



Will Job Generation Impact on Environment?

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Like the national government, the Bicol Regional Development Council (RDC) puts poverty reduction as its overriding goal, and job creation its centerpiece strategy.

The Bicol Medium Term Development Plan for 2005 to 2010 aims to reduce poverty incidence by family proportion to 26 percent by year 2010 from 46 percent in 2000¹.

The plan aims to generate around 600,000 jobs in the next six years. Mining is seen as a major source of new jobs. Mineralized areas will be opened to large-scale mining investors in line with the President's vision that the country can become the fifth mining power in the world. The plan also identifies agriculture and fisheries as the main contributors to economic growth.

Bicol has long been the country's source of gold, fish, rice and coconut yet it remains one of the poorest regions. Worse, its ecosystems are degraded and may not sustain the demands of an increasing population.

Mining may bring in jobs and revenues, but also destroy the upland areas as well as the

lowlands and coasts. Improving on agriculture seems to be a better alternative if it utilizes environment-friendly technologies that respond primarily to local food security.

Bicol must learn from the Marinduque mining disaster in the 1990s and the recent Quezon tragedy in 2004. The natural resources here were exploited for short-term economic gains and in disregard of sustainable development.

The Bicol face of poverty

Almost half or 46 percent of Bicolano families live below the poverty threshold in 2000, according to the Family Income and Expenditure Survey. This makes it the second poorest region after the Autonomous Region of Muslim Mindanao (ARMM)². There were 2.6 million individuals or 413,513 families who were poor. The largest segment of the poor is in the province of Masbate which, along with Camarines Norte, belongs to the top 10 poorest provinces. The region's annual per capita poverty threshold is P11,524 (2000). Only 40,510 families "graduated" from poverty since 1997.

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Bicol's 4.7 million population in 2000 is expected to grow to 5.2 million by year 2005. The additional half million people would need additional food, homes, schools, and health services. More than 15,000 students in the elementary and high school are added to the school-going population yearly but the teaching force and physical facilities are not correspondingly expanding³. The rising population level also means added pressure on the environment.

In 2003, 34 percent of preschoolers were severely and moderately malnourished owing to inadequacy and deficiency of food intake, recurring infections and poor environmental sanitation and large family size. Only 66 percent of the population had access to safe drinking water in 2000. Under-five child mortality increased from 1998 to 2003 due to inadequate and inaccessible health facilities and personnel, especially in remote areas.

In 2003, Bicol had over 2 million people in the labor force, of which 171,000 were unemployed, mostly men. Women were absorbed more in the low-earning informal economic sectors. Agriculture employed more than 40 percent of the labor force. Retrenchments in the services (trade, transportation and communication) and industry sectors (construction, manufacturing and mining) increased the unemployment.

Poverty reduction in the next six years

The RDC's battlecry is ORAGON! or One Region Accelerating Growth through Optimum Use of Natural Resources. It captures the strategies outlined in the Regional Medium-Term Development Plan (MTDP) for 2005 to 2010.

To propel growth in agricultural production, Bicol will be developed into the food basket of Luzon.

In terms of job creation, however, the highest contribution will be generated from the tourism and housing sectors, followed by trade and investment promotion. There is no estimate yet on the contribution of the infrastructure sector.

Sector	Target No. of Jobs
Trade and Investment Promotion	95,700
Agribusiness	33,757
Environment and natural resources	12,050
Housing	152,344
Tourism	231,000

Taken from the RDC Plan 2005-2010

The environment and natural resources sectors are expected to provide only about 12,000 jobs.

