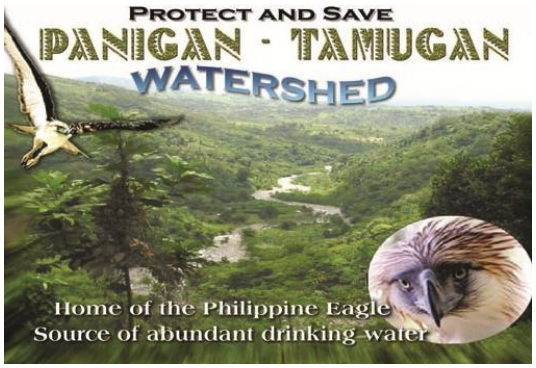


Bantayo Aweg

Community-based Water Monitoring for Panigan-Tamugan Watershed

Background

The vision to establish a community-based water monitoring in Davao City started in 2004, inspired by the experience of Tigbantay Wahig (watcher of rivers) in Bukidnon. The former Davao River Conservation Coordinating Committee (DRCCC), the Interface Development Interventions Incorporated (IDIS), the Davao City Water District (DCWD), the Environment Management Bureau (EMB) and other concerned institutions conducted series of meetings to define the project in terms of objectives, the parameters to monitor, the frequency of monitoring and the role of each institution.

A memorandum of agreement was already drafted in 2004 stipulating the tasks of each institution involved. However, the MOA was not yet signed when the DRCCC was dissolved. But IDIS believes that even without the DRCCC anymore and the MOA with other concerned agencies, its commitment to help empower the community in monitoring the health of their rivers and be the first one to know of any changes or deterioration of their waters should continue. A present, the life of the community is very much connected to their rivers – they use it for bathing, swimming, washing clothes, and even farm animals depend on the rivers too.

Another compelling reason to monitor the waters of Panigan-Tamugan Watershed is the fact that the Davao City Water District has identified it as Davao City's future source of drinking water.

Getting Organized

Thus, during the first quarter of 2005, IDIS conducted series of community consultations and environmental awareness in Baguio District particularly in Carmen, Tawantawan and Gumalang. In one of the meetings held in Barangay Baguio sometime in March 2005, the participants decided to form a group and committed themselves to monitor the health of their rivers. It was on that meeting that they came up with a name for their group - ***Bantayo Aweg*** (a Bagobo term that means water guardians or watchers). Thus, March 2005 is considered the founding month and year of the group. With the support of IDIS, series of meetings and environmental awareness among the initial members continued and new potential members to the group were invited.

The main objective of the group is to protect the water supply and quality of Panigan and Gumalang Rivers through monthly monitoring of the health condition of the said rivers using eight (8) parameters mentioned below and to keep watch over illegal fishers such as those using poisons. Another objective is to report the data to the community and to the public especially to government agencies with mandate to protect water resources.

Formal Training and the Kits

IDIS was also helping the community in researching for simple water monitoring kits that they can use with ease. Consultations were also conducted with DCWD and ADDU on the kits to be bought with regards to the availability and reliability of supply. Communications were also sent to the manufacturers and known users of the identified kits.

About four months later, Bantayo Aweg members were formally trained with the technical and financial support from IDIS and CRS. Sixteen (16) people from Carmen, Tawantawan and Gumalang, Baguio District were trained. The name Bantayo Aweg was agreed by everyone as their official name.

The resource persons during the training were Dr. Lourdes Simpol of the Ateneo de Davao University, Dr. Ruth Gamboa of University of the Philippines and Mr. Serafin Billiones of Tigbantay Wahig, a group of volunteers also doing water monitoring in Lantapan, Bukidnon for more than a decade now.

After the training, the newly organized Bantayo Aweg members had an exposure trip to Lantapan, Bukidnon to also learn from the members of Tigbantay Wahig. Bantayo members received input too about agroforestry and some environment-friendly farming techniques such as terracing, hedgerows, and farm-waste utilization.

