# I. BACKGROUND

Taguibo Watershed is given its neighboring community with resources that accommodate some of the communities' basic needs. The people utilize the water from the stream and springs for domestic, agriculture and commercial purposes. The forest covers play a significant function of preventing excessive erosion and soil run-off preserving nutrients and productivity of the area such as rice lands and agriculture areas below. In spite of these contributions, destructive activities such as kaingin farming, illegal cutting of trees, small-scale mining and quarrying operations are still happening in the area. These results to degradation, denudation of the watershed, increase erosion and loss of biodiversity. Once significantly disturbed, its capacity to provide the resources are also affected like the quality and quantity of water that can be able to supply to the communities.

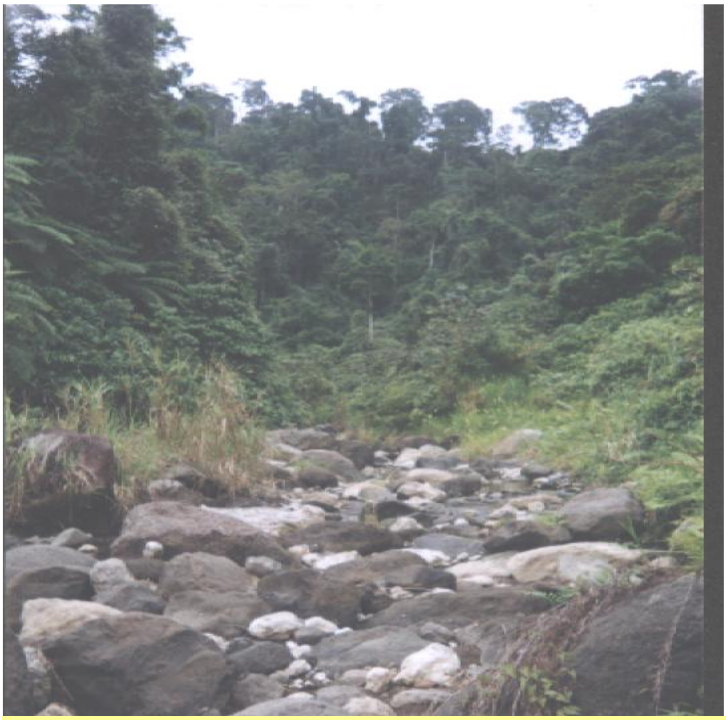


Photo 1: Dead creek found adjacent at the Mt. Hilong-Hilong range with an altitude of 1,000 meters above sea level

In 1994, phase of development under Comprehensive Project was the utilized of water source supply in Taguibo River and above all, surface water consumption was a vital need to classify area for a watershed to improve water quality and restore ecological balance. In 1995, BCWD established effort with the DENR of identifying the Taguibo River Watershed Area

In September 4, 1997 per Presidential Proclamation No. 1076, the decree approved by President Fidel V. Ramos instituted the Taguibo River as Watershed Forest Reserve covers roughly about 4,367.44 hectares of public domain in the City of Butuan and Municipalities of Remedios Trinidad Romauldez and Cabadbaran, Province of Agusan del Norte.

For the past seven (7) years, no regulatory approaches for improvement that can administer the watershed except DENRs -CBFM & ISF Project implemented. In view thereof, BCWD recognize the importance of a Watershed Management and Development Plan to be formulated that can construct a process of community participation to build up a stronger relationship and responsive development towards the watershed. In this perspective, BCWD associated with LEAF Foundation Inc. to conceptualize a proposal on the formulation of watershed management plan for sustainable development program.

Photo 2: Overview of Camigiun Island sited from Mt. Hilong – Hilong ridge at an altitude of 1,200 meters above sea level environs of the Municipality in Cabadbaran.

In 2005, Butuan City Water District (BCWD) funded an amount of P1.7M with the collaboration of Critical Ecosystem Partnership Fund (CEPF) small grants program funding support of P1M and LEAF Foundation, Inc. (LFI) provides a counterpart fund of P300T which, a joint venture to establish a Watershed Management & Development Plans for the Watershed Forest Reserve of Taguibo River and that, LFI will do the proposed management and development plan through a framework of realistic activities and management system for the stability of the project on a long-term scale.

In 2006, implemented the project entitled "Taguibo Watershed Management and Development Plan" officially started in February 2006 and end in February 2007.

