Rural Growth and Development Revisited Study

NATURAL RESOURCES

By

Germelino M. Bautista
This paper discusses the constraints and challenges to the promotion of economic growth in the natural resource sector (NRS), as well as the necessary strategic thrusts, policy actions and activities that will contribute to the promotion of rural growth and development in the sector.

The constraints to rural growth include problems that the natural resource sector ought to address if it is to stimulate or set conditions for growth. In the forestry sector, these problems include the historical loss of large tracts of natural forests and the degraded quality of the remaining forestlands which have been exacerbated by the open-access conditions in the largely untenured forestlands; the subsequent illegal logging that thrives under such conditions and threatens to further reduce the already limited forestlands; the extremely inadequate investments in industrial tree plantations that have limited their success; and the persistent poverty of upland settlers, some of whom are involved in illegal logging. Most of these constraints are a consequence of policy deficiencies and the weakness of local and national institutions to implement and enforce existing policies and mandates. In the fishery sector, the problems of over-fishing and fishery stock depletion are also attributed to its open-access resource regime, the use of destructive techniques, or the inability of government enforcement agencies to regulate entry to fishing waters and penalize destructive and depletive activities. The diminution of municipal fishery stock is also related to upstream externality sources, i.e. pollution from siltation, sedimentation, and mine tailings, and the loss or damage of coral reefs, mangroves, and other fish habitats. In turn, open-access and intense fishing and the destruction of marine habitats resulted in rising foregone incomes from the depletion of fishery stock, greater unemployment and poverty in coastal communities.

Addressing such constraints and promoting conditions for growth in rural areas thus require new policies/courses of action, changes in existing policy or the will and capacity to properly implement policies and programs conducive to the growth and development of the NRS in particular and the rural sector in general.

**Growth and the natural resource sector**

While the current state of the natural resource sector constrains economic growth, this paper implicitly ascribe to the view that natural resources and environmental quality go together and are directly related to the growth potential of the rural economy. In its benign state, the natural environment is not only an ample source of renewable (forestry, fishery, water etc) and nonrenewable (e.g. mineral) resources that contribute direct use values for local use, domestic production and export. It is also the source of indirect use values or environmental services that enhance and maintain economic production and growth. In a stable forest ecosystem and watershed, for instance, these benign environmental services provide a steady supply of water, congenial local climate conditions, slope stability, sedimentation control, topsoil formation and soil nutrients, and maintenance of water quality and aquatic habitats – all contributing to the natural productivity and potential economic rents available in a given locale. The loss or

---

1 The annual deforestation rate of the old-growth forest was 168,000 hectares from 1934 to 1969 and 157,000 hectares from 1969 to 1997. The annual loss of mangroves was 6,520 hectares during the period 1970 to 1993. The annual reported loss of mangroves in the 1980s was larger than this average.
diminution of these services as a result of deforestation and watershed degradation, however, eventually impact downstream irrigation and hydroelectric power services, coastal water resources, and fish habitats, resulting in the decline of farm and fish yield and incomes. Rural production processes thus depend on the state of natural resource habitats or their capacity to provide raw natural inputs and environmental services.

The productivity of the natural resource base or environment is important for both current and future incomes because of its potential economic rents. As the initial given source of surplus, rents are essential for capital formation and sustainable growth on condition that they are ploughed back to renewable resource generation and other productive economic activities. Other conditions are required to achieve sustainable growth. Because of its surplus-bearing capacity, the promotion of equity is critically dependent on the access or distribution mode to natural resources. The efficiency and productivity of resource use is also important because only under such conditions can rents be generated. However, its realization depends upon an agent who will bring together and efficiently combine all the necessary inputs into production, identify a commodity or service which responds to the needs or tastes of particular markets, obtain and use the necessary information on technologies, product development and markets, establish the market linkage and distribution system, and sustain the process. Like in any economic sector, this entrepreneurial function is the key to growth promotion in the NRS.

This paper also argues that rural growth requires putting in place conditions that would close the open-access natural resource areas, improve the governance of the NRS, restore and increase the productivity of the natural resource base, and promote the sustainable uses of forestlands, watersheds and marine and water resources. Once the inefficiently utilized resource base and depreciated assets have been transferred to more secure tenure holders and subsequently rehabilitated and utilized efficiently, they promise to yield once again a stream of future incomes. Moreover, restored to their natural productivity levels, the forest, watershed, mangrove and coastal ecosystem would again be capable of providing their benign environmental services.

Overview of the necessary NRS conditions for rural growth

The paper specifically recommends at least 4 strategic thrusts that would facilitate the contribution of the natural resource sector to economic growth. These strategies would require collaboration among the Department of Environment and Natural Resources (DENR), local government units (LGUs), and other government agencies.

A set of growth levers and actions are proposed to realize each of the following strategic thrusts:

1. close all the open access forestlands, municipal fishing waters, and groundwater sources through the establishment of a secure tenure, licensing or permit system, and develop a more effective resource management and monitoring capacity;\(^2\)

---

\(^2\) A fishery licensing system for the municipal and commercial sectors is a means to regulate the open access situation. It may also be established as a resource management tool with the aim of reducing fishing effort and promoting stock growth.
2. address both the policy limitations in the use and management of forestland, coastal and water resources, and the weakness of natural resource management agencies to enforce policies and initiate changes that would stimulate growth in the sector;

3. assess and increase the productivity of forestlands, particularly the grasslands, degraded residual forests, and mangroves, and promote the sustainable use of marine resource habitats and water resources; and

4. address the issues that underlie the low approval rating for prospective investors with Mineral Production Sharing Agreements (MPSA) or Financial and Technical Assistance Agreements (FTAA) which are assumed to generate economic growth in rural areas and the country as a whole, by addressing community and environmental opposition to mining, specifically the effect of mine tailings on local water sources and competing land uses.

Most of these proposed strategies are not new. That they still need to be reiterated reflects the persistence of particular NRS problems that have continued to constrain the growth potential of the sector in the face of policy deficiencies; limited budgetary and technical capacity, and weak political will to implement programs; strong resistance of vested interest groups; and other reasons discussed in the proposed set of actions below.

What may be new in the following discussion of the above thrusts is the specification of

- particular data requirements for each strategic thrust, the policy implications of each one, and the priority actions necessary for the restoration of degraded natural capital, productive use of natural resources, and sustainable growth in NRS;
- an ecosystem/watershed approach to resource management;
- the necessary involvement of other government and local private agencies, and the need for a third party mediating agent in NR conflicts;
- the policy and institutional conditions for the success of the strategies; and
- the required changes in behavior and perspective of policy implementers and stakeholders.

It should also be noted that the proposed strategies are related. The actions in Strategy 1, for instance, partly set the stage for the actions in succeeding strategies. Closing an open access system (Strategy 1) necessarily precedes subsequent efforts to improve the productivity of tenured holdings. While Strategy 1 involves the allocation and provision of security of tenure,

---

3 The promotion of growth in the NRS must address the diminished stock and unproductive state of the country’s natural capital which have reduced the stream of resource flows and environmental services; limited the growth of the forestry, fishery, and agriculture sectors; and contributed to the poverty of a growing population. The constraints to growth in the sector include the loss of large tracts of natural forests; the degraded state of residual forestlands; the extensive unproductive grasslands within the watersheds and their high erosion rates; the conversion and loss of mangrove areas and other coastal resource habitats, such as coral reefs and sea grasses; the decreasing stock of fishery (small pelagic and demersal species) resources; the deteriorating quality of surface waters because of degraded watersheds, point and non-point pollution sources, and the depletion of groundwater sources because of unmonitored excessive withdrawals and reduced recharge.
Strategies 2 and 3 identify the policy requirements and enforcement- implementing capacities to improve as well as the conditions favorable for investments, productivity improvements, and sustainability.

It must be further noted that some of the proposed actions have been implemented in a few places. It is instructive, therefore, to note the conditions in which they worked and determine the applicability of the strategies to other localities.

