

# Dauis Waterwells: A Case Study of Self-Governing Common Pool Resource Management

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# Dauis Waterwells: A Case Study of Self-Governing Common Pool Resource Management

Marianito Jose M. Luspo

## Introduction:

Since the earliest time, potable water has been a scarce resource in the island-province of Bohol. This is ironic, considering that the island is roughly 75% karst, a type of rock base that retains water underground. In fact, today, we are told we have probably one of the biggest aquifers this part of Asia and we have large rivers perpetually flowing into the sea that the nearby province of Cebu has long wanted to tap for its future developmental needs. At the beginning of the previous century, even the people of Tagbilaran, the capital town had to rely on a few deep wells located some distance from the town center. The situation improved somewhat in 1916 with the introduction of the local waterworks network but this proved quite inadequate as the town grew and its population increased by leaps and bounds. It was only towards the beginning of the new millennium when the water condition in Tagbilaran improved dramatically after the tapping by the provincial government of the substantial aquifers in the nearby town of Corella.



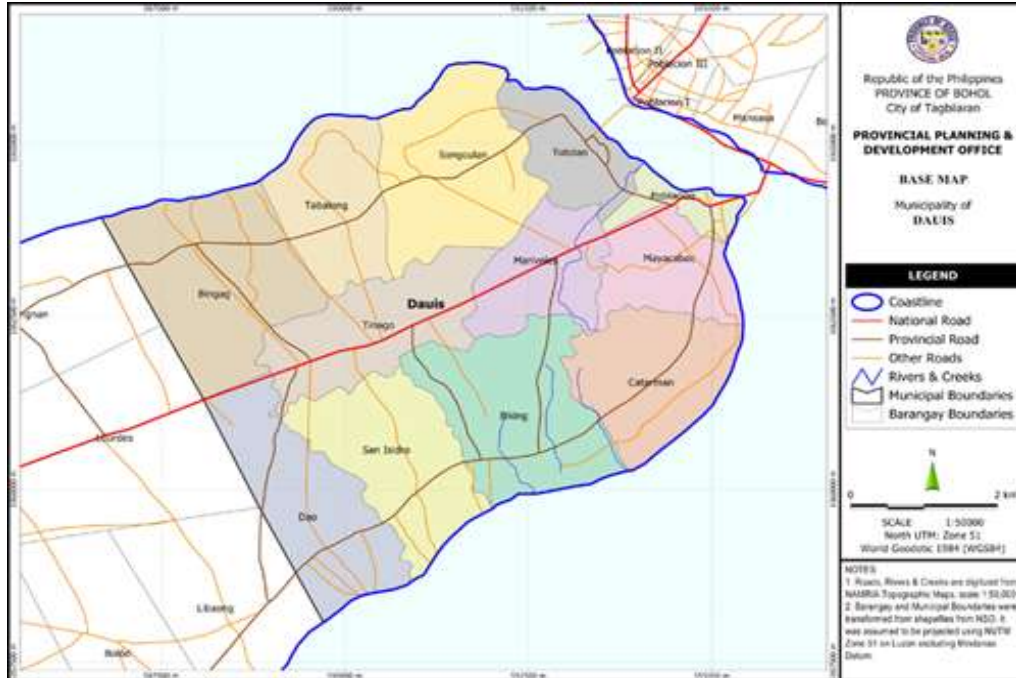
Fig.1

In contrast, the town of Dauis, located some three kilometers away on that part of Panglao Island facing the capital city of Tagbilaran used to have greater access to potable water provided by the large number of wells dug by its inhabitants in earlier times. Things turned bad, however starting in the late 60's as most of the town's wells located

near the coast were closed due to salt-water intrusion. Compounding the problem is the town's burgeoning population, the sixth largest in all the 47 municipalities of Bohol.

How do the people of Dauis balance between supply and demand of its meager water resource? What social mechanisms have they generated to manage its dwindling supply of potable water? This study aims to address both these questions.

**Dauis: Facts and Figures:**



**Fig.2**

The town of Dauis is one of two towns that share the island of Panglao. Panglao Island lies very close to the southwestern corner of the main island of Bohol, separated by a sleeve of water called the Strait of Tagbilaran. Across the street is Tagbilaran City, capital of the Province of Bohol. Tagbilaran is 3 kilometers away from Dauis.

The island is connected to the mainland by two causeway bridges. Dauis town, which occupies the side of the island facing the capital city of Tagbilaran has a land area of 4,457 hectares and consists of 12 barangays: Poblacion, Totolan, Songculan, Mariveles, Mayacabac, Catarman, Biking, Tinago, Bingag, Tabalong, San Isidro and Dao. The 2007 Census assigns Dauis a total population of 36,525 with 2,669 households(Palafox).<sup>1</sup> This population is distributed as follows:

<sup>1</sup> An NSO-based data provided by the Bohol PPDO reports the conflicting figure of 4, 103 households surveyed in 1990.

<b>Barangay</b>	<b>Population</b>
1. Biking	2,631
2. Bingag	3,908
3. San Isidro (Canlongon)	1,129
4. Catarman	4,152
5. Dao	923
6. Mayacabac	3,236
7. Poblacion	2,857
8. Songculan	3,422
9. Tabalong	4,027
10. Tinago	2,202
11. Totolan	4,834
12. Mariveles	2,818

**Fig. 3**

The municipality of Dauis occupies a little less than half the total land area of Panglao at 4,458 hectares or 44.58 square kilometer. Among its 12 barangays, Bingag is the largest with land area of 610.20 hectares. Barangay Poblacion is the smallest at 95.50 hectares (Palafox, 2009).

Historically, Dauis town is one of Bohol's oldest. Although Spanish colonial records place its establishment in the year 1697, other written accounts as well as archaeological evidence prove the place has long been inhabited even before the arrival of the Spaniards. Combes (BR) attests that migrating Lutao people from Mindanao established themselves on the Strait of Tagbilaran some three hundred years before Legaspi came to Bohol in 1565. These people built for themselves a large settlements with houses made on top of huge wooden posts driven into the seabed. The inhabitants of this city, described by the Jesuit Alcina as the "Venice of the East" called the place Dapitan. The pre-Hispanic kingdom stood on this site for the next four hundred years, gradually deteriorating to the elements after its people abandoned the place around 1563 as a result of war with another city-state in the Moluccas.

During the Spanish period, the town of Dauis which is located on the north-eastern shores of Panglao island protected by the thick mangroves swamps, grew in importance as a result of the pilgrimages that centered on its supposedly miraculous patron saint, Our Lady of the Assumption. In 1861, the Spanish colonial government built a stone causeway to connect Dauis and Panglao island to the mainland, partly to facilitate the pilgrimages and partly to provide access to the town port that used to serve as main entry to the province. This development further contributed to the economic boom that

Dauis- a town of excellent craftsmen, carpenters and jewelers had become by the turn of the 20<sup>th</sup> century.

After the Second World War, Dauis' fortune changed considerably. Earlier, in the late 20's, it lost its pier due to the progressive siltation of the Strait of Tagbilaran. By the 1960's, its once booming jewelry industry died out when the supply of Spanish-period gold coins dried up. At the same time Dauis was in the tight grip of a local political warlord that caused people to avoid the town, thus diminishing the pilgrimages. But the worst misfortune that befell Dauis was the steady intrusion of saltwater that resulted in the shutting up of many of its waterwells. For a growing town with a long tradition in cattle raising, the loss of once potable sources of water meant virtual disaster.

### **Water in Dauis Tradition**

Two paradigms of cultural import best underscore the importance of water in the life of the people of Dauis.

The first paradigm revolves around the existence of a well right inside the parish church of Our Lady of the Assumption. This well constitutes one of Dauis' points of pride because it is said it is the only church in the country that contains such a feature. No one really knows why the builders of this church incorporated a well inside the sacred precincts of the church, especially one that opens on the raised pavement that marks the entrance into the sanctuary area.<sup>2</sup>

It has been surmised that the well was intended to supply drinking water to people who would evacuate to the church in times of wars and similar conflicts. Some others insist it was intended as an appendage to the Marian cult which has always been associated with water. For the Dauisanons who regularly drink from the well, the ritual was a way of affirming their devotion to Our Lady of the Assumption. Interestingly, although tourism trumpets the well as miraculous, local tradition never talks of miracles in the past brought about by people imbibing water from "Our Lady's Well." In fact, if there is anything miraculous about this Dauis well it is the fact that it has resisted saltwater intrusion despite its being located just a few paces away from the shoreline. All the waterwells in the immediate vicinity had turned brackish and, thus, rendered undrinkable. In 1984, the first of the El Niño droughts devastated Bohol and dried up

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<sup>2</sup> The opening of the well had been sealed with a glass rim starting in 2009 as a precaution against water contamination brought about by the increasing number of tourists who flock to the church just to see this curiosity. It has been a long-standing Dauis tradition to allow visitors to draw water from the well to prove its potability. After some foreign tourists started throwing coins into the hole thinking it is a wishing well, church authorities decided to secure it. People wanting to get a sample could get a bottled specimen for a small donation at the sacristy.

most of the vegetation in the island of Panglao, but “Our Lady’s Well” continued to supply drinking water to the people and to their cattle, as well.

The other paradigm takes the form of a folk tale from the inland barangay of Tinago. According to the story, early inhabitants in the area suffered from the absence of water sources nearby. People had to walk long distances just to fetch their daily need of drinking water. One farmer, however, did not share the perennial problem of the rest of the inhabitants. He always had his stock of water in his house although his neighbors never saw him fetching water from any of the known water sources. Although this farmer would readily share his water with the neighbors he never told them where he got his water, until one day, he was forced to explain part of his secret to them. It seems that one day, while working in the fields he befriended the resident spirits of the land. The spirits led him to a hidden water source, telling him to avail of its sweet water on condition that he would never divulge to anyone its location. True to his promise, the old farmer never told anyone, not even his own brother, where the water source was located until he died. It was because of this hidden water source that the barangay later got its name- Tinago, in memory of the hidden source of water that was never found(HNU, 2009).

These two paradigms describe to us how the people of Daus look at their water resource. It is a precious commodity made available to them by virtue of their having lived in and having worked the land. As the story of Our Lady’s Well suggests, water is seen as a sacred relationship with their cultural traditions and imbibing it is a form of renewing an unwritten commitment to maintain such a precious gift from nature. Outsiders may view water for its practical value but for the Dausanons, water will always be celebrated in a dimension decidedly spiritual, if not mystical. Furthermore, as the Tinago legend suggests, water is a resource that is meant to be shared, to be enjoyed as a communal value. Its maintenance, however, demands a personal and lifelong commitment. In the way the different barangays of Daus manage their own water resource these attitudinal underpinnings come to full play.

### **The Waterwells of Daus<sup>3</sup>**

With its mostly limestone land base and thin surface soil, Daus looks generally arid with sparse vegetation and small surface water resource. Its ground water source, however, is substantial and has long been exploited by its inhabitants since the earliest time. This can be seen in the more than two hundred wells, both public and privately-owned that dot the whole expanse of the municipality(Palafox, 2009).

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<sup>3</sup> Derived from data gathered from actual site visits and interview of resource persons in each of the 12 barangays of Daus.

