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A Qualitative Analysis of Service Delivery of Potable Water Through Cooperatives: The Case of Talaga Barangay Water Service Cooperative, Philippines

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Abstract

This paper aims to demonstrate the important role of cooperatives in the provision and delivery of potable water to a community of households based on evidence from a case study of Talaga Barangay Water Service Cooperative (TBWSC) in Tanauan, Batangas. TBWSC is a water service type of cooperative that successfully provides its members with access to potable water. The case shows how social capital works in addressing a common need. Particularly, it presents the collaborative partnership between the government and the cooperative in implementing a waterworks project. The factors contributing to the success of water service delivery are the felt need of the community to have potable water, access to financial and human resources, presence and commitment of the cooperative and government as collaborating groups, and the participatory approach to organization and management of the cooperative in providing potable water to the community. As a water service cooperative, TBWSC is successful based on its financial performance and achievement of its mission and goals.

Keywords: *cooperatives, community participation, water service, net surplus*

Introduction

Water has always been an important and life-sustaining drink to humans and is essential to the survival of most other organisms. Drinking or potable water is water safe enough to be consumed by humans or used with low risk of immediate or long-term harm (Greenhalgh 2001 as cited by Bosompem et al. 2014). It is a basic human need, which is essentially used for hydration, food production, and sanitation. Each person on earth requires at least 20 to 50 liters of clean, safe water a day for drinking, cooking, and for simply keeping themselves clean.

According to the United Nations, the universal access to clean water is a basic human right and an essential step towards improving living standards worldwide. In the Philippines, the standard for access to potable water is having available clean supply of at least 50 liters per capita daily (lcpd) from waterpoints of less than 250 meters from the user's residence (The Water Dialogues 2008). Communities sourcing water from unprotected or poor quality sources, those unable to access sufficient potable water, and those using unimproved household water systems are some of the characteristics of "waterless" communities. Water-poor communities are typically economically poor as well as they cannot afford to have household connections.

Economic opportunities are routinely lost as a result of the lack of proper sanitation, causing water-borne diseases and the time-consuming processes of acquiring water where it is not readily available. Some 1.8 million people die every year of diarrheal diseases like cholera. Tens of millions of others are seriously sickened by a host of water-related ailments, many of which are easily preventable (National Academy of Science 2007). Additionally, the current environmental changes and uncontrolled risks due to human activities and natural events are threats to the safety of water (DOH 2011).

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The UNICEF/World Health Organization (2015) reports in its Joint Monitoring Programme (JMP) Progress on Sanitation and Drinking Water that in the Philippines, piped water access level is at 39.5% of the population in 2010 while 11% of the population still relies on unimproved sources for drinking water needs. Even among the population with access to piped water, large disparity exists between urban and rural areas, with 56% of urban residents having access to piped water compared with a mere 26% of rural residents. Despite the presence of government water authorities and providers, the population's requirements are met to a large extent by informal providers that hold up to a 40% share in the urban piped water supply. The report further states that 2.3 million Filipinos use untreated surface water from rivers, dams and canals for drinking while 6.1 million source their drinking water from unimproved drinking water sources like unprotected dug wells and springs.

The responsibility of water supply development rests on the State as part of the policy to ensure universal access to water for minimum daily basic needs to support a healthy, clean, and productive life (World Bank 2011). As described by Israel (2009), the water service providers (WSPs) in the Philippines include water districts, Local Government Unit (LGU) facilities, Rural Water Supply Associations (RWASAs), Barangay Water Supply Associations (BWSAs), Cooperatives and Private Firms. Water Districts are government-owned and controlled corporations (GOCCs). LGU utilities include water systems established by LGUs through their engineering departments and development and planning offices. The RWASAs, BWSAs, and Cooperatives are community-based organizations (CBOs) which establish and operate water systems in barangays (villages) and other localities, oftentimes in partnership with the local government. The private firms include large private service providers as well as small-scale independent providers (SSIPs) such as real estate developers, homeowners' associations, local entrepreneurs, and mobile water truckers and haulers. There are also household self-providers who put up their own water supply system and refilling stations and bottled water providers who sell processed water to the public.

