Applying Systems Thinking to Integrate Sustainability in PPPs for Mini-grids: Bukuya Mini-Hydro Case Example

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Abstract

A key challenge in the electrification of rural communities using renewable energy mini-grids is to create a technical, business, and community solution which not only offers long-term sustainably, but also works to improve the skills and economic prosperity of the benefitting communities. This broad challenge is further complicated by the need to ensure the affordability of electricity, while at the same time lowering the demand for direct economic assistance such as subsidies needed to support mini-grids.
The opportunity of finding the many solutions to address this broad challenge is highlighted through the practical use of a systems thinking approach to improve the sustainability of the electricity supply, and the livelihoods of the impacted communities.

The development and implementation of the innovative Public Private Partnership (PPP) for the Bukuya renewable energy mini-grid in Fiji, is based on solutions derived from a systems thinking approach. The approach takes into account seven identified key system nodes of gender inclusive stakeholder engagement, electricity demand and affordability, electricity generation and distribution system, PPP business and financial model, increasing household income generation, governance & transparency, and capacity development. As well as four causal loops defined on the basis of consumer, community, national, and business social structures.

The highlighted solutions derived from the systems thinking approach can be used by small island developing states to improve affordable access to electricity in rural areas, and contributes to the sustainable development goals of Gender Equality (SDG-5), Clean and Affordable Energy (SDG-7), Decent Work and Economic Growth (SDG-8), and Reduce Inequalities (SDG-10).

Keywords: Systems Thinking, Public Private Partnerships, Renewable Energy, Mini-Grids, Mini-Hydro, Income Generating Activities

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Introduction

The challenge in implementing electrification in rural communities using renewable energy mini-grids is to create a technical, business, and community solution which not only offers long-term sustainably, but also works to improve the skills and economic prosperity of the benefitting communities. This challenge is further complicated by the need to ensure the affordability of electricity, the awareness needed to address community sensitivities and social dynamics, and to comply with laws and regulations.

The practical use of a systems thinking approach can improve the sustainability of not only electricity supply, but also the business model of the mini-grid, and the livelihoods of the benefitting communities. The sections below focus on the solutions derived from the use of the systems thinking approach in developing and implementing a Public Private Partnership (PPP) for a renewable energy mini-grid located in district of Ba, Fiji, which is the first known PPP in Fiji for providing small scale electricity services via a mini-grid.

Example of the systems thinking approach in rural electrification

Arnold and Wade define systems thinking as a "set of synergistic analytic skills used to improve the capability of identifying and understanding systems, predicting their behaviors, and devising modifications to them in order to produce desired effects. These skills work together as a system".[1] Rural electrification presents a complex set of challenges which are social, economic, and technical in nature, which in turn create a complex system. The thinking to devise sustainable solutions to this complex system (or system of systems), requires an equally complex and varying set of skills and knowledge. Borrowing from the idea of systems thinking as using a "set of synergistic analytic skills", as defined by Arnold and Wade above, we presume that the use of a single set of skills and knowledge, or a combination of several sets of skills and knowledge, is what is used to think about means for solutions, or groups of solutions, and this process can be defined by causal loops. As Haraldsson explains, a causal loop is "the effects of the last element influencing the input of the first element which results in a self-regulation of the whole system", also termed feedback.[2] Whereupon, causal loops address this relationship between variables (hereinafter referred to as nodes). Predicting both the influences upon, and the feedback from the relationship of the nodes, is the thinking for which the skills and knowledge are needed. In the context of explaining systems thinking as applied to rural electrification, nodes are defined as parts of the system, and causal loops are defined as social-economic structures of influences of the system.

[1] Ross Arnold and Jon Wade. "A Definition of Systems Thinking: A Systems Approach". *2015 Conference on Systems Engineering Research.* (Elsevier B.V.: 2015)

[2] Hördur Haraldsson. Introduction to Systems and Causal Loop Diagrams. (Lund University: 2000)

