

Developing and Testing a Social Acceptability Framework for Cable-Supported Water and Transport Infrastructure Projects in Cordillera Farming Communities

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Abstract

Community development projects in the Philippines require social acceptability before their implementation; however, no standard tool is used to guide the conduct of the process. Through a review of related literature, this paper developed a framework for determining the social acceptability of development projects through a public consultation process involving the local beneficiaries. The framework was tested on a mountain engineering project for cable-supported transportation and water infrastructure planned for two upland farming communities in Cordillera. The components for social acceptability of the proposed framework enabled the beneficiaries' active engagement in the project's pre-implementation phase, which led to the reexamination of the project plans by the implementers. Moreover, community-based values that guided the concerns articulated by the beneficiaries also surfaced from the process. The social desirability framework developed is therefore recommended for use in similarly-oriented community development interventions.

Keywords: Development projects, public participation, tramlines, environmental impact assessment, DENR-DAO 30 Series of 2003

Introduction

In the Philippines, development projects require social acceptability as a component of their Environmental Impact Assessment (EIA) prior to getting cleared for implementation by the state regulatory body. Social acceptability is defined as “acceptability of a project by affected communities based on timely and informed participation in the EIA process, particularly about environmental impacts that are of concern to them” (Revised Procedural Manual

of the Department of Environment and Natural Resources Administrative Order no. 30, series of 2003, p.43). Beyond this definition, however, there are no distinct parameters set to guide the determination of a project's social acceptability, thus posing a setback in carrying out this otherwise laudable mechanism.

A case in point is the mountain engineering project for cable-supported transportation and water infrastructure that was planned for two upland farming communities in the Cordillera region. This was a subproject of “Program

Boondock: A Mountain Engineering Center Towards Sustainable Infrastructure and Upland Water Security” that was launched in June 2021 and funded by the Department of Science and Technology (DOST) through the Niche Centers in the Regions (NICER) for R&D (Daroya, 2021; Sandoval, 2021). The subproject, formally named “Improving the Livelihood of MSMEs thru Cable Supported Water and Transport Infrastructure,” had two components, namely, the Cableway for Agricultural Resource Transport System (CARTS) at barangay Monamon Sur, Bauko, Mountain Province, and the Cable-supported Irrigation Pipeline System (CIPS) at barangay Ba-ayan, Tublay, Benguet. The subproject with its components was implemented by a team of engineers from Saint Louis University in Baguio City.

As a precondition for the implementation of the project, its social acceptability must be obtained first from the communities concerned. However, the project implementers were unfamiliar with the process due to the lack of clarity regarding the content of the social acceptability measure to be implemented. The question raised was: What specific parameters will be considered to ensure the acceptability of the project? Within the EIA process, social acceptability is limited to identifying the project's potential environmental effects. But still, other factors that render the project acceptable to stakeholders are recognized. For instance, while not specified in detail, the issues of equity, poverty alleviation, and sustainability were reflected in the criteria for granting an Environmental Compliance Certificate (ECC) by the Department of Environment and Natural Resources (EIAMD, 2007).

To address the issue, the project implementers brought in a social science sub-team to aid them in developing a detailed framework to determine the projects' appropriateness and acceptability to the communities concerned. The social science sub-team, composed of a sociologist and undergraduate students of Political Science, set out to prepare the framework for the social acceptability study. They started with a review of literature on the parameters used in determining the social acceptability of development projects, most of which were conducted outside the country. From this review, the sub-team

determined which parameters were appropriate for the project, which were then integrated into a framework that was eventually piloted in the two components of the project.

The following two sections of this paper present how the framework was developed and tested in the project, while the last three sections render the results of the testing, the discussion of these results, and the conclusions gained.

Conceptualizing the Framework

Literature on social acceptability affirms that determining social acceptability involves rationalization on the part of the stakeholder. Thus, it is necessary to consider other variables that affect the public's assessment of the project (Stankey & Shindler, 2006). The research of Vlassenroot et al. (2008) on measuring the acceptance and acceptability of Intelligent Transport Systems (ITS) provided valuable insights into factors affecting public project acceptance. These factors included problem awareness, the effectiveness of the introduced system in achieving what it is supposed to do, usability or the degree to which the intended users can operate the system, usefulness or the degree to which the system is functioning in the way that the users expect, satisfaction or the extent to which the plan addresses the users' needs and finally, affordability or the degree of the users' willingness and ability to pay.

The paper of Pridmore and Miola (2011) contextualized in studying public reactions to transportation measures also identified similar themes for determining public acceptability from a literature review. These themes were: public awareness of a problem, the extent to which the solution to the problem will work, the benefits to be gained and eventual impact, the degrees of trust placed on the implementers, and the possible effect of media in influencing public opinion. Interesting to note that this study also considered the compatibility of the proposed solution with the community's normative standards and values. This is a point of interest for this paper, considering that the locales of the projects are two Cordilleran rural communities where the traditional ethnic culture is still observed. Literature on resource management

in the region suggests a connection between community-held values and access to resources and their use (Brett, 1985; Abansi et al., 2016; Molintas, 2004). Adonis and Couch (2018) likewise explored how tapping into *ili* (village)-based community organizations enable collaboration and active contribution by indigenous peoples to community development.

