Workshop 3

Environmental Change, Economic Decline, and Civil Strife

Case Study

Economic Inequality, Environmental Degradation, and Civil Strife in the Philippines

by

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ECONOMIC INEQUALITY, ENVIRONMENTAL DEGRADATION AND CIVIL STRIFE IN THE PHILIPPINES

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I. Introduction

The image of the Philippines as a country in political turmoil and civil strife became popular since the media-hype that surrounded the popular uprising in 1986 which overthrew the Marcos Regime. The seven coup attempts against the Aquino Government further reinforced that image. However, it is an essentially correct image, making allowances for some over dramatization of the media. Chronic civil strife, peasant rebellion, liberation movements by indigenous groups, debilitating strikes by transportation workers, and violent confrontations among armed groups and private armies characterize the history of the Philippines since its first contact with the West in the early 16th Century.

The occasion of the arrival of the first European in the Philippines in 1521 marked the radical transformation of the political economy of the islands which up to that time could be assumed to be self-reliant communities living in close harmony within the limits imposed by their natural heritage. When Ferdinand Magellan planted the Spanish flag and the cross in Philippines on that fateful day of March 16, 1521 it was not only a melodramatic ritual of conquest but a property claim that the entire archipelago of 7,100 islands belonged to the Crown of Spain. This had the immediate effect of transforming all the native Filipinos into squatters[1]. This act has been the basis of the so-called Regalian Doctrine, the pathological philosophical basis of land laws in the Philippines up to the present.

The slaying of Magellan by the natives a few weeks after his landing was a fitting portent of the legacy of violence engendered by the Regalian Doctrine. By the 1690s tensions about land tenure has started to build-up which became the agrarian Tagalog Rebellion of the 1740s[2]. However, as early as 1587 there have been resistance to Spanish rule and since then uprisings were the dominant feature of the historical landscape of the Philippines.

This paper attempts to show that environmental deterioration and the social maladies spawned the political economy of natural resources is playing a subtle but important role in the incubation of civil strife. Environmental deterioration is crucial to a resource-dependent society because it sharpens the

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1 Lynch, O. "The Ancestral Land Rights of Indonesians: A Comparison With the Philippines", unpublished paper, 1984.

2 Corpus, O.D., The Roots of the Filipino Nation, AKLAHI Foundation, Quezon City, 1989.

fangs of poverty and provides the harsh conditions shared by the poor that breeds social conflicts. Some vicious cycles have been initiated by the colonially imposed political economy resulting in continuing decay, persistent poverty, and chronic civil strife.

Etiology of Environmental Conflicts

In October, 1989, about a dozen farmers and villagers from San Fernando, Bukidnon in the island of Mindanao, traveled all the way to Manila. They pitched tents in front of the Department of Environment and Natural Resources and announced that they were going to fast until the government decides to cancel the logging concessions in their province, control illegal logging, and discipline the Department's personnel in their community. Within the day they were joined by sympathizers from nearby schools and by Manila's environmental organizations. Months before this dramatic demonstration, the Concerned Citizens of San Fernando (as they called themselves) have done almost everything within the arsenal of peaceful protest to stop the logging in the watershed which provide ecological support to their farms. They have written protest letters, appealed to mass media, held demonstrations in San Fernando and stopped the logging trucks by lying on the streets. This protest is probably the first directly related to a subtle environmental change associated with logging.

There have been other environmental disputes in the Philippines before the San Fernando protest but they were mostly the outcome of pollution incidents. There were a series of demonstrations in Binangonan, Rizal provoked by the Rizal Cement Corporation, the community disputes arising out of the operation of Marcopper Mines in Marinduque, and the protests by fishermen against the Central Fermentation Inc. for the pollution of the Pampanga River. In fact conflicts provoked by pollution episodes are becoming quite common in the Philippines.

The cause and effect between environmental change and social conflict is easy to see in the case of pollution incidents. In fact, we can even intuitively confirm the assertion that conflict is some direct function of pollution incidents. In the case of the San Fernando protest, the detrimental effects of logging on the interests of the lowland farmers are widely separated in space and time from the cause which is deforestation. A more sophisticated understanding of ecological processes is necessary to connect the cause and the effect. The San Fernando protest is important in the sense that it signaled the emergence of a new level of maturity of environmental awareness in the Philippines. In fact, a year after the San Fernando protest, the citizens of Gabaldon, Nueva Ecija launched their protest in almost exactly the same style for exactly the same grievance. With this high level of environmental awareness, environmentally induced

conflicts will certainly become more frequent.

One of the most celebrated civil strife in the Philippines concerned the Chico River Basin Project in Kalinga-Apayao and Mountain Provinces of Northern Luzon. The controversy revolved around the potential loss of places sacred to the Kalinga and Bontoc tribal groups. Since this conflict involved a potential change in land use, it may also be considered environmental in nature. More than 100 people were killed in this controversy, although the campaign against the project has been successful[3].

In Laguna de Bay, biggest freshwater lake in the Philippines, violent confrontations have become chronic because of the policy to alter the traditional water uses in the lake. These conflicts are of the same genre as the San Fernando protest. The change from open water fishing to enclosed fishpens has provoked unending strife between traditional fishermen and fishpen entrepreneurs.

It is possible to reach some degree of theoretical understanding of these conflicts through the use of social conflict theories. The possible typology that could be proposed classifies conflicts into three: Simple-Scarcity Conflicts, Group-Identity Conflict, and Relative-Deprivation Conflicts[4]. However, for a country case study dealing mainly with environmental change and civil strife a simpler typology would be adequate.

All the conflict situations cited above have a common feature: environmental change (whether actual, potential, or perceived) is the direct and obvious cause of the conflicts. In pollution-induced conflicts, the provocation is actual change in water or air quality. In the San Fernando protest it is potential change in water regime that could be detrimental to lowland farming that impel the protest action. In the Chico River confrontation it is the potential change in land use. In Laguna de Bay, it is the actual change in water use. If the goal of theory is somehow to foresee and minimize the occurrence of civil strife as an outcome of environmental change, then in this instance a direct relationship could be assumed although this could be influenced by catalytic conditions like the presence of environmental advocates, and the general level of environmental

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3 Lim Teck Ghee, Valencia, M.J., Editors, Conflict Over Natural Resources in South-East Asia and the Pacific, United Nations University Press, Singapore, 1990.

4 Homer-Dixon, T.F., Environmental Change and Acute Conflict: A Research Agenda, paper submitted to the Global Environmental Change Committee, Social Science Research Council, March, 1991.

awareness. In this instance, the general guide to policy is clear and unequivocal: more environmental degradation will precipitate more conflicts of this kind. More environmental groups will be organized provoking more conflicts. They will happen in sites of actual or potential rapid industrialization and population concentration and of rapid deforestation. The time gap between the environmental episode and the conflict will be small. For labelling purposes, we may call this class of conflicts, **Environmental Conflict of the First Kind.**

Environmental deterioration is suspected to induce social conflicts through more complicated causal pathways. For example, it has been suggested that environmental deterioration due to deforestation and destructive fishing played a significant role in the economic decline of the Philippines and ultimately led to the downfall of the Marcos regime[5]. In a similar vein, it has been asserted that the Philippines, because of environmental degradation is now in the midst of a rapidly unfolding subsistence crisis that could further inflame the existing insurgency and threaten the democratic institutions of the country[6].

The proposition that environmental destruction leads to economic decline, economic inequity, and ultimately social conflicts is plausible. In fact, this is the regime where the Relative-Deprivation theory of conflict could conceivably apply[7]. In this case the postulated role of environmental change is quite indirect, non-exclusive and propagated through a complicated chain of causation before it is manifested in social conflict. Environmental degradation could only be one of many causes of the conflicts. The separation in time and space between the environmental causes and the actual conflict events could be large. The coupling between environmental change and social conflict could have weaken with time, distance, and dilution along the many channels of causation and intervening variables. Acute social conflicts such as insurgency, peasant rebellion, and general worker strikes could be some of the manifestations of this type of conflict. These conflicts are clearly taxonomically different from the pollution-induced type and may be called **Environmental Conflict of the Second Kind.** Figure 1.1 could clarify this conceptual classification.