It is said that the first water source utilized by the people of Daus were those found in its numerous caves – water that have trickled through the limestone rocks and which have been impounded by time in underground pools. The most famous example of these is Hinagdanan Cave in Barangay Bingag, which contains a large deep pool long a favorite of tourists. Scores of such caves with crystal clear pools of water are found all over the municipality. For generations, people of the town fetched their drinking water, bathed in it or did their washing in these underground pools. Although most caves are given the names of people who lived near them or owned the land in which they are found, access to these water sources is free. With animistic beliefs still prevalent until now among Daus natives, cleanliness of the cave as well as proper decorum of users while inside was assured by the belief that the supernatural owners frown upon such acts of irresponsibility.

Another type of water source common in Daus are its deep wells dug up by their ancestors long time ago. Although many of these old-time wells have been abandoned due to salt-water intrusion, a good many in the certain areas are still used.

Generally, there are two types of open well that have developed in Daus: the *tinuntunan* or *mano-mano* and the *linikisan*.<sup>4</sup> The *mano-mano* or *tinuntunan* type is the typical open well, its opening enclosed in stone or cement. The mouth of these wells are usually covered with a lid either made of wood or wood encased in galvanized iron sheet. Some have roofing built above them for the convenience of users who come in the heat of daytime. The name for this type of well is derived from the way water is drawn from them: by hand using a pail drawn up and down the well shaft by a piece of rope.<sup>5</sup>

The *linikisan* type waterwell were devised for very deep shafts. The usual pail and rope contraption is still used here but since the rope is very long, it is wound around (*likis*) a large drum wheel, usually made of wood which can then be turned around by a cow or a pair of hefty-bodied men.

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<sup>4</sup>The distinction between the two types of open wells was derived from Bingag by field interviewers assigned there for this present study. Although both types were described already by the HNU Cultural Mapping Survey of 2009 it was focused only on the 9 barangays that belonged to the main parish of the Assumption, Bingag, together with the adjacent barangays of Tabalong and Songculan belong to another independent parish and were thus excluded in this survey.

<sup>5</sup> A popular variation of the *mano-mano* type well is the “*back-to-back*” way of drawing water. This calls for two pails tied to both end of the rope. As one draws up the pail full of water, the other one descends and scoops up water, an ingenious way of using gravity to make the task of drawing water less tedious.

In both the *mano-mano/tununtunan* and *linikisan* types, a large wooden pulley (*moton*, in local parlance) is called for. There was a time in Dausi when ownership of a *moton* was seen as a sort of status symbol because of the implication that its owner either lives near or owns a well.<sup>6</sup>

The other type of water source in Dausi is the artesian well, most probably introduced during the American period. These are the closed-type wells with metal hand levers for pumping out water. Most often this type of artesian wells are privately owned and are usually found inside an enclosed yard or, in certain cases, inside private houses. In this study, we did not consider this type of well because it is not used as a community facility.

In the 1950's bigger, more unwieldy type of artesian wells were built by the government. This is the type built on a wide cement platform and has for its pumping lever huge beams of wood. Interestingly, hardly any of this type of well is still functioning at present. The ones we saw were abandoned, their metal parts rusted and their wooden levers broken. Although this type of well was intended for communal use, the people of Dausi did not seem to give them the same high regard they reserve for their traditional wells. No community-based organization developed around these wells. Nor did people initiate moves for their upkeep.

At the onset of this study, the researchers initially intended to classify water sources in Dausi according to the types described above. However, in the actual conduct of this research we came across a more standardized water source classification formulated by the World Bank and used to classify types of water resource facilities available in communities all over the Philippines. The classification distinguishes water resource facilities as Level I, Level II or Level III.

Level I refers to the traditional open wells that are communal in nature.

Level II refers to communal wells that are of the closed type.

Level III refers to an existing local waterworks system that bring water directly to individual households(PPDO, 2011)

The researchers' initial visits to the different barangays of Dausi revealed that the realities in the field are far more complex to be fully described by the standard classification. It was therefore decided that for this particular study, a revised version be formulated, thus:

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<sup>6</sup> Perhaps this would explain the signification of the local term "tubig-tubigan," which denotes wealth, for only well-off people then had their own private water source.



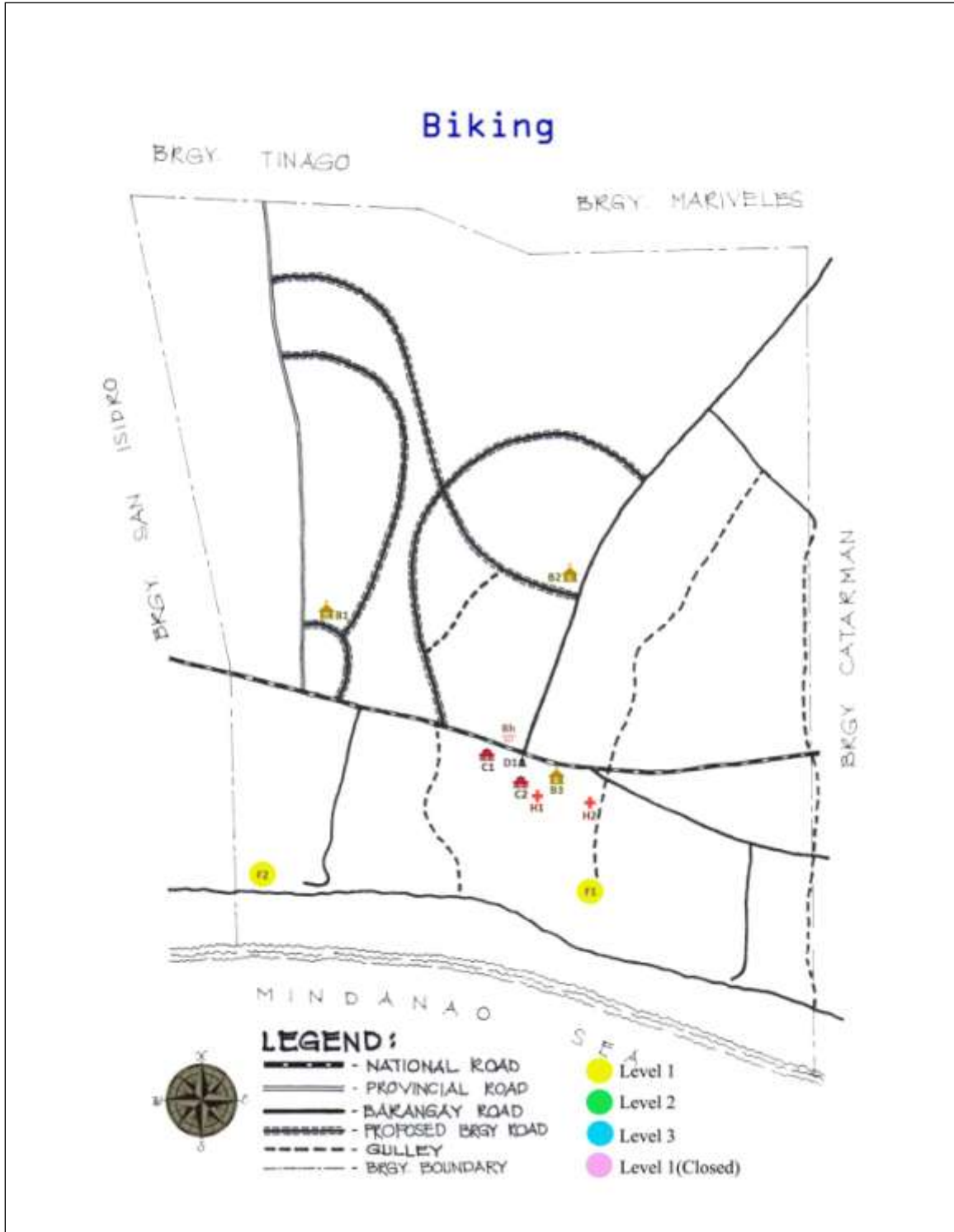
Level I refers to both open and closed well types that serve as communal water resource for the community.

Level II refers to open and closed well types that have been installed with mechanized pump and which serve as a common water resource for the community.

Level III refers to open or closed type wells installed with submersible or mechanized pumps which deliver water through pipes to individual households in a form of Barangay Water System.

Waterwells of different classifications are found all over Dausi. Although many have been abandoned due to salt-water intrusion, a good number are still maintained and used by barrio folks. Recently, a privately-owned waterworks utility, the Bohol Water Utilities, Incorporated( its water is sourced from aquifers in the mainland town of Corella), has started piped-in water service to 9 out of the 12 barangays of Dausi, many communities have opted not to abandon their traditional wells even as most households have availed of the services of BWUI.

The following barangay maps indicate where these different types of well can be found in each of the 12 barangays of Dausi. These include waterwells no longer used due to the increased salinity of its water or have been abandoned in favor of the water supplied by BWUI.