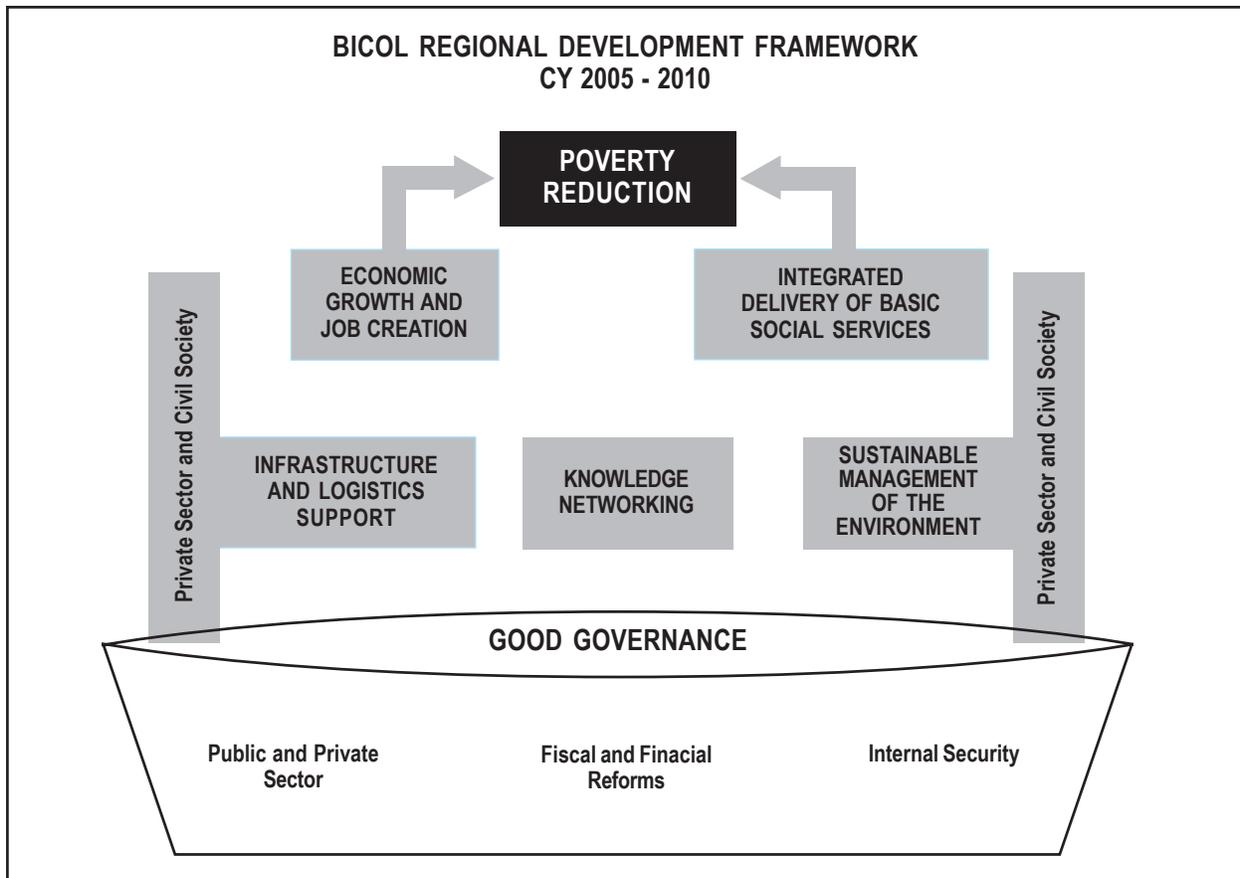
Environment and Natural Resources	Target No. of Jobs
Land surveys	840
Land distribution	60
Community-based forest management (as agribusiness)	990
Forest products utilization	1,200
Grazing lands	2,610
Mangroves development	4,350
Mineral industry (large-scale)	2,000
Total	12,050

Computed from the RDC Plan 2005-2010

Not only is Bicol region one of the poorest, its rich-poor gap is among the highest. It registered a gini coefficient of .45 in 2000, much in the same level as the country's.

Environmental decline has not been arrested. Anti-poverty strategies like productivity enhancement had a negative impact on the environment. The current agriculture systems and mining technologies had degraded the land and water resources jeopardizing hopes of sustaining food production and restoring a balanced environment. Ricelands have been degraded, crops like abaca infested, coconut lands reduced, and fish stock nearly depleted.

The Medium-Term Development Framework incorporates sustainable management of the environment. It looks good on paper. But experiences with past development strategies lead most Bicolanos to question its reliability. With the MTDP framework comes the development target. The Bicol region will be developed in relation to the rest of Luzon as a geothermal energy producer, agri-industrial production center, mineral-based production center, food basket of Luzon, ecotourism destination, and as south Luzon's gateway to Visayas, Mindanao and the Pacific. Economic growth and job creation will greatly depend on agri-industry and natural resources assessed to be the region's competitive advantage. Pili, pineapple, abaca, furniture, marine products, coconut, ceramics, and bamboo are among them. The problem here lies with the kind of technologies to be employed in order to meet the demand for outside market. Reliance on inorganic agriculture technologies is one. Production will surely demand mono-cropping and plantation type farming which will again not meet the diverse food needs of the household, reinforcing malnutrition.



Minerals of course are another focus. Mining is environmentally destructive, especially in areas that could perpetually react to heavy metals polluting soils and water systems. This hazard is a character of the Philippine archipelago, according to authorities in natural sciences. Large-scale mining projects will be opened in Rapu-rapu Island, Albay and Aroroy, Masbate. Meanwhile, explorations are being undertaken in Ragay-Del Gallego, Camarines Sur and in Larap, Jose Panganiban, Camarines Norte. Small scale mines will also be developed in the Gold Rush areas of Masbate, clay mines in Siruma, Camarines Sur, Paracale-Jose Panganiban and Larap.