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5 Mathews, J.T., "Redefining Security" in Foreign Affairs, Spring, 1989, p.167.

6 Brown, J.W., Editor, In the U.S. Interest: Resources, Growth, and Security in the Developing World, Westview, Boulder, Colorado, 1990, p. 14 and p. 59 ff.

7 Homer-Dixon, T.H., Op. Cit.

Empirical studies in environmental change, economic decline, and social conflict will, almost by necessity, be phenomenological in approach. In this regard, this binary taxonomy of environmental conflicts will be useful in discriminating between the theoretically simpler events involving Conflicts of the First Kind from the more complex, intellectually challenging, Conflicts of the Second Kind. The latter will involved the tracking and analysis of a myriad number of ecological, social, political, and other intervening variables - an enterprise fraught with many serious epistemological difficulties[8]. However, this subject should be motivated not only by the academic interest but also by the pragmatic requirements of formulating new policies aimed at reversing the dangerous, environmentally induced, social and political trends in the Philippines. With this perspective in mind, even academically imperfect but informed insights into the dynamics of the environmental conflicts will be of critical value. Even a rudimentary understanding of the phenomenology of Environmental Conflicts of the Second Kind could illuminate policy formulation.

There are only a few conflict phenomena in the Philippines that could possibly be associated with Environmental Conflicts of the Second Kind. The most prominent is the insurgency led by the National Democratic Front (NDF) and supported militarily by the New People's Army (NPA). Another possibility is the regional autonomy movement in muslim Mindanao and the Moro National Liberation Front (MNLF). A third could be the regional autonomy movement in the Cordillera and the Cordillera People's Liberation Army (CPLA). Although the 1987 Philippine Constitution recognizes the aspirations for political autonomy of these regions, all of these movements are insurgency in nature. Other forms of conflict could be the civil unrest of peasants and industrial workers.

Since all these insurgencies claim the rhetoric of inequality as the fundamental cause[9], the research agenda is straightforward: the linkage between environmental change economic decline, and economic inequality must be examined as well as the linkage between economic inequality and social conflict. By definition, the nexus of environmental change and social conflict is the Environmental Conflict of the First Kind. The focus of the study should on the understanding of Environmental Conflict of the Second Kind.

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8 Homer-Dixon, T., Op. Cit.

9 The general issue of inequality has been rhetoric of revolutions. The French Revolution espoused "liberty, equality, fraternity". For the American Revolution it was "all men are created equal". The same could be said for Russian and Chinese revolutions.

Some Previous Empirical Explorations

The nexus of environmental change and economic inequality appears to be a virginal area for empirical research. However, considerable quantitative cross-national studies have been undertaken for Economic Inequality - Political Conflict puzzle[10]. Lichbach after studying 43 quantitative studies on the relationship between economic inequality and political conflict concluded that " In sum, after two decades of empirical research in conflict studies have challenged the conventional view that a strong positive relationship exists between economic inequality (EI) and political conflict (PC). EI-PC studies have produced an equivocal answer about the EI-PC nexus. While numerous analyses purport to show that economic inequality has a positive impact on political dissent, others purport to show negative and negligible relationships."[11]

One reason for the inconsistent results of the empirical studies is the fact that the concepts of economic inequality and political conflict are both multi-dimensional concepts. Some dimensions of political conflict might be related to some dimensions of economic inequality under some given general social conditions. The various studies were dealing with various possible relationships which are not comparable, hence the inconsistent results. The lesson learned is that propositions that we should test empirically should involve specific aspects of these variables. In any case, under the present state of research, we can say with confidence, that there is no such general relationship between EI and PC except in some specific context or supporting social conditions.

In the case of the Huk rebellion in the Philippines, Mitchell[12] was able to show through econometric analysis the intuitive expectation that economic inequality increases political conflict. The study demonstrated that the Huk rebellion arose out of the highly inequitable tenancy conditions particularly in the Province of Pampanga. However, the Huk movement did not prosper in the other provinces where similar tenancy conditions exists because the Huk rebellion was perceived to be a predominantly Pampangan movement.

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10 Lichbach, M.I., "An Evaluation of 'Does Economic Inequality Breed Political Conflict?' Studies", World Politics, Vol. XLI, #4, July, 1989.

11 Ibid.

12 Mitchell, E.J., "Some Econometrics of the Huk Rebellion", in American Political Science Review 63, December, 1969.

Hawes[13] argued that the NPA rebellion in the Philippines can only be completely understood in the context of the unique political economy of the Philippines and its links to the international economy.

II. Concepts and Postulates

Some of the important terms used in this paper, such as economic inequity, environmental degradation, or social conflict are often already emotionally loaded. For the sake of clarity, it is necessary to fix the meanings of these terms. Since this paper seeks to explain the links between these concepts in the Philippine context, a general definition may not be essential. It could, in fact, be more fruitful to consider specific categories of environmental change, and social conflicts that are germane to the Philippines and attempt to create a causal framework to understand the phenomenon of social conflict in terms economic inequity and environmental change. To clarify the meaning of the terms further, indicators for the existence of the concepts will be enumerated whenever possible. The meaning of terms are unambiguous when they are defined in terms of some indicators which can actually be measured although the actual measurements may not be essential to the argument. This inclination toward empiricism is motivated by the desire to make the propositions regarding the topic as clear as possible.

Postulates and Premises

Figure 1.1 is also an illustration of the basic postulate of this paper. Environmental Conflicts of the Second Kind are precipitated by either economic inequality and general economic decline. Economic inequity has been institutionalized in the political economy of natural resources with origins in the colonial history of the Philippines. It is this political economy that induced large scale environmental changes resulting in economic decline which promotes further environmental deterioration. Although environmental degradation is not the sole cause of economic inequality and decline they are linked by positive feedbacks that reinforce the cause and the effects. Environmental degradation hastens the growth of economic decline and inequality which are the precipitating causes of social conflicts. In other words, economic decline and inequity could have other causes but environmental degradation accelerates their development. Because of feedbacks environmental degradation and inequality assume the character of cancerous malignancies feeding

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13 Hawes, G.,"Theories of Peasant Revolutions: A Critique and Contribution from the Philippines", World Politics 42, January, 1990.

on themselves. This is the significance of the double arrows linking these variables in Figure 1.1.

Figure 2.1 is an example of more detailed causal pathways and feedback loops linking the principal variables of the postulate. The figure shows that social inequity engenders poverty in the rural population because most of the income from agricultural production goes to the land owners and middlemen. There is an established correlation between poverty and population growth rate showing that procreation is larger among the poor. Thus, the population of the impoverished increases.

There are only two ways to absorb the excess labor in the rural areas. One is to open up more agricultural lands and the other is immigration into urban centers, the coastal areas, and the relatively underpopulated forest lands. Almost all of the available land suited for agriculture have already placed under cultivation by the 1950s. In fact, the resettlement of the Huk rebels in the 50s were accomplished by cutting down extensive forested areas in Mindanao[14]. The only alternative is the spontaneous immigration of excess labor into the ecologically fragile forest lands, the coastal zone with its open access municipal fishery, and the primate city of Metro Manila.

Because of the inability of the government to protect the forest lands, migration and settlement into these areas is relatively easy. There, the lowland immigrants mimic the indigenous communities in swidden agriculture. This results in serious deforestation and disruption of the water regime which ultimately affect the productivity of the croplands, inducing more poverty.

The migration in the coastal areas, which are already supporting a high population, causes overfishing which impoverishes further the fishing communities. The populations of the croplands and the coastal zone are now plagued by the scourge of increasing poverty.