The case study of Yelle (2013) also identified some important factors that affect how stakeholders perceive the forest ecosystem management in Quebec, Canada. These are the extent of involvement or participation in the ecosystem management by the stakeholders themselves, the perceived advantages and disadvantages of the management system, and the stakeholder's concerns regarding the intervention. Interestingly, the Ministry of Energy and Natural Resources (MERN) of Quebec adopted a framework sourced from Yelle (2013) that outlined various factors affecting social acceptability. These were participation in decision-making; trust in the promoters and institutions; the social, economic, territorial, and geographic context; local knowledge, values, beliefs, and expectations; real or perceived risks, uncertainty; impact on the living environment and the environment; and benefits and repercussions for local communities (MERN, 2013).

Analyzing the afore-discussed literature on social acceptability, the identified aspects of what affects the social acceptability of a project were narrowed down into seven themes. Aspects that were related were combined into a singular theme to avoid redundancy of responses. These themes constituted the seven factors to which the determination of the project's social acceptability was framed. The seven factors are as follows: (1) problem awareness, (2) perceived advantages and disadvantages of the project, (3) expectations on the project's usability, (4) need satisfaction, (5) expectations on the user fees, (6) extent of public participation, and (7) concerns and issues about the project.

Problem awareness (Vlassenroot, 2008; Pridmore & Miola, 2011). This factor pertains to the depth and extent of the stakeholders' awareness that problems or concerns regarding their current situation necessitate intervention. If the stakeholders acknowledge that there are problems that have to be addressed, this can work

positively for the project as it rationalizes the need for intervention. Furthermore, by paying attention to the problems that the stakeholders are aware of, project implementers could get fresh insight or possibly even a new direction for the plan.

Perceived advantages and disadvantages of the project (Yelle, 2013; Pridmore & Miola, 2011). As stakeholders who are at the receiving end of the project, they need to envision what they and their community could get out of the project and at what cost will these benefits be attained. After being thoroughly informed of the project and its intents, the stakeholders could have a different image of how the project can positively or negatively impact their livelihoods, ecology, and community, thereby affecting whether or not they find the project acceptable.

Expectations on the projects' usability (Vlassenroot, 2008; MERN, 2013). For projects like technologies that require manipulation on the beneficiaries' part, the project's usability is also an important consideration. Beneficiaries may be wary of being adept at operating new technology, which affects the degree to which they deem a project acceptable.

Need satisfaction (Vlassenroot, 2008; Pridmore & Miola, 2011). This factor highlights the extent to which the beneficiaries believe that their needs will indeed be satisfied as far as transportation and irrigation are concerned.

Expectations on the user fees (Vlassenroot, 2008). When projects come with a tax for availing the service, beneficiaries may have differing expectations regarding how much will be paid and their ability and willingness to pay. This factor is included since, for a case in point, the resulting intervention requires user fees for the project's sustainability.

Extent of public participation (Yelle, 2013; Doelle & Sinclair, 2006; Cooper & Elliot, 2000). It is a known fact that the apparent intent of conducting public consultations and seeking public participation is to gain consensus for the project. Public participation is not only a mechanism but also a factor that determines a project's social acceptability. Apart from this, the project's design itself can be improved through meaningful inputs from the stakeholder public. Public participation eliminates the monopoly of decision-making by diffusing the ability to

influence outcomes and, in effect, empowers the public to have some control and a sense of ownership and belonging to the project (Dola & Mijan, 2006).

Concerns and issues about the project (Yelle, 2013; Pridmore & Miola, 2011; Doelle & Sinclair, 2006). Interventions designed even with the best intentions may not come to fruition if conflicting perceptions emanating from the public are not heard or addressed. Indeed, many benefits can be derived if the public is encouraged to participate during the project cycle, specifically starting as early as during the planning stage; and if it is carried out with attitudes of cooperation and trust between project implementers and the community (Doelle & Sinclair, 2006). In this process, issues concerning the public are also made known and taken seriously, thereby contributing to a more significant benefit for society (Coenen, 2009; Cotton, 2011; Doelle & Sinclair, 2006).

Implementing the Framework

Public consultations

The social acceptability of the project and its components was assessed through the conduct of public consultations in the communities where the infrastructures were implemented. For this, a semi-structured interview guide was prepared based on the developed framework, which was then used to direct the discussion during the public consultations. Prior to the consultations, letters were sent to the contact persons in each locality informing them of the public consultations and inviting concerned stakeholders to attend on the dates set.