Regular Monitoring

Regular river monitoring started right after Bantayo Aweg finished their training in July 2005. Three stations have been established, two stations in Panigan river (located in Purok 8, Carmen and Purok Durian, Tawantawan) and one in Purok 8 Gumalang River. Regular monitoring day usually serves as a picnic by the river for the members and their families. Actual monitoring lasts for 2-3 hours during the first few months but as they became comfortable and confident in using the kits, monitoring lasts for 1 to 2 hours only. Going to the station takes about 30 minutes for those in Tawantawan and Carmen. For those in Gumalang, just 5-10 minutes except for one member who lives quite far (30 minutes) from the station.

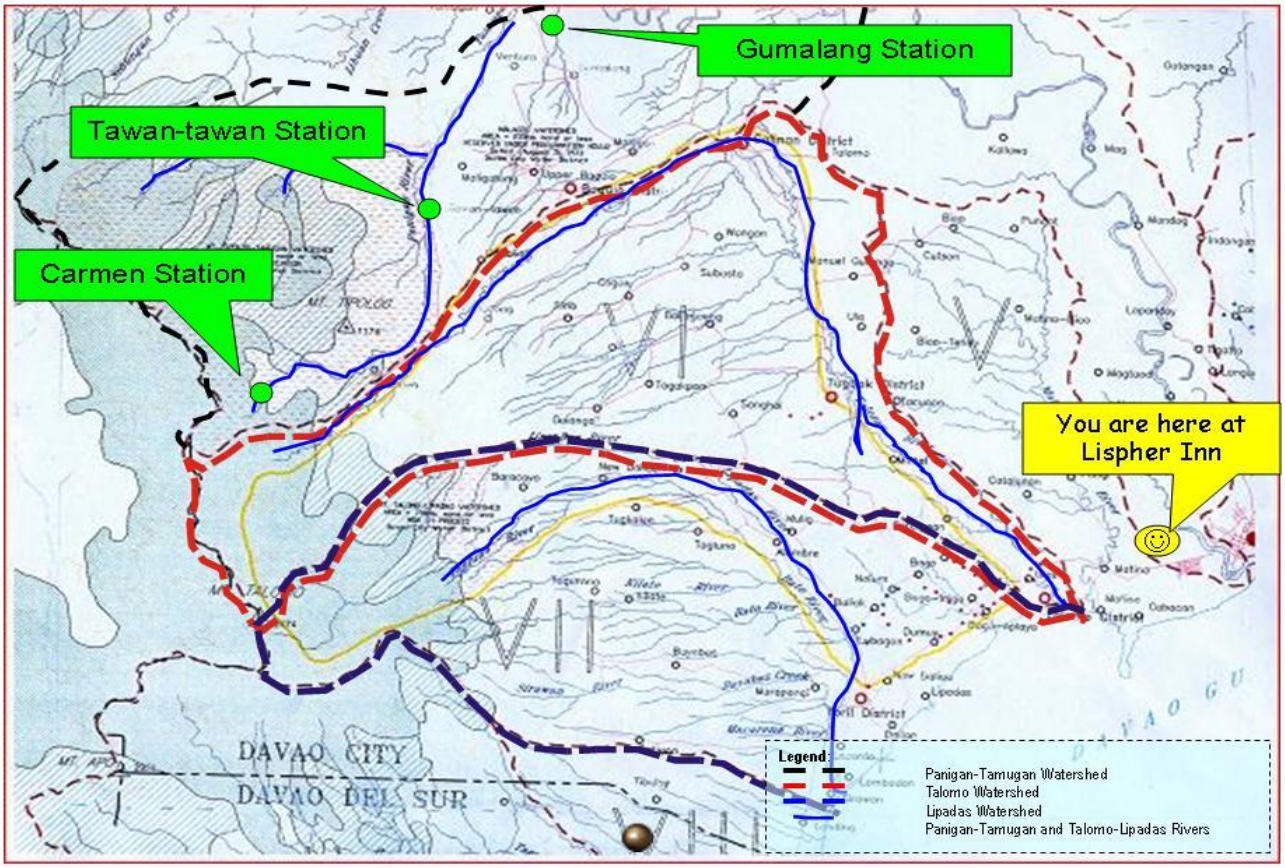
July of 2006, the Environment Management Bureau started to analyze for total suspended solids the water samples submitted by Bantayo Aweg every month after EMB was supplied with a roll of filter paper to be used during the analysis. Since then, Bantayo Aweg has been regularly submitting to EMB water samples from their three stations.