# II. PROJECT OBJECTIVES

The goal of the project is the protection of biodiversity and other natural resources through reliable resource information and sustainable management of the declared forest reserve area by:

1. To conduct information and education initiatives to the different stakeholders through lectures, training, for a and exposures;
2. To conduct socio- economic profiling of the dwellers and occupants;
3. To conduct environmental assessment of biophysical condition;
4. Formulation of Taguibo River Watershed Management and Development Plan and establishment of co-management agreement among Civil Society, NGOs, LGUs and line agencies;
5. Institutionalization of the Watershed Management & Development Plan to the Local Government and Regional Development Council for adoption.

## a. Project Expected Results:

i. Baseline information on the socio-demographic and economic profile of the forest dwellers/occupants;
ii. Extent of forest cover and biodiversity density of flora and fauna species;
iii. Stakeholders agreed for co-management arrangement as part of the approval of the Watershed Management Plan;
iv. A capacity building plan to support to co-management of the Watershed Forest Reserve.

b. Project Deliverable are:

i. A socio-demographic and economic analysis report of the forest settlers.
ii. Biodiversity Inventory Report of the Flora and Fauna Species.
iii. Proceedings for the workshop and consultation in the making of the Watershed Management Plan.
iv. Approved Watershed Management Plan and agreed framework for co-management arrangement for the Taguibo Watershed Forest Reserve.

# III. PROJECT ACCOMPLISHMENTS

(By Component)

## I. Program Advocacy and Environmental Awareness

### 1. Courtesy calls to concern line agencies

The project staff arranged the institutional linkages to major line agencies and LGU's that are involved in the projects such as DENRs-Caraga/, LGU-Butuan City, Cabadbaran, and RTR, PENRO, CENRO-Butuan & Cabadbaran, NCIP-Caraga & Province, BLGU's in Anticala of Butuan City, San Antonio of RTR and Mahaba of Cabadbaran, Agusan del Sur were formally informed about the project that will be undertaken by LEAF and Butuan City Water District. Likewise, to other line agencies concerned that can support the project implementation such as AFP Detachment at Brgy. Mahaba, San Antonio, Anticala and Regional Command in Brgy. Bancasi were also properly informed for the security of LEAF and BCWD personnels during the conduct of resource assessment and consultation meetings.

Furthermore, the Tribal leaders were respectfully informed because of the existence of Indigenous people in the area. The watershed area is declared as Ancestral Domain Claim by Tribal Group issued with FPIC certification last March 6, 2006.

During the visits to different line agencies, concerned units, LGU's, commitments and support to the project were assured by their chief executives/heads/representatives. A positive response was exhibited by their agencies, thus, a full support and commitment is expected.

## 2. Production of IEC Materials (leaflet/brochure)

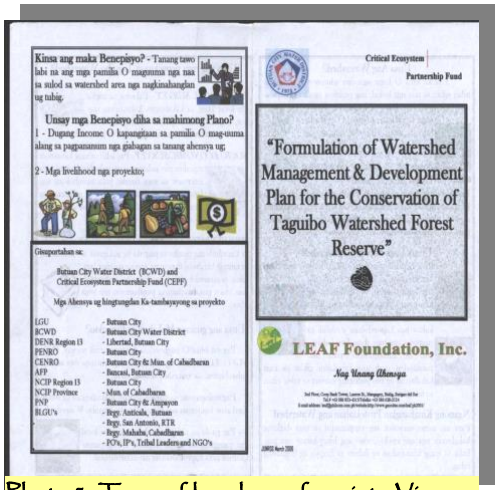



Photo 3: Type of brochures form into Visayan language to simplify the project content for easy to understand by the community.

In order to increase of awareness among stakeholders about the project, an IEC material was developed and formed in a brochure. Outlined was the rationale/objective and project components translated into Visayan version so that it can be easily understood by the community.


The brochure enhanced the dissemination of information about the basis and intention of the project. There were more than 500 copies of the brochures distributed to different stakeholders and concerned communities. The brochures are distributed during the consultation meetings and focus group discussions during household survey interviews.

### 3. Seminar-series of community consultation, orientation on environmental awareness

There were 10 series of consultation meetings with concerned group of stakeholders conducted during the period. The consultation meetings highlighted the presentation of the project rationale and objectives of the project. Issues, problems, and concerns were discussed as well as the possible involvement of the community during the implementation of the project.

Photo 4: Consultation of IPs at Sitio Tagkiling of Barangay Anticala, City of Butuan

For the period of this activity, every concerned barangays, IP leaders (Manobo & Mamanwa) and communities accepted its project concept towards its conservation/protection program of the Taguibo Watershed. The list of series of consultation meetings with the number of participants and the line agencies concerned was properly documented.

Photo 5: Consultation of IPs and non-IPs at Barangay San Anotnio of the Municipality in RTR.

Photo 7: Household survey of Mamanwa's tribe in Barangay Mahaba of the Municipality in Cabadbaran.