Pollution, waste and other environmental problems are expected to arise with the establishment of these economic zones:

- Bicol Regional Agri-industrial Center in Legazpi City
- Legazpi City Special Economic Zone
- Tiwi Ecozone in Tiwi, Albay
- Global Industrial Maritime Complex in Jose Panganiban, Camarines Norte
- Bicol Industrial Park in Bula, Camarines Sur
- Isarog Heights Special Economic Zone in Pili,

Camarines Sur

- Naga Agro-industrial Center
- Sta Rita Industrial Park in Pili

At first glance, calculated revenues from minerals and ecozones could be staggering, but can the poor directly benefit from them? What impact will agriculture, industrial parks and mining create on air, water, forests, coasts, rivers, biodiversity, climate and lowland areas? How many rural people will be displaced to accommodate these so-called economic investments? Can Bicolanos find relief from poverty and still live in a balanced environment, come 2010 or 2015?

The state of the Bicol environment

Bicol is a mixture of ecosystems consisting of forests, marginal lands, lowland/agriculture ecosystem, urban ecosystem, freshwater ecosystem, coastal and marine ecosystem, coral reef, seagrass and soft-bottom, and island ecosystems⁴. This ecosystems mix covers the entire region (total land area of 1,763,249 hectares). The region has four mainland provinces: Camarines Norte, Camarines Sur, Albay and Sorsogon; two island provinces: Catanduanes and Masbate. It has seven cities:

Naga and Iriga in Camarines Sur; Legazpi, Ligao and Tabaco in Albay; Sorsogon City in Sorsogon and Masbate City in Masbate. It has a total of 14 Districts, 107 municipalities and 3,471 barangays.

In the last decade from 1992 to 2001, Bicol lost 34,250 hectares of forest reserves. These are 17 protected forest areas and watersheds with a total area of 60,486 hectares that include Mayon Volcano National Park, Mt. Isarog Natural Park, Bulusan Volcano National Park, Bicol National Park, Libmanan Caves National Park and Caramoan National Park, among others.

Category	1992	2001
Classified Forest Lands	484,086	511,316
Established forest reserves	104,189	69,939
Established Timber Land	351,420	412,996
National Parks, Game Refuge & Biodiversity Sanctuaries & Wildlife Areas	25,276	25,276
Civil Reservation	159	63
Fishpond	3,042	3,042

The rate of forest degradation is 11,172 hectares per year caused by conversion to agriculture, mining, infrastructure and human settlements; fire, calamities and continued illegal logging and utilization of forest products. Most mining areas are located in mountains where there are watersheds. The degree of forest degradation can become tragic as seen in what happened to Real, Infanta and General Nakar in the Quezon province. Bicol has only but half of the ideal forest cover of 60 percent land area to complement its hilly and upland topography, and is a typhoon trail. Remaining classified forest lands only constitute 30 percent, and of the total area classified as such, only one-fifth has actual forest cover⁵. An estimated 12,800 million cubic meters of run-off freshwater are flushed out of forests and watershed areas annually, flooding lowlands and ricefields, and causing sedimentation of coral reefs and coastlines.

Besides the trees and wildlife, traditional Agta (indigenous peoples) communities exercising customary rights over the forest have been dispersed, leading to weakened control over resource use. Forest cover is so diminished it could be likened to buttocks covered by a skimpy t-back.

Opening wide the mineral areas

Bicol abounds with 10 metallic (gold, zinc, nickel, lead, iron, etc) and 13 nonmetallic minerals (marble, clay, perlite, limestone, gypsum, guano, bentonite, etc.). Limestone alone constitutes 3.8 billion metric tons, with the largest deposit found in

Camarines Sur. Gold, silver and copper are in Camarines Norte, Masbate and Albay. Almost all provinces have iron deposits.

The bulk of mining in Bicol is in small-scale mining, accounting for a total sales value of P61.99 million, mostly from sand and gravel, aggregates, limestone and clay. There are four small-scale mining districts – in Aroroy in Masbate, Siruma in Camarines Sur, Paracale-Panganiban and Larap in Camarines Norte. Recently opened was the Rapu-Rapu Polymetallic Project. The feasibility study on Masbate Gold project is being finalized. There are ongoing exploration works in Del Gallego-Ragay, Camarines Sur for copper and evaluation of iron deposits in Camarines Norte. The RDC plans to open up at least two large-scale mining areas. There are 319 mining applications covering 558,046 hectares or 33 percent of the region’s total land area⁶.

Small-scale mining has been the bulk of mining activities in the region. The unregulated informal mining sector is providing temporary jobs to 4,000 people. Mining investment in 2001 accounted to P2,750 million, however, with Camarines Norte having most of mines (small & large scales), it is the 10th poorest province in the country. Instead of reduction the poverty incidence in the province increased from 49.7 percent in 1997 to 52.7 percent in 2000. Masbate has a similar situation.