The public consultation for the proposed CARTS was held on November 25, 2021, at Monamon Sur, Bauko, Mountain Province. It was done at the house of one of the farmers who owned the land upon which the planned tram towers would be built. There were 16 participants in attendance. The public consultation for the CIPS was conducted on October 28, 2021. It was held at the evacuation center of Bawi, Ba-ayan, Tublay, Benguet. There were 26 participants, which included members from the Ba-ayan Coffee Association (BACOFA), barangay authorities,

and residents from different sitios.

During the public consultations, the planned project designs were presented first, after which the participants were asked the questions from the interview guide. To facilitate communication, the languages in the localities were used. In Tublay, it was Ilocano, while in Bauko, it was both Kankanaey and Ilocano.

The questioning and discussion were terminated when the responses elicited from the participants were deemed sufficient to cover all the dimensions of the framework for social acceptability being tested. The public consultation in Bauko lasted for 1 hour and 5 minutes, while the public consultation in Tublay lasted 53 minutes.

Data analysis

The raw data consisted of video recordings from the public consultations. The recordings were transcribed by the team members who are native speakers of the languages involved. The transcribed data was also translated into English to prepare for thematic analysis.

An initial reading of the transcripts was done to obtain a general understanding of the responses. A second reading was done in which codes were determined. The codes were then thematized according to the specific research questions of the study. Emergent codes were also identified that revealed insights about community-held values underlying the contemplations of the participants about the project.

Ethical considerations

The team coordinated with local authorities and community representatives before conducting the public consultations. The public consultations were done on a schedule amenable to the participants so as not to interfere with their livelihoods. Participation in the public consultations was voluntary and without any promise of remuneration or immediate benefits for joining. The participants' verbal consent to record the proceedings on video was also obtained during the public consultations.

All of the data from the public consultation, which consisted of the attendance sheets and video recordings, were stored in a shared

Google drive which can be accessed only by the members of the Boondock project team. During the transcription of the recordings, the responses were anonymized by assigning code names to the respondents. No information was disclosed in this paper that could reveal the participants' identities nor directly connect them with the responses they shared.

Results

The findings from the public consultations are presented below, following the order of the factors for consideration in the proposed framework.

1. Problem Awareness

In Bauko, the farmers articulated that the current problem regarding the transport of their produce was the inaccessibility of the existing tramlines for other farmers in their community. For some farmers, the distance of their vegetable gardens and the existence of geophysical barriers such as creeks and hills limited their utilization of the existing tramlines. As one farmer pointed out, "*Wen ngay ngem no kwa ngay, no ngay kaman ni nan style di bantay ket di nan baetan mi ket, garden ko na garden di esa di, ed mordong di, no din daykong? Tay nauneg san men baetan mi ngay adipay nangaton cable, adi mi maka kalga? Tan din men nenbaetan mi et din creek.*" (Yes, but what about our situation? My garden is between two other gardens, and the creek separates these. Our area is too deep, and the cable is too high; we cannot haul. The center of our garden is a creek).

The sentiment of fair use resonated through the responses of the farmers, as was also reflected in this statement, "*ta no ma il ila mi iman, ayu marigatan da. Adipay, imbag ken dakami no bilang ma tultuloy ket pippippya.*" (If we think about it, it is unfair because only us that is located near the tram can only benefit). Given their awareness of community concern, the farmers suggested to the project engineers that a new design for the tramlines and the towers' location be changed so that everyone in the area may benefit from the infrastructure. Also, it is notable from their responses that they put their trust in the project's engineers to make

the necessary changes. As one farmer said, "*wen ah, jay ammu yu nga remedyo na, isu ti kwa. Tapnu haan piman nga, ma kwa dagijay adda ijay nagbabaetan ngy. Jay lablabasan na haan nga mabenepisyo an.*" (Yes. Make sure to think of its best remedy so all of us can benefit from it. Consider those located at the center of the tramlines or places not reached by the tramlines; they could not benefit.)

For Tublay, the participants in the public consultations were aware of the state of their water supply, which is communally shared. The summer season can be challenging for the community as water scarcity becomes more pronounced. However, this is regarded as a seasonal condition, and they identified that the more significant concern is water distribution. The residents in the barangay have a communal water source to which the *sitios* are connected. Although water distribution is scheduled among the *sitios*, the rudimentary connections of the pipelines to the primary source were often mentioned as the cause for many leakages, affecting the amount of water that could reach the households. To this, they welcomed the technical assistance of engineers to help fix the faults in the existing water system to possibly improve water delivery to the households. As one respondent said, "*Awan basit piman ditoy Bawi ta diyay garud adu piman ti gauge na nu maputputed dagiyay coupling, lastiko lang ket kwa mapuwera, nu umarakop dagidyay bedbed nga ingtaltali mi awan agsubli manen idyay isunga maymayat kuma nu ta engineer kayu ngarud sir, nu kaya nan sang-atan diyay wuno haan kasta diyay ipangatngatu basit kasjay, maengineer yu ngarud, amu yu ti level diyay danum*". Here, the farmer says water is scarce in sitio Bawi because of the gauge. When the couplings get destroyed, they only use rubber to secure the pipes, but when the pressure gets strong, they burst anyhow. The farmer also acknowledged that the engineers could find a way to fix the system, given their expertise.