Photo 6: Consultation of IPs and non IP at Barangay Mahaba of the Municipality in Cabadbaran

## 1. Rapid Rural Assessment/Participatory Rural Assessment

The assessment aims is to assess the process of the activities undertaken and consolidate the data through the forum with technical and concerned assessors and local researchers and the objective of the workshop forum is to conduct a participatory assessment of the activities undertaken together with the technical assessors and the community local researchers/assessors to identify valuable resources in Taguibo Watershed.

Photo 8: Identifying of resources with the participants during workshop.


Photo 9: Resource mapping within the area of Taguibo Watershed Area by PO, IP and BCWD

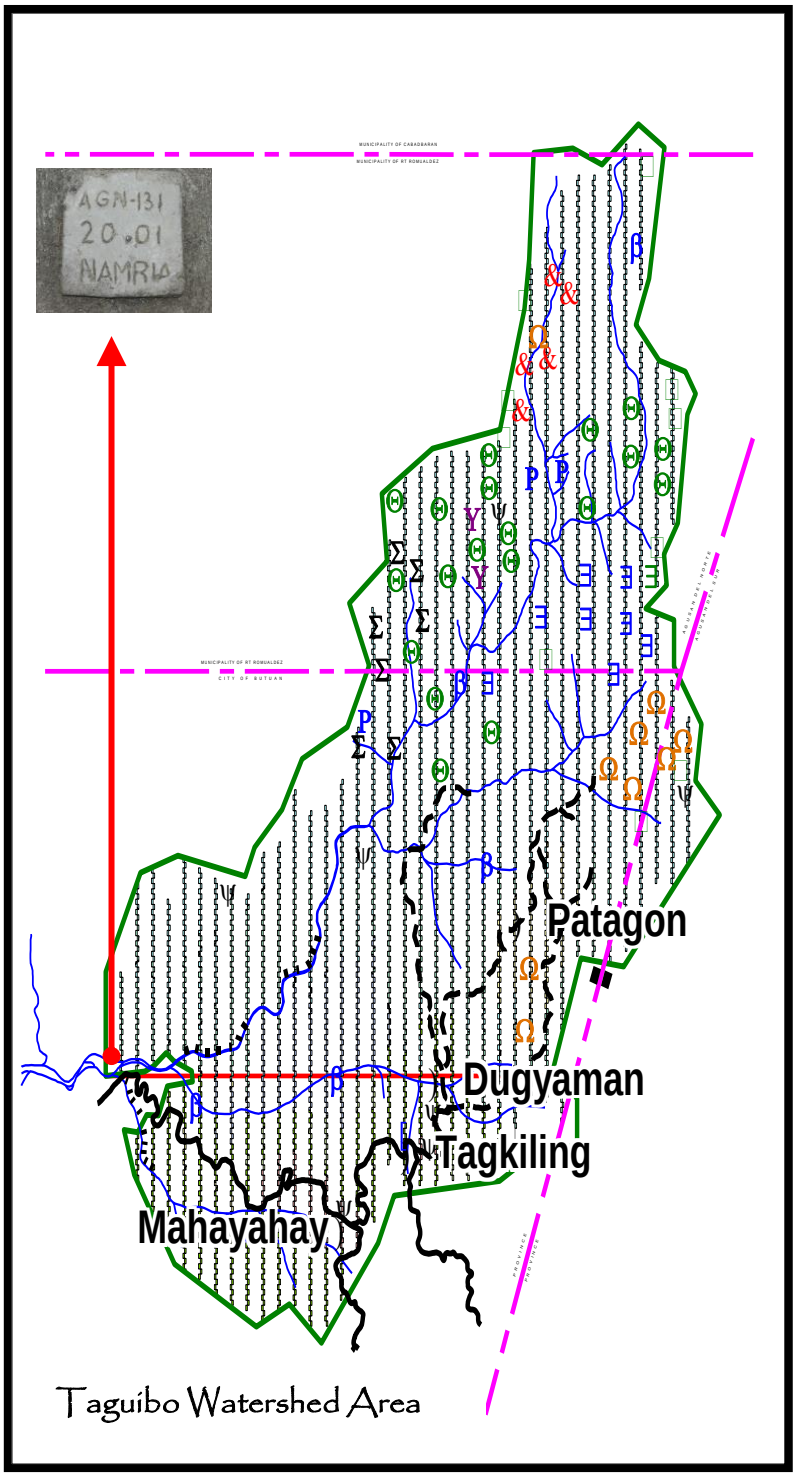
The Community Resource Mapping on Rapid Rural Assessment was conducted last May 27-28, 2006 participated with the different stakeholders. Attendee's were the representative from three barangays of Anticala. San Antonio, Mahaba, Tribal Group Leaders, IP's, PO's, BCWD and LFI. The activity established participatory results of 7 maps within the Taguibo Watershed namely; Soil Map, Agriculture Land-Use Map, Slope Map, Eco-Tourism Map, Mineral Resources Map, Forest Land-Use Map and Biodiversity Map (see activity report on Annexes)

Photo 10: Group discussion of participants during the workshop.