Among all types of WSPs, CBOs or community-managed service providers constitute the largest share (60.5%) in the total number of WSPs in the Philippines (Israel 2009). CBOs involved in water supply include 200 cooperatives, 3,100 BWSAs, and 500 BRWSAs. According to Quiray (n.d.) of the Institute for Popular Democracy and Manahan of Focus on Global South, the failure or inability of central utilities to connect outlying areas and poor communities within their service areas led to the emergence of community water service providers run by cooperatives and associations.

Water service cooperative in particular is a special type of service cooperative in the Philippines. Pursuant to the provisions of Article 23 under Chapter 1 of Republic Act 9520 (RA 9520) also known as the Philippine Cooperative Code of 2008, water service cooperative is one that is organized to own, operate, and manage waters systems for the provision and distribution of potable water for its members and their households. Rural water cooperatives are typically organized by households and businesses that cannot connect to existing water systems, usually because they are located too far from an existing system to make service financially feasible.

Each water system customer is a member-owner of the cooperative and membership is required of all customers. Water service cooperatives are democratically controlled enterprises either on a one-meter/one-vote or a one-member/one-vote basis. Membership is typically open to residents within the designated water service area.

Given the important role of cooperatives in providing water service to people, understanding how a water service cooperative operates and delivers its services to its members in an efficient and effective way is a worthwhile endeavor.

Objective

This paper examines the case of a local water service cooperative — Talaga Barangay Water Service Cooperative (TBWSC) — to provide key lessons and success factors in delivering potable water to households through a cooperative. It analyzes the financial performance of the cooperative to show the viability of a community-based water service provider.

Conceptual Framework

This study highlights the role of social capital in delivering potable water service through a cooperative (Figure 1). A compelling need for a service sparks the idea of forming a cooperative. With the initiative of community leaders who have economic and social needs and interests similar with those of the residents of the community, a cooperative can be organized. It is the desire to secure the needed services that motivates its formation.

Social capital, as defined by the Organisation for Economic Co-operation and Development (OECD), refers to “networks together with shared norms, values, and understandings that facilitate co-operation within or among groups”. The community (Barangay Talaga) shares the same norms, values, and understanding that they need a potable water supply system. In this case, the felt need for sufficient supply of potable or drinking water for households provides the impetus to the prospective members (people in the community) to organize a people-based association which is the cooperative that will take the lead in establishing a community-managed potable water supply system. Through the association, community residents are able to avail of the support of the government in the provision of potable water. Financial support in the form of loans and donations is available from the government agency, the Bureau of Cooperatives Development (BCOD), now the Cooperative Development Authority (CDA). There is also technical support in the form of treatment and sanitation of water from the National Water Resources Board (NWRB). The government uses and channels their assistance through the cooperative. The community leaders and prospective members who make up the human capital raise the capitalization of the cooperative as their counterpart. The output of having a cooperative is the access to potable water. It is thus possible to realize the desired outcome of a sustainable supply of clean potable water with the support from the government and through cooperative action. Cooperation and interaction among the individuals, cooperative, and the government sector provide the key towards achieving the common goal of the community.