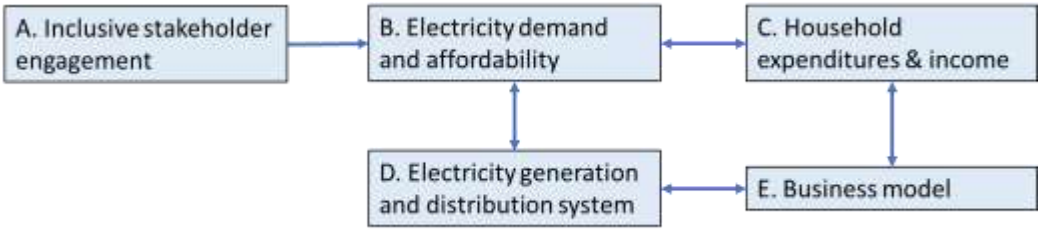


Figure 1: Rural electrification – Consumer & Business Causal Loop Diagram

Consider the example of a system for addressing tariff setting in rural electrification with a defined service area, depicted in the figure above. A causal loop considers the consumer and business social-economic structures determined through stakeholder engagement (node A) the various needs for electricity in the community, which influences the electricity demand (node B). The electricity demand then defines the electrical generation capacity (node D), the investment & operational cost of which changes the financial component of the business model (node E). This in turn changes household expenditures (node C), which may inversely impact electricity demand and affordability (node B), and this starts feedback in the causal loop until equilibrium or final decisions are made. Leading to a solution of supplying an affordable amount of electricity to consumers, which they are willing to pay, and leads to a finically viable business of the electricity service provider.

Introduction to the Bukuya Renewable Energy Mini-Grid and challenges faced

The Bukuya mini-hydro power station and mini-grid (hereinafter referred to as the "Bukuya Mini-grid") was originally designed and installed with a hydro generation capacity of 100 kW, and a 11 kV/1 kV distribution network in 1989. The Bukuya mini-grid supplies electricity to 224 customers (approx.. 1000 people) in the villages of Bukuya, Tabalei, and Natabuquto, which are located in the remote mountain highlands of Ba, Fiji. By 2015 the Bukuya mini-grid was out of commission for several years, whereupon consumers were using small diesel generators to supply electricity to households and for local services such as electricity for the primary school and nursing station.[3]

In 2015, the Fiji Renewable Energy Power Project (FREPP), which is funded by the Global Environment Fund (GEF) and implemented by the United National Development Programme (UNDP), in partnership with the Fiji Department of Energy (FDOE), selected the rehabilitation of the Bukuya mini-grid as a demonstration project. Whereupon, FREPP had the objective to remove barriers to the widespread and cost-effective use of grid-based renewable energy supply via commercially viable renewable energy technologies. FREPP and FDOE supported the Bukuya mini-grid's physical rehabilitation and provided technical assistance for establishing an operational PPP framework, which is in line with several recommendations for the use of capital subsidies[4], and establishing a PPP model

[3] Douglas Marett. *Baseline setting at the Bukuya Micro-Hydro Power Station. Demonstration Project Baseline for Fiji Renewable Energy Power Generation Project (FREPP)*. (Holstebro, Denmark: Grue & Hornstrup A/S, 2015).

[4] ITP. Proposals for Renewable Energy Support Mechanisms. (Suva, Fiji: UNDP, 2014), 25

for renewable energy.[5] Several high level challenges were recognized at the start of supporting the Bukuya mini-grid and community, as well as during the process of supporting these efforts, these challenges include the following:

- The desire to increase household income generation through the use of renewable energy, while improving the lives of women, and considering that as SPREP-UNDP points out "the provision of electrification is not always sufficient to enhance income generation in rural Pacific Island communities";[6]
- Lack of reliable data on household electricity consumption, and consumers use of energy efficient appliance and practices;
- The need for a reliable system of revenue collection which is directly linked to the individual consumers consumption of electricity;
- The need for timely and qualified maintenance of the electricity generation and distribution systems;
- The need for an effective business model and corporate / regulatory structure for a mini-grid to supply sustainable electricity services, which can be duplicated in Fiji;
- The need for retained knowhow at the levels of the community, and the government, for the PPP business model and operation of mini-grids.

Solutions derived through system thinking in rehabilitating the Bukuya mini-gird and implementing the PPP framework

During the process of developing and implementing the rehabilitation of the Bukuya mini-gird and PPP model, seven nodes and four causal loops types were identified, which combined created a general system used to define solutions to the challenges faced. Challenges can be defined by specific systems of nodes and causal loops, however this level of detail is not provided in this article for each challenge. What is presented are nodes and the major loops types involved in both the decision-making process and the solutions derived during the development and implementation efforts.

[5] Douglas Marett and Marc Marr. Capacity Needs Assessment for RE-based power generation in Fiji. (Suva, Fiji: Government of Fiji, Department of Energy and United Nations Development Programme, 2016).