The malignant growth of Metro Manila is explained by the same phenomenon stemming from increasing rural poverty and population. The rapid growth of the primate city results in spiralling unemployment and competition for work places. This could provoke urban social conflicts. The increased levels of pollution could lead to Environmental Conflict of the First Kind. However, the more subtle effect of rapid urban growth is the encouragement of more investments in the big city. This is partially abetted by the relatively stronger political clout of the urban body politick. The relatively much poorer rural areas

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14 DENR, Master Plan for Forestry Development, Quezon Quezon City, 1990.

are further deprived of the necessary public investments which hastens its impoverization.

The model depicted in Figure 2.1 shows vicious cycles overlapping with other vicious cycles which signifies exponential growth in any complicated system. However, the characteristic times involved could be long. Changes in water regimes and the doubling time of the population are measured in decades. The eventual and inevitable collapse of the system due to acute political and social conflicts may be difficult to the trace back to the primary causes. Furthermore, during the long interval between cause and final effect, intervening variables, such as rapid industrialization, could happen and alter the effects. Or the relief valves of a revolution could release some of social and political pressures.

The postulate is specially tailored for a country like the Philippines whose economy is still highly dependent on agriculture and natural resources. The principal exports of the Philippines have been products from the natural resources sector such as coconut oil, copra, sugar, lumber and logs, and minerals. Sixty percent of the population lives and works in the rural areas. About 50% of the population is employed in the natural resources sector[15].

As a general proposition, it is difficult to find empirical anchors for the postulate. However, it could be applied as a framework for understanding specific forms of social conflicts and specific instances of environmental degradation in the Philippines.

Forms of Environmental Degradation in the Philippines

Government reports[16] clearly show that there are three major types of environmental degradation in the Philippines. These are degradation of the forests, the croplands, and the coastal zone[17]. The possible measures or quantitative indicators for

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15 U.S.A.I.D., Sustainable Natural Resources Assessment - Philippines, Manila, 1989.

16 The Environment Management Bureau of the Philippines publishes regularly reports on the state of the Philippine environment. Also, see Roque, C.R., Environment and Natural Resources: Status and Prospects, Economic Development Foundation, Makati, Philippines, 1990.

17 The World Bank, Philippines: Environment and Natural Resources Study, Washington, D.C., 1989

these environmental changes are shown in Table 2.1.

Table 2.1

TYPES OF ECOSYSTEM	INDICATORS OF CHANGE
Forests	Forest Cover Habitat Loss Species Extinction
Croplands	Soil Erosion Sedimentation Acidification
Coastal Zone	Mangroves and Coral Reefs Overfishing Water Quality

The list of possible indicators is by no means complete. These indicators were chosen because some empirical time sequence data or general assessment are available. The point being made here is that environmental degradation in terms of these three vital ecosystems can be demonstrated in the Philippines by empirical measurements of the indicators. The meaning of the term "environmental degradation" is therefore fixed and measurable. These major ecosystems are linked principally by the flow of water. Forests are mostly in high elevations, croplands are in the lower relatively flat lands and the coastal zone at almost sea level. The degradation of the forest and its ecological consequences reverberate through the lower ecosystems.

Environmental Conflicts of the Second Kind

Under the assumption that somehow environmental degradation has some indirect and remote influence in social conflicts, the following are the three important categories in the Philippines: insurgency, peasants unrest, and workers unrest.

Insurgency refers to those movements that deny the authority of the existing Philippine government and are ready to use force to assert their demands. The NPA, the CPLA, the MNLF, and other organized struggles of indigenous groups are classified under this category. This is by far the most serious conflict in the Philippines. And the premise of this paper is that this has some roots in environmental degradation although there are other social and political factors that breed and stimulate insurgency.

The chronic unrest of peasant organizations, which sometimes lead to bloody confrontations with the government is another important category. There are large organized groups of peasants such as the Kilusang Magbubukid ng Pilipinas (KMP) and the Federation of Free Farmers (FFF). Although these conflicts are sometimes provoked by leaders linked with some insurgency movements, the conflicts involving peasant groups have a rationale of their own and could exist independently of the prevailing insurgency.

There are big well-organized labor groups in the Philippines such as the Kilusang Mayo Uno (KMU) and the Trade Union Congress of the Philippines (TUCP). There have been occurrences of debilitating strikes and violence involving organized workers in urban areas. This category also involves those organizations involving urban workers such as teachers, transportation workers, and civil servants.

By limiting the notion of social conflict to these three well known and putative categories, the meaning of "social conflict" is made quite specific and has obvious empirical anchors. The number of confrontations, demonstrations, strikes, protests or any act disturbing the social peace involving these groups are the indicators of social conflicts in the Philippines.

Economic Decline

The economic condition of a country is usually indicated by macroeconomic indicators such as Gross Domestic Product (GDP), Gross National Product (GNP), inflation rate, interest rate, balance of trade, etc. Since these numbers exist in the Philippines at least for the last few decades, they may be used as indicators of economic status of the country. Nevertheless, it should be kept in mind that some of the social groups of interest in this study are outside of the cash economy and these number do not necessarily indicate their economic situation. However, the economic conditions of the dominant groups are most probably captured by the macroeconomic indicators and therefore these numbers have some significance.

The other flaw of using GDP is that it does not take into account the losses in the capital stock of natural resources of a country. The cutting down of forests increases the country's GDP but the loss of these assets are not taken into account. In this regard Repetto complains that "..a country could exhaust its mineral resources, cut down its forests, erode its soils, pollute its aquifers, and hunt its wildlife to extinction but its measured income would not be affected as these assets disappeared. Ironically, low-income countries, which are typically most dependent on natural resources for employment, revenues, and foreign exchange earnings, use a system of national

accounting which almost completely ignores their principal assets."[18]

Knowing these caveats, we fix the meaning of economic decline by any suitable set of measured macroeconomic indicators.

Economic Inequality

The proper and precise definition of economic inequality presents a special problem to previous researchers in this area. In fact, the contradictory results of EI-PC studies could be traced to the inconsistent definitions of economic inequality[19]. There are two questions implied by the problem of defining economic inequality. First, inequality of what aspects of the economy? And secondly who is unequal to whom?

Previous studies have used inequality in land, income, differential economic conditions, and economic discrimination[20]. In short, there is no universally agreed upon definition of economic inequality.

The Political Economy

Political economy refers to the interrelationships between political and economic processes and the implications on resources and wealth. It could be conceived to be the system that allocates political power, resources, wealth, and social roles in a given society. Just like economic inequality it is difficult to define this in a way that is unambiguous and defined on some empirical indicators. Furthermore, since the political economy is crucial to the basic postulate in this paper it must be defined in such a way that the linkages to the other variables such as the principal ecosystems that act as surrogates for environmental change, economic inequality, and possibly the specific dominant forms of civil strife in the Philippines.

The Philippine Model for Economic Inequality, Environmental Degradation, and Civil Strife

Having restricted the range of the important variables in

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18 Repetto, R. "Balance Sheet for Erosion - How to Account for the Loss of Natural Resources", International Environmental Affairs, Vol. 1, No.2, 1989.

19 Lichbach, M.I., Op.Cit.

20 Ibid.

the basic postulate and fixing their meaning through some empirical anchors the posited principal channels of causes and effects for the Philippine case is shown in Figure 2.2.

The figure shows that the political economy of natural resources evolved from colonial history of the Philippines, its salient characteristics and structure were determined by Spanish and American impositions. The working of the political economy could be seen as bringing on social and environmental effects which are linked by complex interactions (depicted as double arrows in the figure). A general and partial analysis of this complex relationships is shown in Figure 2.1.