Most of the NRS constraints to rural growth are a consequence of several factors:

- the open-access conditions of the country’s forestry, fishery, and water resources;
- the limitations of particular tenure instruments;
- insufficient policies and lack of regulations; and
- the weakness of the state to enforce the operational guidelines associated with existing laws and policies against illegal logging, over-fishing, encroachment on public forestlands, municipal and Philippine territorial waters, habitat destruction, surface water pollution, and excessive use of groundwater.

Addressing such constraints would promote conditions for growth in rural areas that in turn require the strategic thrusts enumerated above.

**Proposed actions for growth lever 1: Closing the Open-Access Areas and Establishing a Secure Tenure and More Effective Management System**

An initial step in closing the open access forestland, marine fishery and water resource areas is simply to generate necessary information to guide action, such as the size, location, conditions, uses of resource areas and the local population found in them. It may seem that in the forestry sector the open access area is easily determined as the residual of the tenured area (see Table 1). The commercial and municipal fishing permit system, however, does not allow for such a facile delineation\(^4\). There is no national or municipal fishery stock assessment from which to determine

---

\(^4\) Commercial licenses are granted at the national level by the Bureau of Fishery and Aquatic Resources, Department of Agriculture while municipal permits are provided at the municipal mayor’s office. It is only at present through the FISH project that this commercial and municipal license-dispensing system is being inventoried, reconciled and assessed.
and allocate the local fishing effort. Moreover, municipal ordinances differ in their policy on allowable vessel tonnage and gear. Hence, municipal fishing permits in some towns are extended to commercial fishers. Even if there are permit restrictions on commercial vessels in municipal waters, however, the absence of harvest limits and lack of enforcement capacity by the local government and municipal fisher folks to deter encroachment and over-fishing virtually make municipal fisheries an open access resource.

The same situation prevails in the use of surface or groundwater. While there is a centralized water permit system, there is no water resource inventory from which to determine local applications. Depending on the type of water use, a permit holder is given the right to a fixed volume of ground or surface water. However, the absence of a local regulatory authority to monitor and measure water withdrawals renders it a de facto open access resource.

Given the fixed area of public forestlands and those distributed to different tenure instruments, the determination of open-access areas may seem to be straightforward. What is initially delineated as “open access” in Table 1, which shows the distribution of public forestlands (established timberland), are the established timberland areas without any tenure agreement. This area amounts to about 3.68 million hectares, a figure that reflects an apparent increase from 1985 to 2002.

Interestingly, however, there are “open access” areas beyond the established timberlands that are not allocated to tenure holders. While the DENR had the capacity to cancel approximately 5.35 million hectares of timber licenses and 0.35 million hectares

---

5 A water permit for the irrigation sector is given at 1.5 liters per second (lps) per hectare for paddy field, domestic consumption 0.0029 lps per capita, fisheries 3.15 to 6.30 lps per hectare for prawns in freshwater, livestock 0.00024 lps per head of cattle and swine, 0.000146 lps per head of poultry, and recreation 0.6 lps per hectare per hectare of a planned golf course area.

6 Over the period from 1955 to 1992, 265 out of the 313 TLA holders lost their tenure. Unable to complete the maximum 50-year lease because of violations, most of them were unable to undertake a two-rotation cycle. The holders of cancelled TLAs, therefore, merely mined the forests without contributing to their regeneration.
Table 1. Forest Land Uses and Change, by type of access, area in hectares

<table>
<thead>
<tr>
<th></th>
<th>1985</th>
<th>2002</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timber License Agreement¹</td>
<td>6,090,000</td>
<td>740,680</td>
<td>-5,349,320</td>
</tr>
<tr>
<td>Pulpwood Timber License</td>
<td>50,000</td>
<td>46,399</td>
<td>-3,601</td>
</tr>
<tr>
<td>Industrial Forest Management Agreement</td>
<td>290,000</td>
<td>696,740</td>
<td>406,740</td>
</tr>
<tr>
<td>CSC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CBFMA/CFMA</td>
<td>666,775</td>
<td>666,775</td>
<td></td>
</tr>
<tr>
<td>CADC</td>
<td>1,623,568</td>
<td>1,623,568</td>
<td></td>
</tr>
<tr>
<td>FLMA</td>
<td>14,103</td>
<td>14,103</td>
<td></td>
</tr>
<tr>
<td>CFSA</td>
<td>67,034</td>
<td>67,034</td>
<td></td>
</tr>
<tr>
<td>MSA/REFO/MOA/On-going</td>
<td>31,746</td>
<td>31,746</td>
<td></td>
</tr>
<tr>
<td>Community-based Forest Management</td>
<td>140,000</td>
<td>4,810,577</td>
<td>4,670,577</td>
</tr>
<tr>
<td>Socialized Industrial Forest Management</td>
<td></td>
<td>29,593</td>
<td>29,593</td>
</tr>
<tr>
<td>Forestland Grazing</td>
<td>47,000</td>
<td>115,460</td>
<td>-354,540</td>
</tr>
<tr>
<td>Tree Farm</td>
<td>20,000</td>
<td>20,099</td>
<td></td>
</tr>
<tr>
<td>Agroforestry Farm Leases</td>
<td>90,000</td>
<td>90,707</td>
<td></td>
</tr>
<tr>
<td>Established Timberland with tenure³</td>
<td>7,150,000</td>
<td>6,550,255</td>
<td>-599,745</td>
</tr>
<tr>
<td>Established Timberland without tenure</td>
<td>1,655,144</td>
<td>3,677,592</td>
<td>2,022,448</td>
</tr>
<tr>
<td>National parks, GRBS/WA</td>
<td>1,260,000</td>
<td>893,221</td>
<td>-366,779</td>
</tr>
<tr>
<td>Established forest reserve</td>
<td>3,470,000</td>
<td>3,272,912</td>
<td>-197,088</td>
</tr>
<tr>
<td>Unclassified forest land</td>
<td>970,000</td>
<td>1,089,118</td>
<td>119,118</td>
</tr>
<tr>
<td>Estimated Open Access Area</td>
<td>7,355,144</td>
<td>8,932,843</td>
<td>1,577,699</td>
</tr>
</tbody>
</table>

¹ From 1951 to 1985, there were 10,125,389 hectares under TLA. Hence, 4,035,389 hectares of TLA areas were cancelled or not renewed by 1985.
² Certificate of stewardship contract (CSC); Community-based forest management agreement (CBFMA); Community forest management agreement (CFMA); Certificate of ancestral domain claim (CADC); Forest land management agreement (FLMA); (CFSA); (MSA); Reforestation (REFO); Memorandum of Agreement (MOA)³ Does not include the forestland areas under Mineral Production Sharing (MPSA) and, Financial and Technical Assistance Agreements (FTAA0, and Exploration Permits (EP/TEP).

of grazing permits within the period⁷, it did not seem to have the wherewithal to place all cancelled or expired TLA areas under tenure or formal use. This is reflected in two observations: 1) newly leased areas under the Industrial Forest Management Agreement (IFMA), CADC, CBFA/CFMA, and the SIFMA did not expand to forestlands with cancelled TLAs; and 2) agro forestry and tree farm leases were not issued within the 17-year period to fill up the vacuum⁸. Since the DENR did not seem to have jurisdiction over former TLA areas (amounting to about 4.035 million hectares) that were cancelled or not renewed before 1985 and that could have

⁷ The 1939 Pasture Land Act awarded vast tracts of forestlands to private ranchers. Because of nonuse or noncompliance with pasture development, lease agreements/permits were cancelled. For instance, about 61 permits were cancelled each year or about 26,800 hectares per annum from 1990 to 2001.
⁸ The non-issuance of new agro forestry farm leases, possibly in compliance with the constitutional provision on public land leases, suggests that the promotion of agro forestry farm development will only proceed through the areas under the new SIFMA and CBFMA.
become part of either the established forest reserve, unclassified forestland, or national parks, some of the forests in these lands could very well have been open or accessible to all.

The open-access area in Table 1 may be an overestimation. It does not show other formal claims to the public forestlands, as well as informal ones. Specifically, it does not include the area of mineral reservations within which are the mining agreements and permits (448,816 hectares) approved as of August 2004 and the applications (95,668 hectares) for the year. Moreover, it does not show the extent of area overlaps between tenure agreements, as well as the informal claims not only within the established timberland without tenure, but also in the remaining forestlands. Established timberland without tenure and the remaining forestlands are possibly the areas most vulnerable to encroachment, illegal logging, and inappropriate land uses.