Host mining communities which were supposedly benefited have long been and still are raising relevant issues. There is the case of Goodfound Cement plant in Palanog, Camalig, Albay, blamed for the decreasing water supply in some Guinobatan barangays and the rise in respiratory ailments. However, the DENR said⁷ that the company has already gained ISO 14000, a certification of compliance with international environmental management standards.

In Camarines Sur, the Mountain Isarog Natural Park is in peril from treasure-hunting in several protected sites. In the town of Baao, perlite excavated by a quarry operating under a special permit endangers the water supply of barangays downhill. In Camarines Norte, child labor is exploited in the gold mines of Paracale, Labo and Jose Panganiban; besides, vast areas of land are idle because of mercury pollution. In Rapu-Rapu island, abandoned open pit mines remain agriculturally unproductive and threaten inland water bodies and surrounding coasts.

A phenomenon called acid mine drainage (AMD)⁸, typical in archipelagos like the Philippines, is the main reason for productivity loss of abandoned mines. AMD is the pollution of water with high levels of iron, aluminum and sulfuric acid that has long-term devastating effects on rivers, streams, and aquatic life. Mined areas in other parts of the world could not solve this problem.

Bicol river system is the drainage

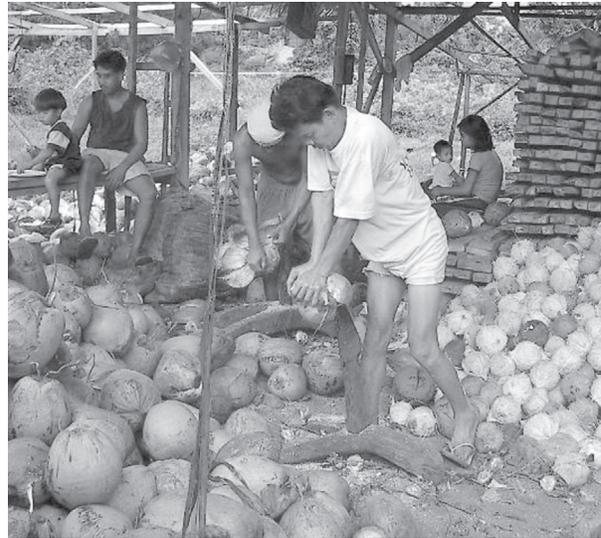
The nearest drainage of agriculture, industrial and residential waste is the freshwater ecosystem which encompasses all inland bodies of flowing water (streams, rivers) and standing water (lakes, reservoir, ponds). Above all, these are important resource base for fisheries, agricultural irrigation and even tourism sectors. The Bicol River Basin, with a drainage area of 3,770 km², is eighth in size among the larger river basins in the country. It lies across three provinces, with about 90 percent of the area in the provinces of Camarines Sur and Albay, and the remaining 10 percent in Camarines Norte. Its 1.3 million population depends mainly on agriculture and fishing. About 5,800 fishers are making a living out of the lake systems. With Bicol in the typhoon path, flooding is extensive, aggravated by the tidal backwater effect and storm surges that travel up the river system. This situation also contributes to saline water intrusion, limiting the use of water for irrigation.

Several upper watersheds are degraded, causing an increase in run-off and soil erosion which lead to poor productivity and damage to infrastructure every year. Fish catch has declined in two lakes, Bato and Baa, owing to over-caging, loss of spawning areas and migration routes, and low water level. Lake Baa now nearly disappears in the dry season. A third lake, Buhi, is encountering management problems due to conflicts in increasing water demand from fishery, hydro-power, irrigation and the preservation of the endemic fish *sinarapan*.

Pollution of the lower basin from untreated sewage and industrial wastes from Naga City and urban areas adversely affects the fisheries. The high incidence of water-borne diseases also point to the need for improved rural drinking supply.

Poisoning of agriculture ecosystem

Agriculture is the backbone of Bicol's economy. Land used for agriculture comprise half (50.76 percent) of the region's total land area. The expanding urbanization, however, has reduced much of previous agricultural lands, thus even forest lands



were converted. The adoption of high-yielding varieties (HYV) by farmers and the wholesale promotion by the government have endangered the ecosystem itself. There was substantial loss in genetic diversity of rice and other common crops. This technology had also required the farmers to use expensive chemical fertilizers and pesticides that contaminated food and water. Intensive chemical use did not only affect the lowland areas but also midland and upland planted to corn and vegetables. Since monocropping was practiced for decades, abaca which had been a Bicol pride easily succumbed to pests and diseases.

Even coconut farmers ceased to diversify crops, hence, valuable land spaces became unproductive with the advent of high-value crops. Most varieties demanded by agri-business corporations were not the same as the traditional varieties that uplanders used to plant. Traditional coffee beans, for instance, lost their market value. To catch up with the trend, farmers focused on more popular crops like pineapple, *ube* and cassava, to the point of clearing trees including coconut just to accommodate sun-loving plant varieties. Coconut tree cutting persisted despite a legal ban because of the low price of copra in the last decade and the greedy tendencies of landowners to get more from their lands subjected to agrarian reform.