Further analytical progress could be made through the application of system analysis to the complex problem of exploring the causal relationships between economic inequality, environmental degradation, and civil strife. Despite the complexity and as long as there is some ordering principle, or even just the absence of total chaos[21] , a system may be formulated to represent a set of relationships. The concept of systems provides us with a coherent and consistent metaphor for the analysis of complicated phenomena. In the systems approach, the important variables in the basic postulate could be anchored within a common semantic framework or structure of meanings which is so essential in avoiding total confusion. Moreover, the various propositions of General Systems Theory will open opportunities for valuable insights into the problem. Off hand, the known general characteristics of systems such as dynamics (stability, change, and evolution), hierarchy and interdependence, reciprocal dependence, control and maintenance, and feedback may immediately be made to bear on the analysis.

Systems View of Natural Resources

Natural resources are not useful as consumer products per se. They must undergo a series of transformations into marketable products and delivered to ultimate consumers. By looking at these stages of transformations as a system, the tools of system analysis could be made to apply in order to gain insights into the very complicated relationships involving the economy of natural resources. The concept of a resource system has been

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21 J.K. Boulding made a simple but bold definition of a system as simply the absence of chaos. See Boulding's "The Economics of the Coming Spaceship Earth" in Beyond Economics: Essays on Society, Religion, and Ethics, The University of Michigan Press, Ann Arbor, 1970.

proposed[22] [23] to provide a framework for tracing the transformation of raw materials into finished products. This concept can be used as the core idea to link the variables of environmental change and the political economy. Figure 2.3 illustrates the idea of a resource system for a certain consumer product X. It is shown as having three principally hardware components: the extraction, processing, and delivery subsystems. There are two software components: the information and marketing subsystems. The information subsystem consists of the stock of knowledge and expertise relevant to the production of X.

The concept of resource system permits a more dynamic conceptualization of natural resources. A raw material may only be called a resource if all transformational systems allow its conversation into a useful product at acceptable cost. A resource today may not be a resource in the future because of advances in technology resulting in the evolution of substitute resource system addressing the same set of human needs.

The information subsystem has a central role in the resource system. This includes not only the organized software of science and technology but also the informal, unorganized experience and knowledge associated with the production of the product X. Also included here are the skills in administration, management, finance, banking, etc. Of special significance is the knowledge concerning the quantity, quality, and geographical distribution of natural resources.

In the modern world the raw materials are becoming relatively insignificant compared to the growing role of technology in the various subsystems of the resource system. This is related to the relative share of the subsystems in the final value of the product which in turn influence the distribution of wealth associated with the production of a particular product.

As shown in Figure 2.3, the resource system admits inputs of capital, raw materials, and other inputs such as those provided by infrastructure, and exogenous energy supplies. For the purpose of this paper it is advantageous to think of the resource system as connected to the ecosystems where it withdraws raw materials and returns residuals and wastes. The ecosystems also

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22 Ruddle, K. and Rondelli, D. Transforming Natural Resources for Human Development: A Resource System Framework for Development Policy, U.N.U. publications, Tokyo, 1978.

23 Roque, C.R., "Systems Theory of Natural Resources", in The Philippines at the Crossroads: Some Visions for the Nation, Center for Research and Communication, Manila, 1986.

provide "services" like the operation of the water cycle and the recycling of other essential chemicals. For specific product X, ecosystems in various geographical locations can be involved. These ecosystems have their own subsystems and dynamics. However, the discussion of these is not needed for the purpose of this paper. For the study of the Philippines, the three ecosystems mentioned above will be assumed to be the most important.

The Systems View of the Political Economy

The system of controls of the resource system and the ecosystems is assumed to be the political economy system as shown in Figure 2.4. The components of the system are assumed be the organized groups representing various interests and have access to the various subsystems of the various resource systems or territorial control of the various ecosystem types. In other words, the network of principal actors controlling wealth, resources, and political power are the components of the political economy system. These actors could be further broken down into smaller groups or could form larger coalitions in controlling the flows in the resource system and ecosystems. In the Philippines the important actors are : the church, the government (which could include the military establishment), the capitalists (which could include the foreign investors), the peasant groups, the worker groups (industrial and service groups), the professionals, the NPA, the MNLF, the CPLA, the indigenous communities, and the students.

For each particular resource system (e.g.,the resource system for sawn logs or copper concentrates) it is possible to formulate a political economy system with a particular set of actors. This choice will also depend on the geographical location of the ecosystems involved.

With the resource system concept, the following proposition about the flows and distribution of income could be made: that income flows along the channels of control on the various components of the resource system. The distribution of income among the various actors is strongly influenced by the bargaining power of the actors. Actors controlling more channels will get a proportionally larger income. Many actors sharing a few control channels will have diluted bargaining power and smaller income. Monopolies can be interpreted as an exclusive control of a channel in the resource system which results in a much larger share of the income.

The operation of this theory of income distribution is exemplified by the rice resource system. In some agrarian reform areas in the Philippines, after the farmers were given control of the extraction system (or the source ecosystem), the former landlords shifted their control to the other subsystems like the

processing (milling), marketing, and delivery systems. The introduction of modern technologies further dissipated the bargaining power of the farmers by increasing their dependence on supplementary inputs such as fertilizers and pesticides, the capitalists and landlords were able to recapture their lost income.

The systems view of the political economy provides an explanation of the distribution of income but not the concept of economic inequality. This concept involves a normative dimension. One way of taking this into account is to imagine the political economy system to be linked and controlled by a system representing values, ideology, the psychological states of the actors, and other abstract concepts that affect human and social behavior. Boulding[24] called this the Transcendental System and Alvin Toffler[25] referred to it as the psycho-sphere or the noosphere.

If economic inequality is conceived as a state of the political economy, the placement of actors in the political power structure, the allocation of controls on the resource system, the distribution of wealth and income, then the limits of tolerance is set by the transcendental system. Thus, economic inequality is not a fixed concept, its measure will be constantly changing in time in accordance with the dynamics of the transcendental system. The signal that the limits of tolerance for inequality have been reached is the occurrence of civil strife. However, it will be tautological to use the occurrence of civil strife as an indicator of economic inequality.

With the perspective of systems analysis, the research agenda for the theoretical understanding of the interrelationships among the political economy, environmental degradation, and civil strife is easily formulated. In essence the program is the construction of a detailed diagram similar to Figure 2.4 for each of the major products of the economy.

Firstly, the detailed resource systems of the major products of the Philippine economy are analyzed. This requires the determination of all transformational stages up the final product, all the necessary inputs, and all the residuals. For the Philippines these products are those related to rice, sugar, coconuts, lumber, and minerals.

Secondly, the source and receptor ecosystems linked to the resource system for a particular product X are enumerated. In the case of lumber for instance, the various watersheds involved in

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24 Boulding, K., Op. Cit.

25 Toffler, A. The Third Wave,

logging, the affected croplands, and the affected coastal areas will be relevant to the study. The impacts of logging and processing on each of these ecosystems could be determined.

Thirdly, the political economy system could be figured out by enumerating the principal actors in the particular resource system under study and determining their degree of control on the resource system. In the case of lumber these could be the logging companies, the affected indigenous communities, the workers in the logging operations and sawmills, the affected farmers and fishermen, the environmental groups, and the government regulators. The economic analysis of the resource system and the distribution of income and ecological costs could also be determined at this point.

Finally, the set of values that could apply to the various actors could be studied. Relevant theories on how these values will determine behavior could be used in understanding the occurrence of civil strife.

Of course, this is a formidable research program. It is a comprehensive, theoretically feasible, but expensive recipe. Its utility at this point is to provide a framework of meanings, a coherent structure for the understanding known historical data in natural resources exploitation, economic development and episodes of social conflict, and to suggest possible linkages and feedbacks among the various systems. The systems analysis presented here lends some order and coherence to the chaos of history. The consistent semantic framework that it provides, isolated events become regular patterns and the patterns connect to one another and can be seen as the manifestation of a definable social organism.

Although a methodology on the subject of this paper has been defined, it has not been implemented to the degree that will merit the label of scientific research in the strict sense. The systems concepts have been used to guide arguments but the assertions remain to be highly qualitative. As is the case in most research in the social sciences, the number of known variables has often often overwhelmed even the most vigorous attempts at quantification. The power of the hidden varables has often invalidated many superficially empirical theories.