**Fig. 4**  
**Waterwells of Barangay Biking**



**Fig. 5**  
**Waterwells of Barangay Bingag**

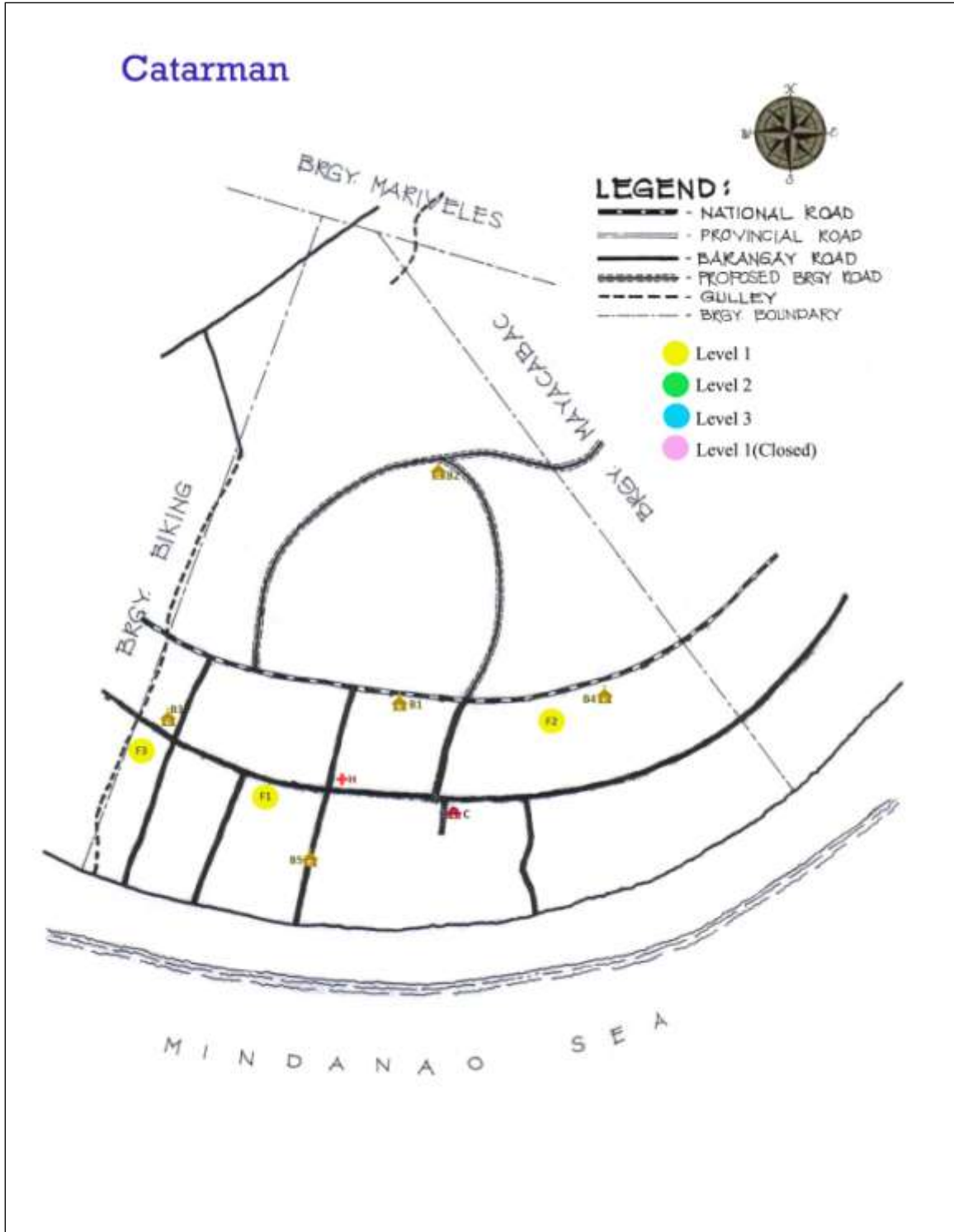


Fig. 6  
Waterwells of Barangay Catarman

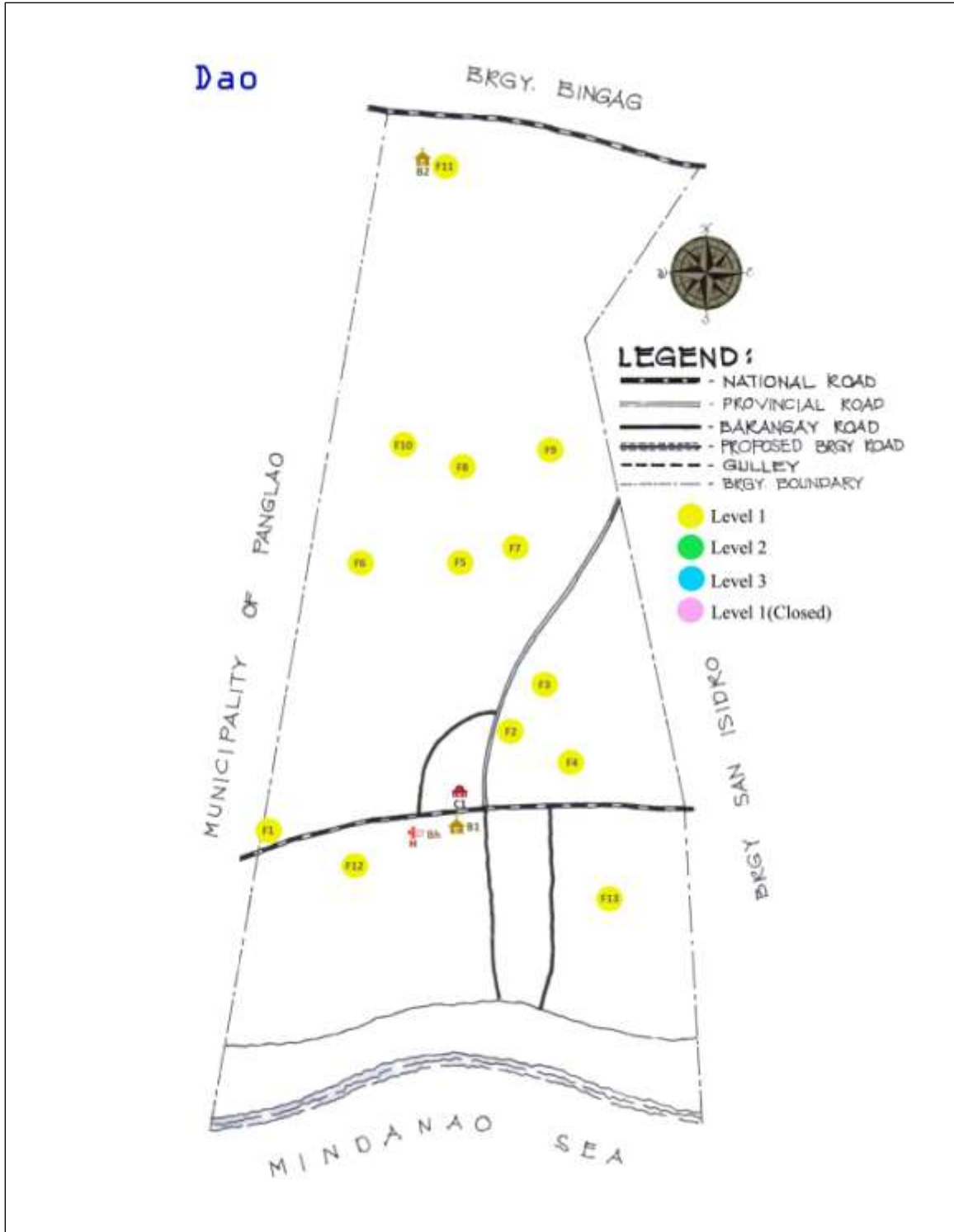
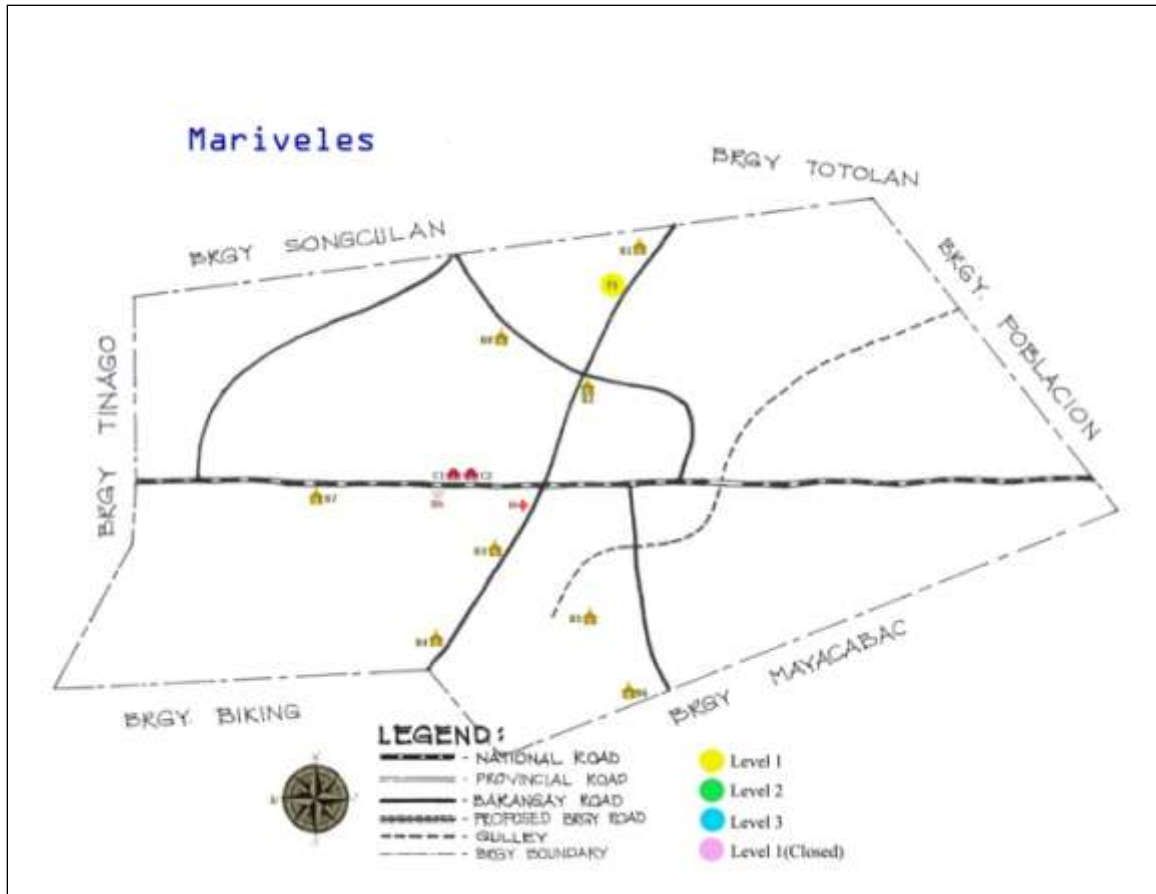
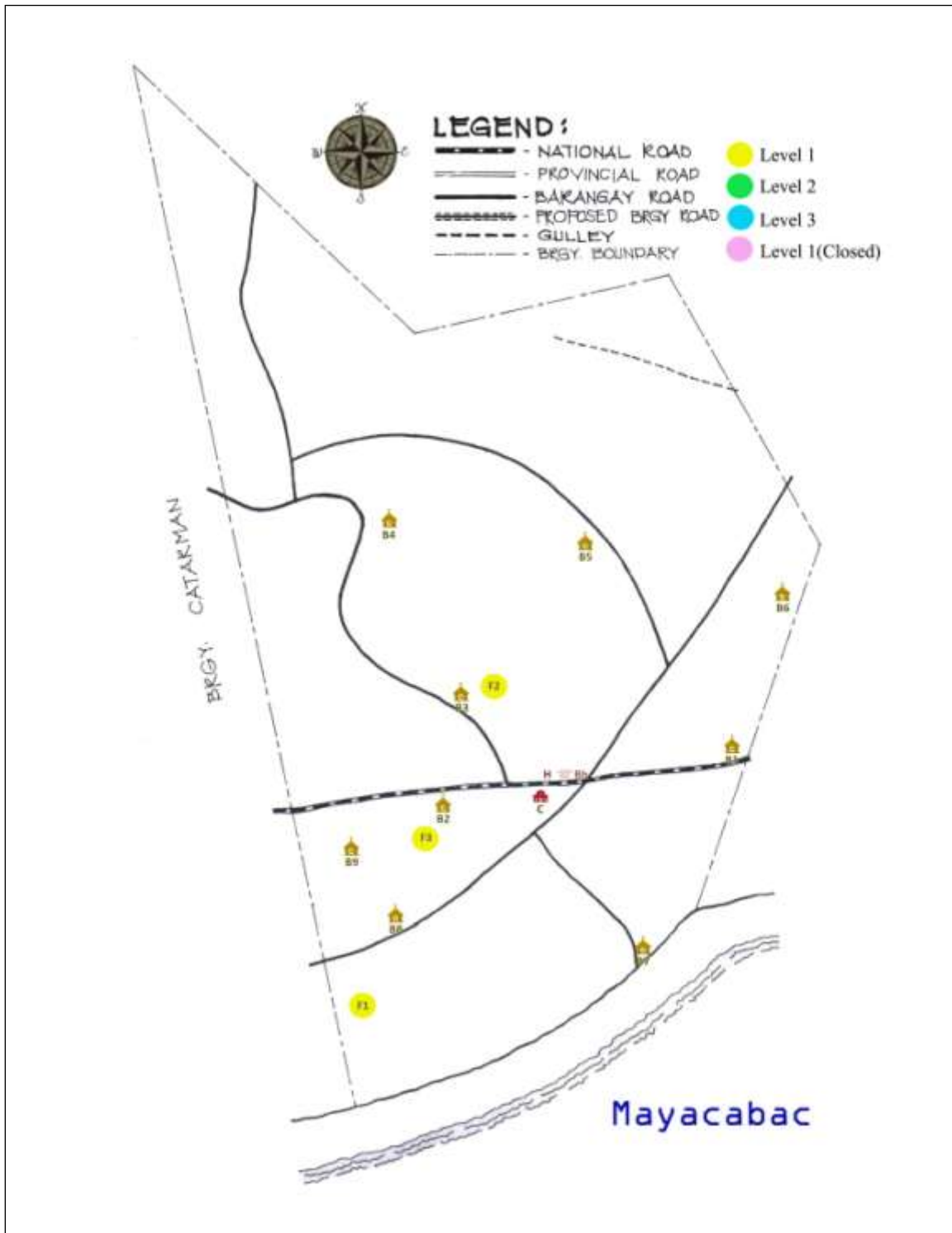