## 2. Baseline/ Survey Establishment

There were 39 corner/markers established in the baseline, an interval distance of 200 meters both-sides as basis for the strip-lining scheme for resource inventory. The baseline reached a total distance of 22.23 kilometer from NAMRIA monument up to the edge of the watershed boundary.

Parallel with the biophysical survey as shown on the map is the conduct of flora and fauna inventory utilizing the same group of technical assessors using the strip line design on transect method of flora and fauna inventory.




## 3. Inventory of Flora and Fauna

Biological Survey focusing on species diversity, are necessary both national and global scales. Biological inventories provide a finer –grained view of biological diversity and can be used to establish national / local conservation programs and policies. These efforts can serve to identify valuable biological resources of which some are unknown, while others are locally known but have potential for much wider use. Inventories and baseline data which to monitor changes is biological diversity and to trace environmental impact of development projects.

### 3.1 Sampling Design

An Inventory of trees and shrubs will be done at 2 meters on each side of the trails on sampled stations/plots border. The assessment of trees and shrubs will be done by a belt transect method. Estimated three thousand six hundred twenty (3,620) by 50m x 2m belt transect method will be established in the project site of watershed area in studying zonation of forest trees species work, vegetation of grasses, herbs, vines and other plants.

It basically consists of strip line technology in systematic manner, with equal distance interval of 200 meters, which permit continuously sampling within every specified strip. The strip width varies 1-2 meters to either side of the centerline. One-meter strip width will be used for grasses, herbs, vines and other plants while 2 meters width will be used for trees (Design on Annexes)

The selections of the belt transect will be identical on altitude, vegetation types and slope gradient. Established transect at the base, middle and at the upper part of the peak. Transect will be marked off using calibrated plastic ropes. Areas without cliff will be selected as site for these plots for easy establishment of transect line and recording.

In ecological studies such as this, tree diameter at breast height (dbh) will be used as an estimate of dominance, while in forestry; height is used as an estimate of dominance and basal areas as the basic value for timber volume calculation.

### 3.2 Sampling Method

Data gathered from this study includes fauna observation and flora composition. A boundary line was established at NAMRIA as mentioned above on baseline/survey establishment will represent the sampling system distribution of the belt transect design. For every strip, established belt transect sampling plot measures 2m x 50m equivalent to 100 sq. m. were inventory of trees species with a diameter breast height (dbh) at 5 cm. above and shrubs species of 5 cm. below will be conducted. For 1m x 1m sub-plots at both-edge of the sampling plot used for herb, grasses and vines inventory.

Aside from the biological survey, activity will includes 10% inventory of timber stand of trees structure and present land-use area profile of the project.

## 3.3 Sampling Outcome

The 3-months period project established actual sampled plots have reached to 4,049. The total number of strip cope up only to 37 lines with an interval of 200 meters both-sides. Area site categorize of study into 3 levels based on altitude range, it shows that level range "A" as Base have 980 plots; "B" as Middle have 1,889 plots and "C" as Top have 1,180 plots based on their specific elevations

Photo 11: (Upper & Lower) Identifying of plants species by bio researcher during the conduct of inventory.

In the processed of inventory, timber cruising was also determined from 10 cm and up for timber stand in the watershed area. There were 8,098 sampled plots recorded for data processing and the number of plots that flora and fauna inventory were undertaken and 37 strip line for timber stand inventory of tree species.

## 4. Secondary Data Collection

In this study, specimens were collected by sample collection in the different habitat found within the sampling sites. The plant/data collector took plant samples for shrubs, herbs and vines for identification purposes. As for trees species, the collector took leaf, bark for classification as well as on timber cruiser on commercial and non-commercial species. The number of individuals, diameter at breast height (dbh) and number of plots were recorded for the computation of the indices species structure. The importance value of the species was also computed to determine its probability of importance species.

Data for the ecological/economical/cultural value of plant species was obtained through informal interview with the local residents, available publications of Forestry, Botany and other biological references.