It was indeed observed by the project team during the ocular inspection that the existing water pipeline system needed proper repair. Apart from that, through the public consultation, it was discovered that there are other barangays that are also in need of water and an efficient water pipeline system. In the intended project

site, the more pressing issue was the repair and management of the existing pipeline system.

2. Perceived advantages and disadvantages of using cable-supported infrastructure for transport and water

The most apparent advantage of using tramlines is its benefit to farmers who do not have road access. Especially in the project site in Bauko, the use of tramlines for hauling produce was deemed to be the most appropriate infrastructure type of transportation from gardens to the main roads as it does not significantly disrupt the natural ecology of the place. Developmental projects in the area are limited because of its inclusion in the Mt. Data National Park. According to one, *“tan sin doy da, no waday umalis nas project, si special project ... no ngay ipresent mi ay sinay ay project et sina da ay mendan, narigat ngay ay ma approve an. Tan under national park kanu kaman na dey.”* (Even when we propose a special project around this area, it will not be approved immediately because it touches the National Park). The protected status of the National Park is the primary reason for restricting significant developments, but the tramlines are infrastructure types that represent a suitable compromise between human and ecological needs.

Since the tramlines are not new to the farmers, they already understand their usefulness and advantages. However, some concerns were raised about the proposed design of the CARTS, which would rely on electricity, and the mechanism for operating it will be different from the existing tramline. This shall be discussed under Factor 7 on the concerns and issues about the project.

On the other hand, the CIPS was perceived to be advantageous for the people of Ba-ayan, Tublay, as it solves the problem of transporting water through the mountainous terrain, enabling potable water to reach the households and other community institutions needing it. It was expressed during the public consultation that they would be grateful if the existing system will be improved. As one participant said in response to the possible improvements, *“nu mapan idyay nu ag face to face ti school, ay dakelen a nga iyaman da pirmi... ada danum dan. Ti skwela haan da paylang nga agsakdakdo ditoy baba.*

Narigat piman” (If [water] will reach the school, when face to face [learning] resumes, they will be greatly thankful. They will have water. The students do not have to fetch her below. That is difficult).

The farmers also clarified that the water that currently flows through the existing pipeline system is for household use and not intended for irrigation. They willingly identified a different potential water source for irrigation water. However, they expressed that if the current pipeline system was fixed and additional tanks erected, they could have excess water for watering their gardens.

3. Expectations about the infrastructure in terms of its usability

In Monamon Sur, Bauko, it was observed during the ocular visits by the technical team that the existing tramlines have depreciated, and sections of the cable have sagged. This current condition of the existing tramline may be seen as a factor for farmers’ acceptance of the CARTS. From the inspection by the project’s engineers, improvements can be made to the system, like incorporating technologies that aid the would-be operators to see the carts in transit and changing the machinery into one that anyone can efficiently operate. This would be an improvement as the old tramlines used the engines and mechanisms of automobiles. Thus, operators of the old trams must know how to drive. This limitation was addressed through the new design, which the farmers were willing to learn to operate despite being accustomed to the old tramrail system. Although the system may be new to them, their responses resonate with the belief that they can operate it for as long as they are taught. As commented by one farmer, *“Itdo yu”* (You will teach [us]).

The farmers were also receptive to the idea that the proposed CARTS design is electric-powered. As said, *“mayat et abeh tan say de kurenta met kitdi. Jay bill laeng ti silaw ti baybayadan nu kasanu.* (It’s good because it is powered by electricity. We will only think of how to pay for the electric bill.)” The new design will also have an electric motor battery, allowing the tram to continue operating for another two hours if there is a power outage. As said, *“kaman gamin*

en nu kwa di no, din gamin maikabit sin kadan di asideg di kampo, no men brown out, wada pylang di kaman duway oras a-nuka, duway oras ay kaman baterya na. (And it will work this way if we can connect it near the camp; there is still 2 hours that serves as its battery when there is a power blackout.)

The same familiarity toward cable-supported infrastructure was also observed in Tublay. Given its current existence in the barangay, the farmers were already familiar with a cable-supported water pipeline system. As mentioned in the earlier sections of the findings, the farmers articulated the need for repairs and upgrading of the current pipeline system and, if possible, the inclusion of water storage tanks. Case in point can be seen in this response from one of the farmers;

“...dakel ti danum nu karkaru matangka ta syempre madiva-divide by sitio, sitio idyay keni idyay. O ada ti two days nga kwa para idyay garden kasdyay, diyay ti improvement na, diyay nga nagbaliwan na. Tadtat nga haan nga marepair ngem nu marepair to, diyay danum apan idyay kumpurmi, apan pay idia bayanen ah” (...the water is abundant, and if it will be stored in a tank, of course we allocate (the water) by sitio. There can be two days for the garden if that is the case. That will be the improvement. Now (the water system) is not repaired, but if it is repaired, the water can be provided anywhere, even in the town”.)