It is theoretically feasible to build a computerized system dynamic model for each of the most important resource system in the Philippines. The concepts presented above indicate some possible state variables and these variables can be related to one another by regression or correlation analysis. Thus, if resources are available, an empirically based process could be elaborated. However, the cost benefit of that enterprise is doubtful. In short what has been achieved in this section is the

definition of the various concepts and their organization into a systems framework. This will make possible the integration of vaious pieces of independent research into a coherent whole.

III. Predators and Preys: The Evolution of the Political Economy

Pre-colonial Period: Paradise Lost

The political economy of the natives before the coming of the Spaniards in the 16th century was a very simple system. It was so simple that the application of the formidable machinery of systems analysis becomes absurdly inappropriate. The subsistence livelihood activities of the natives and their notions of resource-ownership or their lack of it founded an incomplex structure of an economic system. The primary reason for this was that land and everything on it was held in common. The native Filipinos survived mainly thru agriculture, and fishing, supplemented by hunting and other food gathering activities with the technosystem limited to basic farming tools, fishing boats, and hunting equipments which everyone had since these were crucial to daily existence. They lived in very small, manageable communities called "barangays" traditionally headed by a chieftain who allocated the produce among the barangay members. Thus there was no need for big harvests nor surpluses. Cooperative work among the families in the barangay characterized land preparation, tilling and harvesting, as well as the other economic activities. A snapshot of this pre-colonial attitude towards wealth can be gleaned from Legazpi's account:[26]

> "More or less, gold is found in all these islands; it is obtained from rivers, and in some places, from the mines where the natives work. However, they do not work the mines steadily but only when forced by necessity ; for because of their sloth and the little work done by their slaves, they do not even try to become wealthy, nor do they care to accumulate riches. When a chief possesses one or two pairs of earrings of very fine gold, two bracelets and a chain, he will not trouble himself to look for anymore

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[26] Roque, C.R.. Environment and Natural Resources: Status and Prospects. (Manila: Economic and Development Foundation, 1990), p.4.

gold. Any native who possesses a basketful of rice will not seek for more, or do any further work, until it is finished. Thus, their idleness surpass their covetousness."

Rice, fish and bananas were the food staples of the natives. Corn, ginger, citrus and coconuts were also bountiful. Deepwater rice technology as modern agriculture experts call it, was already being used in the village of Taytay along Lake Bai, the modern day Laguna de Bay. The service of carabaos to rice farming has already been discovered in Luzon and Panay and elsewhere in the Visayas, rice was grown through swidden agriculture or what is now called "kaingin".[27] It should be noted that despite its present bad reputation , swidden farming is an ecologically sound adaptation to the constraints of a particular environment. The natives have practiced this method long before the Spanairds came without wrecking havoc on the environment. The heavy forest blankets could heal and renew itself from relatively few burned patches.

Needless to say, fish could be found everywhere and fish nets and fish coral technology were already employed [28]. Nature determined the way the natives lived and given the spread of similar flora and fauna in the archipelago, there evolved common economic and cultural responses to ecology. From Luzon, with its communities thriving in the hinterlands and along the rivers and valleys, through the Visayan Islands, to Mindanao, Sulu and Tawi-Tawi, there evolved an essentially homogenous culture [29] with a political economy which distributed economic goods and tasks to participating actors within every barangay almost uniformly.

As fas as trade among the barangays was concerned, the most common mode was barter which involved goods of local craftsmen such as woven blankets and mats, utensils, cattles, fowls, coconut ,nipa and woodlots. It should be noted that land and houses were not objects of common ordinary sale or trade as these were resorted to only in extraordinary circumstances such as

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[27] Chirino,Pedro. The Philippines in 1900.trans. Ramon Echevarria.Manila: Historical Conservation Society,1969. The Spanish text is also in this edition. The original edition under the title Relacion de las Islas Filipinas i de lo que en ellas an trabajado los Padres de la Compania de Iesus... was published in Rome in 1600.

[28] Corpuz, O.D., Op. Cit., 1:14.

[29] Ibid.,1:5

weddings or heavy indebtedness.[30]

The political economy of pre-colonial times guaranteed the free use of resources for the basic needs of the natives. No one individual or organized group controlled any resource system so that the natural resources and the labor put in for the production of goods were adequate so long as the natives worked.

But when the Spaniards came, the whole Philippine archipelago, in the name of the King of Spain and the Cross, became the property of the Spanish Crown who ruled by divine right. Through this colonial interference, the subsistence economy that characterized the pre-colonial times started to evolve into a far more complex structure of resource and distribution control .

In the following sections, the historical veins of the political economy that evolved shall be traced. The historical facts shall be viewed through the systems view of political economy that has been explained and the focus shall be on the previously identified resource systems, namely forests, croplands and coastal zones.

The Forests: Cortes de madera

The Regalian doctrine , which bestowed all of the Archipelago to the King of Spain , hailed the advent of an ecological tragedy to what the native Filipinos then , held in common. These were the vast tracts of forestlands from which they extracted products they traded with other baranggays that augmented the harvests from their small fields. The new political and economic designs and strategies of the colonizers entailed controls in every component of the forest resource system which were alien to the natives. The Spanish colonizers employed instruments of governance which affected the use of the forests and the natives' share in its fruits. This was embodied in the system of encomienda, tributario and polos y servicios.

The encomienda system, being the operational means of control over the source ecosystems , prefigured the political economy of the forests. This scheme assigned a number of native families into a new basic colonial political and economic unit, called the "encomienda" and extracted from the natives , twenty to sixty years old, a quota of "tributes", in labor or produce or

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[30] Morga, Antonio de. Sucesos de las Islas Filipinas. Vol. VI of "Escritos de Rizal", Publicaciones de la Comision Nacional del Centenario de Jose Rizal. Manila:1961. This edition is an offset print of of Jose Rizal's annotated Morga , published in Paris in 1890. The original edition was published in Mexico in 1609.

any valuable item that the natives possessed. This social reorganization for economic purposes saw the opening up of virgin territories for transfers of barangays which led to ecological disruptions in people, animals and plants. With the newly imposed scheme, forest products, therefore, had to be exploited in a relatively faster rate to service the needs of the natives and to pay for their tributes. There were accounts that most of the time, the natives would not be able to meet their own quota and therefore, had to buy tribute goods from the "alcalde", who was the tribute collector, to make up for the lack. [31] There is, however, one feature of the encomienda system which laid down the trend for the mighty inavasion of the forests. This was the "polos y servicios" which imposed on the barangays a number of men to deliver their services for the construction of supposed public projects which included churches, government buildings, and road repairs. Some "alcaldes" transformed these "public" projects to more lucrative undertakings by using unpaid labor men for the felling of trees to be used as firewood to supply Manila, which was the main Spanish settlement and capital.[32] The forest materials required for the colonial edifices were all forced contributions from the natives who had not undertaken such large-scale constructions before. There were also the colonial machineries like the sugar-cane refineries which had to be ran using massive quantities of firewood. In fact as early as 1850 in Central Luzon, wood was such in short supply that the farmers had to use cane husks for fuel. [33] Because of this continual drafting, the small fields which the natives cultivated for their needs and to pay their tribute, were often left uncultivated . Fast-yielding and more lucrative, the forests increasingly became a major venue for colonial resource exploitation. There were thus born new pressures on the forest ecosystem in order to lay the physical evidences of the colonial era and to pay for the cost of living of the new actors in the resource system.

"Cortes de madera" or the felling of trees marked the advent of large-scale forest-exploitation, relative to the extent to which the pre-colonial natives used their forests.[34] Coupled with forced labor through which the colonizers controlled extraction, and a technology that pre-existed the coming of the Spaniards, the forests were especially exploited to build many vessels. These vessels were used to facilitate the transport of the friar

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[31] Corpuz, O.D. , Op. Cit., 1:96.