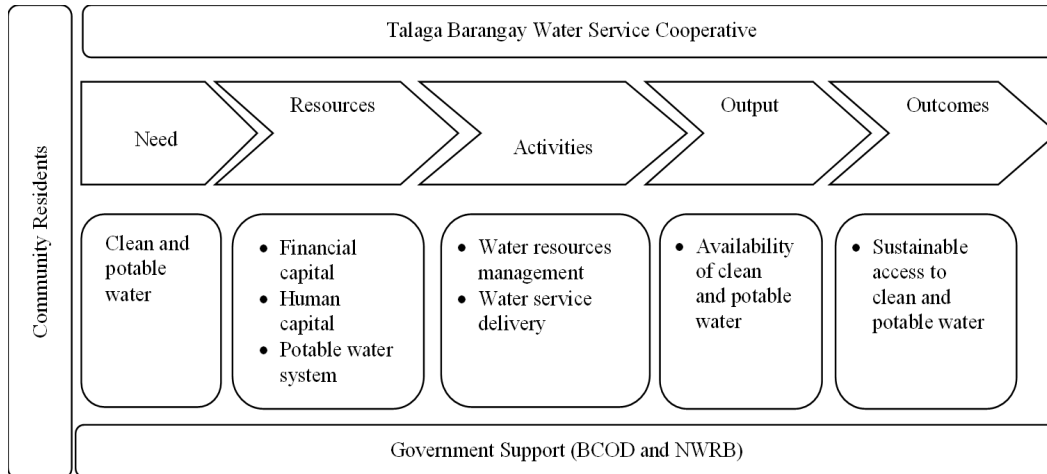


Figure 1. Social capital in potable water service delivery of Talaga Barangay Water Service Cooperative (TBWSC)

Methodology

Study Area

TBWSC is the case cooperative purposely selected to exemplify water service cooperatives in the Philippines. It is situated in Barangay Talaga, Tanauan, Batangas which is one of the 48 barangays of the first class city of Tanauan. The barangay is 6 kilometers away from Tanauan City proper and along the Tanauan-Talisay highway. The topography of Talaga is from hilly to lowland which is characterized to have a very deep water table causing a problem in sourcing adequate supply of potable water in the locality.

Data Collection

The study used both primary and secondary data. Secondary data from the annual reports and related articles and literature are used to describe the water situation of the country and the profile of TBWSC. Primary data on the operations and management and the problems encountered by the cooperative were drawn from the officers and staff of the cooperative through key informant interviews (KIIs) and personal interviews with 10 randomly selected cooperative members. The interview was aided by a structured questionnaire. Descriptive statistics are used to consolidate and summarize the data.

Method of Analysis

The study uses the case study method which analyzes the data in a qualitative manner. Case study method is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, when the boundaries between phenomenon and context are not clearly evident, and in which multiple sources of evidence are used (Yin 2009). It emphasizes the study of a phenomenon in its real-world context and favors the collection of data in natural settings (Bromley 1986, as cited by Zucker 2001).

Financial performance of the case cooperative is done using selected financial indicators to determine the cooperative's profitability and solvency. The profitability measures are net surplus, profit margin, return on assets, and return on equity while debt ratio is a measure of solvency. The formulas are as follows:

Net Surplus (NS)	=	Total Gross Revenue – Total Expenses
Profit Margin (PM)	=	$\frac{NS \text{ after Allocation of Statutory Funds}}{Total \text{ Gross Revenue}}$
Return on Assets (ROA)	=	$\frac{NS \text{ after Allocation of Statutory Funds}}{Total \text{ Assets}}$
Return on Equity (ROE)	=	$\frac{NS \text{ after Allocation of Statutory Funds}}{Total \text{ Equity}}$
Debt Ratio	=	$\frac{Total \text{ Liabilities}}{Total \text{ Assets}}$

Results and Discussion

Historical Profile of the TBWSC

In 1979, some residents and local officials of Barangay Talaga, Tanauan, Batangas initiated the organization of a community-based association to avail of the project on potable water system offered by the Cooperative Development Authority (CDA), then called the Bureau of Cooperatives Development (BCOD). The main consideration for granting the project is the availability of the electrical power supply in the area. The association was first registered with the Securities and Exchange Commission (SEC) on July 20, 1979 with the initial capitalization of PhP14,700.00. The project was inaugurated on July 23, 1979 and started its operations on October 25, 1979. The association was then registered as a cooperative on July 16, 1982 with the BCOD under the Ministry of Agriculture and later registered with the Ministry of Trade as Talaga Barangay Water Service Cooperative, Inc. (TBWSC) on October 26, 1982.