The farmers also articulated their interest in the durability of materials to be used for the repairs, which indicated their desire that the old problems with the existing pipeline do not recur. Once all of these improvements were accomplished, they perceived that more community members would benefit and that with other information campaigns on using the cable-supported pipeline system, better infrastructure management after the turnover is foreseen.

4. Expectation on Needs Satisfaction

An expectation of the CARTS is the cable's capacity to carry loads of agri-produce, agri-tools, and equipment. The farmers of Monamon Sur, Bauko, expected that the CARTS could carry heavier loads, if not the same, compared to the existing tramlines. The farmers were

given a rough estimate of 500 to 600 kilograms hauling capacity of the new tramlines, to which they responded amenably. The farmers were also anticipating that the CARTS be multi-purpose. They asked if they could haul items other than crops, just like fertilizers, and they were assured by the project engineers that they may use the CARTS in the same way that they have been using the existing tramline, emphasizing that eventually, the project is theirs to manage. This is a recognition of the farmers' autonomy in managing the CARTS post turn-over. In this aspect, they contemplated other possibilities by which they could use the CARTS. One farmer even remarked, *“Asi takon amagen adis medyo tourist spot ay bassit bassit sat way man, way customer takuy man luglugan* (let's make it look like a small tourist spot. Maybe there will also be customers who might want to try the tramline”).

As for Tublay, the public consultation was instrumental in determining the pressing water needs of the community. Initially, the project team intended to install a cable-supported water system for irrigation. However, through the public consultation, it became evident that since a system was already in place, the intervention needed in that *barangay* was more of an enhancement of the existing CIPS and the capacitation of the community members on how to manage their water system better. The farmers generally believed these specific interventions would alleviate the present problems of leakages and maintenance of the CIPS. More so, it was also projected that with those necessary changes, more households would benefit from it and can even support other economic activities.

The discussion also helped identify other areas in greater need of water infrastructure, especially those intended for economic purposes like irrigation of the gardens. The foremost intention was to install a CIPS in the town to aid agricultural development. The farmers readily volunteered information about a potential water source that could be tapped for irrigation. As remarked by one farmer, *“...pang farm kuma, adda met ti source ditoy baba nga mabalin mainstallan iti barbaro, Idyay pangalal-aan mi met lang ti danum ditoy. Adayu met lang pang private vehicle”* (If [the project is intended] for farms, we do have a source of water [for irrigation] here below where you can install a

new [pipeline]. That is where we get water [for the farms]. It is also far; it can be reached by private vehicle). Indeed, the farmers emphasized more than a couple of times throughout the public consultation that the water used in the current CIPS is potable and not intended for farm use. This information was helpful for possibly reorienting the project's resources to a different location to install a new CIPS. However, in the interest of sitio Bawi, the project team must perform the necessary repairs on their pipeline system as this was an expressed need.

5. Expectations on user fees for the infrastructure

For the CARTS, while no exact fees had been established, the farmers did expect and accept that they would pay user fees, mainly because the CARTS would be powered by electricity. A farmer even suggested that they will install a sub-meter to facilitate the splitting of the electricity bill that will be used for the tramline system, saying: *"wen. Sino men balin ay a nu kwa, mabalin maikabitan so sub-meter asi yu pay lislista-en et pagbibingayan yu."* (Where can we put a sub-meter? So you can divide the bills among us).

A farmer also suggested that the operator's salary be paid monthly, stating, *"tay talaga ay syat eh ma per month sin eh operator na* (The operator must be paid per month)," but one farmer said that maybe the operator's salary must be paid daily stating that *"ma per day* (I think it is per day)."

Another fee to be considered is the hauling fee for the produce. The farmers have agreed to adopt their usual practice of charging a hauling fee per kilo or per sack, depending on the type of products they will have to transport. These insights of the farmers on user fees further reflect the autonomy of the farmers in making decisions that relate to the operations and maintenance of the tramline system.

In the case of Tublay, the users of the current CIPS were well aware that there are user fees to be paid for the maintenance of the water system. Currently, they pay fifty (50) pesos monthly contribution for this purpose, referred to by the farmers as a "cash to cash" basis, which is their existing practice in collecting user fees. They are not paying for the volume of water

consumed but rather the cost of maintaining the proper functioning of the pipeline system. They also expect to pay the same amount after the repairs. The farmers were receptive to the idea of payments for using the infrastructure, but they also asked for clarifications as to who would fund the project.