[32] Corpuz ,O.D., Op. Cit., 1:90.

[33] Keepers of the Forest: Land Management Alternatives in Southeast Asia.Mark_Poffenberger , ed..(Quezon City: Ateneo de Manila University Press,1990), p.13.

[34] Ibid,1:91

or the alcalde's tribute goods from the different islands to the capital (an undertaking from which they friars and the alcaldes immensely profitted) ; and most importantly to build the great galleons that served as the colonizers' lifeline to Acapulco.

Indeed the Spaniards took note of the forests as rich reservoirs for opportunities:[35]

> **"At least ten ships can be built every year in these islands; and by taking care of their many forests, even if a hundred ships were built now, there would be enough timber left to construct every year the ten (I have) mentioned"**

The quality of timber was especially noted and described as "the best that can be found in all the universe" . The parts of the galleon were built with different kind of hardwoods with identified special features which spoke of their usefulness and uniqueness.

Forced labor embodied the control and the tightening of the natives' access to the fruits of his labors. The natives lent resource and labor investments to the construction of galleon ships which sailed and brought back returns only to the colonizers who instituted the source and labor controls in the resource system and who utilized the returns for unproductive luxuries, thereby precluding a return of the natives' investments to the resource system.

In the three centuries of Spanish colonial rule, there have been no major changes in the established controls nor with the actors in the forest resource system. In 1863, the first Bureau of Forestry was established implementing forest laws which required the documentation of claims which only the wealthy colonizers, and their supporters could afford. Certificates for forest exploitation began to be issued to private companies. However,the first Forestry Bureau only served to lay down a tradition of exploitation with no regard for conservation. It was ill-equipped and lacked the political motivation to regulate forest exploitation. It was Cebu that experienced the first signs of over-exploitation in 1870. Because of massive deforestation and erosion, logging was banned in that province; but the timber firms did not take any notice of the ban.[36]

With the native population subject to Spain reported at

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[35] Corpuz, O.D., Op. Cit., 1:91.

[36] Op. Cit. M. Poffenberger , ed., p.13.

6,261,339 in 1896 from 1 to 1.5 million in 1565 [37], there were more men to be drafted and extractive activities in the forests intensified. With bigger tribute-paying communities, more virgin forest territories had to give way to the new waves of migration and for the clearing for more agricultural lands to yield tribute goods. In the discussion of the roots of the political economy of the croplands, the linkage of the cropland resource system to the forest resource system will be revealed as there will be greater demand for more and more lands to be devoted to cash crops and the actors involved in both resource systems became a homogenous set with the same control strategies.

The second conquest of the Philippines did not essentially change the political economy of the forests in terms of actors in the components of the system. However, their names have changed. Those who controlled the major resource channels were now the elites who were descendants of the tribute collectors and resident Spanish colonizers who had the financial resources to tighten controls in the system to maximize their returns. They were now supported by a new actor with a familiar role: the American colonizers.

The U.S. colonial period did not use instruments of control such as forced labor and tribute, but by this time, the natives need not be forced, for with the disappearance of the subsistence economy, there grew an impelling need to exploit the resources amidst the sophisticated controls instituted by the colonial era, in order to survive.

The U.S.-sponsored local actors who were given preference to exploit the forests were kept unregulated by the same actors who held regulatory roles in the legislature. Forest exploitation then, had been rendered virtually unchecked by the state. In 1900, being handed by a tradition of exploitation by the former colonizers ,Geroge P. Ahern was appointed the first American director of the Bureau of Forestry. His agency had to control 20 million hectares of forestlands which were also the subject of political and economic objectives. The Bureau lost; and in 1904, the first twenty-year renewable forest lease was granted. Starting on that fateful event, modern-day logging was to saw through sixty years of intensified forest exploitation.[38]

The principal actors in the political economy of the forests

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[37] Compana de Jesus. El Archipielago Filipino , Coleccion de datos geograficos, estadisticos,cronologicos y cientificos , relativos al mismo , entresacados de anteriores obras u obtenidos con la propia observacion y estudio. (Washington: Imprenta del Gobierno, 1900.) ,1:8.

[38] Op. Cit., M. Poffenberger, ed.,p.14.

during the Spanish and American colonial era namely, the general public, the indigenous users, the industrial users and the government as the regulating actor did not change after the period of U.S. colonization. The industrial owners whose interests spread over large tracts of forestlands still controlled the forest resource system in the post-colonial years.

In the late 40's, the Philippine government, with its regulatory role, undertook a national economic strategy to use forest resources as a source of foreign exchange to finance its development programs [39]. As a result, the actors who already had well-entrenched instruments of control in the system for maximum access enjoyed even a greater share with the generous incentives from the state. This intensified activity in the forests surrendered affluent shares to the already wealthy controlling concessionnaires and almost none to the general public and the indigenous users who remain in the source ecosystems and are paying for the ecological costs of the heavy forest destruction.[40]

In the 60's, the demand for timber intensified mainly because of the reconstruction boom in Japan and heavy world demand. The control of the logging concessionnaires increased as the forest areas under concession grew from 5.5 million hectares in 1960 to 10.6 million hectares in 1971. [41] By the 70's, there were more than 400 forest concessions that enjoyed the biggest share in the timber boom. Returns for rural development which should theoretically go to the indigenous users and the general public only amounted to .5 to 1.3 per cent in export revenues in the 70's. The government obviously failed to optimize the control it could have over the potential rent of logging given the impact of forestry activities on the primary levels of production. In 1968, timber production and wood processing made up almost one-third of the total foreign exchange earnings. This plummeted to 12 per cent in 1974 and sank to 6.6 per cent in 1986.[42]

To this date , the same actors animate the forest resource

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[39] Repetto, Robert, The Forest for the Trees ? Government Policies and Misuse of Forest Resources. (Washington: World Resources Institute, 1988).

[40] Factoran, Fulgencio. Population , Resources and the Philippine Future: an Ecological Perspective. (Quezon City: Department of Environment and Natural Resources,1989),p.7.

[41] Ibid.,p.188.

[42] Ibid.,p.9.

system; the only difference is that the source of the resource is no longer replete but gravely degraded with the forest cover reduced to 22 per cent of the country's total land area from the 75 per cent before World War II. [43] The number of subsistence families, now occupying 20 to 25 per cent of the country's forestlands now number over a million [44], competing in the use of the forests. The forest ecosystems have been devastated to the extent that the effects have reached the croplands. The two resource systems have been shown to have evolved through a similar pattern of the colonizers' monopoly of control.

The Croplands: Encomiendas and Haciendas

The conquest of the Spaniards of the Philippines was only one journey among their many colonizing adventures, but to the natives, the conquest marked the Filipino exodus through a historical bridge of struggle and deprivation.

The land which sustained the needs of everyone was taken away from the natives through the "encomienda", landgrants, landgrabbing by the friars, lease, "sanlangbili " (mortgage), purchase by auction and litigations.[45] These instruments which closed the native's access to the land were beyond the pre-colonial comprehension of resources as being common and traditionally passed on to them by their ancestors. But the simplicity of this view could not hold on its own against the forceful imposition of the colonial instruments of control.

The most powerful actors were the friars, mostly Dominicans and Agustinians who were recipients of landgrants. These friar lands, the modern-day haciendas, were vast tracts of lands that were awarded to the Spanish colonizers, clergy or lay, as their prize for their labors in conquest. The grants often embraced several towns. At the end of the Spanish era, the total area covered by these friar lands totalled 170,100 hectares.[46] These lands were also acquired through wills and testaments of Spaniards who bequeathed their landgrants to the clergy. The temporal involvement of the absentee friars with land ownership had to be represented through the "inquilinos", the rentors-lessors of these lands, who in turn hired native workers to cultivate the land and paid rent in kind. These landgrants, however, had no set technical boundaries and therefore were

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[43] Roque, C. R. Op. Cit., p. 6.

[44] Factoran, F. Op. Cit. ,p.10.