[6] SPREP-UNDP. Recommended Proactive Strategic Barrier Removal Approach (Apia, Samoa: Secretariat of the Pacific Regional Environment Programme, 2012)

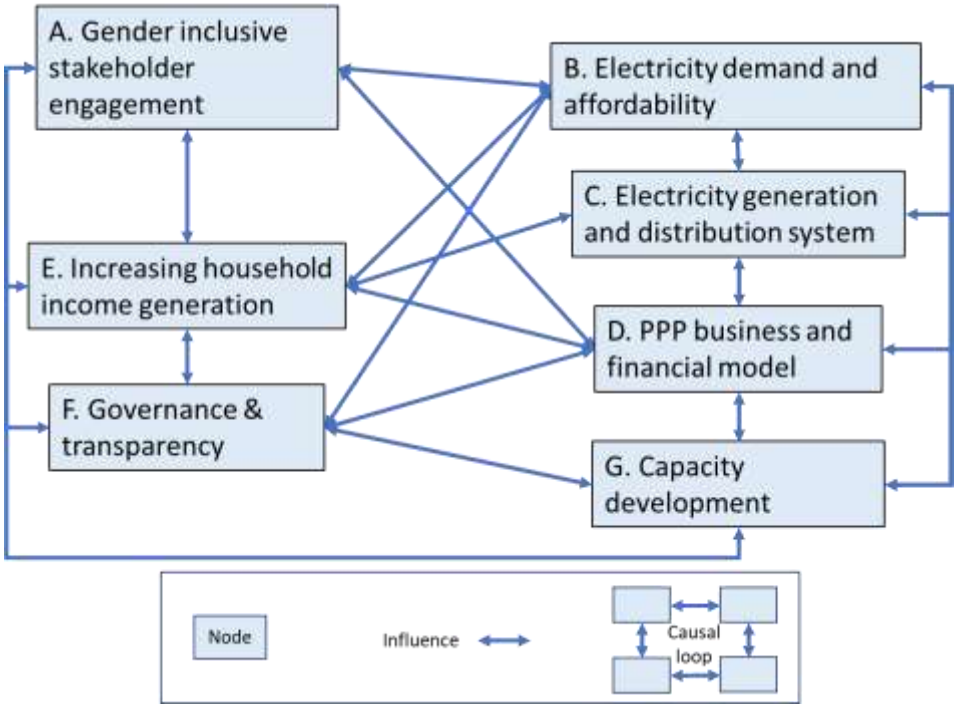


Figure 2: Identified Major Nodes and Potential Influences

The figure above depicts seven system nodes which were identified while implementing the rehabilitation of the Bukuya mini-grid and PPP framework, as well as the matrix of possible influences between them (e.g. systems). The seven system nodes are:

A. Gender inclusive stakeholder engagement
B. Electricity demand and affordability,
C. Electricity generation and distribution system,
D. PPP business and financial models,
E. Increasing household income generation,
F. Governance & transparency, and
G. Capacity development.

It is noted that not all of the nodes were identified at the start of the Bukuya mini-grid efforts, for example the node of governance & transparence was identified after several National and Business causal loops identified it as a major component of the PPP framework which influenced and changed other nodes.

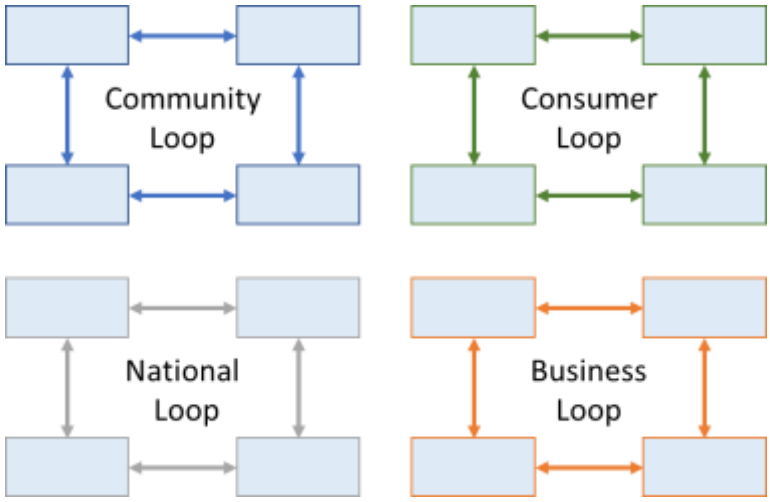


Figure 3: Identified Major Causal Loop Types

The figure above depicts the four major causal loops, which are defined based on the identified social-economic structures of influences in the rehabilitation of the Bukuya Mini-grid and PPP framework, as follows:

- The Community Loop focuses on the influences which relate to the community as a whole, such as pathways to reach consensus based on Fijian tradition and culture.
- The Consumer Loop focuses on the influences and behavior of households, institutions, and businesses connected to the mini-grid.
- The National Loop address how central government practices and regulation influence stakeholders and local economy.
- Finally, the Business Loop focuses on the influences which relate to the business model and operation of the mini-grid.