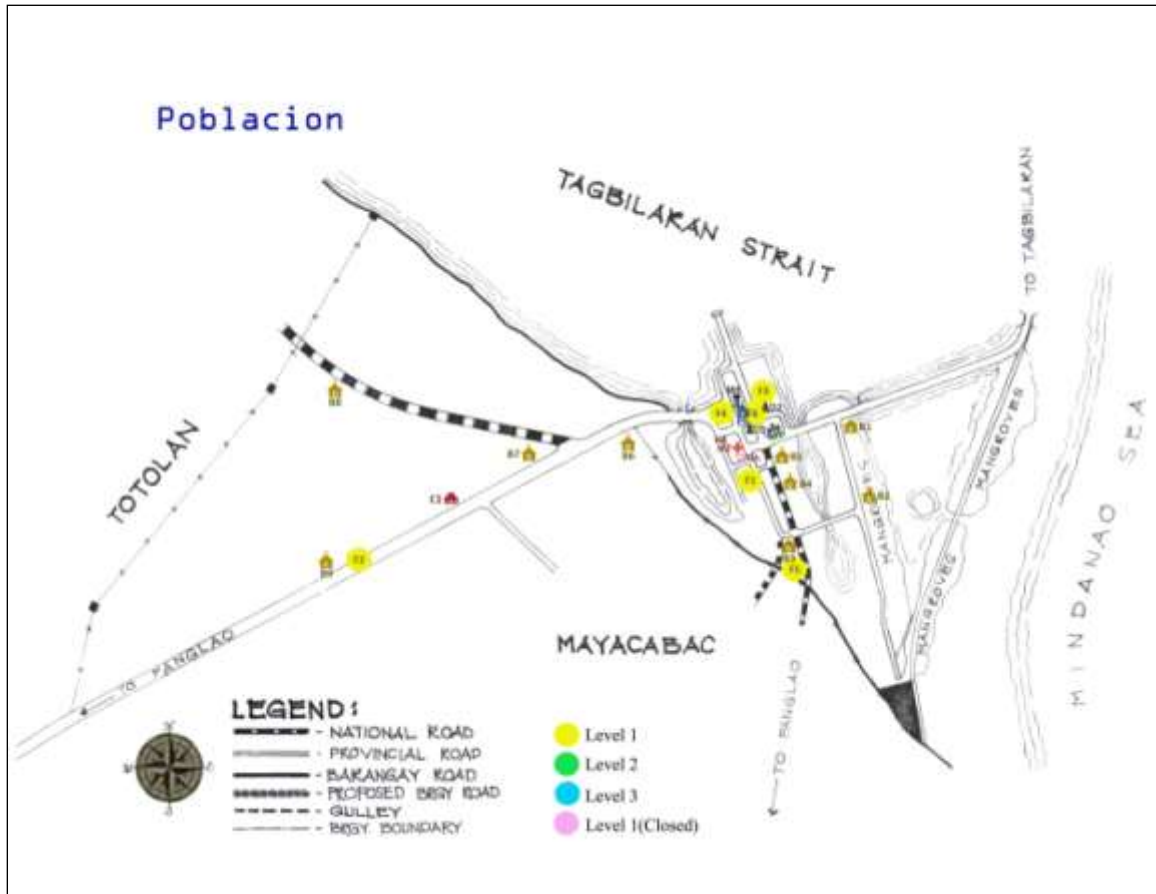
Fig. 7  
Waterwells of Barangay Dao



**Fig. 8**  
**Waterwells of Barangay Mariveles**



**Fig. 9**  
**Waterwells of Barangay Mayacabac**



**Fig. 10**  
**Waterwells of Barangay Poblacion**



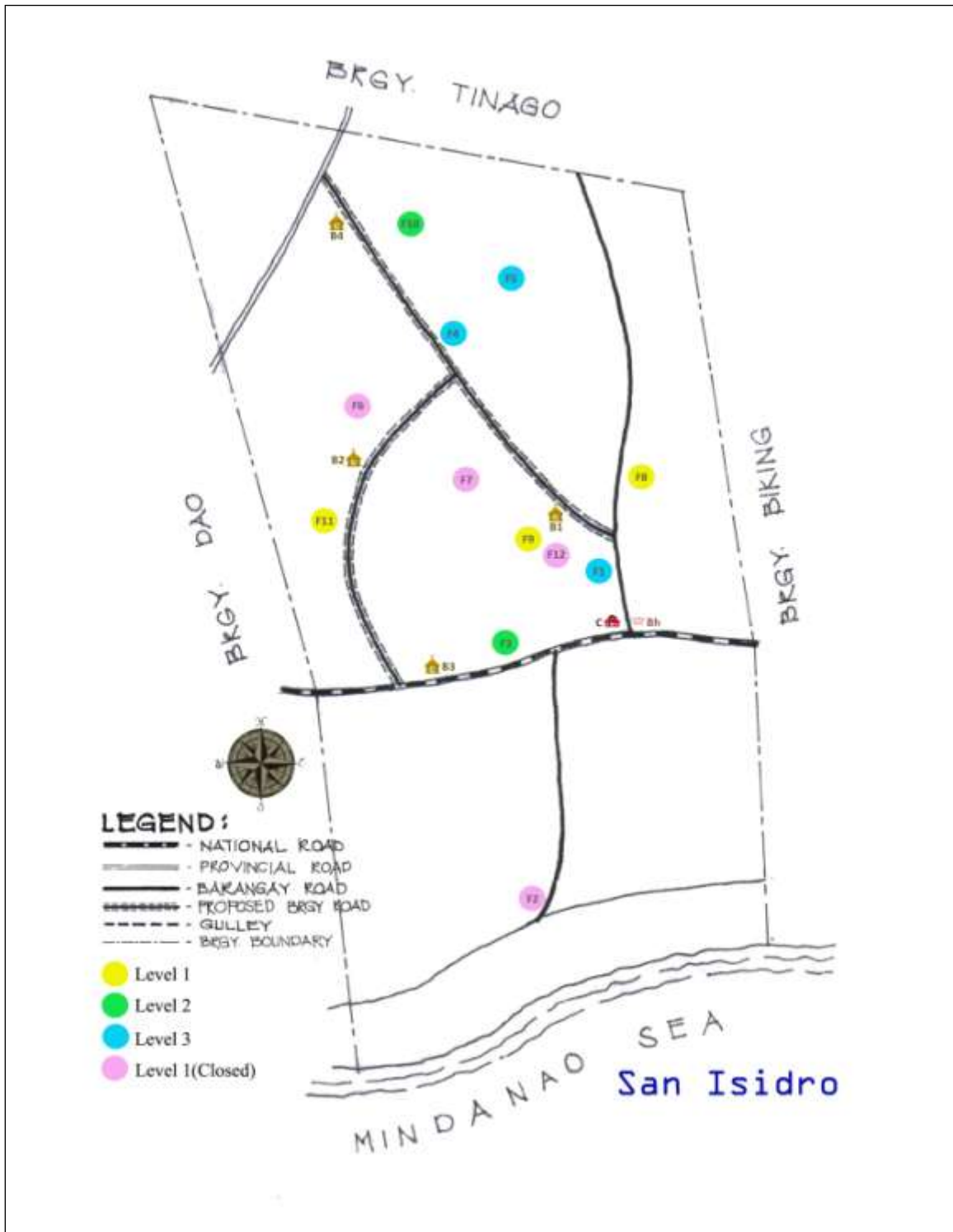


Fig. 11  
Waterwells of Barangay San Isidro

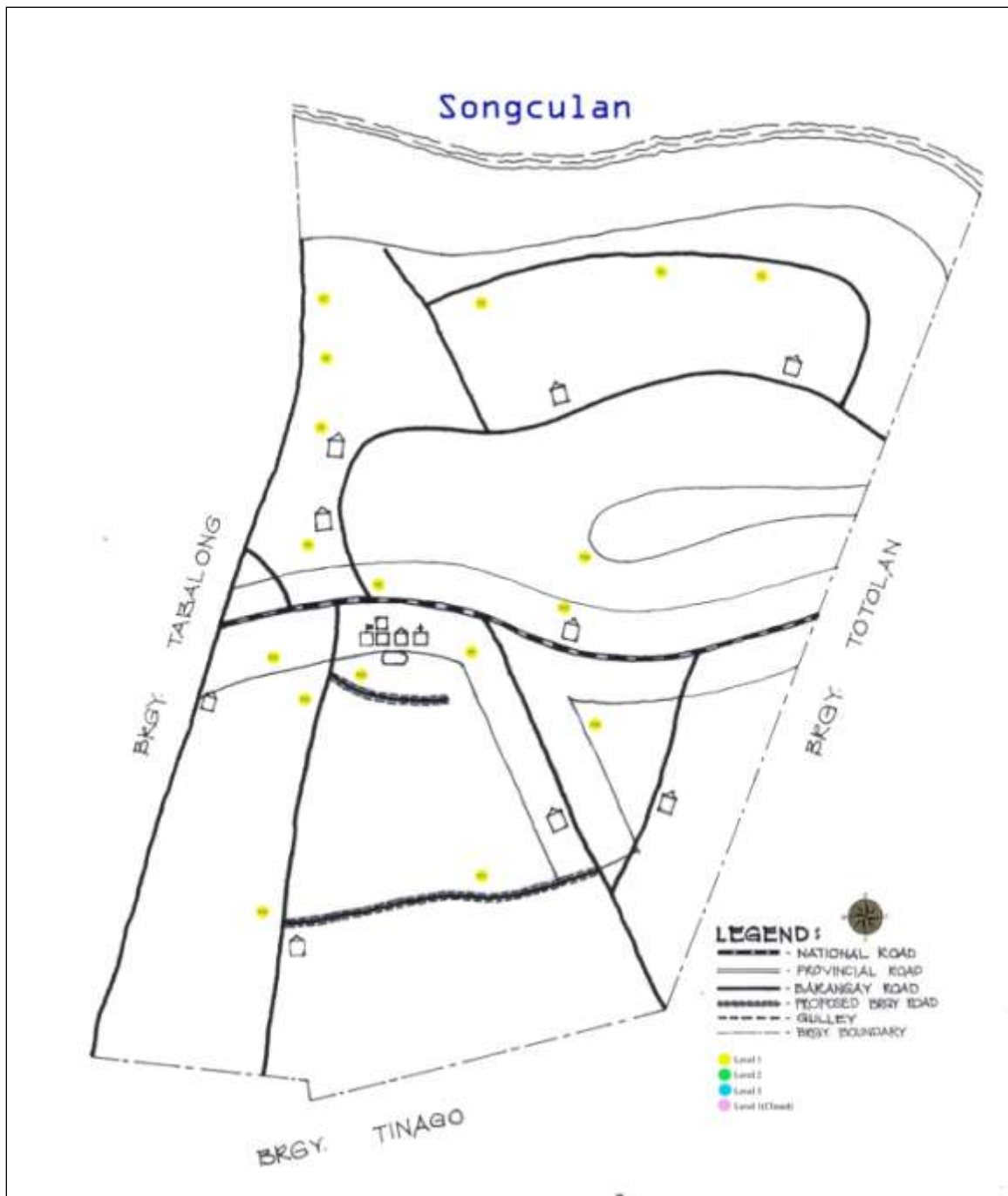
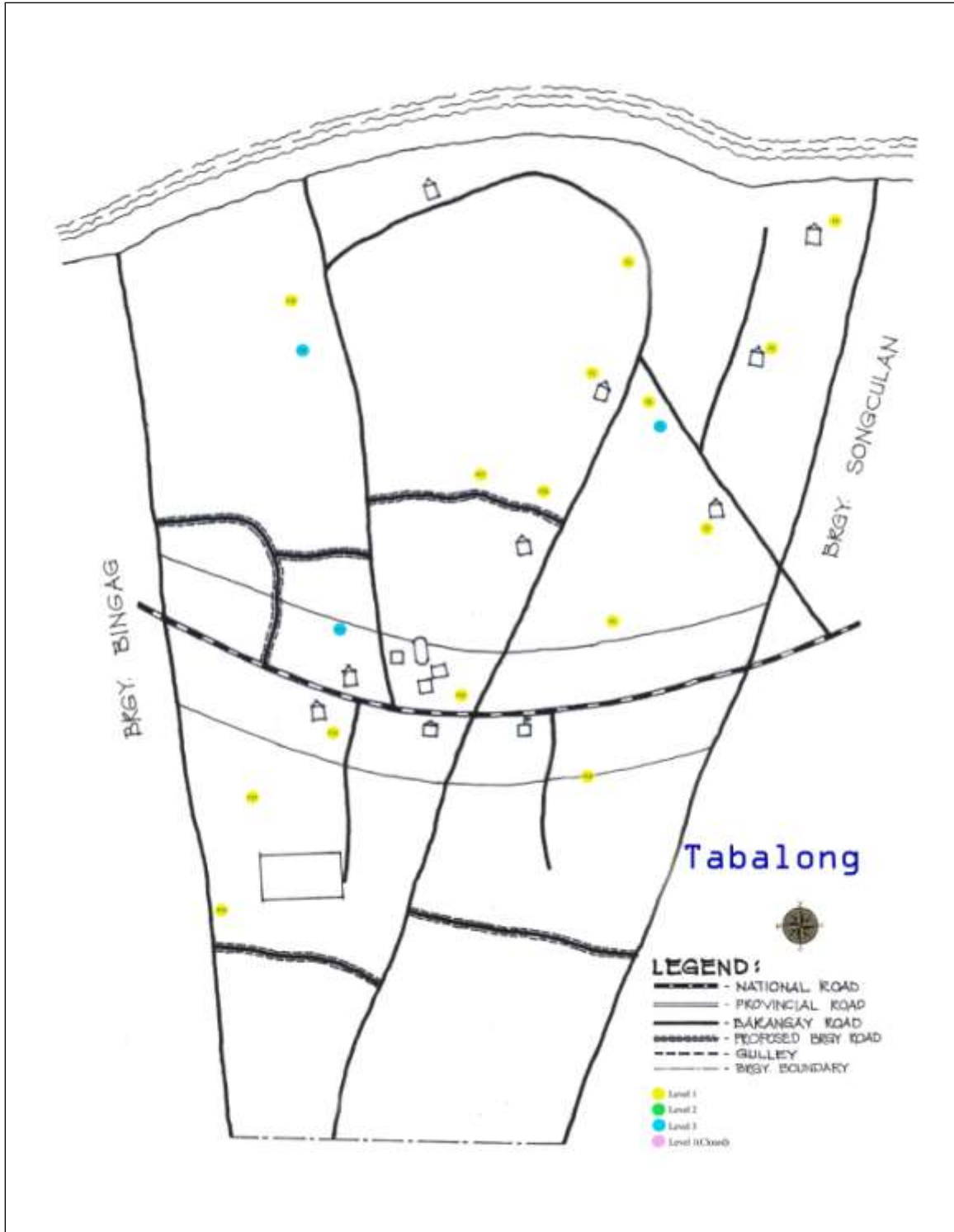
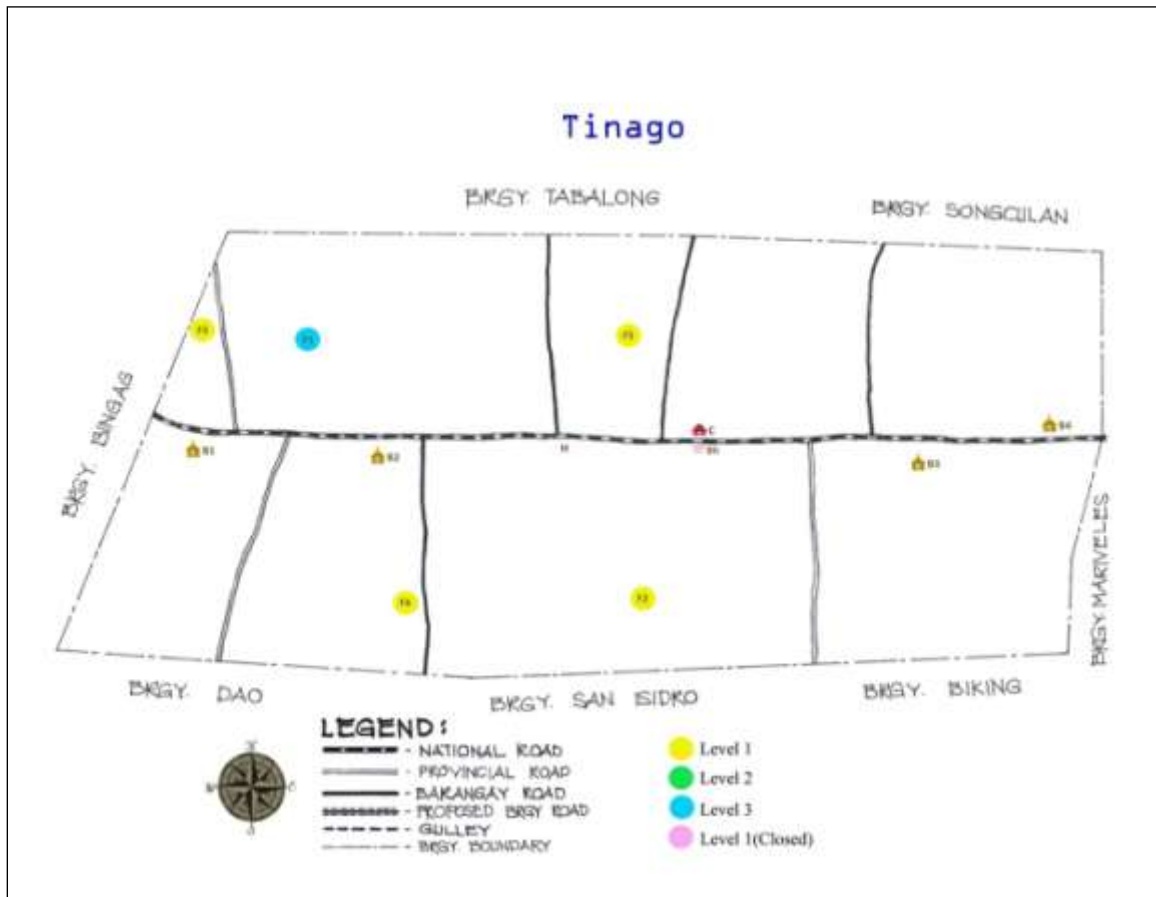