[45] Corpuz, O.D. Op. Cit., 1:423-432.

[46] Ibid.,1:305.

conveniently stretched far beyond the original tracts that were awarded.

With regard to agricultural techniques employed, no improvement in productivity was recorded since the Spaniards did not contribute further to the existing farming methods. In fact, until the eve of the galleon trade in the 1780's, these lands had very low yields and profits for the friars and the "inquilinos" only came from the rent paid the cultivators.

The "sanlangbili" was a strategy of the rich and native mestizos, including the Chinese, who had the business acumen to engage in usurious lending to the native cultivators and small landowners using the land as collateral. In the process, the natives, in their indebtedness, surrendered their landholdings to these mestizos. These indebtedness was passed on to the next generations.

The lands outside the communities were also auctioned as landgrants. This strategy naturally eliminated the native who did not have the financial resources to participate in the bidding. Modern-day public domain then was purchased mostly by the church or some church-related organization to add to their collection.

Native control of their lands was also lost through litigations within the legal fortress penetrable only by those educated in the Spanish manner and language and whose fees can only be paid by the mestizos. Again, in the end, it was the mestizo, who lent the attorney's fees to the natives, who ended up owning the subject of litigation.

The control of the land was the key to controlling the rest of the resource system. The galleon trade which guaranteed seasonal but enormous profits for exports determined the fate of the agricultural lands. Plantations which produced cash cops became a colonial economic fashion and the beneficiaries, of course, were the friars and the inquilinos who held most of the lands. The development only aggravated the condition of the debt-ridden native as he now not only had to pay tribute and rent but had to work to produce cash crops that will yield profits for the landlords. These crops included tobacco, cotton, indigo, cinnamon, cacao, pepper and coffee. Profits from these crops were never invested back to the resource system to improve technology nor to increase the pay of the natives but instead, these profits went into financing the luxurious lifestyles of the colonizers or to their own exploits in Mexico and Spain.[47] Most cash crops failed because they were not sustained by an appropriate technology. The Spaniards, partcularly the friars who owned the largest tracts of lands, did not provide the technology that

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[47] Corpuz, O.D. Op. Cit.,1:402.

could sustain and improve the yield. Thus , none was introduced . They were not interested nor were trained in the field of agriculture but they persisted in their role as the ultimate landlords.

For over seventy years, the native actor labored to sustain a resource system in which he did not have control and thus, gave him nothing in return. The favored actors who guarded the source had corresponding marketing strategies that kept the fruits of the land away from the natives. With the promotion of commercial agriculture and cash crops, a cash economy emerged where again the positioned Spanish mestizos and merchants had the finances to hoard and speculate on those goods which deepened the debt of the native buyers. [48] One cash crop which proved to be outstanding, revenue-wise, was the tobacco and this was done through monopoly.

The Spanish regime took over the commercial, manufacturing and marketing aspects of the tobacco industry and this was to survive for a hundred years. Some farmers were forced to shift to tobacco from traditional crops like cotton and sugar and they could only sell their tobacco to the monopoly. Of all the cash crops, tobacco was the only one that lasted a hundred years; the rest did not prove profitable beyond their promotional periods.[49] The intervention of the state in the marketing component did not however change the system of access to resources. Access remained with the colonial actors and their patrons.

The Spanish government interfered in the resource system through the "Sociedad Economica de Amigos del Pais", the precursor of the National Economic Development Authority (NEDA). It was a narrow and myopic economic plan in the sense that it only laid out cash incentives for those who would pioneer in cash crops but never mentioned the assistance government can do in terms of the much-needed technology or capital or experts. There were none of those indicators found in the modern-day development plans such as performance targets, time-frames or plan of action. It remained an umbrella agency of the many committees that served the interests of the advocates of the cash crops. It was formed in 1871 and died a natural death after six years. [50]

So, at the end of the Spanish era, there was a well entrenched type of resource economy that left the native farmer with no land, no capital, no provisions, and no technology. There was an unmistaken need for change and the Revolution took it up

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[48] Ibid., 1:451.

[49] Ibid.,1:411.

[50] Ibid., 1:403

when it inspired a sense of hope. But then, another conquest was on its way to douse the hopes that the Revolution sparked.

Just after the Philippine Revolution against the Spanish colonizers, there were concepts of agrarian reform being formulated by the Filipinos in different parts of the country. It involved sale of some friar haciendas to those who were tilling it (in Calamba); restitution to the original owners of the friar lands in case of failure to locate the owner through outright sale or auction; or absolute take over of haciendas (Cavite).[51] However, these concepts which would have drastically altered the colonial resource system was barred by the American colonizers' strategy embodied in the Philippine Bill (1902) and the Friar Lands Act (1903). The former bill limited the individual landholdings to 40 acres; but the big landowners found ways around the law. Also, a feature of the law required the registration of the landholdings which the wealthy landowners eagerly and comfortably did while the small farmer was either too remote an actor in the game to be aware of the law or could not afford the processing fees. An important point here was that the Americans were given a similar right to acquire landholdings which gave way to the large U.S. corporations that engaged in agri-business.

As far as the 1903 Act is concerned, notwithstanding the fact that the Americans paid $1,500,000 more than the original estimate to the friars [52] as part of their rescue plan, it just maintained the resource system by the instrument of resale (at full cost plus interest) [53] to which only the wealthy Filipinos, former colonial supporters and the dummies of friars could only participate in. Free trade was espoused by Acts in the U.S. Congress between 1909 and 1913 which assured a market for export crops in the U.S. making the plantations of export crops very viable and thus, virtually difficult to question. By 1941, 81% of Philippine exports went to the United States. In the early eighties, the brewing tragedy fell on Negros as the world price of sugar crashed and suddenly the vast expanse embraced by the sugar haciendas were rendered worthless to an export-oriented economy. Profits reaped from the cash crops which made possible the lifestyles of the rich and famous cronies now have to come from other alternative land-use or crops.

The new colonizers joined forces with the controlling local actors to maintain the resource system inherited from the past

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[51] Ibid.,2:527.

[52] Corpuz, O.D., Op. Cit.,2:534.

[53] Collins, Joseph. The Philippines: Fire on the Rim.(San Francisco: Institute for Food and Development Policy,1989),p.13.

colonial era. Immediately after they have officially established their power, the U.S. maintained the leading local people to be the hacienda administrators who by "reason of their wealth, well-known honesty and patriotism are worthy of confidence of the nation ".[54]

The opening up of the Philippine economy to free trade through the Payne-Aldrich Act only served to exert more pressures on an unsustained agricultural economy. At the start of the 1920's, there have already been reports of agrarian unrest which reflected the farmers resistance to controls that have been established and whose long term-effects were already being felt. The new U.S. Commonwealth in 1934 installed state actors and recommended measures which were to condition the resource system of independent Philippines after 1946. The first glaring evidence was the Philippine-United States Trade Act which guaranteed American citizens and corporations who brought with them commercial and industrial technology, the same right as Filipinos to exploit the Philippine's natural resources. Thus, the importation of the technosystem carried the price of a more powerful and tenacious control of the land of a new set of foreign actors.

In the 1950's, despite having been granted independence by the United States, Americans continued to play an active role in the resource system as they maintained their linkages with the state actors and and those who controlled the resources. Land reform advisers in Washington continued to recommend plans of action for the land distribution problem in the Philippines. They recommended mild administrative reforms for those areas where agrarian unrest has been subdued and mild redistributive reforms for those areas, yet active in the agrarian movement. The result was the Land Reform Bill of Magsayasay which only redistributed lands where the court ruled that agrarian unrest prevailed. And still , it failed because of corruption and mismanagement of actors in the bureaucracy who acted in collusion with the landowners. [55]

The State intervened to return access to land to the farmers but the laws that came out barely touched on redistribution ; and if at all they did, the enormity of the amount of compensation to be paid by the state to the landowners only served to widen the access of the latter in the whole resource system. The land reform laws passed were mere palliatives that barely created an impact in the lives of the

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[54] Corpuz, O.D., Op. Cit., 1:426.