The above discussion reveals that the actual (on-the-ground) extent of open access lands for forest use or conservation has yet to be determined. Furthermore, it is necessary to clearly account for their size and location within a larger context. The closure of open access resources (whether it be forests, mangroves, municipal fisheries, or water resources) cannot be simply isolated from the larger tenure-resource use system involving existing, if not potential competing resource uses. Nor can it be dealt with separately from the wider ecosystem (watershed, foreshore area and coastal bay).

Against this backdrop, the establishment of a larger database that meets the multiple objectives of sustainable rural development is imperative. By consolidating existing data on various natural resources—critical and other watersheds; forest vegetation/resources; biodiversity; protection forests; production forests; mineral reservations; headwaters; natural springs; river basins; control areas where aquifers and surface flows interact; areas vulnerable to natural hazards or with high seismic risks; original and existing mangroves; foreshore areas; municipal waters; marine protected areas; fishery stock; surface water quality and groundwater stock assessment—and juxtaposing them with other data—on population; livelihood and resource uses; tenure instruments or resource permits; competing economic activities; sources of water pollution and threats to resource depletion, national and local leaders and natural resource managers within the DENR and LGUs would be able to make critical policy and resource management decisions.

In order to finance the establishment of a database for local resource management, fund mobilization is necessary. Funds may come mainly from the LGU development fund, congressional allocation, and the other local sources, such as national agencies operating in the area. Apart from the limited budget of the DENR, the proposal to source funds locally is premised on the fact that benefits from local natural resource management and development will accrue eventually to the LGU, local community and stakeholders. The generation and use of

---

9 I had earlier requested for data from the MGB on the extent and location of mineral reservation, but have not received the information.
10 The funding responsibility of the LGU suggests that only well-off provinces (Class 1-3) and towns would be able to shoulder the development cost unless national agencies like NPC in the province can contribute to the requirements. This implicit area prioritization may be addressed once the national government and richer LGUs would be able to support the poorer areas.
these data, for instance, will not only orient their leaders and staff to environmental concerns but also enhance their capability to fulfill environmental and resource management responsibilities.

The database will also be useful for substantiating the policy directions, strategic thrusts and action components of the NRM action plan. To illustrate, a simple juxtaposition of watershed category and forest vegetation, as shown in Table 2 may provide some inputs for determining the approach and priorities for watershed management. At the moment, there is some amount of forest protection given to both proclaimed watersheds (covering national parks, game refuge and bird sanctuaries) and critical watersheds that are the existing and proposed sites of NIA irrigation or NPC hydroelectric power facilities. In the National Parks and established protected areas (PA), logging and grazing operations, as well as mining applications have not been allowed. The PAs are managed by a Protected Area Management Board (PAMB), consisting of LGUs, NGOs, government and private agencies, and other stakeholders that sets policies and initiates protection and rehabilitation projects. Some of these protection projects have taken the form of biodiversity conservation, as well as forest and river rehabilitation efforts to reduce sedimentation and improve water yields.

In contrast, the ‘non-critical’ watersheds have experienced greater economic pressure, and the landscape consists largely of nonforested or unproductive areas, logging roads, swidden plots and grasslands that require much rehabilitation. The predominance of grasslands and shrubs in the degraded forestlands, together with farmlands reflects the historical use of these lands and suggests the severe erosion of non-critical watersheds. The situation is not hopeless in these unprotected areas, however. Since LGUs and communities with smaller river basins on which their economic, agricultural livelihood and domestic water requirements depend would have greater potential interest in the state of their forest headwater and surface water source, the possibility of DENR and LGU collaboration for watershed management and agro forestry development may be stronger in these smaller river basins or non-critical watersheds. In order to encourage agro forestry development in these areas, the definition of “public forestlands” as “established timberland” may have to be expanded to include the production of non-timber trees and agricultural crops. At present, only 20% of an IFMA area is allowed for the planting of permanent fruit and oil-producing trees. Since the basis of this 20% is not clear, the percentage for non-timber trees can easily be raised by an administrative order.

In critical watersheds, the potential for collaboration on watershed and forest management and protection by the NIA and the NPC, on the one hand, and the DENR and LGUs, on the other, may be quite good. It may be realized if one of the parties, if not the PAMB as a third/external party, initiates and sustains collaborative arrangements. Initial funding may not be a problem in some localities. Some PAMBs have been able to collect user fees for the use of PA services, as well as raise voluntary funds from local governments and private stakeholders. The Integrated Protected Area Fund created through the Implementing Rules and

---

11 About 39 percent of watershed lands are classified as “critical watersheds”, the rest supposedly non-critical.
12 More than half of grasslands are severely eroded with acidic soil that is shallow and deficient in nutrient. Soil erosion in undisturbed grasslands is only 10 tons/ha/year, but when regularly burned, it erodes at 40tons/ha/year.
13 In a 2004 Water Forum in Bukidnon, the PAMB of the Mt. Kitanglad Protected Area was able to generate P45 million in pledges from plantation companies, hydroelectric plant, water district, and other local stakeholders for reforestation, watershed and riverbank rehabilitation, and forest protection.
Regulations (IRR) of the NIPAS Act of 1992 allows ‘at least 75% of the revenues generated by a protected area to be retained for the development and maintenance of the area …’ Other formally established funds may also be tapped. For instance, host LGUs can draw from the Department of Energy’s (DOE) “Reforestation, Watershed Management, Health and/or Environmental Enhancement Fund” that was established through the Energy Act of 1992\textsuperscript{14}. Similarly, the Electric Power Industry Reform Act of 2001 (EPIRA) also established a universal charge of PhP 0.0025 per kilowatt-hour sales on all end-users of electricity for watershed rehabilitation and maintenance\textsuperscript{15}. There are other fund sources that may be formed and shall be discussed in the proposed actions for the third growth lever.

Other policy directions may be inferred from available data on the delineation, management and use of forestlands in watersheds. Apart from using data to close the open-access areas and define the management approach and organizational thrust in different watersheds, the establishment of an information system can further refine the delineation of the protection areas from the production forestlands, and hence the priority areas for rehabilitation and protection. For instance, the 1975 Forestry Code does not explicitly include the headwater forest within the country’s protection forest category.

| Table 2. Composition of Forestland Types within the Proclaimed/ Critical and the ‘Non-critical’ Watersheds |
|---------------------------------------------------|---------------------------------------------------|
| **Category**                                      | **Area (million ha)**                             |
| Proclaimed and critical                           |                                                   |
| Public forestlands                                |                                                   |
| Proclaimed watershed (national parks, GRBS, wilderness) | 0.14\textsuperscript{a}                         |
| Critical watershed                                |                                                   |
| Old-growth                                        | 0.80\textsuperscript{b}                         |
| Mossy                                             | 1.04\textsuperscript{b}                         |
| Pine                                              | 0.15\textsuperscript{c}                         |
| Residual                                          | 1.76\textsuperscript{c}                         |
| Brushlands                                        | 1.44\textsuperscript{c}                         |
| Submarginal lands                                 | 0.30\textsuperscript{c}                         |
| Alienable and disposable lands                    | 4.99                                              |
| Unproclaimed and noncritical                      |                                                   |
| Public forestlands                                | 9.00                                              |

\textsuperscript{14} The EPIRA IRR states that ‘one centavo per kilowatt-hour of the total electricity sales’ of a generation company shall be applied as ‘financial benefit of the host communities of such generation facility …’ In non-highly urbanized cities, 25% of the one centavo per kilowatt-hour allocation is allotted for the Reforestation, Watershed Management, Health and/ or Environment Enhancement Fund.

\textsuperscript{15} There is need to ascertain the compliance of electricity companies, the extent the universal charge fund has grown, and the actual disbursement of the fund for watershed rehabilitation and maintenance.
unlike other countries that acknowledge its watershed function of regulating and improving water yields\textsuperscript{16}. In these countries, headwater forests have been insulated from logging and mining activities, thereby limiting the area of timberlands and mineral reservations. The passage of a sustainable forestry bill in the House may in time rectify this policy limitation. Even if the headwater forest would eventually be classified for forest protection, local governments and communities might consider it imperative to recognize its watershed function and delineate its protection status in their forestland use plans. This assumes that LGUs can actively work with the DENR in the delineation and allocation of (some) public forestlands.