TBWSC envisions to give the members continuous supply of clean, safe and refreshing water. Supporting this vision are its cooperative goals which include the following: (1) increase capitalization for the improvement of the services to the members; (2) add business enterprise aside from the water service; (3) provide good services to those in need of water supply that would lead to membership in the cooperative; (4) maintain clean and high quality potable water, (5) provide continuous cooperative education for members and would-be members; and (6) strengthen the cooperative for the benefit of the next generations. The cooperative is guided by a set of values that include the following: honesty to God, duties and responsibilities in the use of the natural resources; open minded officers, members and the communities being served, true, sincere and equal service; and cooperative for all and not for the few.

Membership

From the original 196 members in 1979, membership grew to 935 in 2014 or an average annual increase of 26 members for a period of 35 years. The original membership was mostly composed of farmers (80%) and some employees (20%). In the beginning, majority of the members were male (70%) but over the years, distribution by sex has become more equal. In 2014, male members comprised 48% of TBWSC's total membership while female members constituted 52%.

Besides having access to safe and clean water, members of TBWSC receive benefits from the cooperative in the form of dividend and patronage refund. If the cooperative generates earnings or net surplus, each member will have a share of the earnings based on water usage in the form of patronage refund. A dividend is also given based on the share capital contributed by the member.

Capitalization and Ownership of the Potable Water System

The project cost of potable water system amounted to PhP 256,034.00 with 50% loan from the Provincial Government and 50% donation from the United States Agency for International Development (USAID) payable within 20 years at interest of 4% per year. TBWSC acquired 420-m² land to construct the first deep well. The first pump consisted of 23 tube wells or 600 feet below sea level and used a motor of 20 horsepower and powered by three phases of electricity with two transformers of 25 kilo-volt amps. On April 9, 1989, the second water pump was installed. In 1995, TBWSC bought a generator amounting to PhP 214,820.00. In 1998-2002, it received financial grant from government officials totaling PhP 500,000, which was used to purchase a new motor and water pump.

In 2004, the water supply service of TBWSC was improved with the construction of additional motor and water pump in a 12-m² lot. In 2007, it got financial assistance from the Office of the President for the purchase of generator set for a better water service in Silangan Well (Water Source #2). A district representative also provided financial assistance in the amount of PhP 300,000.00 through the initiative of the local government officials for the rehabilitation of the water system. By 2008-2013, water service was already being provided to 19 thickly populated areas in the community.

TBWSC also put up an overhead tank in the lot at the Silangan Well that makes the supply of water available the whole day. It bought 49-m² lot in Crossing, Barangay Talaga where another overhead tank was installed and later purchased another 250-m² lot near the cooperative office. The cooperative is under the regulation of the National Water Resources Board (NWRB) which is tasked to regulate and control the utilization, exploitation, development, conservation, and protection of all water resources. NWRB ordered the TBWSC to put up a chlorination machine in the three pumping stations to guarantee the safety of water for drinking.

Management and Operations of the Cooperative

A cooperative culture of mutual trust between the enterprise and the individual member is essential to the success of cooperatives. Members need to know that their organization will always be run in the best interest of the membership. Mutual trust is only sustained when the organization is committed to a framework of cooperative practices and values that can ensure the integrity of the enterprise. In a cooperative, the members own and control on a democratic basis the businesses of the cooperative. This element is observed in the management and operations of TBWSC. Like any cooperative, TBWSC adopts the recommended organizational structure for a primary cooperative composed of the General Assembly, the Board of Directors, Audit Committee, Election Committee, Treasurer, Secretary, Mediation and Conciliation Committee, Ethics Committee, Education and Training Committee, and the Management Staff.