Sharing their knowledge and experiences

After nine months of regular monitoring, members of the Bantayo Aweg became confident in what they do and even helped the Philippine Science High School as the school started monitoring also Davao River and its tributaries. They were also able to demonstrate the use of the kit to some international guests from UNESCO facilitated by CRS and PCEEM. They had already presented the annual results of their monitoring to their respective barangay LGU for two consecutive years now.

During the presentation of results to local leaders, some sitio and purok leaders and other councilors signified their interest to participate sometimes in the monitoring. Just recently, the youth in Tawantawan with the leadership of their SK chair was given an orientation about Bantayo Aweg and their activities. From the said meeting they commit to be part of the group and had already joined the regular monitoring last month.

Bantayo Aweg Monitoring Stations *(Base Map from DCWD)*



Bantayo Aweg monitors the health of their rivers using the following parameters:

1. temperature
2. color
3. pH
4. dissolved oxygen
5. nitrate
6. phosphate
7. stream flow discharge
8. biological indicators (not yet religiously implemented, requires more time at least half day for the volunteers)

LGU Support

The Barangay Council of Gumalang and Tawantawan have the following support to Bantayo Aweg :

- P 300.00 monthly allowance for Bantayo Aweg members and supply of reagents in Gumalang
- Initial agreement among members of the Barangay Council in Tawantawan to come up with a resolution adopting the project. This is to ensure that when reagents are needed to replenish the current supply, the barangay can allot a budget to purchase the said reagents.
- Recognition of the group by allowing the members to have individual identification card with the signature of their respective Barangay Captain.

Initial Key Results

The almost two years of monitoring yielded the following results:

- Among the three stations, the water quality of Gumalang river is the worst in terms of color, indicating soil erosion problem. Even without measuring the total dissolved solids or TDS, Gumalang would have the highest value as indicated by its brown color.
- The same trend for the results of total suspended solids analysis from EMB. Gumalang river always has higher TSS value per liter of water compared to the other 2 stations. The one high value from Carmen was mainly leaves/grasses and not sediments as manifested by its clear water sample
- In terms of dissolved oxygen (DO) all three stations passed the DENR standards for surface water. Except in Gumalang where there were three occasions that the level was below the threshold level of 5 mg/L..
- Carmen station showed the coldest water temperature with 18 degrees Celsius. Tawantawan and Gumalang stations temperature ranges from 21-27 degrees Celsius
- Generally the three stations pH level is still within the ideal 6.5 - 8.5 range except in few instances that the three stations are below the threshold value.
- In terms of nitrates and phosphates, again, it's Gumalang river that showed consistently higher values compared to the other 2 stations.
- In terms of land use in the surrounding areas of the 3 stations – Gumalang area is the most intensively farmed compared to Carmen and Tawantawan.
- Comparing stream flow discharge rate of the three rivers, Tawantawan showed the highest average with 1.714 cu.m/second (and the most erratic as manifested by its high average standard deviation compared with the other 2 stations). Carmen comes next to Tawantawan with a discharge rate of 1.396 cu.m./second. Gumalang has an average discharge rate of only 0.347 cu.m./second.

How has the program helped the local communities?

"The program has…

- Educated us more about environmental issues especially pertaining to water and its importance;
- Empowered us to protect our water resources from destructive activities such illegal fishing using toxic chemicals;
- Improved our self-confidence; and,
- Encouraged us to continue to be vigilant and protective of our water resources.

Conclusion and Recommendation (taken from the reports during yearend assessments of Bantayo Aweg)

- Gumalang has the worst water quality and hence needs urgent attention to prevent further degradation
- Mapping of the land uses surrounding the stations should be conducted soon to be able to point out potential sources of contaminants
- To urge local LGUs to strictly observe the 20 meter-buffer zone between rivers and plantation and to plant these areas with diverse trees and bamboos.
- To continue reporting of data to the LGU and lobby for their support to ensure sustainability of activities (includes support for the purchase of reagents)
- To religiously conduct biological monitoring every six months starting 2007.
- To encourage more community members especially the youth to join the monthly monitoring
- To link up with other monitoring groups within and outside the country.
- To sustain educational sessions within the group

Bantayo Aweg Members

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