Fig. 12  
Waterwells of Barangay Songculan



**Fig. 13**  
**Waterwells of Barangay Tabalong**



**Fig. 14**  
**Waterwells of Barangay Tinago**

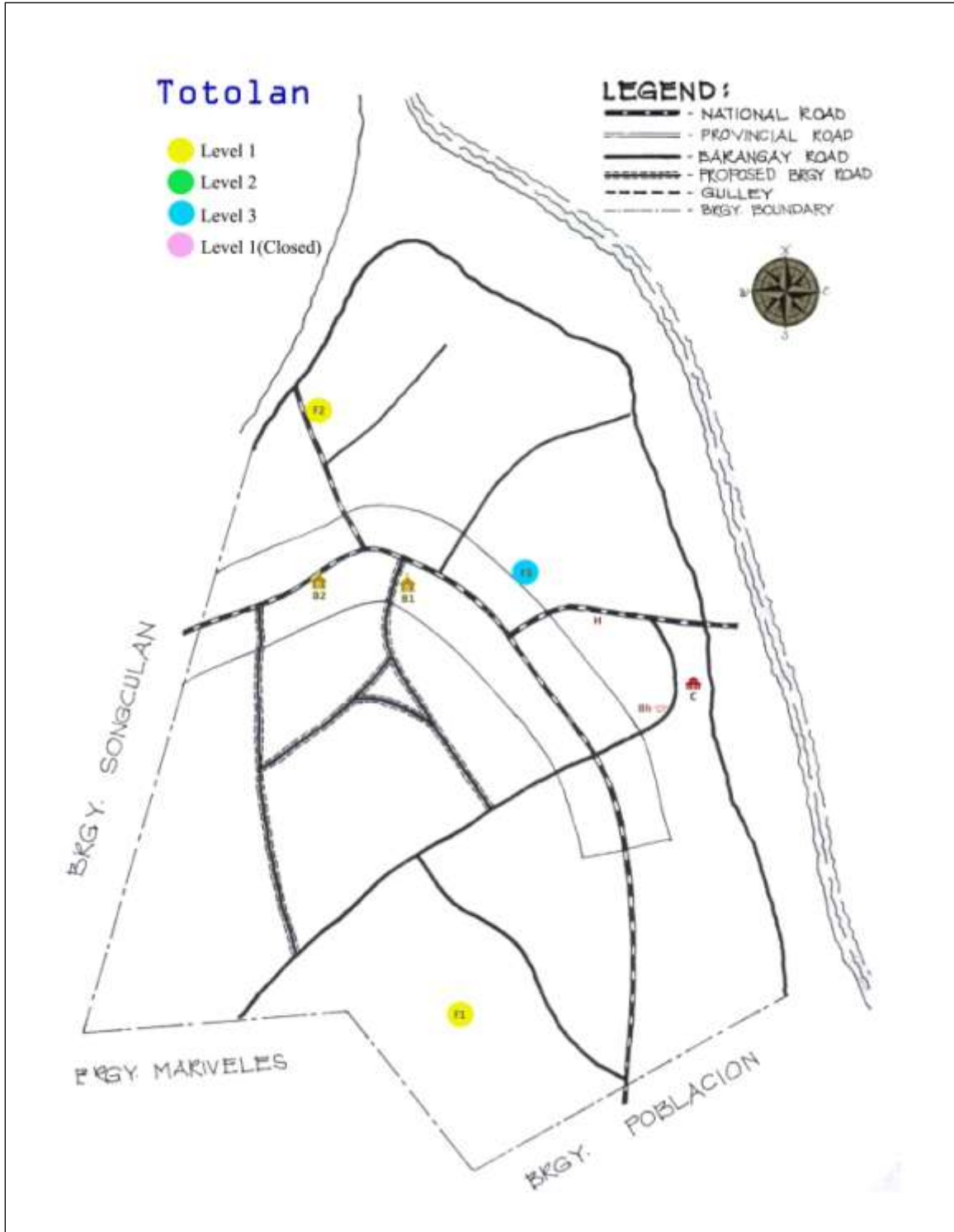


Figure 15  
Waterwells of Barangay Totolan









**Fig. 16**  
**Consolidated List of Daus Waterwells**

**Biking**




<i>Code</i>	<i>Name/Owner</i>	<i>Location</i>
● F <sub>1</sub>	Bitoon	Purok 5
● F <sub>2</sub>	Tugas	Purok 3