Each water system customer is a member-owner of the cooperative. Membership is typically open within the designated water service area. The member-owners constitute the General Assembly of the Cooperative. The cooperative is democratically controlled by its members wherein they practice their voting rights on a one member-one vote basis. In this case, the water service cooperative is a monopoly like many other water utilities. Hence, most of the residents of a community are members of the water service cooperative.

TBWSC is governed by a board of directors that establishes policies and provides oversight for the cooperative. Members elect the board of directors from among the membership. The number of directors in the board varies depending on the size of the cooperative. The members typically elect 5 or more board members. Usually, directors are not regularly compensated for their service but are given honoraria. The day-to-day operations of TBWSC are managed by the general manager who is supported by hired staff who perform operational functions within the cooperative.

Capability Building Activities

Cooperatives distinguish themselves from other forms of social and entrepreneurial organizations by adopting a set of cooperative principles and values. One of the cooperative principles is “education, training, and information,” which states that cooperatives provide education and training for their members, elected representatives, managers, and employees so that they can contribute effectively to the development of their co-operatives. They inform the general public — particularly young people and opinion leaders — about the nature and benefits of cooperation” (ICA 1995).

Attending trainings and seminars is one way to enhance and strengthen the capabilities and competencies of the officers and members. In TBWSC, cooperative leaders and members are given opportunities to undergo continuous education particularly on the topic of governance of the affairs of the cooperative. The cooperative also complies with the reportorial training requirements of CDA like conflict management, cooperative standards, entrepreneurial and business management, internal control including inventory system, investment and banking procedures, policy development, social and performance audit, and parliamentary procedures. Members are also given education seminar to capacitate them on the structure, management, and operations of the cooperative and on their rights and responsibilities as member-owners of the cooperative. They are taught about their responsibility to actively participate in the capital formation, governance and management of the cooperative, and patronage of the products and services delivered by the cooperative.

Affiliation and Linkages

Networks and linkages can be formed with different organizations that share the common vision and values for social and economic development for any purposes. It is important to establish networks and linkages for greater visibility, better access to technology and other resources, business partnerships and project collaborations, and sharing and dissemination of knowledge, skills and experiences to a wider sector. With more established linkages, effectiveness and efficiency of the cooperative can be improved.

TBWSC has partnered with the following national and international organizations with corresponding benefits derived: USAID – soft loan and grant; Department of Agriculture (DA) - seminar; NWRB – permit to operate, approval of water rate, monthly check up and yearly chlorination; CDA – registration, supervision, and monitoring; Local Government Unit of Tanauan (LGU-Tanauan) – business permit; Barangay – barangay permit; Coop Bank of Batangas and Metro South Coop Bank – dividend; and Batangas Provincial Cooperative Development Office (BPCDO) – training and Php 10,000 donation for the holding of general assembly meeting.

Financial Performance

Financial analysis measures how well a cooperative is using its resources to realize a net surplus and determines the performance of the cooperative over a given period of time, expressed in terms of overall profits and losses. Results allow decision-makers to judge the outcomes of the business strategies and activities in monetary terms.

Generally, TBWSC has an impressive financial performance in 2009-2013 (Table 1). Its assets are increasing at an average annual growth rate of 2.69%. It invested in real properties, installation of water tanks and wells for the whole day supply of water. Share capital is rising at 5.36% per year as a result of the expanded provision of the water system in 19 areas in the barangay. Households provided with potable water automatically become members of the cooperative and as such paid the required share capital prior to the installation of water pipes and meter.