6. Extent of involvement and participation in the project

The positive reception to the project was coupled with the farmers' willingness to be involved. One of the farmers whose property will be affected by the installation of the towers was willing to give a portion of his land provided he knows the construction timeframe. This is so he can also adjust how he will use his property, considering future needs like home construction. Responding to the projects' engineers the farmer said, *"aw tan asi et maki asawa San putot ko ay dey yan kanana en syay men saadan nan maisad-an di tram ay dey adipay. Maki asawa da ay nasapsapa"* (I see because my child might get married immediately. He might want to build a house at the supposed location of the tramline).

The farmers also offered accommodations to the project team once construction commenced. The farmers said, *"no din ay, no din ay pan te-an yo anusan yo adi din wada."* (We can also provide a place where you can stay). They also expressed that their counterpart will be to help prepare the ground where the posts will be erected.

The farmers also sought clarifications as to the maintenance of the project. While they expressed apprehensions about possibly being unable to repair the CARTS if it gets destroyed, they nonetheless accept accountability if the infrastructure gets damaged. As one farmer said, *"syempre no adi takon tamungen adi kapilitan ay sukatan tako"* (Of course, if it gets destroyed, we should change it). However, such worries were alleviated by the project engineers, who assured them there would be a user manual for the CARTS or that they could always seek help for the repairs.

As for the case of the CIPS, the farmers also shed light on their potential participation in the project during the public consultation. They immediately offered workforce or labor, although some asked if the labor rendered would be paid.

They were assured by the project engineers that the inclusion of the labor costs would eventually depend on the budget deliberations of the project proponents. Paying for the labor costs is also a way of remunerating the locals for the opportunity cost of performing work on the project itself.

7. Concerns and Issues about the project

Among the common concerns raised by locals during the public consultation was the technical aspect of the CARTS. The residents were hoping that the cable used would be thicker than before. "*Ngem sino ngay di ited da nga cable? Baka din bassi-bassit?*" (But what kind of cable will they give? I hope it is not a small one). This was also in line with their concerns about the capacity of the carriages. Throughout the consultation, these concerns were allayed as the design was explained thoroughly.

However, apart from the concerns on the technical aspects of the CARTS, resonating throughout the meeting was the concern on how farmers who do not have access to the existing tram can benefit from the CARTS. Verbatim claims of the farmers referring to this matter were presented and discussed in the earlier section on Problem Awareness. It was an issue that resurfaced during the public consultation, reflecting thus its significance to the farmers. They requested that the design be re-examined, adding that they trusted the engineers to develop a plan to allow more farmers to benefit from the new tramlines.

As for the CIPS, the participants in the public consultation did not show any disapproval of the use of CIPS as their water distribution system. They were consistent in expressing their concern over the poor condition of the existing pipeline system that had resulted in inefficient water delivery to the end users.

Moreover, the participants also voiced their concerns regarding the project's beneficiaries, verbalizing that it ought to be for the community or, in the words of one farmer, "*...ti para community mit laing nya.*" As gleaned from the public consultation, water is essential for all types of users, whether households, institutions, or farms. It is a matter of delineating which water source is for the family and which is for irrigation. It seemed essential for them that the project

proponents understand such delineation with the intended consequence of having two CIPS, one for potable water and one for irrigation. They also voiced their concern for other communities in their town who still have difficulties sourcing their water, again implying the preference for a project centered on the community.

Discussion

The developed framework for determining the social acceptability of the infrastructures was comprehensive enough to reveal important concerns that were not initially thought of by the Boondock project team. This was elucidated when the farmers from both project sites expressed their problems with the existing infrastructures; the extent to which the projects will meet their transport and water needs, respectively; and their general concerns about the project.

A major finding in this respect is the concern that the farmers gave for the infrastructures' capacity to provide communal benefit. In both communities, the benefit to the greater majority was a critical consideration for the beneficiaries to cooperate with the project proponents. As presented in the findings, the farmers in Monamon Sur, Bauko, were desirous of a tramline system that would allow more farmers to access and use the tramlines. The farmers in sitio Bawi, Ba-ayan, Tublay also articulated the need for upgrading their existing water system to increase community benefit not only to the households but to the local institutions and other sitios. This community orientation is a value characteristic of Cordilleran rural communities and becomes evident in situations that affect social development and resource use. Take the case of water as a shared resource; rural Cordillerans are bound by a subsistence ethic that disallows the monopoly of water access and use since it is a survival resource (Brett, 1985). In the findings of this study, there was an overarching concern over the sharing of water resources and improving the water facilities of other sitios that need intervention.