Another public lands feature with policy implications for DENR, LGUs, existing tenure holders, and local communities, is the high risk of seismic and natural hazards in particular areas. Cognizant of such risk, the DENR has sought in its ENR action plan to increase disaster preparedness by formulating a disaster risk management plan, conducting soil stability measures for landslide-vulnerable areas, and undertaking geo-hazard mapping in 13 regions\textsuperscript{17}. The action plan, however, is silent on the implications of these risks for the mining industry. The 2003 study of the World Resources Institute reports that more than half (56 percent) of all exploratory and mining concessions overlap with areas of high ecological vulnerability while 6 percent of mining lease and exploration areas overlap with formally designated Protected Areas. An awareness of these risks suggests that the DENR must carefully study the mining design plans of investors, particularly the adequacy and strength of their mitigation and pollution control measures, such as their tailings impoundment structure, in order to avert the potentially negative environmental and health impacts of mining in disaster-prone areas.

Concern for the environmental hazards of mining in disaster-prone areas should figure in the implementation of the fourth strategic thrust and would address some of the issues against mining raised by LGUs, local communities, and environmental groups. This concern should be

\textsuperscript{16} In Japan, 9.34 million hectares of its 25.15 million hectares of forests have been designated as protection forests. A large proportion of these protection forests (6.36 million hectares) are for headwater conservation.

\textsuperscript{17} There is also a plan to require businesses to obtain an environmental impairment liability insurance.
incorporated into the 12 guiding principles of the Mineral Action Plan that hopes to undertake mining operations within the framework of multiple land use and sustainable utilization of mining areas. One principle, for instance, seeks to identify a rational and science-based valuation tool to determine the best and alternative uses of forestlands. Considering vulnerability of a mineral reservation or a portion of it to hazards, the application of the principle would suggest the reclassification of the area or its reallocation to another use or alternative tenure instrument.

There is certainly a need to refine the decision-making criteria for evaluating alternative land use options, mindful of geographic considerations that include environmental hazards. The Forestry Code suggests one decision-making criterion that may be useful not only for determining optimal land uses of the open access areas but also for assessing existing tenured areas. In its discussion of the multiple uses of forests, the Code provides a general procedure for ranking resources (or options) and determining the use of forestlands that generates the optimum benefits. What is optimal is established by weighing the benefits afforded to the “development and progress of the country and the public welfare” against the “cost of injury to its resources”. While the Code or its IRR did not make the methodology for doing this explicit, the suggested/implicit criterion is an extended cost-benefit analysis where benefits to public welfare are defined and quantified in objective and subjective terms while injury to the country’s resources refers to the cost damages to natural, environmental and human resources. The discounted costs and benefits of various land use options can then be computed to determine their respective net present value (NPV). The option with the highest NPV would secure the allocation or tenure rights. The implications of this methodology will further be articulated in the discussion of the third and fourth strategic thrusts.

As a procedure for ranking options, the NPV rule may be generalized for purposes of resource or tenure allocation. Applied to a particular piece of forestland where its potential direct uses and indirect use benefits can be compared and ranked, the NPV rule can be used to determine the particular (production) use or nonuse (protection status) of the land. Hence, if the non-market benefits or values from indirect uses of portions of forestlands for soil conservation, provision of water supply, and flood protection exceed the NPV values from logging or cattle grazing, then it would be optimal to conserve such portions for watershed functions. Similarly, the rule may be applied to a large piece of land to determine its sub-allocation or distribution. If the high NPV of a production area comes only from a small portion of the land and the rest are superfluous to its value generation, then the other portions should be released to other high value uses or non-uses. The NPV rule can thus be used either for the delineation of the protection and production forestlands or the land size determination of different tenure instruments. With this criterion for determining the best forestland uses, appropriate tenure instruments and forest-watershed programs reflecting optimum land uses can then be provided.

18 The 1975 Forestry Code states that “the numerous beneficial uses of the timber, land, soil, water, wildlife, recreation value and grass of forest lands shall be evaluated and weighted before allowing the utilization, exploitation, occupation or possession thereof, or the conduct of any activity therein. Only the utilization, exploitation, … or possession of any forest land, or any activity therein, involving one or more of its resources, which will produce the optimum benefits to the development and progress of the country and the public welfare, without impairment or with the least injury to its other resources shall be allowed.”

19 It should be noted that in the early 1970s the valuation methodologies of environmental economics were still in a nascent stage.
Apart from data for forestland delineation and the evaluation of land use options, data on actual land uses, claims, and the sentiments and expectations of stakeholders regarding tenure are also important because they underlie existing conflicts that undermine growth efforts. In fact, the process of resource delineation and recognition of existing allocations is bound to bring to the surface various forms of resource conflicts\(^{20}\). Unless these are resolved, the actual delineation, closure of the open access resource areas, and provision of secure tenures would not be able to proceed.

The application of the NPV norm presupposes that overlapping, competing or conflicting claims have been resolved. A necessary condition for the closure of the open access area and its optimal use is a conflict resolution mechanism or a responsive management-monitoring structure to mediate and resolve such conflicts, enforce the agreements, and establish the conditions for the productive and sustainable use of the resource base. This condition applies as well to coastal and water resources. Conflicts over the undelineated or unenforced municipal fishing waters between municipal and commercial fishers and over competing uses of coastal areas between municipal fisher folks and bay municipalities, have yet to be resolved. Also, with regards to water, the growing competition for the limited, dwindling supply among permit holding and illegal users, as well as conflict between the Water District and private well owners must be addressed.

But who should constitute this conflict-mediating resource allocation and management authority? A quick answer is the DENR but will it be able to effectively serve as mediator? At present, the DENR is solely responsible for forestland allocation and assessment of existing tenure instruments. Given the weight of its responsibilities, however, the Department alone with a limited field complement cannot fully fulfill these functions. Moreover, being a party to the allocation process, the DENR may not be effective in resolving conflicts over jurisdiction and competing mandates. For instance, the prior rights of indigenous peoples (IPs) to the harvest, extraction, development or exploitation of natural resources through their CADC or CALT within their ancestral domains as asserted in the Indigenous People’s Rights Act (IPRA) is in conflict with the practice of local DENR agents\(^{21}\). Such tension also exists between formal holders of natural resource utilization permits or agreements and the IPs. Since the local DENR is perceived to have an institutional bias in such jurisdictional conflict situations with the IPs and NCIP, the participation or mediation of a third party, like the LGU, NAPC, DOJ, DA, or DAR is necessary to mediate the conflict\(^{22}\).

---

\(^{20}\) Land conflicts arise from overlapping claims, disputed boundaries, and competing uses. Overlaps may occur when existing tenure instruments are found within the same area, such as IFMA in CBFM areas or CADC, or MPSA in CADC or protected areas. Since these overlaps are within DENR lands and result from the instruments it has issued, the conflicts arising from them can be prioritized and resolved internally.

\(^{21}\) Particular events or practices have also contributed to local grievances, such as the non-recognition by the PENRO, CENRO of the ancestral domain claims of IPs, the issuance of rattan permit to non-IPs in CADC awarded areas, or failure to enforce measures for violations of local personnel, and the weak monitoring by DENR of PENRO, CENRO activities in IP area.

\(^{22}\) Conflicts with IPs could have possibly been avoided if they together with the NCIP were involved in forestland allocation and the issuance of resource use permits (RUPs).
Outside forestlands, third-party mediation is also needed to resolve conflicts in open access areas between the municipal and commercial sector over water and between the MGB, mining investors, and some LGUs, on one hand, and the local communities, environmentalists, and other LGUs, on the other, over mining. Since unresolved conflicts cause uncertainty and insecurity of tenure, delays in their resolution and the subsequent closure of open access areas inhibit investments and productive activity. Hence, in order to promote growth, it is imperative to identify the third party mediator and formulate conflict resolution mechanisms that would avoid future conflicts.