## 5. Biodiversity Analysis

There were several measures or indices used to describe the species structure of plant species. In this study, relative density, relative dominance, relative frequency, species importance value, importance probability and species diversity are indices used to depict the composition of plant species. Each indices of species structure was illustrated through level range altitude, habitat types by elevation, habitat type regardless of elevation and per plant type. A comprehensive biodiversity report was prepared which contains baseline data on flora composition and species structure of the plant species found in Taguibo Watershed. The ecological status of the species was based on the IUCN standards were also established (attached is the biodiversity report).

The Pipoly and Madulid (1995) indices of species structure were derive/calculated using the following formulas:

- Density (D)

$$\text{Density} = \frac{\text{Number of individuals}}{\text{Area sampled}}$$

- Relative Density (RD)

$$\text{Relative density} = \frac{\text{Density of species A}}{\text{Total density of all species}} \times 100$$

- Frequency (F)

$$\text{Frequency} = \frac{\text{Number of quadrats in which species A occurs}}{\text{Total number of quadrats examined}}$$

- Relative Frequency (RF)

$$\text{Relative frequency} = \frac{\text{Frequency value for species}}{\text{Total of frequency values for all species}} \times 100$$

- Dominance (COVER)

$$\text{Species dominance} = \frac{\text{Species basal coverage values}}{\text{Area sampled}}$$

Note: Basal areas of trees were taken at breast height level (1.3 m above ground adjustments relative to slope), while measurements for other life forms were taken at 3 cm above the ground.

- Relative Dominance (RD)

$$\text{Relative dominance} = \frac{\text{Dominance of species A}}{\text{Total dominance of all species}} \times 100$$

- Species Importance Value (SIV)

As a rough and overall estimate of the influence or importance of plant species in the community, the SIV might be useful and was computed by the following formula:

SIV or ni = RD + RF + Rdom,

*Where, RD = Relative density, RF = Relative frequency, and Rdom = Relative dominance*

- Species diversity indices

The Importance Value of Species A and total IV of all species were computed to obtain Species Diversity using the Shannon Index of General Diversity (H'):

$$H' = - \Sigma \frac{ni}{N} \log \frac{ni}{N}$$

*Where ni = total number of individuals per species*
*N = total number of individuals of all species*

The similarity and dissimilarity index of the plant species was determined using the Sorensen (1948) Index (for similarity index) and Jaccard Index (for dissimilarity index) as adapted from Smith (1995). The indices of the plant species was calculated with the use of the Ecostat Software developed by Howard Towner (1992) and described by elevation and per plants.

a. Sorensen Index

$$IS = \frac{2C}{A+B} \times 100$$

Where: IS = Similarity Index
A = Total Number of Species in stand A
B = Total Number of Species in stand B
C = Common Species in both A & B

b. Jaccard Index

Dissimilarity Index = 100% - IS

## 6. Land-Use Assessment/Resource Mapping using GIS

The assessment includes physical structure of Taguibo Watershed Forest Reserve Area, present land-use status of its coverage with 4 maps as the results showing its different identification. These maps were: Resource Assessment Showing the Strip Line Sampling Inventory of Flora & Fauna including its present natural resources statistic within the Taguibo Watershed; Vegetative Cover of Taguibo Watershed Forest Reserve Area: Topographic Map for the whole watershed and last but not least, Land Classification Showing the Ancestral Domain Claim or CADC Area - CBFM of DENR Program with corresponding awarded PO's and Political Boundaries of Butuan City, Municipality of RTR, Municipality of Cabadbaran and Provincial (see Annex - III).

## 7. Socio-Economic Assessment

The assessment was formed in a participatory approach to determine the socio-ecological and economic condition of the community which is fundamental in the creation of the watershed management plan. It has been noted that communities inhabit the Taguibo Watershed area and human activities are inevitable hence socio-economic survey was conducted. The evaluation of socio-economic and environmental behavior is very important, which might affect the future environmental condition of the watershed due to human intervention (Attached Socio Economic Assessment Report).

The main objective of the survey was conducted to address the following;

- ✓ To determine the socio-economic profile of the respondents in the area;
- ✓ To determine the level of awareness of the respondent about watershed;
- ✓ To identify the livelihood practices and the degree of utilization of

respondents within the Taguibo watershed;

- ✓ To determine the issues/problems/concerns within the watershed area;
- ✓ To identify the flora and faun that can be found/observed within the Taguibo watershed area.

## 7.1 Methodology Used

Back-to-back with the series of courtesy calls and community consultations per barangay covered within the Taguibo watershed, the project conducted the socio-economic profiling to each of the target barangays (Anticala of Butuan City, Mahaba of Cabadbaran, and San Antonio of RTR).