**Bingag**














<i>Code</i>	<i>Name/Owner</i>	<i>Location</i>
● F <sub>1</sub>	Flaviano Acido	Purok 1
● F <sub>2</sub>	Santiago Opada	Purok 1
● F <sub>3</sub>	Tinoy Opeña	Purok 1
● F <sub>4</sub>	Lucing Omega	Purok 1
● F <sub>5</sub>	Quirino Opada	Purok 1
● F <sub>6</sub>	M. Pinanonang	Purok 1
● F <sub>7</sub>	E. Opeña	Purok 2
● F <sub>8</sub>	Totong Guimerey	Purok 2
● F <sub>9</sub>	Juan Guimerey	Purok 2
● F <sub>10</sub>	Santo Cristo	Purok 2
● F <sub>11</sub>	Leon Bullecer	Purok 2
● F <sub>12</sub>	Berting	Purok 2
● F <sub>13</sub>	Marcia Operiano	Purok 2
● F <sub>14</sub>	Siloc Operiano	Purok 3
● F <sub>15</sub>	Narda Tuazon	Purok 3
● F <sub>16</sub>	Lourdes Tubio	Purok 3
● F <sub>17</sub>	Nanoc Estallo	Purok 3
● F <sub>18</sub>	Imay Otac	Purok 3
● F <sub>19</sub>	Lucy Bonao	Purok 3
● F <sub>20</sub>	Susing Pintac	Purok 4
● F <sub>21</sub>	Binong Compound	Purok 4
● F <sub>22</sub>	F. Estoquia	Purok 4
● F <sub>23</sub>	Inang Pogoso	Purok 4
● F <sub>24</sub>	Tinoy Abejaron	Purok 4
● F <sub>25</sub>	Siloy Estaño	Purok 4
● F <sub>26</sub>	Tikyo Siga	Purok 4
● F <sub>27</sub>	Emil Tubiano	Purok 4
● F <sub>28</sub>	Pisjot Estaño	Purok 4
● F <sub>29</sub>	Serging	Purok 4
● F <sub>30</sub>	Ising Millama	Purok 4
● F <sub>31</sub>	Ka Angkay	Purok 5
● F <sub>32</sub>	Asoy Dulangon	Purok 5
● F <sub>33</sub>	Tatong Bulang	Purok 6
● F <sub>34</sub>	Misiang Operiano	Purok 6
● F <sub>35</sub>	Iba-Vera	Purok 6
● F <sub>36</sub>	Boy Dologuin	Purok 6

	F <sub>37</sub>	Ka Miano	Purok 6
	F <sub>38</sub>	Lucena Espinase	Purok 6
	F <sub>39</sub>	Gaudioso Usaraga	Purok 6
	F <sub>40</sub>	Milanio Calamba	Purok 7
	F	Tatong Bolong	Purok 7
	41		
	F <sub>42</sub>	Serging Bolongaita	Purok 7
	F <sub>43</sub>	Isin Abejaron	Purok 7
	F <sub>44</sub>	Mikay Cilos	Purok 7

**Catarman**

<i>Code</i>	<i>Name/Owner</i>	<i>Location</i>
 F <sub>1</sub>	“atats”	Purok 2
 F <sub>2</sub>	Near the residence of Arabiana	Purok 5
 F <sub>3</sub>	“Kamansi”	Purok 1




**Dao**

<i>Code</i>	<i>Name/Owner</i>	<i>Location</i>
 F <sub>1</sub>	Atabay sa Boundary	Purok 5
 F <sub>2</sub>	Poldo Hontucan	Purok 3
 F <sub>3</sub>	Cheng Sumili	Purok 3
 F <sub>4</sub>	Mario Arañego	Purok 1
 F <sub>5</sub>	Ka Bebang	Purok 6
 F <sub>6</sub>	Densyong Micutuan	Purok 6
 F <sub>7</sub>	Andang	Purok 6
 F <sub>8</sub>	Ka Ponyong Dulalas	Purok 6
 F <sub>9</sub>	Ka Ninong Arancon	Purok 6
 F <sub>10</sub>	Sebastiana Lorete	Purok 6
 F <sub>11</sub>	Ka Pingping	Purok 7
 F <sub>12</sub>	Simon Millanes	Purok 2
 F <sub>13</sub>	Aurea Arañego	Purok 1







**Mariveles**

<i>Code</i>	<i>Name/Owner</i>	<i>Location</i>
 F <sub>1</sub>	Gervasio Hunzol	Purok 4













**Mayacabac**

<i>Code</i>	<i>Name/Owner</i>	<i>Location</i>
 F <sub>1</sub>	Ka Iko	Purok 1
 F <sub>2</sub>	Duas	Purok 6
 F <sub>3</sub>	Ka Rosa	Purok 3














**Poblacion**

<i>Code</i>	<i>Name/Owner</i>	<i>Location</i>
 F <sub>1</sub>		Sawang (near basketball court)
 F <sub>2</sub>	Bagakoy hill well	Colo Hill
 F <sub>3</sub>		Sawang (near the convent)
 F <sub>4</sub>	Near the residence of Mr. & Mrs. Caturan	Sawang
 F <sub>5</sub>	Near Mrs. Garcia Doldea's residence	Kaipusan
 F <sub>6</sub>		Inside Daus Church

**San Isidro**

<i>Code</i>	<i>Name/Owner</i>	<i>Location</i>
 F <sub>1</sub>	Atabay sa Manga (Level 3 - 130 Households)	Purok 3
 F <sub>2</sub>	Atabay sa Dagat	Near San Isidro Beach
 F <sub>3</sub>	Atabay sa Titoy	Purok 2
 F <sub>4</sub>	Atabay ni Segundino Bunani (Level 3 - 45 Households)	Purok 4
 F <sub>5</sub>	Atabay sa Pang-guom (Level 3 – 81 Households)	Purok 5
 F <sub>6</sub>	Atabay ni Catalina Bunayog	Purok 4
 F <sub>7</sub>	Atabay ni Conrado Pineda	Purok 6
 F <sub>8</sub>	Atabay ni Restituta Micutuan	Purok 6
 F <sub>9</sub>	Atabay ni Romualdo Arancon	Purok 1
 F <sub>10</sub>	Atabay sa Angel Bunayog	Purok 4
 F <sub>11</sub>	Atabay ni Serapia Pineda	Purok 6
 F <sub>12</sub>	Atabay ni Lorenzo Arances	Purok 1

**Songculan**

<i>Code</i>	<i>Name/Owner</i>	<i>Location</i>
 F <sub>1</sub>	Virgie Anot	Purok 1
 F <sub>2</sub>	Virgie Anot	Purok 1
 F <sub>3</sub>	Demo Rollorata	Purok 2
 F <sub>4</sub>	Kubkob	Purok 3
 F <sub>5</sub>	Cosme Tubac	Purok 3
 F <sub>6</sub>	Esco Andiya	Purok 3
 F <sub>7</sub>	Meling-Justa	Purok 3
 F <sub>8</sub>	Demo (Geronimo Loquias)	Purok 3
 F <sub>9</sub>	Angula-Dulo	Purok 4
 F <sub>10</sub>	Songculan Elementary School	Purok 4
 F <sub>11</sub>	Justo Loquias	Purok 5
 F <sub>12</sub>	Jorge Honculada	Purok 5
 F <sub>13</sub>	Pedro Lopena	Purok 5



● F <sub>14</sub>	Arac	Purok 6
● F <sub>15</sub>	Aquilino Cericos	Purok 6
● F <sub>16</sub>	Dadi Talino Cericos	Purok 6
● F <sub>17</sub>	Nisja	Purok 9

### Tabalong

<i>Code</i>	<i>Name/Owner</i>	<i>Location</i>
● F <sub>1</sub>	Felisa Tubac	Purok 1
● F <sub>2</sub>	Nerio Araco	Purok 1
● F <sub>3</sub>	Teling Tubayan	Purok 2
● F <sub>4</sub>	Sabino Opada	Purok 2
● F <sub>5</sub>	Dumacaya	Purok 4
● F <sub>6</sub>	Roman Sumylo, Jr.	Purok 4
● F <sub>7</sub>	Zenon Sumaylo	Purok 4
● F <sub>8</sub>	Alturas	Purok 4
● F <sub>9</sub>	Ka Miano	Purok 5
● F <sub>10</sub>	Juan Lopena	Purok 5
● F <sub>11</sub>	Jose Guimerey	Purok 6
● F <sub>12</sub>	Marcelo Honculada	Purok 6
● F <sub>13</sub>	Candelario Pantillo	Purok 6
● F <sub>14</sub>	Felipa Magallanes	Purok 6
● F <sub>15</sub>	Candido Opeña	Purok 7
● F <sub>16</sub>	Angelo Dinsay	Purok 7
● F <sub>17</sub>	Jose Opeña	Purok 7
● F <sub>18</sub>	Atilana Lopena	Purok 7

### Tinago

<i>Code</i>	<i>Name/Owner</i>	<i>Location</i>
● F <sub>1</sub>	Binunga	Purok 7
● F <sub>2</sub>	Ka Goryo Guirigay	Purok 4
● F <sub>3</sub>	Ka Belyan	Purok 7 (Going to Bingag)
● F <sub>4</sub>	Ka Susing Doding	Purok 6 (Going to San Isidro)
● F <sub>5</sub>	Ka Poning	Purok 4 (Going to Tabalong)

### Totolan

<i>Code</i>	<i>Name/Owner</i>	<i>Location</i>
● F <sub>1</sub>	Matan – ag Well	Purok 2
● F <sub>2</sub>	Sanggabon Well	Purok 4
● F <sub>3</sub>	Quirino Alangilan	Purok 4

The table above shows the distribution of waterwells in all the 12 barangays of Daus. It shows that the barangay with the most number of wells is Bingag with some 44

wells. This is not surprising because Bingag, found in the northeastern part of the island sits on a thick karst base. The barangay prides itself as a land of caves and this is where the famous Hinagdanan Cave with its underground pool is found. Heavily populated ever since, its inhabitants have long relied on its rich water resource. Most wells in the area were dug out in the early part of the 20<sup>th</sup> century. Bingag is followed by its two adjacent barangays Tabalong (18), and Songculan (17). Barangay Dao, which is located on the southwestern flank of Daus follows with 13 wells. Coming up a close fifth with 12 wells is Barangay San Isidro, located east of Barangay Dao. All these 5 barangays have evolved their own barangay waterworks project utilizing their own natural resource to distribute precious water to the different households within their domains. The rest of the barangays – Biking, Catarman, Mariveles, Mayacabac., Poblacion, Tinago and Totolan have the least number of wells. Not surprisingly, all these areas are serviced by BWUI.<sup>7</sup>

### **Waterwells in the Community Life of Daus.<sup>8</sup>**

In Daus, a communal source of water is not just a place from which to get one's daily need for drinking water. In fact, the communal well is seen as a community center, a place to see friends and neighbors and a place to be seen by the rest of the community. The communal well is a venue for gathering news and information, a virtual extension of the *purok* center where community concerns are discussed and argued upon. This would explain the structures built above the wells. These structures usually provide seats not so much to serve as waiting areas as to facilitate interaction. In Upper Poblacion, the *nilikisan*-type waterwell has a sizable hut built around the communal water source; in the main San Isidro waterwell, the “*Atabay Sa Mangga*” ( Well-By-The- Mango-Tree), the interaction hut is partly boarded up with galvanized iron and contains two benches facing close to each other. It is said that people, especially the elderly would gather here from 5 P.M. until 9:00 P.M. even if they did not come to fetch water. Nearby, washing troughs of cement have been constructed in such a way as to promote lively interaction even as the women are doing their washing. The same arrangement can be seen in the Atabs Well in Barangay Catarman. Here, the cement fence that surround the well has protruding bases that function as seats.

