

Chapter 11: Conservation and Management of Watershed and Natural Resources: Issues in the Philippines, the Bukidnon Experience

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Introduction

There has been a continuing shift in the management of watershed and natural resources in the Philippines. Stakeholders such as local communities, LGUs, indigenous people, and the civil society reflect this in changes in government policies from being top down, driven by the central government to one that is built on local participation. The Forest Management Program demonstrated this gradual shift in the 1970s. This was implemented by selectively devolving rights to utilize individual land parcel with responsibilities to conserve adjacent forestlands. Such efforts were pursued through the application of agroforestry, tree farming, and soil conservation technologies.

In the 1980s, the upland development direction focused on the social forestry agenda brought into the fore not only technical concerns in forest resource management but also issues pertaining to social and economic development in forest areas. This was carried out under the Integrated Social Forestry (ISF) Program that placed great emphasis on providing land tenure to forest occupants.

The 1990s saw the passage and implementation of the 1991 Local Government Code, which created a tremendous impact on the delivery of basic services at the local level. The environment and natural resources sector were among those sectors affected by the devolution. The policy content of the Code stipulates the devolution to local government units the implementation of social forestry and reforestation initiatives, the management of communal forests not exceeding 5000 ha, the protection of the small watersheds, and the enforcement of forest laws. In Bukidnon, these developments have offered the local government

units numerous opportunities and challenges to effectively carry out these new mandates.

Brief Profile

Biophysical

Bukidnon is a landlocked province and occupies a wide plateau in the North Central part of Mindanao Island. It has a total land area of 829,378 ha accounting for 2.7% of the Philippines' total land area. Being relatively elevated and centrally located, Bukidnon is in itself a "watershed" for most of North-Central Mindanao, comprising the headwaters and substantial portion of seven major river catchments originating in the Province. These are the Pulangi River watershed, Tagoloan River watershed, Cagayan River watershed, Muleta River watershed, Maradugao River watershed, Salug River watershed, and the Cugman-Agusan River watershed.

Bukidnon is the country's eighth largest province, lying between the latitudes 7°22 to 8°35 north, and longitudes 124°33 to 125°26" east. About 49% of its total land area consists of rugged hills and mountains. Mts. Kitanglad and Kalatungan are the second and the third highest mountains in the country, rising to 2,938 m and 2,836 m, respectively.

The province's land classification shows that 336,412 ha (40.56%) are classified as alienable and disposable while 492,966 ha are forestland. The vegetative covers of the forestland reveal that only 227,062 ha are forested while the remaining 265,904 ha are brush lands and open or cultivated areas. Furthermore, analysis of the forestland shows that 213,330 ha are utilized as production forests.

Socio-economic

The last three official population surveys of the National Statistics Office showed that the province had a reported population of 631,634 (1980); 843,891 (1990); and 1,060,415 (2000). This suggests an average population growth rate of 3.46 % (1975-1980) to 2.94 % (1980-1990) and 2.31% (1990-2000).

Bukidnon is basically an agricultural province. The major economic activities include farming and livestock production. Principal crops cultivated are corn and rice. Commercial crops include sugarcane, pineapple, banana, coffee, rubber and other high value vegetable crops grown extensively in the upland areas.

Political and Administrative

Bukidnon is a first class province, based on income classification. It was formally created under Republic Act 2711 on March 10, 1917. As a province, it has autonomous functions, organization, responsibilities and accountabilities. It is mandated to exercise corporate powers and to implement the delivery of basic services to the people.

A duly elected governor administers the day-to-day affairs of the provincial government and head the Executive Branch. Within the provincial government, there are three offices that are responsible in the conservation and management of watershed and natural resources. These are the Office of the Provincial Administrator, which handles the division of the devolved DENR personnel; the Office of the Provincial Agriculture, which provides devolved functions on extension services on sustainable agriculture; and the Office of the Provincial Planning and Development Coordinator, which leads the planning and coordination of programs/projects related to sustainable development (Province of Bukidnon 1999).

The legislative branch, headed by the vice-governor, supports the executive department of the province. It is also responsible for the formulation of policies, including measures to promote conservation and management of watershed and natural resources through the Committee on Environment and Natural Resources.