The community based-ethic was not reflected only in the areas of problem awareness and concerns of the farmers regarding the project but also in their attempts to reorient the original

plans of the project implementers. In the case of Bauko, the farmers wanted a re-design to enable more community members to use the CARTS. In the case of Tublay, the farmers suggested a different water source to be tapped for the CIPS since the water source initially identified by the project implementers was, according to the community members, intended for household use and not for irrigation. They also articulated that there were other sitios that needed the CIPS since sitio Bawi has an existing CIPS, albeit for household use, and that upgrading the system is what is presently required. In both project areas, the suggestions to redesign (in the case of Bauko) and relocate (in the case of Tublay) point to a more efficient use of resources that maximizes the benefit to the communities from both projects and targets the stakeholders and locales that need intervention. During a virtual meeting with the project implementers, and based on their field reports, the implementers were receptive to the insights expressed by the farmers by reporting a change in the initial design of the CARTS and a reorientation of the project site for the CIPS.

Referencing the cultural context of both Cordilleran farming communities where developmental projects are a community concern, the community ethic provided the backdrop for the active participation of the farmer-beneficiaries. The farmer-beneficiaries could imagine themselves in the project as recipients and active agents in efforts that enhance their collective well-being. This was evidenced by their offers of “counterparts,” the most common of which was the provision of the workforce for the construction of the infrastructures, accommodation for the project workers not from the locale, and their management of the infrastructures after the project was turned over. Based on the reports of the technical team, some of the farmers also allowed to use a portion of their private property to construct the intermediate towers of the CARTS. These acts of volunteerism express the extent of public participation that the farmer-beneficiaries were willing to provide for the realization of the project. Thus, the value of collective well-being resonates throughout the social desirability process. These expressions of a community ethic are characteristic of Cordilleran farming communities that have not fully integrated into the market economy, and

thus, their social exchange relations are bound by redistribution and reciprocity (Abansi et al., 2016).

The study of Adonis (2018) explained this value as having a connection to community development and is referred to as the *ili* concept of the indigenous Cordillerans. The *ili* in the Ibaloy and Kankanaey languages is a term for home, birthplace, or origin (Adonis, 2018). It is also understood that the *ili* is the “communal territory” of the indigenous Cordillera peoples to which access to resources is perceived to be shared (Molintas, 2004, p. 277). While it may seem that is just a local term for village or community, it bears the footprint of the collectivist value that reverberated throughout the decision-making and planning process for projects, given that these projects are developmental interventions that were intended to bear the maximum benefit for the community as far as their transportation and irrigation needs are concerned.

More so, integrated into the project design of the CARTS and the CIPS was the turnover of the management of the infrastructures to the community through the *ili*-based people’s organizations such as the Ba-ayan Coffee Association (in the case of Tublay) and the barangay level government after proper coordination with the local government units. By engaging the farmers, particularly in areas like the Cordilleras, where there exists a deep community orientation, the project planning becomes one that internalizes the social context of the locality, thereby increasing the likelihood of people’s participation in the development process (Adonis, 2018). This lesson ought to be explored in future studies.

The social acceptability process also showed that it is a discursive process between project implementers and stakeholders. The project implementers presented the plans, the stakeholders provided their insights, and the project implementers took these insights into account, resulting in recommendations that would be amenable to both parties and still resubjecting these recommendations for the consent of the project beneficiaries. This was evident in the field reports of the project engineers in retrospect of the social acceptability process. For the case of the CARTS, they disclosed that while it was geographically and financially

impossible to grant the desire of the farmers for a deviation from the original plans (i.e., the inclusion of a sub-tramline), they nonetheless stated they would devise a more feasible strategy that shall benefit the farmers of the community and subject this revised plan to the approval of the local government unit and the farmers. In the case of the CIPS, during the validation meeting among the social acceptability team, the project engineers realized through the public consultation that there were other sitios in need of the intervention; they disclosed that they needed to reorient the CIPS project to another site while addressing the needs of the people in the original project site that is to perform the necessary repairs and upgrading of the existing CIPS.

These lessons learned from the social acceptability process were enabled by applying the framework constituted by a comprehensive list of factors affecting social acceptability. Moreover, by operationalizing public participation as both a constituent of the framework and the means through which social acceptability was determined, the process allowed for a profound understanding of what it meant to involve the public in the project. This entails going beyond obtaining the consensus and approval of the community for the continuance of the projects to making the project more responsive to the needs of the stakeholders by engaging them in active dialogue. Through the participatory process, the farmers could articulate the community's precise needs regarding transportation and irrigation. While considering these genuine concerns may have consequences on the project's logistics, doing so would make the project more adaptable to the communities' physical and social conditions.

As for limitations, the framework may have less applicability to other projects of a different nature. For instance, user fees may be consequential to projects that require a maintenance allowance, which is not a component of all developmental interventions. Moreover, not all developmental projects may require operation and handling by the intended beneficiaries, thereby rendering the factor of usability inapplicable. However, both factors may still be used as part of the framework for social acceptability since they tackle expectations rather

than actual user fees and operability. By opening the discussion for these factors, stakeholder expectations for a project can be managed early on if they arise. Apart from these, the framework itself is limited to obtaining insights from the social acceptability process and does not include a formalized feedback mechanism. This can be an area for exploration for future studies, especially those in the field of development communication. Finally, the development projects upon which this framework was applied were known to the stakeholders because the CARTS and the CIPS already existed in the community. It would be interesting to apply the framework to projects that are unfamiliar to their intended beneficiaries.