In at least one barangay in Daus, the religious dimension of the relationship between people and waterwell is quite apparent. Here in San Isidro, waterwells have been assigned patron saints. In fact, the name San Isidro(formerly called Canlongon) is the name of the main waterwell of the barangay. Local legend says that early in the previous century, when inhabitants of the place dug around in search of a water source, people

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<sup>7</sup> Residents of Tinago interviewed insist they did not abandon their waterwell tradition because of lack of water but as a result of political accommodation; they allowed themselves to be serviced by the BWUI because local politics persuaded them to.

<sup>8</sup> As gleaned from proceedings of the different FGD sessions conducted at the barangay level.

would say a novena to a particular saint each and every day of the search. When water is struck on the day a saint's novena is said, this becomes the patron saint of that waterwell. Local legend says that the people were praying to San Isidro when they struck the rich water source located at a place which later on became the nucleus of the future barangay. In other parts of Dauis, specifically Bingag and Tabalong, some communities celebrate the fiesta of their waterwell's patron saint.

### **Managing a Precious Resource**

The great significance of waterwells in the life of the people of Dauis is such that they keep fond memories of wells even if they have long ago ceased servicing them. Condemned wells are carefully boarded up. Rarely did it happen that old wells were dismantled or destroyed. In some areas, brackish water in otherwise condemned wells are still used to clean vehicles. Other wells that have been abandoned in favor of piped in water from the local waterworks system are secured for future emergencies. When asked for waterwells in their locality, respondents in the barangays readily pin-pointed each one of them and identifying ownership and status with great accuracy. It's as if these structures were human members of the community who have grown old; although they do not anymore move around to be seen yet are nonetheless reckoned as one of them until they die.

A well is a focal point in the local community. Invariably, when a well is discovered, a group of households tend to group themselves around it. In time the householders organize themselves not just to formalize their right to avail of the water resource but also to delineate duties and responsibilities. Some well-related organizations, such as the one in Catarman can have as many as 267 members, others with little less than 50.

The management of most waterwells in Dauis is patterned after the traditional *hongos* system of Bisayan culture. *Hongos* is an ancient form of basic organization wherein members are expected to contribute human labor for a pre-designated communal undertaking. In its original agricultural sense, *hongos* organizes a combined labor force to work on the fields belonging to member families, either during planting or harvesting. In its Dauis application, the efforts of *hongos* go towards the maintenance of the waterhole and its immediate area. *Hongos* makes possible the conduct of the regular *tagbo* (literally, "to meet") when member households contribute at least one family member to undertake the cleaning of the well area. The same *hongos* system raises money by collecting membership dues and fines which would then be used to pay for the *sag-a*, i.e. the regular cleaning of the well shaft. Aside from collecting dues and fines, the *hongos* also collect access fee or *kalas* from non-members who occasionally avail of the water source.

In all organized wells in Dauis, the persistence of the age-old system of *hongos* is quite evident. Still, there exist variations in the nature and the conduct of the *hongos*, as can be seen in the following case studies:

### **Case Study 1: Hongos in the San Isidro Waterwells**<sup>9</sup>

Barangay San Isidro has three Level III waterwells. This means that all three have been fitted with submersible pumps and piped in to subscribing households under a waterworks facility operated by the barangay LGU. But this has not always been so. In the beginning, when the well was dug out in 1908, the people of the former barrio of Canlongon drew water directly from the well and organized themselves around their well in a set-up that is closely aligned to the ancient system of *hongos* ( people on this side of Dauis call the organization “*honglos*” or “*hongot*”)

Today, the people of San Isidro could not adequately explain how their forebears discovered water in their locality. The idea of a dowser or a water witch is alien to them. It is evident from their replies that the discovery of water was a result of their ancestor’s familiarity with nature( they say their elders simply took cue from certain natural indicators or *tamdanan* or *tulungdan*) as well as their religious faith. Thus, it was in San Isidro that we heard of the series of novena said by the barrio folks as they dug around for a well. It is said that water was discovered on the day they started a novena to San Isidro Labrador, thus their waterwell is named as such and they celebrate a fiesta for the well on the feast day of San Isidro on May 15. Similarly, the two other wells in the barrio have patron saints: Our Lady of Perpetual Help for the Segundina Bunani well (celebrated every December 30) and Our Lady of Lourdes for the Pang-guom well whose feastday is celebrated every February 14. During the Well Fiesta, members of their respective *hongos* contribute food and drinks and hold communal banquets.<sup>10</sup>

In San Isidro, membership in the *hongos* gives a householder both right and priority in drawing water from the well. To become a member, one must pay his or her membership fee, attend the regular monthly meeting and participate in the monthly *tagbo* or general cleaning of the well area. Failure to attend meetings and communal cleaning schedule would result in fines. The accumulated fines and the membership fee constitute the standing fund of the *hongos*. The *hongos* is run by a set of well officers elected by the members: President, Vice-President, Secretary, and Treasurer. Term of Office for the well officials, however, is fluid. Most serve their position until the members feel it expedient to elect new officers. The *hongos* also has by-laws formulated in a general assembly.

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<sup>9</sup> Based on the proceedings of the FGD conducted last September 1, 2011.

<sup>10</sup> Normally, town or barrio fiestas in Bohol are celebrated in individual houses; well fiestas, however, are communal in nature.

Part of the by-laws govern the conduct in drawing water from the well. Priority is normally given to members of the well *hongos*. Non-members usually have to wait their turn. Still this seldom happens and never has it occurred that these are denied access to water. While at times waiting time at the well is long, these occur only during fiesta time when demand is high and universal. Nevertheless, the people of San Isidro claim friction is very rare among the barrio folks. In fact, the spirit of cooperation and mutual service is high among the *hongos* members. In and through the *hongos*, people in the community develop the value of community service and communal bonding.

In the late 1990's, the San Isidro *hongos* decided to develop their waterwell, such that they moved their well-classification from Level I to Level 2. They equipped their waterwells with submersible pumps that bring water mechanically to a stand pipe from which people could draw water for a fee. A few years after, the San Isidro *hongos* members voted unanimously to allow the barangay council to develop their waterwell into a Level III facility. Although the local barangay LGU underwrote most of the expenses arising from the project, the local *hongos* also contributed their part by soliciting donations from San Isidro OFW's working abroad. Not long after, the two other Level I waterwells in San Isidro joined the barangay local waterworks system. By creating a barangay waterworks system, the people of San Isidro solved the problem of the increasing salinity of the main San Isidro well by mixing it with the still-sweet water of the two other barrio wells.

The taking over by the barangay LGU of the operations of the three waterwells of San Isidro did not spell the demise of the traditional well *hongos*. On the contrary, the old *hongos* continue to flourish. They still meet regularly, collect membership fees and fines and conduct regular *tagbo*. While the *hongos* endeavors to maintain cleanliness in the surrounding, the barangay LGU undertakes maintenance of the community pumps as well as the regular testing and chlorinating of the well water. The people of San Isidro do not see any conflict in the partnership nor find any irrelevance in the continued existence of the *hongos*. As a matter of fact, most officers and members of the *hongos* are members of the barangay council, as well. Nor do they mind that they now pay metered rates for the use of water piped into their homes by the local waterworks for they realize they have to pay for the new convenience.

In the same vein, the people of San Isidro do not feel threatened by the eventual entry of BWUI into their barangay. Instead they see it as a way of lessening pressure on their local water source and ensuring its sustainability. On the other hand, the people of San Isidro are almost unanimous in rejecting the Municipal LGU's plan for developing a municipal waterworks system that would utilize their water sources for wider-scale distribution. The people feel rather strongly against this project because:

1. they feel a responsibility towards those OFWs who donated money for the establishment of their barangay waterworks system;
2. with their waterworks system already in place, the Municipal government will simply take over their equipment, spend a little but bring out too much of what they consider their own God-given resource;
3. it would deprive their barangay of a lucrative source of income.

In view of the future, the people of San Isidro see two problems facing them: first, they do not really know how much water they have under their feet. They realize water is an irreplaceable resource. They exploit this natural resource but in the absence of scientific studies about the actual volume of water they manage they cannot plan for the future. Secondly, the people of San Isidro fear the impact of migration and encroaching tourism-related establishments. Because of the barangay's proximity to Panglao and the fact that it possesses some of the more attractive beachfront properties in the island, more and more outsiders are buying lands in San Isidro and constructing tourist resorts here. These new residents and property owners do not avail of the services of the barangay waterworks system. Instead, these newcomers dig their own water sources and, with their powerful and expensive pumps siphon off untold quantities of water for their own needs. Unless they are able to come up with appropriate measures the people of San Isidro fear they would have to face the prospect of resource depletion earlier than expected.

### **Case Study 2: Catarman's Waterwell-based Organization<sup>11</sup>**

Like most other barangays of Dauis, Barangay Catarman is presently serviced by BWUI, the private waterworks utility that derives its water from the Corella aquifers in the mainland of Bohol. This means that the three traditional waterwells found in the barangay are not anymore used as before. Still, the people of Catarman have assiduously maintained at least two of them and kept their well-based organization with the same vibrancy as in days before when people in the community were still solely reliant on their traditional water source.

The most organized of the remaining Catarman waterwells is the Atabs<sup>12</sup> Well. Dug out in 1914, the well has been supplying the barrio folks with its remarkably sweet water since then. People of the barangay say the well's water flows down from above the

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<sup>11</sup> Based on the proceedings of FGD conducted in the area on September 17, 2011

<sup>12</sup> Atabs is short for "Atabay", Bisayan word for well. It's a play of words that shows the sense of humor of the locals. The word "hongos" is also pronounced as "honglos" in Cataman.

low chain of hills that rise above the barrio. When one draws water from this well, chances are one gets tiny crustaceans- or even an eel – in one’s bucket.