Issues and Concerns in Watershed Conservation and Management

The province faces numerous issues and concerns related to promoting watershed conservation and management. These are:

1. Rapid Population Growth

The rapid increase of population in the province (observed population growth of 1.90%), attributed mainly to in-migration, has put pressure to upland land use. The natural population growth and the lack of access to economic opportunities in the lowland have contributed to the uncontrolled in-migration of non indigenous peoples into the upland areas. This had led to the declaration of forestlands into settlement areas. Further, the indiscriminate disposal of solid waste and sewer by households to ridges, dumpsites, and other bodies of water contributing to sanitary problems and environmental degradation which have been observed to be on the rise as the population of the province continues to increase.

2. Demands for Raw Materials

Construction of buildings and installation of other infrastructure projects need large quantities of raw materials such as sand, gravel, and wood. These require the use of a considerable amount of the province's natural resources, most of which are from forest reserves and protected areas.

3. Conversion from Forest Land Use to Agricultural and Other Land Uses

Development brings about a lot of changes not only on the social and economic side but also more on the physical view of the environment. Development of upland areas for high value crops and the attractiveness of the province's low lands for plantation crops such as pineapples and bananas, and the establishment of poultry and piggery farms have further pushed the local population to the uplands.

4. Unsustainable Agricultural Practices

Modern farming involves the extensive use of inorganic fertilizers and chemical pesticides, some of which have been proven to pollute land and water resources and hazardous to people's health. As farmers apply more and more chemicals to their crops, the higher the soil acidity becomes, and the lesser the soil's potential to produce abundant harvests. Further, since the great majority (about 84%) of present agricultural areas are in the uplands, the inappropriate farming technologies have contributed to the degradation of upland areas.

5. Inconsistencies of Government Policies

Though the LGUs at the lower level strive hard to put into realization the environmental policies and orders, the upper ranks are hesitant to put it into full implementation, considering that a lot of the officials themselves become "protectors" of big capitalists of chemical fertilizer and pesticide companies. Also, the conflicting national policies in mining and forestry are problems that local governments and communities have to grapple with. This situation is partly attributed to vague and undefined mandates of some government organizations that often overlap with each other. This is compounded by the absence of clear guidance on laws and policies affecting protected areas such as forests and watersheds. Further, the weak enforcement of laws give wrong signals to the people and have

encouraged them to take up residence in critical slopes, important watersheds and even in identified national parks.

6. Difficult Terrain

The difficult terrain of the watersheds resulted in the dearth of government services reaching these areas. The provision of extension services on appropriate natural resource management practices and the monitoring of illegal resource extraction such as the indiscriminate cutting down of trees by forest occupants, some of whom have encroached into these areas due to population pressure in the lowlands, could not be carried out as desired.

The Changing Role of Government Units in Watershed Conservation and Management

The country's decentralization policy through the implementation of the Local Government Code of 1991 and selection of the province, specifically the Municipality of Lantapan as the site for the SANREM Project in the Philippines, have assisted the local government in carrying out its responsibilities in watershed conservation and management.

Shift from Central to Local Governments

Prior to the implementation of the 1991 Local Government Code, the national government supervised four reforestation projects with a total area of 66,794 ha. These are the Cinchona (1,994 ha), Impalutao (1,700 ha), Malaybalay (1,600 ha) and the Muleta-Manupali (61,500 ha). From 1982 to 1993, the Department of Environment and Natural Resources (DENR) pursued a soil conservation component of the Muleta-Manupali Rehabilitation Project. These are considered priority critical watershed areas by the national government.

Another special project was initiated in 1989 covering an area of 21,000 ha, a portion of which included the Malaybalay Reforestation Project. This is the Bukidnon Industrial Plantation Project. In 1990, this New Zealand Government-funded project was converted into the Bukidnon Forests Incorporated (BFI) under the management of a board headed by the provincial governor. The goal of this project was to manage and implement industrial forest plantation development to help address issues related to environmental rehabilitation and the development of

alternative wood resource, thereby mitigating the pressures on the country's remaining forests.

Some local officials viewed the DENR-managed Muleta-Manupali Rehabilitation project was unsuccessful due to DENR's failure to identify market for harvested wood and the unstable price of coffee, which was promoted in the privately titled areas within the watershed, and the lack of involvement of local governments and other community stakeholders in the planning processes. On the other hand, the BFI plantation venture that was operating independently from the DENR, was considered successful for it has involved the local officials in its decision-making processes as well as facilitated community participation. This assessment foretells the critical role of local governments and community participation in watershed conservation and management. These, in fact, are among the vital components in devolving powers and resources in environmental management from central to local governments.

