvested (qole naka) is farmed mainly for food security. Unlike banana, betel nut and kava are long term economic activities which normally take more than three years to be harvested however, comparatively, the financial benefit of kava is far better than all the other economic activities. Piggery and canteen will succeed when the requirements highlighted in figure 2 are fulfilled. Moreover, fishing is a sustainable livelihood option that can continue as part of the day to day activities of the community. Fishing is not only done for income generation, but it also contributes to food security which is essential for future generations.

Regardless of the different costs incurred for each livelihood option, the important goal is sustainability. As indicated by O'Garra (2007), the key indicator of success is that the livelihood activity is able to persist long after subsidies and/or external funding organizations are utilized. Although assessment of livelihood options to identify the most appropriate option is vital, it is also important to diversify different options as a form of self-insurance so that when one option fails, the community can still have other options available that are still up and running (Haider et al., 2018). All in all, the requirements highlighted above are important for the success and sustainability of these different livelihood options.

CONCLUSIONS

A management that combines traditional and indigenous knowledge to modern-day science is very likely to succeed. This is possible for contemporary communities in the South Pacific region because such an approach will reflect local knowledge

and help the community people to make plans that build essentially on what they have. From the study, it was obvious that despite the weaknesses identified during the diagnosis workshop, the development strategies formulated from the strengths and opportunities will help SVTA management and the member communities to overcome their weaknesses and actually progress. Per se, the most crucial strategies that may leverage sustainability in any conservation program in Pacific Island countries include; capacity building to enhance quality leadership and technical skills within the communities, collaboration and networking, and sustainable supplementary livelihood options. Implementation of the strategies will promote social cohesiveness, growth, development and effective management of natural resources. Despite threats such as land dispute, high illiteracy, poor leadership, and poor organization to resource management, we have seen that contemporary community based organizations like SVTA can build on their most important strengths and utilize every possible opportunity to easily move away from these threats. Addition to that, identifying the most appropriate supplementary livelihood options which are fitting for the communities is also very crucial.

It is therefore important that a community participatory approach such as CBRM is adopted to avoid being oblivious of the management challenges faced on the ground however, management also needs to be supplemented with appropriate livelihood activities to keep abreast of other needs in the community. Hence, we have chosen to use results from the diagnosis study to enhance actualization of the livelihoods activities being considered. Specifically, for SVTA communities we have concluded that betel nut, canteen, banana, piggyery, kava and fishing are the most appropriate livelihood activities that can work well to supplement their forest

conservation initiative. Moreover, we recommend that consideration of livelihood options for assessment must be based on real situations otherwise they may lack feasibility. Thus, despite any cost that can be incurred to start and/or operate the livelihood options, the important objective is that, the options chosen are realistic and sustainable.

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