In his book titled *Systems Thinking for Social Change*, the author Mr. David Peter Stroh calls for alignment of stakeholder aspirations through a 4-step process using the causal loop approach. The first step is to "understand that there are pay-offs to the existing system" (e.g. a case for maintaining the status quo and why people are reluctant to initiate change due to factors such as financial investment, and no-tangible issues such as the discomfort of learning new skills). The second step is to "compare the case of status quo with the case for change", and this includes the benefits of changing and the costs of not changing. Next Mr. Stroh recommends to "create solutions that serve both, long-term and short-term interests, or to make a trade-off recognizing the meaningful change can often require letting something go". Here it is noted that the unwillingness to let go of benefits to the status quo is often the greatest obstacle to change. Finally, Mr. Stroh calls for supporting people to "make an explicit choice" by weakening the case for status quo and strengthening the case for change.[7]

[7] David Peter Stroh. *Systems Thinking for Social Change*. (White River Junction, USA: Chelsea Green Publishing, 2015).

Mr. Stroh's four step process can be used in each individually defined system and iteration of a causal loop, noting that even the different changes caused in one causal loop may influence the change in a different causal loop (e.g. another system).

In the discussion below each of the seven nodes are described in the context of the Bukuya mini-grid efforts, and solutions or decisions for the identified challenge relating to that node are presented, including the influencing causal loops types and other influencing nodes.

Node A: Gender inclusive stakeholder engagement

Essential to the long-term success and sustainability of the Bukuya mini-grid was addressing the all challenges through gender inclusive engagement with two major groups of stakeholders. The first group consisted of national level stakeholders from various government agencies & departments, independent commissions, and development partners who hold regulatory and support responsibilities for the energy sector and for private / cooperative companies. Where the second group consisted of specific community stakeholders including indigenous governance "Mataqali" representatives, village representatives (e.g. elders, youth, women, and men), the school, and the Bukuya Electricity Cooperative (the asset owner). Stakeholder groups were engaged during twelve separate sessions, either on-site or in government offices. The on-site stakeholder meetings were held with specific stakeholders and with the community in mixed stakeholder meetings, and national level stakeholders were present in all on-site stakeholder meetings.

Gender inclusion in the mixed stakeholder meetings was ensured through direct contact and questions targeted at women in the meetings, allowing them to respond and provide specific inputs, in a minority of cases in small groups or individually. It is recognized with the mixed stakeholder meeting approach, and even in small groups or individually, that women may not entirely be free to discuss issues important to them due to social norms, traditional roles, and/or seniority / community status.

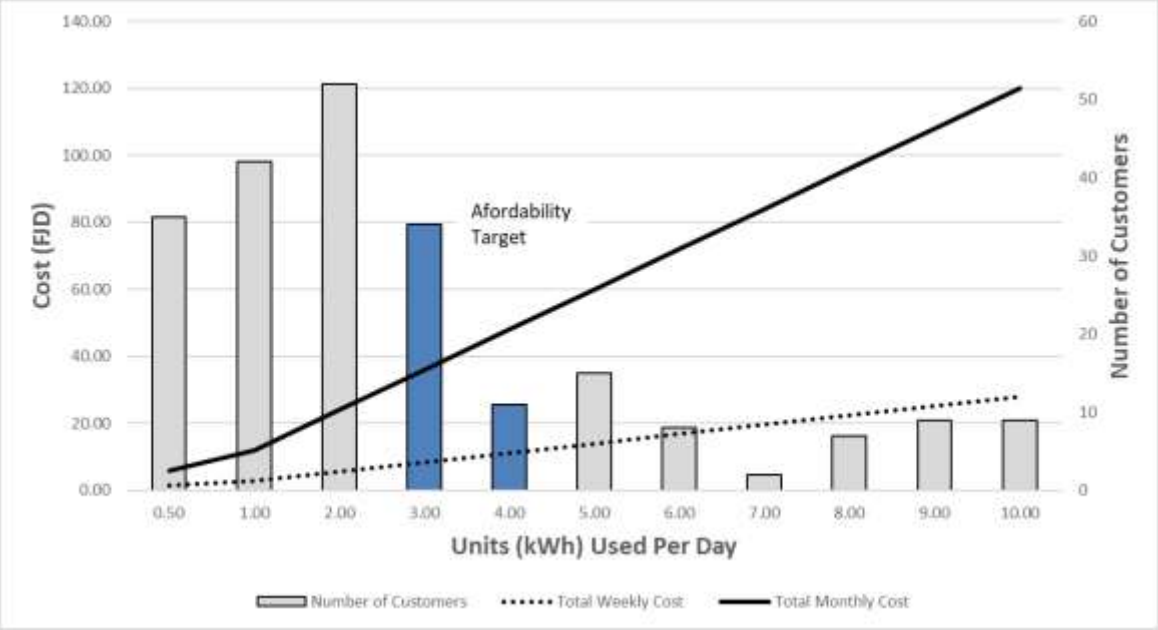
Community and Consumer causal loops involving stakeholder engagement (node A) identified several solutions for the community to strengthen gender inclusion. These solutions influenced or were influenced by increasing household income generation (node E), electricity demand and affordability (node B), and capacity development (node G). Several of these solutions included, but are not limited to:

- The inclusion of specific income generating activities which will have direct impact on improving the livelihood of women (which will free up more productive time for women, lower household expenditures, or increase household income),
- Highlighted the preferred traditional role of women in handling finances, thus leading to the Special Purpose Company (SPC) hiring women to act as purchasing vendors and the SPC financial accounts manager.
- Identified high electricity demand appliances, and mechanisms for dissemination of information to households on the use of energy efficient appliances and behavior.

Node B: Electricity demand and affordability

Electricity demand and its affordability (associated to the willingness to pay) are central components to the sustainability of a mini-grid system in rural communities, insofar that the combination of the electricity tariff and household consumption should not exceed the ability and willingness of households to pay for the electricity. In addition, the affordability of electricity will impact electricity demand, along with other issues such as the efficiency of appliances and behavior.

The Community, Consumer, and Business causal loops allowed for several means for addressing challenges in estimating the future demand of electricity and affordability, based on stakeholder engagement (node A), costs defined in PPP business and financial model (node D), and the electricity generation and distribution system (node C). At the start of efforts, records from 2005 which was before the shutdown of the mini-hydro power station, showed the average demand by household was 2.9 kWh per day, at which point in 2005 consumers were paying a minimal monthly fee per household (Bukuya Cooperative 2005). In 2015, when the mini-hydro power station was not operating, a demand survey was completed based on the inventory of appliances on a sample of 12% of the consumers, consisting of 23 households, the heath center, and teachers quarters. The results of this survey indicated an average potential demand by household of 3.3 kWh per day, excluding distribution losses.[8] Similar experience with other rural electrification mini-grids shows that there can be major differences in estimated and actual electricity demand, such as errors highlighted by Blodgett et. al. for mini-grids in Kenya.[9]



[8] Douglas Marett and Marc Marr. *Report on income generating activities and tariff structure (v1.2)*. (Holstebro, Denmark: Grue & Hornstrup A/S, 2015).

[9] Courtney Blodgett, Peter Dauenhauer, Henry Louie, and Lauren Kickham. "Accuracy of energy-use surveys in predicting rural mini-grid user consumption." (*Energy for Sustainable Development*. Vol. 14, December 2017), 88-105.

Figure 4 – Estimated Customer Daily Consumption and Costs in 2018

To address the challenges of greater accuracy of electricity demand, the sustainably of the financial model, and affordability for consumers, the causal loops lead to the following decisions:

- To install prepaid metering as part of the rehabilitation of the distribution grid, which gives both the operating company and individual consumers internet based access to consumption and cost data. After the commissioning of the prepaid metering in late 2017, more accurate and individual energy consumption was available and a subsequent analysis was performed, as shown in the figure above, leading to an average demand by household of 3.0 kWh per day.[10]
- The prepaid metering system showed that 78% of consumers were at, or under, the expected average affordability target of consumption of 4 kWh per day, and 22% were above this target. This increase in transparency lead to increased capacity development of individual consumers electricity consumption, and for disseminating information on individual consumers affordability of electricity;
- The inclusion of a mechanism in the PPP business model and governance structure to periodically adjust the tariff to allow for a lower electric price or subsidy to consumers, at a commercially viable level, rather than a fixed long-term tariff.

Node C: Electricity generation and distribution system

As previously mentioned, the Bukuya mini-grid was originally designed and installed with a hydro generation capacity of 100 kW, and a 11 kV/1 kV distribution network, where analog electricity meters were installed (but not used in billing).

The Community, Consumer, Business, and National causal loops allowed for several design and implementation changes during rehabilitation which were influenced mainly by stakeholder engagement (node A), electricity demand and affordability (node B), PPP business and financial model (node D), and capacity development (node G). Some of these changes included:

- The commissioning of a prepaid metering system with cloud based data access and analysis;
- Employing individuals from the community to perform non-skilled labor during implementation;
- Contracting of available private service providers for maintaining the prepaid metering system, and preforming major maintenance on the mini-hydro power station,
- Establishing a new office closer to consumers, giving easier access to payment vendors,

[10] Grue & Hornstrup. *Electricity Consumption Analysis for Bukuya Mini-Hydro Power Company - December 2017*. (Suva, Fiji: Grue & Hornstrup A/S, 2017).

- Additional training of operational staff in daily maintenance for the all components of the Bukuya mini-grid.