The Local Government Code of 1991

The Local Government Code of 1991 provides for the autonomy of local government units at provincial, municipal and *barangay* levels and mandates them to play leading roles in promoting sustainable development within their areas of jurisdiction. The Code provides guidelines on the responsibilities of national line agencies and the local government units and their local offices in relation to the promotion of ecological balance. It sets up the policy framework in which services and environmental concerns are devolved to local governments. It states that:

It is the policy of the State to require all national agencies and offices to conduct periodic consultation with appropriate local government units before any project or program is implemented in their respective jurisdiction.

The services devolved to the municipal level include the following:

- water and soil resource utilization and conservation projects;
- implementation of community-based forestry projects;
- management and control of communal forests with an area not exceeding 50 square kilometers; and
- establishment of tree parks, greenbelts, and similar forest development projects pursuant to national policies and subject to supervision and review of the DENR.

The province is responsible for the following, pursuant to national policies and subject to supervision, control and review of the DENR:

- the enforcement of forestry laws limited to community-based forestry projects;
- pollution control law, small-scale mining law, and other laws on the protection of the environment; and
- mini-hydro-electric projects for local purposes.

In the area of inter-governmental relations the national government agencies are specifically mandated under Section 26 of the Code to consult with the LGUs in their effort to maintain ecological balance. Furthermore, under Section 27, the Code specifies the requirement for national line agencies to conduct prior consultations.

The Code paved the way for the devolution of 126 Integrated Social Forestry Projects previously managed by the DENR to the province. This covers an aggregate area of 24,148 ha with 9,471 beneficiaries. The transfer of direct supervision of these ISF projects to the province, together with the 26 personnel from the DENR, made the province evaluate its current thrusts and priorities with regard to conservation and management of watersheds and natural resources. This led to the creation of unified vision on development and the creation of framework and implementing guidelines to put this vision into practice.

Development Vision of the Provincial Government

The development of the province is guided by its vision to make Bukidnon a “province of self-reliant people enjoying a full life in an atmosphere of justice and harmony, and as an agricultural-based industrial center with an optimally developed agricultural economy and ecologically balanced environment” (RDC 1999: 2). Specific to conservation and management of watersheds and other natural resources of the province, the approved Provincial Physical Framework Plan (PPFP) and the Bukidnon Watershed Development and Protection Plan provide guidance as to how the vision statement is to be implemented

The PPFP translates provincial policies and development goals and objectives into a general land use plan indicating the manner in which land shall be put into use within the planning period (in this case from 1993 to 2002). Further, it delineates the direction and extent of expansion of urban and other built-up areas of cities and municipalities in the province, the alignment of transportation networks, the location of major

infrastructure projects and facilities and all major land development proposals that have provincial, regional, or national impact and significance. The provincial legislative body officially adopted this plan in 1996.

The Bukidnon Watershed Management Framework Plan (1996) provides the provincial government with the basis to coordinate and supervise all programs and projects relating to water management in Bukidnon. The plan aims to document the common understanding reached by the range of institutions and interest groups concerning the current environmental and socio-economic situation in the province. It also outlined the general principles and approaches that the province believes should be followed to most effectively address the situation, and to have a commonly agreed framework for coordination and supervision of subsequent programs, projects and activities on behalf of the Provincial Government.

Local Government Initiatives

The specific responses of the local government units of Bukidnon with their mandates under the Local Government Code of 1991 include the following:

1. *Creation of the Bukidnon Environment and Natural Resource Division under the Office of the Provincial Administrator and the BEST Farm Project*

Administrative Order No. 44, which was issued in 1993, provided the basic guidelines on how the devolved Integrated Social Forestry (ISF) Program and personnel of the DENR will be carried out in Bukidnon under the direct supervision of the Provincial Administrator. The ISF Program was redirected to ensure that the forest occupants participating in the program would feel the economic value of reforestation. This resulted to the implementation of the Bukidnon Environment Small-scale Tree (BEST) Farm Project.

The ISF program requires the ISF holders to plant at least 20% of their land to permanent forest cover or trees. The province developed a scheme to reverse the requirement to 80%. The farmers are allotted 6,000 Philippine pesos (approximately US\$ 133.33) as direct cost plus an additional 1,500 Philippine pesos (US\$ 33.33) as supervision cost per hectare of land committed to the BEST Farm Project. The project was designed to ensure partnership between the tree planters and the province,

recovery of cost investment, and sustainable land use practices in the uplands.