With the entry of BWUI in the area, people have ceased using the well, except on rare occasions, but the barrio residents still maintain the well because they see it as fallback in case of water service interruption by BWUI. Today, the well features *motons* and plastic pails poised above the well’s mouth as if people are still coming as in years past. The well’s mouth is secured by heavy wooden gratings because not so long ago a local woman had fallen down the 30-meter shaft while trying to draw water from the well. The well area is covered by a large G.I. sheet roof and surrounded with cement seats that also form part of the retaining fence. The whole place is very clean. On one end of the shed one can see a large bamboo basket. This basket used to carry cleaners down and up the well shaft.

Our FGD visit in Catarman coincided with the regular meeting of the Atabs *hongos* that administers the well so most of the officers were present. Their set of officers include a President, Vice-President, Secretary, Treasurer, four PROs who function to call in members during the regular monthly meetings and four other officers assigned to clean the well area everyday. As in San Isidro, the Atabs *hongos* officers do not get any salary. They also do not have fixed terms in office but elections may be called by the members when they see it fit. During our visit, we were shown the notebook that contains the minutes of all their meetings. We were also shown their SEC registration as a community organization formally known as Atabay Community Association, Incorporated. The SEC registration, according to the officers was done seven years ago to enable the group to receive donations for the development of their waterwell. One time the *hongos* managed to contract a sizable grant from a congressman but a local politician wanted it diverted to barangay projects other than the development of the barangay waterwell so they decided to forego with the financial assistance. This experience created in the minds of the people a general distrust for politicians and wariness for outside interventions.

According to the former *hongos* president who attended our FGD, when he was still a young boy of 5 he remembers his father was president of the well *hongos*. Since he was already an old man of more than 70 years, there is reason to believe the local organization must have started since the well was first dug out ninety seven years ago.

The Atabs Well organization has some 267 registered members. These members are not individuals. Rather each member represents a household. The Atabs *hongos* does not charge any membership fee. Nor does it collect monthly dues. Their standby fund is derived from fines paid by those who have not attended meetings or those who have not participated in the regular *tagbo* or community cleaning of the well area. Fine for non-attendance in the *tagbo* is P50. The *hongos* fund is used to finance the maintenance of the

well. This includes replacement of the rope, the buckets and the light bulbs inside the well area. When the time for the *sag-a* or regular cleaning of the well shaft comes, the *hongos* members would contribute an amount to pay for the cleaners.

Members who would avail of the well are not charged any user's fee. Neither are they limited in the number of containers they bring into the well. The idea of a *kalas* is alien to Catarman. Even non-members or outsiders could draw and use water from the well for free. This is because, as one officer explained, water is free resource, a gift from God that should not be denied to anyone in need of a drink. When asked if conflicts have occurred in the past among well users, the answer was negative.

Catarman's waterwells are also advocated to certain saints. The Atabs well is advocated to three: Sto Nino, Our Lady(unspecified) and St Isidore (Isidro). Fiestas are also celebrated over these patron saints but there are indications that unlike in San Isidro(Canlungon) , the choice of these patron saints was not bound to some miraculous event.

Also, like in San Isidro, the Atabs Waterwell once served as a sort of community center for the people of the barangay.. Here, the barrio people met to socialize and exchange news and information in an informal setting. Young men and women also met their future mates while drawing water from the well.

Since the local LGU does not have its own waterworks system, it has no conflict with the *hongos*. In fact, the barangay officials have a most cordial relationship with the members of the well organization. During the FGD, the Barangay Kagawad assigned to Catarman attended the proceedings. He also made the announcement that the Barangay Council intends to renovate that part of the retaining wall facing the basketball court so that seats could be made against it for onlookers to sit on.

Again, as in Barangay San Isidro, Catarman is vehemently against the plan of the Municipal government to utilize their well in an envisioned municipal-wide waterworks system. For the members of the Atabs *hongos* this plan totally goes against the most basic principles of their organization. Also, the Atabs well sits on private land donated by its owner for the use of the community. If the well is taken over by the municipal government, they fear the original intent of the donation would be lost. Also, the people of Catarman is very much aware of the experience of other places with a municipal waterworks system that went awry, leaving the people waterless for weeks as they waited for their waterworks to be fixed. The old people of Catarman remember that before their barrio had their well, they used to paddle their boats to Baclayon across the sea just to get drinking water. They do not want this to happen again, and their best assurance for this is



to keep their nearly a century old Atabs Well ready for use at all times even as they avail of the water service provided by BWUI.

### **Case Study 3: Bingag's Chapel-based Well Organization<sup>13</sup>**

Bingag is one of those Daus barangays with a great number of wells – forty four in all. This is not surprising: the land practically sits on water. It calls itself the land of caves because so many are found within its confines, most of which contain pools of clear water inside. In earlier times, inhabitants of this place relied on cave water for their daily need. It was only during the early part of the American regime that a great number of wells were dug up to service an ever-increasing population.

The Miano waterwell is the only Level III waterwell in this barangay. It is located far into the interior, less than a hundred meters from the boundary of barangay Lourdes of Panglao. It's sweet water services some 700 of the roughly 877 households in Bingag and in the adjoining barangay of Lourdes.

Although it cannot now be ascertained when this well was dug up, there are indications this well dates back to the 1930's or even earlier. The older inhabitants say their forebears determined the presence of water in the area by means of *duk-duk* – i.e. by an expert hand tapping the ground surface and analyzing the returning vibrations.

The Miano well got its name from the landowner who donated that portion of his property for communal use- a certain Emiliano( nicknamed 'Miano') Millan. This was when water was found in that particular spot. Later, as the organization developed, a chapel was also built beside the waterwell as a way of strengthening it. The people named both their waterwell and their chapel San Isidro because they claim he is the patron saint of waterwells.<sup>14</sup> To differentiate their chapel from others similarly named, people took to calling it San Isidro Labrador –Miano chapel.

The organization that has been managing the Miano well since the beginning exhibits all the characteristics of the traditional Daus waterwell *hongos*, with its governing structure, membership rules and provisions for communal service all centered on the maintenance of a water source. Curiously, the members of the Miano well organization do not call their organization a *hongos*. For them *hongos* means the mutual and communal service of a farming economy and does not apply in their case. In fact, they consider themselves a chapel-based organization. While this organization also takes

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<sup>13</sup> Based on proceedings of the FGD conducted last September 21, 2011.

<sup>14</sup> <sup>14</sup> Interestingly, all the three FGD sites we have chosen have wells dedicated to San Isidro Labrador. While this particular saint is popular in rural Bohol, it was only in Bingag that we heard of this saint's cult being connected to waterwells.

care of the maintenance of the adjoining well, the members are expected to fully participate in the regular religious services of the chapel, i.e. community masses, Sunday afternoon communal rosary and the annual novena to San Isidro Labrador that culminates with the chapel-waterwell fiesta on May 15. In fact all the funds raised during the year by the organization goes to the holding of the annual fiesta. For the Miano waterwell organization, holding a fiesta and spending its funds for the annual celebration ensures the continued existence of their water source. According to an elderly member, there was one time in the past when the barrio folks decided to forego with the celebration that year because of economic difficulties. That year, according to her, the well began to smell foul and its water became stale. From that time on, the people endeavored never to miss celebrating the Patron's fiesta.

In 1994, the Miano well became a Level III water source when the well organization agreed to the offer of their barangay LGU to use the San Isidro waterwell as the main reservoir of the planned local waterworks system. With funds from a grant by the local congressman, mechanism for pumping out water and distributing it to individual households was set up at the Miano well. The barangay LGU now shoulders all expenses arising from the maintenance of the well and takes care of collecting fees from users. Exempted from paying the monthly fee are some 16 households who are considered the original members of the well-organization. Aside from this, the LGU pays a monthly token (*pahinungod*) of P450 to the organization for its use of an originally privately owned facility. This amount, together with all other monies raised by the organization from penalties and annual contribution of P100 per member is lent out, thus increasing the organization's standing fund.

As in San Isidro and in Catarman, the people of Bingag do not favor the idea of the Municipal LGU taking over their well for use in a municipal waterworks system. The members of the Miano waterwell organization are convinced the capacity of their water source is not infinite. Thus, using their well to service a wider clientele would only result in faster depletion of the gift they received from their fathers. Bingag doesn't have to look far for a case in point. Not far from the Miano well in Panglao town lies Canhilbas spring, once a rich water source tapped by Panglao for their municipal water system. Now, after less than ten years of continued use, Canhilbas spring has turned salty and showing signs of deterioration. The members of the Miano well organization say, if the municipality would insist on their waterworks project, they would rather pull out their submersible pump and return the well to Level I.

### **Drawing Insights from the Waterwells of Daus**

For a long time Boholanos have had to live with an ethnic tag of being a people with an *ija-ija aho-aho* mentality. The term roughly translated means "yours is yours;

ours is ours,” and indicates a type of individualism or parochialism so prevalent it is almost impossible to whip Boholanos into a larger communal undertaking.

Our study on the waterwells of Dausis has led us to rediscover an interesting value indicator that may give lie to the claim we are inherently individualistic, for if, indeed we have the *ija-ija aho-aho* mentality, how do we account for the persistence of *hongos* in our communities – either in its traditional farming sense or in its unique Dausis application?<sup>15</sup> As we have seen in the three case studies, the Dausis well-based *hongos* is a real and basic form of community organization and applied as a management style to take care of a natural resource.

On the other hand, the FGDs we conducted in three different places in Dausis have revealed to us the fact that the *hongos* system comes in many different variations and that different communities freely make their own adaptation of a classic theme. In fact, after our third FGD we entertained the idea of conducting the same activity in the rest of the barangays in Dausis just to find out what other forms *hongos* have taken in the other corners of town. This also led us to conclude that perhaps there must be some truth to the *ija-ija aho-aho* tag, only it takes on a more positive interpretation, i.e., as a form of initiative so strong it disdains unquestioning adherence to established forms.

The apparent strength of the Dausis well *hongos* is remarkable. It’s integrity seems to stem from the fact that it is both homegrown and tradition-based. It seems that local organizations are stronger when they are built on structures generated from within rather than on something external and imposed. On the other hand the strength of Dausis’ well-based organizations and their reticence over any attempt at absorbing them in a larger and more expansive set-up seems to indicate a mentality more at ease with micro-level rather than macro-level management. In other words resource management for the people of Dausis is more effective when conducted along the level of the basic community.

Lastly, there is the fact that while most communities in Dausis disapprove of their LGUs attempt at absorbing their water wells and constituting a municipal-wide water works system, they do not feel threatened by the operation of BWUI in their locality. This is because a municipal waterworks set-up taps into a local resource that once served only a few hundred and disperse it to service a much larger clientele. The people of Dausis sees this as a threat to the sustainability of their water resource and so they oppose it vigorously. On the other hand BWUI does not utilize local waterwells as reservoirs. It gets its water from the aquifers of Corella in Dausis. When householders avail of the services of BWUI, they meet their daily requirement for water without touching their

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<sup>15</sup> Aside from the practice of *hongos*, Boholanos also have the *dajong* (literally to carry each other’s burden), a real community-based organization geared towards mutual assistance in times of death in member families.

natural resource, thus keeping it in reserve. Obviously, the more primordial concern of the people of Daus is conservation of their water resource and functioning well-based community organization enable them to achieve this aim.

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