The household survey method was used where a socio-economic survey instrument was developed and pre-tested prior to the conduct of the actual interview. The said instrument was used in gathering the socio-economic profile, awareness level, and degree of resource utilization of the community towards the resources within the Taguibo watershed area. The survey questionnaire highlighted the socio-economic activities within the watershed and the resource utilization of the watershed including flora and fauna and its agricultural activities.

## 7.2 Sampling and Selection of Respondents

Respondents of this activity were the occupants and farmer-tillers within the Taguibo watershed. Selections of the respondents were based on the 20% of the total household number per barangay covered within the Taguibo watershed. They were also identified from the set criteria a -those that were living within the watershed and b - those living outside the watershed but have lands/farms inside the watershed and directly cultivating and/ or using the resources.

## 7.3 Survey Instrument and Data Gathering

Photo 12: Interview of respondent (IP) conducted by the Community Development Worker at Purok 4 of Barangay Mahaba.

To gather baseline information on the socio-economic activities of the communities within the watershed, and the

resource utilization of the watershed resources including the flora and fauna, a socio-economic survey questionnaire was developed. It was pre-tested before used in the actual interview in every household.

## 7.4 Data Gathering Procedures

Secondary data was gathered from the Barangay Profile of each of the target Barangays and from Caraga Center for Agricultural Research and Development (CCARD).

Photo 13: Interview of San Antonio Barangay Chieftain Datu Pantagon in the Municipality of RTR conducted by the CDW.

## 7.5 Scoring and Quantification of Data

The survey used the structured questionnaire to quantify the respondents' answers; a Linker scale technique was employed that ranges from 1-5. The scale was quantified based on the different parameters set in this study. On the degree by which the natural resources in Taguibo watershed were utilized, the respondents rated the parameters.

## 7.6 Statistical Analysis

The data collected from the survey interview was sorted and tabulated using the computer software (e.g. excel and SPSS). The data were treated statistically using the measures of central tendencies such as frequency, percentage, distribution, weighted mean and the use of graphical presentation.

The weighted mean value was derived using the following formula:

$$Wm = \frac{\sum [f1\ (1) + f2\ (2) + f3\ (3) + f4\ (4) + f5\ (5)]}{\sum [f1 + f2 + f3 + f4 + f5]}$$

Where:

Wm= weighted mean value

f1 = frequency

Out of the weighted mean value, the following weighted mean range was used to determine the average condition of the situation in question.

| Weight | Scale range |
|---|---|
| 1 | 1.00-1.80 |
| 2 | 1.81-2.60 |
| 3 | 2.61-3.40 |
| 4 | 3.41-4.20 |
| 5 | 4.21-5.00 |

# III. PLAN FORMULATION

## 1. Series of Strategic Planning Workshop

In planning preparations, sequence of meetings during the project implementation was conducted within the declared Taguibo Watershed as Forest Reserve Area from the locality of three baranagay's namely: Anticala of Butuan City, San Antonio of

RTR and Mahaba of Cabadbaran. These participatory approaches may conceive relevant factors both social and ecological in structuring the watershed management plan. This anticipation based from the activities done within the project period during the conduct of Community Consultations from respective three barangay's, Biological/Socio-Economic Assessment, workshop of Rapid Rural Assessment / Participatory Rural Assessment from selected community stakeholders within the Taguibo Watershed participated by IP Leaders, BLGU's, & PO's and last but not least, the Strategic Planning Workshop.


Photo 14: Participants of the training-workshop held at Luciana Convention Center & Restaurant attended by the different line of agencies and the stakeholders of Taguibo Watershed.

The Strat-Planning was made to formulate a plan for the watershed, compatible in formation, as basis for their guidelines of development implementation, manageable and sustainable plan. The proper workshop of major stakeholders was facilitated last October 2006 on planning preparation to create a tangible Sustainable Management & Development Plan for the Taguibo Watershed Forest Reserve Area. The 3-days seminars participated with the LGU's, BLGU's, DENR's, NCIP's, DTI, Fisrt Gen, Water District's from Surigao City, Bislig City, Tandag, Del Carmen, Socorro, BCWD, Conservation International, PO's and IP's/Community held at Luciana Convention Center of Butuan City dated October 11-13, 2006.

## 2. Resource Assessment Presentation and Validation

The resource assessment together with 1st draft of Taguibo Watershed Management Plan presented

last June 13, 2007 held at Butuan City Water District Training Center of Butuan City by selected stakeholders namely: Anticala Tribal Council Chairperson Ruben "Datu Buhay" Dapeniagan, TRICORR-IPGroups of Returness, PENRO Representatives, Barangay Captain of Anticala Danilo Dandanon, PO's headed by Helen Pojaras, Butuan City ENRO, BCWD and CENRO of Butuan City.