Conclusion

The study developed a social acceptability assessment framework for development projects that considered several key factors, namely: (1) problem awareness, (2) perceived advantages and disadvantages of the project, (3) expectations on the project's usability, (4) need satisfaction, (5) expectations on the user fees, (6) extent of public participation, and (7) concerns and issues about the project. Applying these components encouraged public participation in the developmental intervention's planning process, leading to the implementers' reconsideration of the CARTS and CIPS projects. Moreover, in using the assessment framework to the social desirability process, deeply-held community values were also foregrounded as the bases of the locals' reactions and feedback to the proposed development projects. These positive outcomes suggests that the social desirability framework developed is a comprehensive tool that will be beneficial for use in similarly-oriented community development interventions.

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References

- Abansi, C.L, Doble, M.C.C. , Cariño, J.K., & Rola, A.C. (2016). Beyond prices: The cultural economy of water in the Cordilleran highlands of Northern Luzon. *Asia Pacific Viewpoint*, 57(2) 280-293.
- Adonis, D.L., & Couch, J. (2018). Ili-based community organizing: an Igorot indigenous people's concept for grassroots collaboration. *Journal of Social Inclusion* 58-70.
- Brett, J. P. (1985). Stone Walls and Waterfalls: Irrigation and Ritual Regulation in the Central Cordillera, Northern Philippines. In *Cultural Values and Human Ecology in Southeast Asia*, by A. Terry Rambo and G. Lovelace ed. KL Hutterer, 125-155. University of Michigan Press.
- Coenen, F. (2009). Public participation and better environmental decisions. The promise and limits of participatory processes for the quality of environmentally related decision-making. Springer. DOI - 10.1007/978-1-4020-9325-8
- Cooper, L M. & Elliot, J.A. (2000). Public Participation and Social Acceptability in the Philippine EIA Process. *Journal of Environmental Assessment Policy*, Vol. 2 (03) 339–367.
- Cotton, M. (2011). Public participation in UK infrastructure planning: democracy, technology, and environmental justice. In *Engaging with Environmental Justice: Governance, Education and Citizenship*, pp. 201–211. https://doi.org/10.1163/9781848880627_020
- Daroya, B. L. B. (2021). June 21. <https://car.neda.gov.ph/rrdic-launches-rd-programs-for-cordillera-development/>.
- Doelle, M. & Sinclair, A.J. (2006). "Time for a new approach to public participation in EA. Promoting cooperation and consensus for sustainability." *Environmental Impact Assessment Review* 185-205.
- Dola, K., & Mijan, D. (2006). "Public participation in planning for sustainable development: operational questions and issues. ." *International Journal on Sustainable Tropical Design Research & Practice* 1(1) 1-8.
- Environmental Impact Assessment and Management Division, Department of Environment and Natural Resources-Environmental Management Bureau (EIAMD, DENR-EMB). (2007). "Revised Procedural Manual of DENR Administrative Order (DAO) no. 30 Series of 2003-30." Quezon City.
- Ministry of Energy and Natural Resources MERN. 2013. "Factors Influencing Social Acceptability ." https://cdn-contenu.quebec.ca/cdn-contenu/adm/min/energie-ressources-naturelles/publications-adm/acceptabilite-sociale/AS-Aide-memoire_facteurs-Influence-en.pdf?1574693997.
- Molintas, J.M. (2004). "The Philippine indigenous people's Struggle for Land and Life: challenging legal texts." *Arizona Journal of International & Comparative Law Vol 21, No. 1* 269-303.
- Pridmore, A., & Miola, A. (2011). "Public Acceptability of Sustainable Transport Measures: a review of the Literature." *International Transport Forum*. Leipzig, Germany. No. 2011-20.
- Sandoval, C.R. (2021). June 8. <https://car.dost.gov.ph/index.php/9-home-articles/197-dost-car-rolls-out-r-d-programs-for-conservation-of-mountains-water-supply-in-car>.
- Stankey, G.H., & Shindler, B. (2006). Formation of social acceptability judgments and their implications for management of rare and little-known species. *Conserv Biol*. 28–37. doi: 10.1111/j.1523-1739.2005.00298.x. PMID: 16909656.
- Vlassenroot, S., Brookhuis, K., Marchau, V. A. W. J., & Witlox, F. (2008). Measuring acceptance and acceptability of ITS. Theoretical background in the development of a unified concept. *10th TRAIL Congress and Knowledge Market. TRAIL in Perspective*.
- Yelle, V. (2013). Social perception of ecosystem management in Québec's black spruce forest: can large harvests emulating fire be acceptable to forest users, stakeholders, and the uninformed public? <https://corpus.ulaval.ca/jspui/bitstream/20.500.11794/24231/1/29770.pdf>.