The steps involved in the process include the conduct of information drive emphasizing that tree planting is an economic endeavor and that the farmer-cooperator shall pay for only 15 trees for the loan extended. The program was successful that it was able to establish 2,101 ha of tree farms and covered 75% of the ISF sites turned over to the province in 1992. Further, requests for funding assistance and inclusion of Alienable and Disposable Lands flooded the Provincial Government and this demonstrated the wide acceptance of tree planting as a truly economic endeavor.

2. Provincial Watershed Protection and Development Plan

The province likewise initiated efforts to establish a mechanism for coordination and complementation of efforts among LGUs and national line agencies and the non-government organizations in watershed development and protection. This was given a boost with the issuance of Presidential Memorandum No. 270 in 1995, creating the Bukidnon Watershed Protection and Development Council whose responsibility is to develop guidelines to protect and preserve the remaining forests found in the watersheds of Bukidnon and to rehabilitate open areas within their headwaters.

The council grew out of the Bukidnon Watershed and Environment Management Council formed by Governor Carlos O. Fortich in 1993 to “exercise general guidance and oversight functions relative to watershed and environment management and to facilitate inter-agency coordination” as mandated under the Code.

The presidential memorandum also enjoined all national and local agencies to fully cooperate and support the council in implementing its mandate. One of the most important outputs of the council was a properly documented consensus on the current situation of the watersheds of the province and the proposed intervention contained in the Bukidnon Watershed Management Framework Plan developed in 1996.

The formulation of the watershed management framework plan was facilitated with full support from the various researchers involved with the SANREM project. SANREM provided technical inputs in the preparation of the plan.

Below are some of the lessons that the provincial government learned in the process of developing and implementing the plan:

- Local governments have to play a proactive role to link with national line agencies and to assist these agencies in working with upland communities.
- Local governments have to immediately establish a good track record to gain support from foreign donors. Having an established track record makes it easier to approach funding agencies for support.
- Sustaining local initiatives require sensitivity and recognition of cultural tradition and local knowledge as well as flexibility to negotiate.

3. Forest Land Use Planning

Responding to the Local Government Code, which stipulates that the LGUs share with the DENR the responsibility in the sustainable management and development of the forest resources within their territorial jurisdiction (MC No. 98-01 of DENR and DILG), the province and the DENR initiated forest land use planning in 1998. The output of this activity is the Provincial Forest Framework Plan, which delineates the watersheds of the province. The technical inputs of the Technical Advisory Group of the Bukidnon Watershed Protection and Development Council (BWPDC), which includes SANREM, enhanced the preparation of the various comprehensive land use plans of the different municipal governments that give equal emphasis to watershed development and protection. Through forest land use planning, the current efforts of the different municipalities has given equal importance to detailed planning of the forestland areas, thus, complementing the primary concern of the BWPDC to ensure the protection of the watersheds through effective planning.

4. Advocacy work for the declaration of Mt. Kitanglad as a Natural Park

Eight municipal governments, with full support from the province, assisted in developing a local legislative action towards the proclamation of Mt. Kitanglad Range into a national park to protect its socio-economic and ecological importance. This became a reality when former President Aquino declared Mt. Kitanglad as a protected area in December 1990 under Presidential Proclamation No. 677. Various SANREM workplan investigators also provided technical assistance to the Protected Area Management Board (PAMB) of the Mt. Kitanglad Range Nature Park. Thus, on 24 October 1996, Mt. Kitanglad became a protected area under the category of Natural Park under Presidential

Proclamation No. 896. And finally, last November 9, 2000 President Estrada signed the Mt. Kitanglad Range Protected Area Bill into law as Republic Act No. 8978.

Emerging lessons from the experience the LGUs on the management of Mt. Kitanglad Range Nature Park include the following:

- First, park management can be implemented successfully by changing the locus of decision-making from the national agencies to local governments.
- Second, decentralization of park area management is not mainly the domain of local governments but should provide participation of stakeholders and implementation of complementary projects.
- Third, devolving responsibilities is accompanied by the devolution of decision-making authorities.
- Lastly, there is no ready-made template in park area management.

We have also learned that natural resource management cannot be undertaken by a single agency such as the local government or the DENR. Collaboration, if done right, could have a positive impact on various stakeholders. This continues to be demonstrated in the local governments' collaboration with the SANREM project in the Manupali watershed.