The presentation was to re-evaluate the outcome of assessment conducted by LEAF Foundation and review the management plan for Taguibo. The settings of its content thoroughly discussed step by steps and its statement or phrases that suited both intellectual concept for the Technical Working Groups for critiquing, suggestion and recommendations.

Photo 15: 1st draft plan presentation including resource assessment validation held at BCWD Training Hall.

## 3. Presentation and Adoption of Watershed Management Plan

Taguibo River Watershed Management Council (TRWMC)

The council was organized late 2003 through the effort of Butuan City Water District with the collaboration of the PENRO & CENRO of the Department of Environmental and Natural Resources (DENR). Presently, the group was inactive due for handling of chairmanship position of the council to both government agencies PENRO-DENR and LGU. The issue was arranged by LFI to re-group the council and make some follow-up meetings with both agencies concerned as mentioned above. Thru this, LEAF Foundation, Inc. (LFI) and National Economic Development Authority (NEDA) do some initiative on how to set the formation of the council in which NEDA will assume temporarily as chairperson to call up the council in order. Then, a meeting was schedule dated June 15, 2007 for the presentation of Taguibo Watershed Management Plan.

The 15th Day of June 2007 meeting was held at Butuan City Training Hall for the presentation of the 2nd draft-Taguibo Watershed Plan to the Council. These was participated by the Watershed stakeholders and the members of the council; NIA, DENR Regional, EMB Caraga, NEDA, PENRO-DENR, CENROs Butuan and Cabadbaran, City ENRO of Butuan, NCIP Regional Office, SBs of Butuan, RTR and Cabadbaran, 1st District Congressman Office, POs, Tribal Leaders, BLGUs of Anticala, San Antonio and Mahaba, BCWD, LFI.

**Photo 16: 2nd draft of Taguibo Watershed Management Plan presentation to the watershed stakeholders and council member held at Batuan City Water District Training Hall.**

The presentation of the draft continuously undertaken up to fourth, the 3rd draft was presented and held at NIA Regional Office with 24 participants attended dated July 30, 2007 while the 4th draft, presented and held at Butuan City Water District Training Hall with 29 participants attended dated September 5, 2007. (See attendance sheet and minutes of the meeting on Appendices)

Presently, the Taguibo Watershed Management Plan still on the process of finalization for the adoption of the Council.

# IV. PLAN INSTITUTIONALIZATION

## 1. Institutional Arrangement (MOA Signing)

The agreement was partially taken up by the NEDA Director Ms. Carmencita S. Cochingco that, the institutionalization of the Taguibo Watershed Management Plan will based on the adoption of the council. Meanwhile, NEDA will also assist the reorganizing of the council chairmanship to manage its developments and continuing of plans finalization.

### 2. Publication/Billboard Production (IEC)

The billboard designed (See on the Appendices) was allocated to install in the watershed area, the three (3) site selection will be at the watershed boundary line of Sitio Iyao, Barangay Anticala of Butuan City; second at the Barangay Hall of San Antonio, Municipality of Remedios Trinidad Romuladez (RTR); and third at the Barangay Hall of Mahaba, Municipality of Cabadbaran.

The designed was prepared for publication and submitted to LFI Accounting Office for fund release.

### 3. Presentation to Regional Development Council

This presentation will come up when the Taguibo River Watershed Management Council soon adopt the Taguibo Watershed Management and Development Plan. The Council will do the appearance to deliver its programs and projects based on the plan for the approval and support of the Regional Development Council.

## V. PROBLEMS/CONCERNS ENCOUNTERED AND ACTION TAKEN

The implementation of the project did not happen without any problems occurred. There were several concerns/issues encountered which affecting to some extent of

timetable and quality of outputs. To address these concerns, specific actions/remedial measures were undertaken.

1. Apprehension or fear of the IP community/occupants that the project is a threat to their livelihood and occupation. The aggression of some people prevented the LFI survey team to go beyond its limits and the survey team was mug by a certain person using bolo/sword during the conduct of road surveying activity in Barangay Anticala.

    i. These were reportedly to the office of Barangay Anticala for complaint and filling charges to the suspect. The Barangay Captain taken up some action and call-up for table discussion but the suspect did not shown during the date of investigation. So day after, the Barangay Captain proceed to the house of the suspect to gave some views and warning that he might be charge for harassment but, the suspect asked some apology because he was drunk on that day and he promise not to do it again. From that day, aggressions to the survey team were no longer happen.