Agricultural ecosystems suffered much. Inorganic farming and overcultivation destroyed the soil structure and depleted natural nutrients and organic matter. Farmers blame the monopoly on farm inputs by big corporations for the high cost of production that they sustain through loans. The current farming system has led to food and nutrition insecurity because after each harvest, products are

wholly traded to pay for loans. Because they were conditioned to stick to monocropping practices to attain high yields, farmers have forgotten to plant other crops for their own household needs.

A new threat in the form of genetically modified organisms (GMOs) is now being introduced to local farming communities. Field testing of Bt corn has been completed and the seeds are now in the market. GMOs are potentially hazardous to the environment because they affect the genes of native crops through cross pollination.

Agricultural lands have also been lost due to conversion to residential subdivisions. This is most evident in the cities of Legaspi and Naga, following the trend in developing metro areas. Meanwhile, marginally productive upland areas were cultivated, and forest areas continued to decrease in size.

Urban ecosystem

Urban ecosystems are centers for human settlements with corresponding support services. The urban areas of Bicol region have a per capita poverty threshold of P13,659. Based on this income level, there were 84,554 families who were poor in 2000. The region now has seven cities, and more municipalities are rapidly urbanizing, giving way to immigration. For 2001 – 2004, the total housing need in the region was estimated at 185,846 units — a housing backlog of 29,256 units and future need of 156,608 units. This translates to an annual housing need of 46,466 units.

Additional housing means more cement, lumber, sand and gravel, iron, steel and other construction materials that need to be extracted from the environment. An urban area also has to deal with the solid and liquid waste generated by residential, commercial and industrial areas. Naga City alone generated solid waste at a rate of 157 cubic meters per day in 1998, which had an increase of 20 metric tons from 1996. Average daily per capita waste generation rate is 420 grams. With an average of five persons per household, each household generates about 2.1 kilograms of solid waste everyday. Thirty five percent of the total garbage collected is from the Naga City Public Market.

To manage the waste problem, an assessment of the environmental conditions of potential sanitary landfill sites is being conducted in Manito, Albay; San Fernando, Camarines Sur, and Gubat, Sorsogon.

Pollution is aggravated by the increased number of transport vehicles in urban areas. Air quality monitoring was conducted in the cities of

Naga, Iriga, and Legaspi, but only Naga has established an airshed multisectoral board.

Coastal and marine ecosystem

The Coastal ecosystem consists of mangrove, seagrass and coral reefs. Being surrounded by water, Bicol has 16 major fishing grounds along extensive coastlines indented with numerous bays and gulfs. Six of the fishing grounds are among the richest in the country: Lagonoy Gulf, Lamon Bay, Ragay Gulf, Visayan Sea, Samar Sea and Sibuyan Sea. Major marine species caught are *siganids* and tuna. The famous whaleshark or butanding can be seen in Burias Strait. Around 87,000 full-time and 53,000 part-time fishers are dependent on marine fisheries.

The bays and gulfs are mostly characterized by too many fishermen and too few fish. These areas are municipal waters under the jurisdiction of the LGUs but local officials are unable to strictly enforce the law and require license fees and permits. Their catch declining and unable to find alternative livelihood, some small-scale fishers resort to illegal fishing. Competition for resources is tight owing to pressure from uncontrolled migration and poverty in coastal villages.

Conflicts regularly erupt between small-scale fishers and trawlers or bigtime fishers from as far as the Visayas islands encroaching Bicol municipal waters. Organized task forces and deputized fishery wardens are actually experiencing harassment in some hot spot areas, as what happened recently in Donsol, Sorsogon⁹.

Other problems in the coastal areas are pollution from domestic and untreated industrial



waste; siltation owing to deforestation, acid mine tailings, mangrove conversion into fishponds, dredging and infrastructures that crowd out the natural habitat. The discharge from abandoned mines in Rapu-rapu has already affected Lagonoy Gulf, extending to the coastal areas of Sorsogon¹⁰. San Miguel Bay coral reefs in Camarines Sur are heavily sedimented, particularly in the area where the Bicol river drains. The El Niño in 1998 also contributed to the bleaching of coral reefs located in areas facing the Pacific Ocean.

There are 35 marine protected areas (MPAs) in Bicol but only 14 are considered operational¹¹. The Bicol University is leading in managing MPAs in partnership with LGUs and BFAR since it is a strategic response to address the dwindling marine resources. One MPA is the San Miguel Island Marine Fishery Reserve in Lagonoy Gulf, endowed with vast coral reefs and seagrass/algal beds. One square km of healthy coral reef produces 20-35 metric tons of fish each year, enough to feed 400-700 Bicolanos.