Node D: PPP business and financial models

Ensuring a suitable structure for the PPP and financial model for the managing a mini-grid, is critical to the sustainable supply and affordable electricity to the community. Community, National, Consumer, and Business causal loops identified the following solutions to the challenges for ensuring a sustainable structure for the PPP and the financial model for the Bukuya mini-grid. The loops involved all of the seven major nodes, and was most influenced by stakeholder engagement (node A), electricity demand and affordability (node B), governance & transparency (node F), and capacity development (node G). The causal loops lead to the following solutions:

- That the Operate, Maintain, and Manage (OMM) business model was the most appropriate for the PPP of the Bukuya mini-grid, since all investment needs were covered by the FDOE and FREPP, and the long-term operation was the greatest challenge faced. Under this PPP a SPC was formed to act as the private party in the PPP with the responsibility for OMM of the Bukuya mini-grid. The SPC's contract could be extended, or a replacement private party could be chosen at that time if the SPC underperforms.

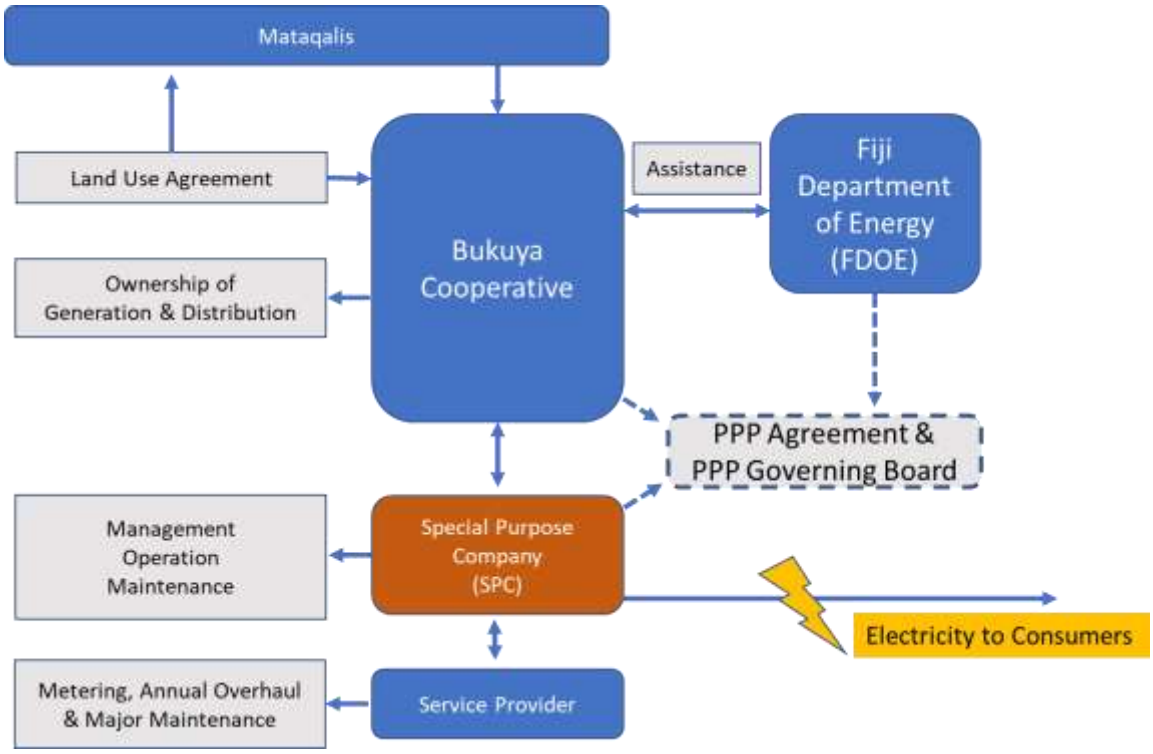


Figure 5 – PPP Business Model for OMM

- The role of the various parties involved in the PPP business model were defined as depicted in the figure above. These included the Bukuya Cooperative who is asset owner and the public party, the SPC who is the OMM company and private party, the PPP Governing Board to oversee the PPP, the Service Providers for pre-paid meters and major maintenance services, the FDOE who is the government body supporting the PPP, and the Mataqalis who own the land and are the indigenous governing bodies. These roles were central to the development of the draft PPP agreement.[11]
- Identified and enacted solutions to support setting up the SPC, including defining skillsets and hardware needs, employing staff (where in early 2018, 40% of the SPC employees were women), setting up the SPC Management and Board, preparing the Articles of Incorporation, supporting registration and licensing processes, employing staff.
- The financial model was also developed through identified causal loops, and is depicted in the figure below. Based on the PPP business model, the electricity tariff was calculated based on the required cash flows to cover all cost components and to continuously add capital to two special purpose funds. The Major Maintenance Fund for the accumulation of capital to cover the costs for major maintenance, and the Income Generating Activities Fund to accumulate capital required for investing in the planned income generating activities selected by the community in the service area of the PPP. Whereupon, oversight of financial flows and use of capital from the two funds above is provided by the PPP Governing Board. The figure below shows the estimated financial flows (green arrows indicate the revenue flows) to the parties involved in the PPP. The percentage of the tariff and specific amounts were determined based on the cost estimation for long-term operation.[12]

[11] FDOE & UNDP. *Public Private Partnership Agreement - Template (v1.2)*. (Suva: Government of Fiji, Department of Energy, 2017).