Table 1. Summary of financial condition of TBWSC, 2009-2013

Year	Assets (PhP)	Growth Rate (%)	Liabilities (PhP)	Growth Rate (%)	Share Capital (PhP)	Growth Rate (%)
2009	6,820,243	-	831,519	-	5,190,588	-
2010	7,526,894	10.36	1,099,530	32.23	5,470,760	5.40
2011	7,401,046	-16.73	625,070	- 43.15	5,808,813	6.18
2012	8,292,656	12.03	1,348,372	115.72	6,011,190	3.48
2013	8,718,141	5.13	1,297,922	-3.74	6,396,448	6.41
Average	7,751,796	2.69	1,040,483	25.26	5,775,560	5.36

Source: TBWSC Annual Financial Reports of 2009, 2010, 2011, 2012 and 2013

The cooperative's revenue from the services provided to members is increasing but the operating expenses and net surplus are fluctuating for the period under review (Table 2). This is due to expansion in their area of operations and acquisition of properties. TBWSC realized net surplus with average growth rate of 21.18% per year. With net surplus, the cooperative distributes patronage refund and dividends to its members.

Table 2. Summary of statement of operations of TBWSC, 2009-2013

Year	Revenue (PhP)	Growth Rate(%)	Operating Expenses (PhP)	Growth Rate (%)	Net Surplus (PhP)	Growth Rate (%)
2009	4,405,051		3,645,131		759,920	
2010	4,921,219	11.72	3,734,418	2.45	1,186,801	56.17
2011	4,784,061	-2.79	4,198,711	12.43	585,350	-50.68
2012	5,060,352	5.76	3,893,336	-7.27	1,167,016	99.37
2013	5,207,469	2.91	4,275,440	9.81	932,029	-20.14
Average	4,875,630	4.40	3,949,407	4.36	926,223	21.18

Source: TBWSC Annual Financial Reports of 2009, 2010, 2011, 2012 and 2013

The profit margin measures how much of every peso of sales a cooperative actually keeps in earnings (Table 3). The average profit margin of TBWSC is 15.83% per year in 2009-2013, which means that TBWSC has a net income of PhP15.83 for each peso of total revenue earned. Return on asset (ROA) as a measure of profitability indicates profit per unit of asset. The average return on assets of TBWSC is 9.29% from 2009-2013. This shows that the cooperative is able to cover its cost of capital. Return on equity helps members gauge how their investments are generating income. TBWSC has a 10.78% return on equity which shows that for every peso invested by the members in the capitalization of the cooperative, it generates PhP 10.78 earnings.

Table 3. Financial ratios of TBWSC, 2009-2013

Indicator	2009	2010	2011	2012	2013	Average
Profitability						
Net surplus (PhP)	759,920	1,186,801	585,350	1,167,016	932,029	926,223
Profit margin (%)	13.80	24.12	9.48	17.87	13.87	15.83
Return on assets (%)	8.91	12.22	6.13	10.91	8.29	9.29
Return on equity (%)	10.15	14.31	6.69	13.02	9.73	10.78
Solvency						
Debt ratio	0.12	0.15	0.08	0.16	0.15	0.13

Debt ratio is the proportion of the cooperative's assets that is financed by debt. A ratio of 1 means that total liabilities equals total assets. This means that the cooperative would have to sell off all of its assets in order to pay off its liabilities. Cooperatives with higher debt ratios are better off looking to increase member's equity financing to grow their operations. Lower debt ratio implies a more stable business with the potential of longevity. The average debt ratio of TBWSC is 0.13, which indicates that 87% of the cooperative's assets is owned by the cooperative and only 13% is from the creditors. A debt ratio of 0.5 is considered reasonable.

Problems Encountered

The major problems encountered by TBWSC are illegal tapping or installation of jumper and payment defaults. In illegal tapping, a consumer member allows a neighbor or relative who is not a cooperative member to tap from the water connection without the authorization of the cooperative. The water usage is charged to the consumer member with the illegal tapper enjoying the benefits of continuous supply of water without having the need to invest in it (unlike those members who paid membership fee and share capital to the cooperative). In this case, the cooperative calls the attention of the members who engaged in illegal tapping and are given three months to disconnect. If the jumper remains installed after three months, appropriate action or sanction is done to stop the unauthorized tapping.