**IN SUMMARY,** the aim of the first strategy is to end the system of open access to natural resources, place every hectare of open access resources under the management, stewardship or responsibility of households, communities or private enterprises, and institute security of tenure, and set the conditions for productive and sustainable use of resources. For forestlands, these goals can be realized through the establishment of a comprehensive information system; delineation of production areas from the protection areas, their proper demarcation; application of appropriate tenure instruments to production forests; local capacity building; and LGU-DENR collaboration with other stakeholders. Specifically, the following actions are proposed in line with the first strategy:

1. Generate funds to establish baseline data, undertake resource assessment, survey the current forest status, forestland and other resource uses, threats to the resource, and natural hazards;
2. Generate and process the data for the delineation of the protection areas, forestland, municipal water use and watershed planning, coastal resource management, the resolution of land and other resource conflicts, the closure of open-access areas, their optimal use and allocation to particular tenure instruments, and the promotion of investment opportunities;
3. Resolve overlapping claims, disputed boundaries, and competing uses, and clarify and harmonize the jurisdictional coverage of different agencies, thereby increasing security of tenure rights;
4. Build the capacity of LGUs and local DENR for resource management;
5. Operationalize a multiple use framework for determining the basis for land allocation, or apply the NPV rule;
6. Determine the local course of actions, policy requirements and resource management structure which may take the form of co-management of forestlands, collaborative inter-agency and sectoral watershed arrangements among the DENR regional office, LGU, locally-based national agencies (e.g. NPC, NIA), peoples organizations (PO), and other important stakeholders, or inter-LGU and POs for coastal bay resource management; and
7. Disseminate information on investment opportunities within the forestlands, watersheds, or coastal areas.

**Proposed actions for growth lever 2: Improve the Policy Environment for NR and the Enforcement-Implementing Capacity of NRM Agencies**

Most of the constraints to rural growth are a consequence of policy deficiencies and the weakness of local and national institutions to implement the legal mandates, enforce the
operational guidelines of existing laws and policies, and address policy deficiencies. Against this backdrop, new or improved policies/courses of action and greater or more effective capacity to implement good policies and programs could promote conditions that are conducive to the growth and development of the NRS in particular and the rural sector in general.

The policy environment can be improved by addressing policy limitations in the allocation and use of forestlands, coastal and water resources. Consider the following recommendations:

One, the historical and current resource-rationing allocation system, which is determined \textit{a priori}, ought to shift to a more market-based system that considers opportunity costs and resource supplies. Before introducing a transferable market-based tenure instrument, the existing forestland and water use categories must be made more flexible. This means that the DENR should no longer merely allocate public forestlands solely to specific historically given uses and at fixed rates. Timberlands, for instance, which were well endowed in the past but are currently degraded, should no longer continue to be allocated solely for timber production purposes. Similarly, forestlands classified as grasslands and mineral reservations, which are currently allocated respectively only for grazing purposes and mineral exploration and extraction\textsuperscript{23} should be open to other potential uses. As it stands, the existing non-economic allocation system presupposes that forestland categories have mutually exclusive commodity uses, that a particular \textit{a priori} defined forestland use is the optimal or most efficient option and that agro forestry or mixed cropping implicitly assumed to be less productive cannot prosper in such lands.

Two, a more sustainable resource rights allocation system must initially be based on an inventory of the resource supply. Unlike in the forestry sector where allowable timber harvest is based on stock inventory, the issuance of fishing licenses has not been based on stock estimates on which the sustainable level of fishing effort can be determined. Similarly, water permit issuance has not been based on an inventory of available surface and ground water. Without this inventory of existing water supplies, the granting of rights has assumed that the resource is infinite. This taken-for-granted assumption underlies the uneconomical rationing of water at a given rate for a particular use. Even if rice productivity is low compared to other uses, rice agriculture receives an unexceptionally large water allocation. Resource supply and economic return should influence the relative allocation of the resource.

Three, the cost of access rights to natural resources or user fees should be based on economic rent. At present, fees for water permit, irrigation service, fishing license, fishpond (on mangrove) permit, and other resource uses are merely administrative charges. They are not related to the resource input’s contribution to revenues in agriculture, industry, and services, or to economic rent in general. Nonpayment of a user fee beyond administrative charges has thus enabled producers directly utilizing raw water for free, to appropriate its full raw value, i.e. technically its marginal revenue product. Under this circumstance, the adoption of a user fee charge on quality surface and groundwater or any productive natural resource, that reflects the

\textsuperscript{23} In the case of grasslands, the DENR historically has not applied such a comparative multiple use evaluation framework. It simply rationed the public resource to applicants as they queued in, and persisted in this particular land use category because of a rigid interpretation of a Forestry Code provision that “portion(s) of the public domain … (be) set aside, in view of its topography and vegetation, for raising livestock”.

15
positive value of the raw water/resource and captures a portion of the economic rent, is justifiable.

Consistent with the recommendation to impose user fees for the use of resources, existing user fees or charges for undervalued resources, like grazing pasture lands and irrigation water must hence be reviewed and adjusted accordingly and a strong advocacy or public support for this approach mobilized. Five years after a 1999 DENR Administrative Order raised user fees for pasture leaseholders on the basis of an estimate of economic rent in grassland use, the policy was reversed to accommodate the interest of FLGMA holders on an election year.

Four, while the next section would discuss a more acceptable, voluntary approach to generating resource service payment funds and inducing more productive use of natural resources, resource charges, together with water pollution charges, must be pooled in an environmental fund that is ploughed back to the sector in order to ensure their efficient utilization. After all, the success of economic instruments such as user fees depends on whether collected funds stay in the environmental sector or not. According to Klarer (1999), “environmental funds, as long as their revenue base is income from environmental charges, taxes and fines, recycle revenues from (resource users and) polluters in general to the (resource users-) polluters responsible for activities requiring remedial action on a priority basis. In this way, in fact the combined charges/subsidies system may retain the efficient property of an economic instrument.” The pooled user fee revenues can thus be used more efficiently if they are allocated to priority remedial environmental actions, such as reforestation, watershed rehabilitation, surface water quality improvement, or as subsidies for environmental infrastructures.

In the case of water pollution charges, the draft IRR of the Clean Water Act should formulate and implement the collection of charge payments with this efficiency consideration. Water pollution charges must revert to the maintenance and rehabilitation of the watershed and surface and groundwater quality.

Lastly, the benefits of the above policy recommendations would not be realized if the enforcement-implementing capacity of the DENR and related agencies is not strengthened. A new policy on raw water value and user fees would be useless if illegal or free access to water cannot be stopped, and groundwater withdrawals of permit holders are not monitored and charged at the prescribed rates. Similarly, the Department must be able to inventory resource supplies, effect efficient allocation, identify and address threats leading to resource depletion or damages, and promote new opportunities and arrangements for the productive and sustainable use of natural resources.

Proposed actions for growth lever 3: Increase the Productivity of Forestlands, and Promote the Sustainable use of Marine Habitats and Water Resources

The third strategic thrust entails the restoration of the natural resource base, the improvement of the productivity of forestlands and marine resource habitats and the sustainable use of forestland, marine and water resources. Funds certainly are needed to restore the degraded natural resource base and rehabilitate particular resource habitats, such as the headwaters,
protection forests, critical watersheds, mangroves, and potential marine protection areas. A more voluntary way of generating funds may be more effective than imposing user charges.

Investments in turn must also freely flow to improve the productivity of forestlands, particularly the grasslands and degraded residual forests. Direct investments in higher-valued forest or agro-forestry products would thus transform unproductive or less productive resources to more productive ones. It is expected that while the restoration and rehabilitation of the natural resource base would generate employment and income opportunities, investments specifically in tree plantations, agro forestry, and related processing facilities would increase domestic production, generate more jobs, and alleviate upland unemployment and poverty.