2. Estimated to 80% of the declared watershed proclaimed as CADC area issued by the PENRO-DENR of Butuan City. These areas were claimed by Manabo Tribal Leaders headed by Ruben "Datu Buhay" Dapeniagan of Barangay Anticala, Butuan City and Gregorio Datu Pantagon" Antong of Barangay San Antonio, Butuan City. Their people's fear was that, their cultivate land will soon be sequester by the Government especially to the Water District and force to move in the resettlement areas.

    i. Intensive and comprehensive IEC activities were undertaken by the project staff together with the representative of the Butuan City Water District (BCWD) to the occupants understand the project objectives as well as the importance of environmental conservation. Consultation meetings were held in the surrounding barangays including sitio's/purok inside the taguibo watershed area to asked for support from the communities and leaders in helping to achieve the

purpose of the project in making the management plan that suited the interest of the IP community within the watershed area and most of all, they were assured not to be touch nor to be transferred from other places except, if one of them insist to sold his or her property.

3. Minor delays occurred during the resource assessment of flora and fauna inventory due to unfavorable weather conditions including peace and order situation at the upper level range towards Mt. Hilong-Hilong peak.

    i. In case of climatic factor, the staff and survey teams doubled their effort and target during good weather conditions to catch up backlog accomplishment. So as to meet the target activities, the project staff hired local personnel mostly rebel returnees as our advance front guide to settle things in the area before the team proceed to their field activities.

4. Spotted illegal activities at Sitio Tagkiling, Barangay Anticala of timber lumber stock nearby the sitio and hauling of lumber stock during the night time period.

    i. These activities were reported during the Anticala Management Board meeting, the members of the board was the Butuan City Water District, PENRO-DENR, Barangay Council of Anticala, LGU-Butuan City, CENRO-DENR, PO's of Barangay Anticala, NIA, NEDA, NCIP and Tribal Leaders. LFI were always invited in the meeting to give an update status report of the project and other

    related information within the watershed area. The reported activity was taken care of by the responsible agencies concerned with the assistance of the Barangay Council headed Barangay Captain Mr. Dandanon.

5. Encroachment of manganese mining operation adjacent side-northwest of Mt. Hilong-Hilong range within the vicinity of Barangay San Antonio, Municipality of Remedios Trinidad Romualdez (RTR). The said mining

company has a complete permit to operate but, these were protested by the BCWD and other concern common community. The violation was made when the operator established a mobile skyline cable at the watershed perimeter going towards at the inner portion of the watershed area.

   i. The Butuan City Water District (BCWD) calls the attention of LFI staff and the Anticala Management Board to investigate the manganese mining encroachment within the area where ocular inspection was made by a composite team. The events were reported to the BCWD as basis for legal evidence document done by mining operations and also, the evidence presented to the Regional Development Council for a legal action purposes.

6. Delays on the finalization of Taguibo Watershed Management Plan due to some critics, comments and suggestion that has to be entertain or else, it is not a participatory process. Additional inputs required by other members of the council to the plan and some comments, the arrangement of the plan where there was some argument by the members during the plan presentation. The plan presented at 4th draft and it is still on process for preparation.

# VI. ACHIEVEMENT OF OBJECTIVES AND EXPECTED OUTPUTS

In the one year project implementation, it was able to attain the objectives set. Specifically, the project had reached the following:

1. Increase level of awareness of the communities on the watershed conservation and protection as well as the importance biodiversity to the local leaders and sector to

participate in the conservation of the watershed. The willingness of the community and agencies to participate and support conservation effort such that, other organization of Anticala Management Board is a manifestation of their awareness and recognition of the watersheds contribution to the whole community.

2. Determine baseline information on socio –economic profile and its demographic characteristics of the community within the Taguibo Watershed and Forest Reserve Area

3. Determine the scope of forest cover which identifies seven (7) types of habitat vegetative cover with corresponding amount of hectarage excluding road and creeks. The information of biodiversity density of flora that identifies 68 types of family groups with 297 different plants types of species including unidentified 72 species on their scientific classification. Out of 297 species, 36 species were on the red list based on IUCN conservation status categories. On fauna, identifies 27 types of family groups with 41 different types of species including unidentified 5 species on their scientific classification. Out of 41 species, 5 species were on the red list based on IUCN conservation status categories. This shows that the Taguibo Watershed Forest Reserve Area is diverse on its biodiversity classification with 88% both flora and fauna.

4. Activity Report of the workshop on participatory rural assessment and resource mapping; strategic planning; resource assessment validation/1st draft plan presentation to the technical working group and; presentation of the 2nd draft plan to the members of the Taguibo Watershed Management Council and watershed stakeholders were properly documented.

5. Approval of the Sustainable Watershed Development and Management Plan for Taguibo Watershed and agreed framework for co-management arrangement still on

process for approval and adoption of the council and watershed stakeholders (attached herewith the 3rd draft final plan).