Problem with environmental law enforcement

Environmental law enforcement remains a problem, partly because of corruption and lack of legal support from the agency itself. The DENR reported in 2003 that more than 500 cases have been filed against forestry, fishery and other environmental law violations, yet very few cases prosper because prosecution is basically weak. After filing of charges in court, the DENR routinely leaves the task to public prosecutors.

However, the Tanggol Kalikasan said there are fiscals who are actually handicapped on environmental laws. This problem is aggravated by weakness in the presentation of witnesses and evidence. But the worst problem is with prosecutors and judges who accept protection money. In the case of Mountain Isarog Natural Park, a recent fact-finding mission found out that a municipal trial court judge is the operator behind a treasure-hunting excavation within the protected area¹².

DENR's assessment

According to DENR Regional Executive Director Oscar M. Hamada, the region's present environmental state is a result of composite factors¹³. Among these are the periodic typhoons that causes heavy damage to forest and coastal resources, including lowland areas; prevalence of poverty, prompting many poor people to illegally cut trees from the forests, engage in *kaingin*, gather forest products and overexploit the already diminished natural

resources; burgeoning population many of them unemployed and without viable livelihood; and a profit-centered approach to entrepreneurship without due regard for the health of the environment, resulting in massive exploitation. Wrong values of people are also being blamed.

The DENR admits that on its own, it has limited budget and manpower. Since it could not do the job alone, the agency has embarked on networking and partnerships with Department of Interior and Local Government (DILG), LGUs, NGOs, POs, and academic institutions. Co-management approaches are expected to create jobs and improve forest cover as a result of localized and increased investments by LGUs and private sectors in forest plantations.

Past ecological interventions

In the last decade, the ecosystems and protected areas received varying levels of intervention by the government, civil society organizations and the enlightened corporate sector.

According to the DENR 2003 report, the agency gave priority to communal forests, community watersheds, greenbelts, tree parks and reforestation areas. From 1989 to 2003, it reforested 14,398 hectares of uplands. Eighty-one Integrated Social Forestry Programs were established to prevent further *kaingin* and shifting agriculture. In 1997, the agency launched the Community-Based Forest Management Program where communities are given the privilege to manage and rehabilitate, allowing them to benefit from its forest products. Thirty-eight CBFM Agreements were forged, supported by 57 people's organizations covering 42,752 hectares. The ecosystem approach was adopted for 14 watershed areas. To conserve biodiversity, 14 Protected Area Management Boards were strengthened. Greening programs in urban and rural areas were intensified with the establishment of 31 mini-forests. Land owners were also encouraged to plant trees resulting in 1,853 hectares of private tree plantations.

To improve forest protection capability, 10 multisectoral forest protection committees representing varied sectors were organized to track illegal activities. More than 500 cases of Forestry Code violations were filed in court. Staff of LGUs, NGOs and POs were trained to evaluate sites and inspect accomplished activities.

To mitigate air and water pollution, DENR worked with LGUs on anti-smoke belching campaigns, air and water quality monitoring. Surface water bodies in 25 classified rivers were regularly

monitored. It also supported the LGU waste management programs.

Several nongovernment organizations have provided interventions to protect the environment. Each has varying level of resources, some operate in a single large or small location, some have scattered pilot communities, and others covered the entire region through networking. Below are examples:

Organization	Program Intervention on Environment	Location
CARE Phils	Sustainable management of Mt. Isarog territories	Mt. Isarog Natural Park, Camarines Sur
Plan International Bicol	Sustainable livelihoods for communities and families of sponsored children, theater arts among children	Bicol National Park, Mt. Isarog Natural Park
Philippine Rural Reconstruction Movement (PRRM)	Capability building, organizing of resource management councils	Jose Panganiban, Paracale and Labo, Camarines Norte Rinconada District, Sipocot & Libmanan, Camarines Sur Tabaco, Bacacay and Mallipot, Albay
Movement for Accelerated Development Efforts in Bicol (MADE)	Nursery and agro-forestry	Pili, Camarines Sur
Tanggol Kalikasan (TK)	Environmental law education; legal assistance; media advocacy	Legazpi city-based with current networking efforts in Mt. Isarog, Mt. Bulusan Sorsogon, Tabaco, Catanduanes State College, Camarines Sur State Agril College
Haribon Foundation for the Conservation of Natural Resources	Information and capability building	Coordinating with the Camarines Sur State Agricultural College
CSSAC Development Foundation Inc.	Researches and advocacy	Pili, Cam Sur
Hiwas Catandungan	Volunteer mobilization for environment advocacy	Virac, Catanduanes with provincial scope
Coalition for Bicol Development (CBD)	Environmental advocacy	Naga City with regional scope
Institute for Environmental Conservation and Research (INECAR)	Environmental natural science researches	Ateneo de Naga University with regional in scope
Social Action Center (SAC) of Legazpi	Community organizing and advocacy	Legazpi City with provincial scope
Social Action Center (SAC) of Sorsogon	Community organizing and advocacy	Sorsogon City with provincial scope
Prelature of Libmanan Development Foundation, Inc. (PLDFI)	Community organizing and advocacy	Libmanan, Cam Sur
Camarines Sur Social Action Foundation, Inc. (CASAFI)	Community organizing and advocacy	Naga City with provincial scope
Socio-Pastoral Action Center Foundation, Inc. (SPACFI)	Community organizing and advocacy	Daet, Camarines Norte
Pook Mirasol Center for Appropriate Technology (POMCAT)	Mitigating Greenhouse Gas Emissions through the Use of Renewable Energy Resources	Basud, Daet, Labo & Mercedes, Camarines Norte
World Wildlife Fund	Conservation program in whaleshark area of Burias pass	Donsol, Sorsogon
TAMBUYOG	Coastal resources management	Sorsogon
Center for Community Development	Community organizing	Ateneo de Naga
Naga City People's Council	Environmental advocacy	Naga City