**Fund generation for resource habitat rehabilitation**

Apart from the user fees for different resources and the establishment of an environmental fund for priority remedial expenditures or investments in environmental infrastructure, there is a more participatory approach in generating funds for the restoration and provision of environmental services. Based on the experience that an undisturbed or stable forest ecosystem or watershed performs benign functions and provides beneficial services that confer utilities, economic rents, or an expected stream of future personal benefits, including incomes, the curtailment or loss of these benefits because of deforestation or watershed degradation creates a demand for environmental services. From among the ranks of watershed beneficiaries, consisting of farmers, water-dependent industries, domestic water suppliers, like water districts or local governments, fisher folks and downstream coastal producers, or even recreation facility owners, there may also be an accompanying willingness to pay for the necessary activities or projects that would restore and maintain the desired environmental service24.

Beneficiaries of watershed services begin to express their demand once the present quantity and quality of water supplies, if not their uncertain future supply is clearly seen to affect their economic activities25. If demanders are also confident that their payments will not be misused, but will redound to their own benefit, they will either directly contract potential suppliers of the service or willingly participate in a watershed arrangement that would cover the cost of environmental service delivery. With payments pooled to cover the necessary project costs for reforestation or watershed restoration, the arrangement should provide adequate compensation to the contracted environmental service providers for their role in restoring and ensuring the unhampered flow of services.

24 The benign natural services that the watershed provides include the following: 1) the regulation of surface water (i.e. increasing dry season base flows while slowing or preventing the rate of runoff in the rainy season); 2) determination of local climate conditions; 3) groundwater recharge or the regulation of the water table; 4) reduction of incidence of soil erosion and landslides, control of the sedimentation of waterways; 5) topsoil formation and soil fertility maintenance; 6) maintenance of water quality (control of sediment load, nutrient load e.g. phosphorous and nitrogen, chemical load, and salinity); and 7) the maintenance of aquatic habitats.

25 A degraded watershed results in a less congenial local climate, droughts, flood damages, excess sediments, reduced domestic water supply and groundwater recharge, inferior water quality, losses in soil nutrients and other resources, declines in downstream agricultural output, coastal fisheries, livestock, property values, and human community welfare.
There are already successfully established voluntary payments arrangements or ‘markets’ for environmental/watershed services in some developing and developed countries. Their success reflects either the direct action of private consumers of environmental services or the accomplishment of third party negotiators who performed various tasks, such as bringing potential investors, sellers, trading partners together to determine the cost of environmental services, mediating conflicts and securing agreements on the necessary set of project activities, brokering between demanders and prospective suppliers of the services, eliciting the demanders’ willingness to pay, involving stakeholders in the design of the payment mechanism and service delivery arrangement, securing assurance of service delivery from potential suppliers at reduced risks, formulating agreements on payment mechanisms, and even pooling funds from other sources.

Given the demand for environmental services in the country, arrangements for the payment of environmental services have emerged though still in a nascent form in a few watershed areas and natural parks\(^\text{26}\). The potential for the establishment of an environment payment arrangement can fully be realized if the DENR and LGU together with local NGOs can serve as brokers and get the commitment of key beneficiaries in the river basins, such as the National Irrigation Authority, the National Power Corporation, the Water District, Bureau of Tourism, the large plantations, and other public or private enterprises who have a clear interest in maintaining the quality and flow of water. Existing funds, such as DOE’s universal charge and the Reforestation, Watershed Management, Health and/or Environmental Enhancement Fund, the PAMB’s Integrated Protected Area Fund, and the LGU’s development fund may serve as initial seed money to get the arrangement off the ground.

**Promote an entrepreneurial process in NR sector**

The concrete object of the third strategy is to induce investments to flow into the NRS, specifically to establish tree plantations, higher-valued forest or agro-forestry products, so that unproductive or less productive grasslands, mangroves, degraded residual forests and watershed lands would become more productive. In order to set the necessary conditions for investment flows, the following actions are proposed:

- Assess the efficiency of tenure instrument holders, especially the grassland pasture leases; determine the alternative uses of the deforested grasslands, given the country’s lack of comparative advantage in cattle-raising; and eventually institute a tradable lease system;
- Address the disincentives to tree farm and plantation development, specifically the illegal timber market, barriers to formal credit access, and the LGU orientation and lack of support or assistance to CBFM-PO;
- Promote production forest and agro forestry development through technology (e.g. higher valued species and wood-drying technology) and dissemination of market information and linkage of farm timber (agro forest product) suppliers with wood processors (final consumers);

\(^\text{26}\) There are cases of such collective action and initial establishment of payments for environmental services in Maasin watershed, Iloilo; Mt. Kitanglad Natural Park, Bukidnon; Imugan, Nueva Vizcaya; Pasunangka, Zamboanga; and Mt. Malaraya, Lipa, Batangas.
Assess existing tenure instruments, like the Pasture Lease Agreement

As part of the information system establishment action in strategy 1, there is a need to study or appraise the efficiency or productive use of existing forestlands, specifically grasslands and residual forestlands. Since the DENR has issued and implemented these agreements, the assessment of FLGMA, SIFMA, and IFMA holders’ compliance with respect to their terms, as well as their economic efficiency should be done by an external study team.

A significant number of FLGMA holders seem not to have complied with the terms of the agreement. With regards to its requirement that there should be forage improvement in at least 10 percent of their lease area, the landholding lessees, on the average, have only developed 1.3 percent of their area. While the agreement of the grossly inefficient holders would be cancelled, the not-so efficient may be given business orientation and technical training, and allowed within a reasonable period to improve land use. In the meantime, the initial requirements for the establishment of a tradable lease or permit market, whether for public forestlands, fishing or water should also be studied and put in place so that tenure rights may transfer to the more cost-efficient and productive.

With higher lease rates and a tradable lease system in operation, it may be possible to effect the transfer of idle, unproductive grasslands under FLGMA to more productive uses or tenure holders. Based on Francisco et al (2003) assessment of the net benefit of grazing in three types of degraded grasslands in comparisons to other forestland use options, like corn or palay production, reforestation, and agro-forestry, the authors reported that grazing among the various land use options had the lowest net present value (NPV) per hectare while agro-forestry provided the highest net income (see Table 3). This finding suggests that FLGMA holders should be informed and oriented to shift to agro forestry production, and that if they are unable to make the investments under a tradable system, prospective agro forestry investors would eventually come around to buy their tenure instrument. It would be interesting to know whether current FLGMA holders in a pilot area have the potential to be investors or will merely tend to wait on the side for the prospective investor.

The empirical observation that agro-forestry provides a higher net economic return than pasture, inclusive of the cost of rehabilitation, also suggests that the practice of fruit-tree growing and agro-forestry activities by usufruct land claimants or cultivators who currently do not have formal rights to patches of forestland patches ought to be recognized through agro forestry or tree farm certificate of stewardship contracts even if they are covered by a CBFMA. Some FMB and CENRO forestry personnel should not find it contradictory to grant such individual tenure rights to members within their existing group-tenure instrument.

---

27 The current use of forestlands for grazing seems grossly inefficient. In a grazing permit area of 119,000 hectares with 188,230 cattle heads, there are only about 1.6 heads per hectare (FAO, FMB). Based on BAS data, farm households are raising more cattle in their backyards. For some perverse, possibly speculative reason, most FLGMA holders merely want to hold on to these large tracts of public forestland without investing in it.

28 If the country does not have comparative advantage in cattle production, it should not further require that grassland develop their cattle forage. Grasslands can be converted to other uses.
Table 3. Economic Returns and Rent from Alternative Uses of Pastureland in Cancelled Pasture Lease Agreement, Selected Sites, 1999

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Class A Net Income</th>
<th>Class A Economic Rent</th>
<th>Class B Net Income</th>
<th>Class B Economic Rent</th>
<th>Class C* Net Income</th>
<th>Class C* Economic Rent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>9,300</td>
<td>4,740</td>
<td>6,494</td>
<td>2,967</td>
<td>4,700</td>
<td>1,550</td>
</tr>
<tr>
<td>Corn</td>
<td>12,256</td>
<td>9,633</td>
<td>10,030</td>
<td>7,627</td>
<td>6,200</td>
<td>3,800</td>
</tr>
<tr>
<td>Palay</td>
<td>12,263</td>
<td>9,565</td>
<td>8,354</td>
<td>5,759</td>
<td>5,815</td>
<td>3,478</td>
</tr>
<tr>
<td>Reforestation</td>
<td>37,546</td>
<td>28,759</td>
<td>29,430</td>
<td>21,762</td>
<td>22,102</td>
<td>15,016</td>
</tr>
<tr>
<td>Agroforestry</td>
<td>1,253</td>
<td>882</td>
<td>913</td>
<td>553</td>
<td>631</td>
<td>345</td>
</tr>
<tr>
<td>Pasture</td>
<td>1,253</td>
<td>882</td>
<td>913</td>
<td>553</td>
<td>631</td>
<td>345</td>
</tr>
</tbody>
</table>

* Class C lands are most degraded, subject to greater erosion, landslides, and has lower soil fertility. They have greater need for weed control and pasture development.