[12] FDOE & UNDP. *PPP Model Framework For Small-Scale Renewable Energy Power Systems in Fiji*. (Suva, Fiji: Government of Fiji, Department of Energy and United Nations Development Programme, 2018).

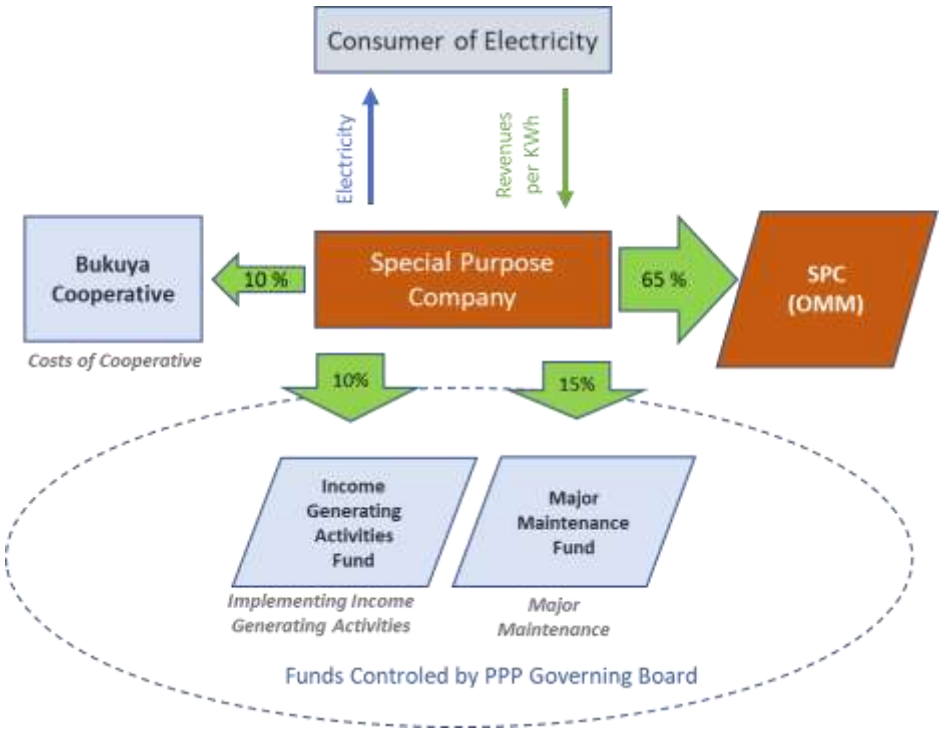


Figure 6 - Revenue distribution mechanism

Node E: Increasing household income generation

Increasing household income generation is a central element of the PPP for the Bukuya mini-grid, insofar that the service of sustainable electricity supply will lead to further investments in income generating activities via the Income Generating Activities Fund. The Community and Business causal loops identified new income generating activities in the community of the service area, which use electricity, but also highlighted a capital limit for investment. The loops involved the nodes of stakeholder engagement (node A), electricity demand and affordability (node B), PPP business and financial model (node D), and governance & transparency (node F).

The causal loops and additional analysis identified seven income generating activities, of which five were selected for investment in the first three to five years of the PPP due to the limit on capital which can be raised by the tariff. The selection was based on an analysis of related investment costs, annual electricity consumption, and impact on the electricity tariff price. The income generating activities selected included:[13]

- Purchase and operation of agricultural processing machinery (e.g. mechanized grog pounding),
- Establishment and operation of a village shop and internet café,

[13] Douglas Marett and Marc Marr. *Dossier - Determination of Power-Tariff for Bukuya Hydro-Power Project*. (Holstebro, Denmark: Grue & Hornstrup A/S, 2017).

- Establishment and operation of portable petrol station located in the community, since the nearest petrol station is over 1 hour drive away.

Node F: Governance & transparency

Governance & transparency are an essential element to the effective and sustainable operation of a PPP, as well as for fostering the continued support of the rural community serviced by the mini-grid. Fiji in particular, has a historic process for community dialogue and involvement (call "Talanoa"), though this involves stakeholder engagement, it also forms a foundation for governance & transparency in the context of communities and government.