Data were taken from the series of consultations, meetings and workshops where the writer had participated¹⁴

There are no consolidated data on the outputs or impact of NGO interventions on poverty and environment. However, the NEDA Regional Director, Marlene Rodriguez, said that environmental projects and advocacy of NGOs really counted particularly in the area of public awareness and advocating commitments from among LGUs¹⁵.

On the other hand, there were numerous community-based organizations (CBOs) which actually provided significant contributions in rehabilitating forests and coastal resources, and guarding them from illegal activities to the point of risking their lives. In most cases, these CBOs started only as mere recipients of government and non-government projects, expecting some material monetary benefit that would gradually wean them away from total dependence to natural resources extraction. Through education and exposures, there were exceptional community leaders who had developed a deeper level of commitment pushing them to defend their efforts in the face of corrupt and sometimes armed environmental adversaries¹⁶.

The people committed to environmental protection remain poor today despite protecting the trees, coasts and biodiversity. Worse, they are subject to life threatening situations. There are deputized officers and organizations like DENR forest rangers, the forest and coastal wardens, and the community-based environmental groups. In the course of their duty, there are many of them whose lives and dignities are threatened with counter-lawsuits, and physical and mental harassments.

Challenges: Alleviating poverty by preserving the environment

Bicolanos want sustainable development, through environmentally sound practices that would maintain and enhance the productivity of the resource base ultimately leading to improvement of income and general quality of life. However, time seems to be running out for the government which seeks to address poverty in order to graduate a significant number of poor families from the state of being poor to non-poor. This is the general objective of the Bicol Development Plan for 2005 – 2010. But upon careful examination of the strategies for poverty alleviation, there are significant components that will not really lead to sustainable development. Agriculture and mining are definitely problematic.

In the last quarter of 2004, a series of consultations and workshops were initiated by different sectors, both public and private, in the Bicol region. The civil society organizations (CSOs) have initiatives parallel to the government's call, through NEDA

and DILG, for the newly installed governors and mayors to incorporate the MDGs in their plans and programs, with poverty alleviation as priority concern. CSOs have much to do in influencing the government decision makers from the level of the Regional Development Council down to the provincial, city, municipal and barangay levels of governance, where the real battle is fought.

Mining for domestic industries, or else

Sensitive issues like mining could not wait to be implemented while glaring negative impacts of past and current similar projects are being suffered by several communities in the region. In all of the forums where CSOs discuss environment, further destruction is viewed to be leading to tragic incidents like the one experienced in Quezon, Nueva Ecija, Aurora, and recently in one coastal town of Camarines Sur¹⁷.

The Philippines may become the 5th mining power in the world¹⁸ as the country ranks 3rd in gold, 4th in copper, 5th in nickel and 6th in chromite deposits. But Filipinos may also become the poorest people living in the worst degraded environment. Generating a measly 2,000 jobs for the Bicolanos out of mining at the expense of the various ecosystems will not resolve the problem of poverty. It is hard to risk the remaining forests, regenerated farmlands and marine resources because definitely, clean air, fresh water and food security are basic necessities for human survival, and even for assured quality life.