**Address the disincentives to tree farm and plantation development**

At least three general structural disincentives constrain tree plantation/farm development for small landholders and PO members with CBFMA: the illegal timber market, barriers to formal credit access, the LGU orientation and lack of logistical support. These disincentives may not apply to other tenure holders who precisely have been able to invest in tree plantation development. For instance, IFMA holders who have their own funds or have no difficulty in accessing credit as corporate enterprises have also not been affected negatively by the illegal timber market. Most IFMA holders either have their own direct buyers of timber or operate their own wood processing outfits. Their tree-plantation is not a stand-alone enterprise but linked to greater value-added production.

One, the illegal timber market by catering to the more greatly demanded, higher quality naturally-grown wood that illegal loggers sell at a low price, has negatively affected small landholders, as well as the POs with CBFMAs by depressing the price of fast-growing plantation timber. Moreover, as current or potential suppliers of plantation wood, small landholders and POs generally tend to sell their plantation timber to middlemen or informal creditor-traders at a low price.

With the closure of the illegal market, the price of plantation wood may eventually become attractive to small producers. In some places, however, the demand for fast-growing species has steadily grown and has been strong enough to induce local tree farm development. In such localities where private processors, for instance, need raw materials for their processed wood products, investments have been made directly in tree farms/plantations in order to ensure...

---

29 The investments of IFMA holders in tree plantation and wood processing show that these investors have been able to operate with the given 25-25 year lease duration. Certainly, more incentive will be granted if public forestland leases were longer, or if some lands would be reclassified into alienable and disposable lands. These incentives however would require a constitutional amendment.
a future source of raw materials\textsuperscript{30}. Hence, with the eventual closure of the illegal log market and open access areas and the growth in demand for farm-grown timber and agro forest products, the problem of low timber price may be resolved in time.

Two, the inaccessibility of formal credit to small landholders and PO members has also constrained investment in tree farm development. While there seems to be many micro-credit programs catering to tree growers and other rural borrowers\textsuperscript{31}, and the Land Bank of the Philippines (LBP) and the Development Bank of the Philippines (DBP) have their targeted credit programs for cooperatives and NGOs\textsuperscript{32}, most available rural lending facilities for tree growers are short term and require collateral. Hence, PO members with a CBFMA who neither have land nor collateral cannot directly access these special financial assistance programs. POs would only be able to indirectly secure financial assistance for forestry projects through their LGU support. Not all LGUs, however, would qualify for the LBP special loan program. Only prime LGUs can receive favored treatment in terms of loan terms, grace period, and interest rate charges without any collateral\textsuperscript{33}.

Despite the favorable features of the LBP credit program that has made funds available since 2000, there have been no takers. Lack of information among other reasons may partly explain why prime and low risk LGUs have not availed of the facility.

Three, since small landholders and POs cannot directly avail of formal credit for tree farm development, their only available institutional funding source or developmental support is the LGU. However, the assistance that the LGU can provide is so much dependent on its priorities, environmental orientation, technical capacity, and working relationship with the local DENR.

While all LGUs have not availed of the special formal credit for forestry, a few have spent a part of their budget or provincial development fund or have raised funds to support the establishment of tree farms\textsuperscript{34}. The success of these projects is due not only to the leadership and

\textsuperscript{30} The case of a small furniture plant in Quirino Province illustrates this development. Given the current growing demand for timber, with his traditional source of gmelina from small private land farms in the vicinity already inadequate to meet his growing contract for office furniture with various government agencies, the furniture maker embarked on his own tree-growing project 4 years ago over a 500 ha of private and public forestlands.

\textsuperscript{31} There are 111 credit programs available through government departments, banks, cooperatives, and NGOs, 46 of which relate to micro-finance and 13 for poverty alleviation (Ellis, 2004).

\textsuperscript{32} The LBP has a special long term lending program for forestry projects from JBIC that provides reasonable interest rates (9 to 11%), grace periods for interest payments up to at least 5 years, and maximum-loan duration of 15 years.

\textsuperscript{33} LGUs that are ranked high to low medium in risk category would have to assign 20% of their annual IRA allotment as collateral and would receive less favorable loan terms.

\textsuperscript{34} The Nueva Vizcaya experience under Governor Agbayani illustrates LGU involvement in forestland rehabilitation and tree plantation development (Ramirez, 2004; Virgilio, Ellis, 2004). With public forestlands devolved to the province as a result of a co-management agreement between the DENR and the provincial government, on the one hand, and money from the provincial development fund, on the other, the governor was able to implement the Tree for Legacy Program over a 1,000 ha forestland area, and support the tree-planting projects of the upland federation members with Integrated Social Forestry (ISF) licenses. The governor also raised funds from raffle ticket sales to
orientation of the governor but also the goodwill and cooperation between the DENR and LGU officials. Both leaders can create and make co-management of the devolved watershed and forestlands work. The involvement of LGU leadership in watershed management and tree plantation development depends greatly on its orientation and appreciation of the forest ecosystem and environmental services. Without this orientation, most governors and mayors would not be involved in forestry projects, tree planting, and watershed rehabilitation and management. They would prefer instead to use local funds or borrow money to construct roads, bridges, and other infrastructural projects because these entail less effort and generate more short-term political benefits.

Most LGUs have also been unwilling to initiate plantation activities because they foot the bill while DENR still exercises effective control over forestry project operations. The Local Government Code (RA 7160) provides only for the partial devolution of forest management functions. Accordingly, LGU forestry activities are “subject to the supervision, control, and review of the DENR”. DENR’s full control of forestry projects may have partly stifled LGU initiatives and development plans for local public forestlands.

DENR’s effective control over public forestland activities has also been reinforced by the lack of LGU technical capacity in forest management, the scant resources for capacity building, and the local DENR’s limited appreciation of the purpose of devolution. Moreover, the guidelines for the transfer of natural resource management responsibilities from the DENR to LGUs need to be clarified.

The developmental LGU and NGO’s role in the entrepreneurial process

Apart from the various necessary conditions for rural growth discussed in the above strategies, such as resource information, secure property rights or tenure system, new policies, conflict resolution, and improved enforcement-implementing capacity, to name a few, rural growth also requires an agent that would promote an entrepreneurial process. As agents of growth, the developmental LGU and NGO must undertake various functions: source and provide market information; identify a product or service which responds to the needs/tastes of particular markets; organize resources and oversee product development work; network and form linkages with local suppliers, fund sources, and potential market outlets; modify existing technology if necessary; and sustain the process. The DTI, DENR, DA, DOST and their respective product research and marketing units, as well as the DBP and LBP can all assist in this entrepreneurial development process by providing information on product development, efficient/cost-effective technologies, market research and contacts, and linking local producers to interested private investors and domestic market outlets and foreign buyers.

cover the expenses of school children who participated in planting 10 hectares under the “trees for education” program. To each ISF holder and student who participated in these projects, the governor issued Certificates of Timber Ownership (CTO) over the trees which would allow them to sell or use the trees as collateral.
Imbued with an environmental consciousness and a developmental orientation and in partnership with DENR under a co-management arrangement, the developmental LGU can actively intervene in the development of tree farms/plantations and agro forestry products. Like the Nueva Vizcaya case, the LGU can direct its own funds and mobilize resources for such programs, inform potential investors, and link them up with local growers or tenure holders. Other LGUs may even do more, such as allot a portion of their IRA as loan collateral, act as guarantors of local POs with financial institutions, encourage the entry of local investors into forest/agro forestry product processing, or link local producers to the market.