5. Municipal-led Natural Resource Management Plan

The Municipal Government of Lantapan boasts of its natural resource management plan. This plan was not conceived as an initial objective of SANREM but rather was the result of the intent of the Lantapan local government to ensure that all the scientific outputs of the research project will be incorporated into a plan that will benefit the locality. It was launched in 1996 with the formation of the multi-sectoral Natural Resource Management Council, with participation of individuals representing various economic, social, and religious sectors of Lantapan. The SANREM Site Coordination Office played a pivotal role in working with the municipal government and the council. They incorporated the range of research outputs of the consortium to come up with a natural resource management plan to address the problem of the declining rich natural resource base. The formulation of this municipal-led plan is considered a milestone in the decentralization of planning and management to the local level. A shift was made from traditional top-down planning approach to a participatory, multi-sectoral planning and research-based decision-making approach.

6. Environmental Planning through Linkage with Funding Agencies

The Bukidnon Watershed Protection and Development Council (BWPDC), with technical assistance from the USAID's Governance and Local Democracy (GOLD) Project and SANREM inputs, facilitated a planning approach using a watershed rather than a political area as a planning unit. This brought together five municipalities (the Maradugao Watershed Cluster) to formulate their locally adapted municipal watershed management plans geared towards soil and water conservation measures, and agroforestry activities. The Watershed Cluster pooled their resources in the management of the Maradugao Watershed and was able to generate financial support from the Southern Philippines Development Authority, which is a national government agency, and from the province to finance identified activities. The planning activities are implemented at the *barangay* level.

The council was able to generate support from various agencies for technical and financial assistance. In September 1999, the province held its first Bukidnon Watershed Summit with support from USAID, SANREM, GOLD, and the Growth with Equity for Mindanao (GEM) and AusAID. This locally initiated advocacy on watershed has inspired other donor organizations to link up with the province to encourage other LGUs for Mindanao-wide activities on watershed advocacy.

The International Council for Research in Agroforestry has likewise linked up with the province for the scaling up of the natural resource management methodology to the different municipalities of the province. This is based on their current SANREM work plan. This is being pursued with the introduction of the Landcare movement.

Likewise, the Canadian International Development Agency (CIDA)-supported Local Government Support Program has taken cognizance of the province's effort for alliance and capacity building among stakeholders in the field of natural resource management.

7. Environmental Management Planning and Development Policy Analysis Using a Watershed Model

This project, a collaboration between the Bukidnon provincial government and Lantapan local government in partnership with SANREM work plans, was implemented from June 2000 to May 2001. Its objectives are to 1) develop a monitoring and evaluation system for the NRMP impacts, and other national policy impacts on households and the communities' natural resource endowments; 2) strengthen policy analysis and policy advocacy skills through development of mechanism

and linkages with other involved agencies that will ensure continuity of programs and policies contained in the plan; and 3) to make the Natural Resource Management Plan of Lantapan more understandable to the farmers and other stakeholders through an advocacy plan. The project has released several policy briefs that are very useful to the local decision makers and even to the national line agencies operating in the province in relation to the implementation of their programs and projects.

Opportunities and Challenges to Local Government Units

The Bukidnon experience points that devolution brought new challenges to local governments. It also inspired the local government to go out and build linkages and alliances with organizations and agencies that share their goal of promoting sustainable management of the natural resource base and recognizing the importance of strengthening local capacity development. Devolution works best when the vision comes from the local government and the people. The people are the centerpiece of the process of development.

The presence of the SANREM and the other research groups in the province offered an opportunity for the local government units of Bukidnon to link research with development. Technical support from SANREM has enabled the LGUs to better address the challenges of ensuring the conservation and effective management of our watersheds. These include:

1. improving the database on the state of the province's natural resources. This is to establish a firmer basis for decision-making such as the allocation of resources for environmental conservation and appropriate land use planning for agricultural development and other development uses.
2. enhancing awareness and participation of various stakeholders such as the indigenous communities and the tenured migrants in the uplands, the "users" of the upland resources (investors, government agencies engaged in the provisions of potable water, irrigation water, hydro electricity, *etc.*) on water management;

3. developing and sustaining participatory mechanisms such as the localization of watershed planning and management, institutionalization of water watch, and Landcare movements; and,
4. ensuring real participation of various stakeholders including grassroots organizations in the existing mechanisms established for watershed conservation and management. Presently the indigenous people and the village elected leaders are recognized members of the Mt. Kitanglad Natural Range Park's Protected Area Management Board.

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