There are various stands on mining but a group of CSOs under the Bicol Environment Advocacy Network (BEAN) pushes for the indefinite prohibition of opening new mining areas anywhere in the region. They are demanding for the strict enforcement of laws in existing mines and eventual closure for violators¹⁹. However, one private sector representative to the RDC is considering mining strictly for domestic needs and not the raw ore and mineral demand of export market. The Mines and Geosciences Bureau can be more active assisting village level projects that support agriculture instead of large scale and environmentally hostile mining projects. Red clay, ball clay and diatomite are used in pottery and earthen wares that serve as container gardens, vermicomposting vessel (excellent for growing earthworms for fertilizers and feed additives for fish and poultry), jars as water vessels instead of plastic jugs, and clay vegetable refrigerators. Clay is also best for bricks and roofing tiles (for housing construction), stoves and ovens, and rice hull carbonizers. Silica is used for glass wares (for processed food containers), laboratory equipments, and additional ingredient for ceramics. Iron will best serve the fabrication of farm and garden tools, agricultural equipments and implements (coco fiber decorticators, pilinut crackers, water pumps, and rice mills), housing and building construction.

Institute for Environmental Conservation and Research (INECAR) of Ateneo de Naga, on the other hand, strongly suggests the recycling of



metals which are abundant in dumpsites. This is a better alternative in support to importation of important metals which are mined from large continents of the world where AMD is not a phenomenon and environmental regeneration is possible. Recycling may be costly, but still far outweighs the loss of forests and destruction of agricultural and coastal ecosystems. Simple lifestyles like the abandonment of jewelries will prevent more mining of gold. Regulated construction of buildings like essential shelter only can save much on the cutting of trees, quarrying of limestone, and mining of marble and iron ores. It will also trigger the narrowing of gap between the rich and the poor by preventing affluence in society.

Local industry and agriculture complementation

The Industry Sector can support the Agriculture Sector. Organic rice farming is one best example where investors would be creating a very strong use of his capital in mobilizing local labor – to produce organic fertilizer, indigenous planting materials and improved farming practices. It also saves the community from toxic chemicals used by conventional farming. On top of it all, the workers become healthier than before while the investor gets a good value for his/her money without brain drain or capital flight.

Incentives and support must be given to industries and farmers working to arrest malnutrition. Bicol is rich in indigenous nutritious foods that can be produced at the level of rural households, and even in volume to supply urban centers,



through organic farming. This is why CSOs are united in calling for the banning of GMO production anywhere in Bicol region because manipulation of genes is not necessary to produce high yielding and resistant crops. Rather, retrieval and propagation of traditional rice varieties, vegetables, fruits and other food crops must be given attention.

Government subsidies to organic farmers must be provided. The National Food Authority, for instance, should set-up a special procurement fund for organic rice and corn. Highly diversified farms and gardens instead of market driven monocrop farms must be supported by the Department of Agriculture and LGUs with appropriate research and development. A genetic pool especially accessible to farmers must complement the Research and Development (R & D). Sustainable agriculture concepts, methods and strategies must be institutionalized at all levels, including mandatory patronage of compost and other soil supplements produced by local manufacturers. For consumer protection, local monitoring and product standardization bodies for locally produced organic foods, compost and soil supplements will have to be set-up.

To support the composting industry and comply with the Clean Air Act, local ordinances must reinforce the prohibition in burning rice straws and rice hulls, instead, actively promote carbonization projects to produce fertilizers and generate jobs.

Agricultural lands and watershed Protection

To insure food sufficiency and water supply, agricultural lands and watershed areas must be protected against non essential land development projects such as residential subdivisions, commercial complexes and mining. Mandatory production in agricultural lands that is idle can be made and penalties to land owners who keep their lands unproductive should be imposed. Indigenous (native) tree species must be used for watershed and forest rehabilitation. Surrounding farms adjacent to protected areas must have mandatory adoption of sustainable agriculture sloping agriculture land technologies.

The rights of community dwellers to enhance income through Community-Based Forest Management must be guaranteed.

Building the nature-based industry

A new type of investment will emerge as people become more nature friendly. Small capital is necessary to establish the following enterprises:

- plant nurseries of indigenous plant species

- (food crops, medicinal plants and forest species)
- animal nurseries of indigenous animal stocks (poultry and swine, cattle and small ruminants)
 - permaculture farms (organic fruits, vegetables, cereals and animals integrating the highest possible number of animals and plant species)
 - production plants of natural plant extracts for pesticides and medicines
 - feedmills
 - urban outlets of organic products and restaurants of organic foods
 - agri and eco-tourism packages

Industries must be powered with renewable energy resources such as microhydro power plants, rice hull gasifiers, biogas digesters, and solar home systems among others. Investment on rural electrification should make use of cleaner energy sources. This must be coupled with the establishment of permaculture habitat models at the village clusters to promote sustainable agriculture, decent housing, clean energy, and food sufficiency.

Poverty and environmental degradation are interrelated. The Marinduque and Quezon tragedies should serve as deterrent to Bicol region. A great majority of the country's poor are in the rural areas, earning their living from the natural resource base. It is this important to protect and conserve the life support systems if the goals of providing sustained livelihood and generating economic growth are to be achieved.

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