Actual field developments show that the availability of a growing farm or plantation timber stock in a particular locale in the short or medium term has induced private investors to establish mill or wood processing facilities. Apparently, the decision of a developmental LGU to invest earlier in tree farm or plantation development by itself or through a PO has served as a magnet to private investments. In other words, in order to induce the entry of private capital, the developmental LGU must play a more active, forward-looking role and bear in advance the risks of plantation establishment.

Entrepreneurship in the NRS also involves the initiative of some NGOs to partner with local upland community producers and specialize in the collection, product development, and marketing of processed forest and agro forest products. Over the past decade the Upland Marketing Program, as a case in point, has grown and established a growing marketing network for an increasing list of forest-based products. From its experience, as well as those of its partner community groups, many lessons can be drawn for enterprise development in the natural resource sector that other local groups if not the LGU may apply. These lessons suggest the opportunities for growth in the NRS, or the possibilities and challenges for LGU, DENR engagement.

Lessons from local community experiences and the work of the Upland Marketing Program

Secure group tenure together with individual holdings was the historical starting point for the Ikalahan community’s direct management of its forestlands. In identifying products for market development, the community had more success with locally available resources than those where it tried to introduce a product from the outside. With some grant money to finance initial project failures and undertake simple R and D work with limited test production and sales, the community identified jam production from locally available wild guavas and endemic fruits as its initial product line. It learned that processing must be done at the community level where it can control the raw material and add greater value. The need to undertake a resource inventory and a market study only became urgent when production and sales began to pick up.

Given its findings from a commissioned market study, the community learned of the market structure for its proposed product, the large share of a big company and its B and C consumer class composition, their level of satisfaction with its product, and the community’s
potential market niche within the A, AB category. This market information thus brought the upland producing community to the city malls and high-end supermarkets through the assistance of the Upland Marketing Program (UMP), a Makati-based NGO. This earlier experience also confirmed that the skill, capacity, and reach of local communities is in production and processing and not in marketing. Thus, in order to reach the city supermarkets or the A, AB class, a partnership with a city-based marketing group, the UMP is critically essential.

The UMP experience also provides lessons for enterprise development. The market agent has learned that it must identify products or enterprises with very strong backward linkages to the communities. Their product must have a growing market demand or at least has good potentials for viability. Over time, this marketing activity must diversify and develop a portfolio of products because selling a few products may not make its marketing function viable. Products do not have the same volume and margin level. Also, it is important to plough back some of its profits to subsidize product development in other communities, and provide a revolving fund for the needs of community producers. There must also be continuous exchange or feedback between the UMP and the supermarkets, and between UMP and the PO-NGO suppliers.

Proposed actions for strategy 4: Address the Issues Underlying Community and Environmental Opposition to Mining

The resistance of some LGUs and the opposition of local communities and environmental groups to mining underlie the low approval rating for the Mineral Production Sharing Agreements (MPSA) or Financial and Technical Assistance Agreements (FTAA). The issues that underlie this opposition must be identified and addressed in order to enable the flow of investments into the mineral industry and thereby contribute to economic growth in rural areas and the country as a whole.

Some issues have already been identified in the discussion of the above strategies. These include the delineation of the mineral reservations, approved mining agreements, and claims under application, their overlap with other tenure instruments, protection areas, ancestral domain claims, and areas of high risk of seismic and natural hazards. Also, there is concern within the mining areas over the location, adequacy and strength of mitigation and pollution control measures, such as their tailings impoundment structure, in order to avert the potentially negative environmental and health impacts of mining in disaster-prone areas. Given these conflicting areas and demands for environmental safeguards, growth can proceed with the resolution of these conflicts and the provision of environmental safeguards.

There has also been much concern within local communities and environmental NGOs over the many shortcomings in the EIA process that make the system an ineffective tool for minimizing the adverse environmental and social impacts of mining. These concerns refer to the superficial participation of communities in the EIA process. To the affected communities, the EIA process does not enable them to study and understand the issues in the technical reports. They are merely mobilized to attend one meeting, and their attendance is already taken as their

35 In this A, AB category, educated women buyers played an important role. Hence, a new product must connect to their taste and preferences, such as color and their premium for health.
consent to the project. They have little or no say in determining basic issues, such as the location of the various components of the mining project. They do not have the opportunity to know and understand the various concrete mitigation measures that will be set in place, their affectivity and risks, nor the power to verify whether they would be undertaken as specified and agreed upon in the ECC. Moreover, there are no provisions in the law by which communities can reject or terminate a mining permit that has seriously been detrimental to their land, health, and livelihood.

In other words, in order to ensure that communities would be in a position to demand for environmental and social safeguards, they must be informed, sufficiently consulted, and must have an active role in the Multipartite Monitoring Team. An independent third party audit, together with the environmental monitoring function of the MMT must also be in place in order to identify the risks and develop an effective environmental management system.
BIBLIOGRAPHY

Published Materials


Project (WPEP). Manila, Philippines: WPEP and the Government of the Philippines through the Department of Interior and Local Government.


**Government documents**


______________. 1993. *Department Administrative Order (DAO) 93-60.* “Revised Regulations and Guidelines Governing the Establishment and Management of Industrial Forest Plantations (IFPs) and Management of Residual Natural Forests for Production Purposes.” Quezon City.


Rural Growth and Development Revisited Study
Natural Resources


_______________, 2002. Department Administrative Order (DAO) 2002-02. “Establishment and Management of Community-Based Program in Protected Areas.” Quezon City.


Rural Growth and Development Revisited Study
Natural Resources

“Amending Certain Provisions of DAO 96-29 and Providing Specific Guidelines for the
Establishment and Management of Community-Based Projects Within Protected Areas.” Quezon
City.

Philippines (Republic) Office of the President – National Commission for Indigenous
People’s. 2002. *NCIP Administrative Order 2002-02.* “Revised Guidelines for the Conversion of
Certificate of Ancestral Domain/Land Claims to Certificate of Ancestral domain/ Land Titles
Delineated Prior to R.A. 8371.” Malacañang, Manila.

“Adopting Community-Based Forest management as the National Strategy to Ensure the
Sustainable Development of the Country’s Forestlands Resources and Providing Mechanisms for
Its Implementation.” Malacañang, Manila.

____________. 2004. *Executive Order (EO) 318.* “Promoting Sustainable Forest
Management in the Philippines.” Malacañang, Manila.

____________. 2004. *Memorandum Circular No. 67.* “Directing the
Malacañang, Manila.

Unpublished materials

Baños, Laguna.

Carandang, Myrna M., Margaret N. Calderon, Antonio P. Carandang, and Nicasio T.
in the Philippines.” Report submitted to the Swedish International Development Agency (SIDA)
by the UPLB College of Forestry and Natural Resources and the Department of Environment and
Natural Resources, Los Baños, Laguna.

Dalmacio, Roberto V. 2001. “Strategies in Addressing the Weaknesses/Limitations of
Different Agroforestry Systems in the Philippines: Fallow and Multi-Storey System.” Paper
presented as a second lecture for the UPLB faculty, staff and students Professorial Award.

Delos Angeles, Marian S. 2000. “Natural Resources Management: ENRAP IV Technical
Paper.” Edited version of a report contributed to Rural, Development/Natural Resources
Rural Growth and Development Revisited Study

Natural Resources


Ramirez, Mark Anthony M., and Germelino M. Bautista. 2004. “In-Depth Case Study of a CBFM Site in Mindanao: The Case of Ngan, Panansalan, Pagsabangan Forest Resources Development Cooperative (NPPFRDC), Compostela, Compostela Valley.” Report submitted to the Food and Agriculture Organization (FAO), and the Department of Environment and Natural Resources (DENR) by the Institute of Philippine Culture, Ateneo de Manila University, Quezon City.


Tropical Resources for Environment and Economic Systems, Incorporated (TREES, Inc.) 2004. “In-Depth Case Study of Community Based Forest Management (CBFM) Project in
Luzon.” Report submitted to the Food and Agriculture Organization (FAO), and the Department of Environment and Natural Resources (DENR) by the TREES, Inc., Los Baños, Laguna.