TBWSC also experiences payment default as some members overlook the water bill due date and lack cash. If a member is not able to pay the water bill for two consecutive months, he/she becomes ineligible for any position in the cooperative. If a member coordinates or informs the cooperative about the problem of inability to pay, there is no disconnection but a penalty charge is imposed. Cheating is another problem; this is done by putting a magnet on top of the water meter which slows it down resulting in low water reading. The cooperative's technician does unscheduled or random checking of the water meter to discourage this practice.

Lessons Learned

The following are the lessons learned from the cooperative's water service operation:

1) Improved access to potable water

Before the organization of TBWSC, supply of potable water was a problem in Barangay Talaga, Tanauan, Batangas. While government funds are available for water supply systems, community households cannot tap the resources on an individual basis. Through group action, the cooperative now serves as the conduit or channel in the provision of potable water 24 hours a day to its members. This has created a positive impact on the community. With efficient service and supply of clean water, the members are now able to live comfortably and undertake maintenance, sanitation and good housekeeping everyday.

2) Collaborative water service delivery

The collaborative network among TBWSC, public stakeholders, and the household community is one of the keys to the successful delivery of potable water in the barangay. TBWSC partners with national and local government agencies to enable the establishment of a water supply system and the delivery of potable water. The government provides a favorable environment for implementing the waterworks project by extending financial support (loan) to the cooperative. The participation of the civil society has also been important in putting together financial and human resources needed for the delivery of the service. The whole network is able to embrace the value of commitment, transparency, and quality in its water service delivery. The leader and officers of the cooperative show commitment and dedication in operating and managing the affairs of the cooperative to sustain the supply of potable water.

3) *Dynamic and effective organization and management system*

What is good about cooperatives as water service providers is the fact that members of the cooperative are the direct users of potable water. The goal to address the felt need of the members prompts the officers and management team to craft a harmonized organizational and operational system for the cooperative. Moreover, as users of the water service, leaders and members of the cooperative are concerned with the quality, affordability, and adequacy of the potable water they are distributing to themselves. The exclusiveness of the area of operation of the cooperative also gives an advantage in terms of selecting the officers since member-voters are familiar with each other and know who the nominees are for the positions. It is easy to build trust and camaraderie, have consensus in decision making, and implement policies and regulations among the constituents of the TBWSC because the membership is comprised of residents who are likely to know or are related by affinity with each other. The government-cooperative partnership provides a perspective on how a strategy for empowering the people might be realized. It can also be said that a water-works project could become an instrument for shaping the life of the people in the locality like Tanauan. TBWSC has clearly shown the different responsibilities and roles of the project stakeholders.

Conclusions

The case of TBWSC demonstrates how a water service cooperative plays a role in ensuring people's access to potable water. It illustrates a model of collaborative undertaking between a cooperative, representing a community of households, and the government which responds to the needs of people. TBWSC successfully provides the people in the community access to potable water with the assistance from the government. The following are the key elements that propel the success of the cooperative in the provision of potable:

- 1) *The fundamental cooperative strategy.* The organization of a cooperative ensures the harmonious and productive partnership between the government and the people in the community as represented by the cooperative.
- 2) *The social capital.* The trust and confidence established by the cooperative and the government is crucial to the success of the water works project. Social capital involves a series of consultations and meetings between the government and the people through the cooperative.
- 3) *The participatory approach.* A cooperative-managed potable water system is one that is owned, managed, and used by the cooperative members themselves. The involvement of the members in water service provision and the benefits they receive as they use the service motivate them to support the project.
- 4) *The commitment of the key players.* The commitment of the government executives and TBWSC leaders (officers and management staff) is essential to the success of the water system project. The support of the government, willingness and convictions of community leaders, and cooperation of the people lead to sustainable potable water service provision.

Beyond these success factors, however, is a clear fundamental factor that enables the formation of a sustainable cooperative-managed water system – the common felt need of the people to find solutions to their problem, that is, adequate and affordable supply of potable water.

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