The Community, Consumer, National, and Business causal loops identified core elements of governance & transparency (node F), influenced by all other nodes, and leading to the introduction of numerous elements and decisions for mitigating identified challenges. These numerous elements and decisions include, but are not limited to, the following:

- The continuous consultation with stakeholders and keeping the communities updated on the progress and decisions of the rehabilitation of the Bukuya mini-gird and PPP framework, inclusive of direct community participation decision making. For example, the communities wished to establish an SPC, instead of open tendering for an OMM contractor.
- Inclusion of a PPP Governing Board as an oversight body, which has final say on the inclusion of elements within and compliance to the terms of the PPP agreement. The PPP Governing Board consist of members from the Bukuya Cooperative, the SPC, and representatives from two government agencies;
- The establishment of the SPC as a company by guarantee (a type of non-profit) under the Fiji Companies Act 2015, to require that the OMM of the Bukuya mini-grid is operated under the national standard for business practices, include audited financial reporting, and to ensure more accurate calculation of the electricity tariff;
- The decisions made under FREPP to invest substantial amounts of time, human, and financial resources, for the design and operationalization of the PPP. Including technical assistance, capacpity building, and assistance with regulatory processes.
- Ensuring that all PPP and SPC elements are documented and handed over to the FDOE to allow for further duplication in other mini-grid projects, including the public release of the *PPP Model Framework For Small-Scale Renewable Energy Power Systems in Fiji*[14] and the *PPP Agreement Template*[15].

[14] FDOE & UNDP. *PPP Model Framework For Small-Scale Renewable Energy Power Systems in Fiji*.

[15] FDOE & UNDP. *Public Private Partnership Agreement - Template (v1.2)*.

Node G: Capacity development

Capacity development is a key element when improving the operation of mini-grids, and when establishing PPPs, in rural communities. It is intuitive that stakeholders of rural communities are the recipients of capacity development, but the capacity needs of national level stakeholder should not be neglected.

The Community, Consumer, National, and Business causal loops identified core needs and actions of capacity building (node F) for various stakeholders, which is influenced by all other nodes. Capacity development mainly focused on the challenges during the development and implementation phases, but also identified challenges to be addressed in the future. Several capacity development actions are mentioned under the explanation of previous nodes, but others include the following:

- The development, establishment, and training for corporate accounting and SPC management was provided during implementation, and it was identified that additional follow-up training would be needed for the SPC during operation, preferably at several points during the first year;
- FDOE and development partners participated in separate training sessions regarding PPPs in general, and the PPP for mini-grids specifically, with the dual objective to inform the Government of its role in the PPP and to assist duplicate the PPP model for other rural mini-grids in Fiji;
- The future challenge of training of the community stakeholders will be needed for the implementation and operation of the income generating activities to be invested in as a part of the PPP.
- Included in the mandate of the PPP Governing Board is the identification of future capacity development needs, and support in securing aid to provide capacity development.

Conclusions

Process of developing and implementing the rehabilitation of a mini-grid, and the establishment of a PPP for mini-grid operation, offers a complex set of challenges to be addressed by the stakeholders involved. Especially when the stakeholders have limited knowledge in commercial power system operations and PPP models. The application of a systems thinking approach to this process leads to informed decision making and potentially sustainable solutions not only during the development and implementation phases, but can also be used to address challenges during the operation phase.

Critical to finding such solutions is defining the major system thinking nodes and cause loop types at the start and during the development and implementation process. The nodes and cause loop types can be used to defined specific systems for specific challenges, noting that more than one cause loop type can be applied to a specific system.

In the case of the rehabilitation of the Bukuya mini-grid and PPP model, numerous systems had to be addressed in order to find solutions to the many challenges faced during the development and implementation efforts taking place between the period of 2015 to 2018. The solutions have lead to specific results, in 2018, of an operational Bukuya mini-

grid and PPP model, servicing 224 customers consisting of households, a primary school, a health clinic, and a Roads Authority depot. The total annual electricity demand for 2018 is estimated to be 200,000 kWh/yr, and will in total be supplied by the mini-hydro power station, contributing to an annual CO_2 emissions reduction of 160 tCO_2/yr. In addition, 40% of the employees of the SPC were women in 2018 and the community is set to invest in several income generating activities financed by the PPP.[16]

As a whole the efforts of the rehabilitation of the Bukuya mini-grid and PPP model contribute to Fiji meeting the sustainable development goals of Gender Equality (SDG-5), Clean and Affordable Energy (SDG-7), Decent Work and Economic Growth (SDG-8), and Reduce Inequalities (SDG-10).

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