[55] Shalom, Stephen R. The United States and the Philippines: A Study of Neocolonialism. (Quezon City : New Day Publishers, 1986), p.119.

farmers. For instance, rice and corn , were the only crops subjected to the Land reform Code of 1963 which in 1970 recorded total beneficiaries at only 1 per cent of the nation's tenant farmers.[56] One reason for this was that these government interventions were not invincible to the acquired skill and talents of the landowners on instruments of resource control. With the 75-hectare limit , the landowners who controlled more than 75 hectares subdivided their lands into 75-hectare parcels and distributed them to their family members. This circumvention would recur every time a land reform law was passed and when a subsequent law is passed, it would have the same loose reform strategy. It would seem that the state actors had not tenuously imbibed a hindsight as the landowners have which leads to the second reason that basically, they were the same actors playing different roles .

The land reform program, limited to rice lands, under Marcos was no different in terms of impact on changing the system of access to land although it served its political purpose with fanfare. It had a twin strategy, backed up by the U.S. called the "Green Revolution" which undertook the rapid introduction of high-yielding rice seeds. This entailed sophisticated credit schemes which only the wealthy could run and the importation of machineries which displaced the farmer which left him with no other job alternative. The Comprehensive Agrarian Reform Program under Corazon Aquino were authored by the actors in the legislature who also owned agricultural lands. The 5-hectare limit was skirted in the same manner as the previous laws were. Corporate farmings which equated corporated stocks with the farmers real ownership of the land became the grandiose strategy of the bigger hacienda owners as was the case of Hacienda Luisita, the largest sugar plantation in the Philippines owned by the Aquino clan. In Negros, a major alternative that the landowners discovered was prawn-farming which conveniently exempted them from the latest land reform program. Despite the Negros experience, lands devoted to cash crops still cover 55 per cent of all cultivated land. [57]

Not counting the land-reform related Acts of the U.S. Congress before the Commonwealth period, there have already been ten Congressional Acts and forty-three presidential decrees addressing the issue. They have exhaustively covered all but one element: the landless farmer who now number about 8.5 million.[58]

The Coastal Zones:

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[56] Ibid, p. 121.

[57] Collins, Stephen. Op. Cit., p.xvii.

[58] Ibid., p.xvii.

____As it was in the great civilizations, the waters have always been the point of reference for the native pre-colonial settlements. In fact, to the natives, the directions to another location was indicated by the river flow. It also explains why numerous islands in the Philippines are named after bodies of water found in the area. In fact the "barangay" was also the name of the most commonly used watercraft. Even the upland communities founded their settlements parallel to mountain springs and streams.[59] This would also make fishing, a natural livelihood for the natives. Living close to the waters, they fashioned boats for speed and sturdiness. Besides fishing, these boats served to transport one's baranggay trade goods to another and made possible flights from enemies. The groves adjacent to the waters were planted to coconut, nipa, bananas, and fruit trees.[60]

The political economy of the coastal zones do not have clear traces in the country's history as in the case of forests and croplands. However, from patterns that evolved in recorded recent history, they would seem to have also been governed by the same principle of being common and thus open to exploitation. The political and economic changes in the Spanish colonial era which determined the fate of the forests and croplands would not have overlooked the coastal areas of the archipelago where the native barangays have uniformly settled.

From recent government records, a coastal adaptation of the political economy of the forests and the croplands seemed to have taken place. Commercial activities such as the establishment of fishponds and muro-ami fishing have increased.[61] The mangroves, which were estimated to cover roughly 450,000 hectares in the 1900's, were leased out for a 25-year period to individuals, which in effect rendered them privatized. Beaches like the ones in Batangas, Cavite, Cebu, La Union, and Palawan with tourism potentials have been leased to wealthy individuals who are also known to own vast tracts of plantations and commercial areas. Also, the waters have been convenient dumping grounds of mining wastes from industries located in some islands in the country such as those in Marinduque, Cebu, and Davao Del Norte.[62]

These commercial invasion of the coastal areas have driven

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[59] Corpuz, O.D., Op. Cit., 1:16.

[60] Ibid., 1:18.

[61] Muro-ami fishing is a fishing method which employs swimmers who dive carrying scare lines to drive coral fishes into a waiting net. Most of those employed are native children.

[62] Roque, Celso. Op. Cit., p.29.

the coastal communities to the same fate: to move over to give way to the paid interests of the wealthy entrepreneurs.

In 1988, the precious mangroves of the coastal resources were found to have been reduced to only 33 per cent of that originally estimated at the turn of the century. The income derived from this exploitation, however, did not go to the artisanal fisherman. His poverty bears irrefutable evidence of this as the fishermen's family income combined, results to an average below the poverty line. [63]

The simple tools of the artisanal fishermen were ill-matched against the modern and expensive equipments of the entrepreneurs artisanal fisherman's tools. Thus, the simple fishermen got the left-over's share from the fishing grounds. The small fishermen are eventually forced to serve the commercial entrepreneurs.

Today, it is estimated that 70 per cent of the country's population live in the coastal zones.[64] Even the guarantee of susbsistence for these communities is greatly diminishing with the competition they face from the wealthy fishpond operators, muro-ami fishermen and lease-holders of mangroves and beaches. The coastal areas which have traditionally looked to the waters for sustenance have also become a captive of the same political economy which embraces the forests and the croplands.

No frontier had escaped the claws of a political economy that preyed on the poor majority and the once pristine environment and surrendered its fruits to the wealthy few. And judging from the trend, the ruling actors are not about to turn the claws in on itself while the poor sinks more deeply in destitution and the environment towards the precipice.

IV. The Vanishing Cornucopia: The Evolution of the Philippine Environment

For purposes of analysis, we limited the concept of environment only to three ecosystems, but this is not a serious limitation by any means. These three cover almost the entire life-support system of the Filipinos. Although 40% live in urban centers, the principal food items, rice and fish come from these ecosystems. When the watersheds run dry, the water supply and the electrical power system of Metro Manila are seriously disrupted. During heavy rains, the Metropolis is flooded because of the denudation of the nearby forests. Salt water has been

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[63] Ibid.,p.28.

[64] Ibid.,p.25.

intruding into the ground water of Cebu City because of the devastations of its forests. The quality of life of the Filipinos, from the survival of the kaingineros to the income of the loggers and other elite, depends heavily on the proper functioning of these ecosystems.

The discussion of the evolution of the Philippine environment, as influenced by the political economy, is to a large extent also a presentation of the physical aspects of the quality of life of the Filipinos. Before the arrival of the Spaniards, the Filipinos did not have to worry about his subsistence, he was assured of a reliable, although modest, cornucopia.

The Philippine environment began to change rapidly with the Spanish conquest. The burden of paying tribute led to faster exploitation of the resource systems. This did not make the natives rich, but it made the powerful elite more greedy inducing the rapid exploitation of natural resources. On the contrary, the natives became poorer as in the take over of the gold mines of the Ifugaos. In general, a vicious cycle involving impoverization, environmental degradation, population growth, and diminishing production ensued. The decline of the Philippine environment began with colonization with imperceptibly slow changes in land use. Being driven by feedbacks, the decline became rapid during the last three decades. The devastation of the forests has grave ecological implications for the croplands and the coastal zone as well.

A serious study of these ecosystems renders the Malthusian vision an irresistible allure. The Philippines already has the highest population density in Southeast Asia, with the exception of the City State of Singapore. Its population growth rate is also relatively high (1.9 to 2.4 percent). Its natural resources is rapidly diminishing and yet it has the lowest economic growth rate among the ASEAN countries. Indeed, these combination of circumstances is a potent brew that could provoke social conflict. Civil strife is usually the early symptom of a depleting cornucopia.

Even with a vanishing natural resource base, the flow of goods could be maintained through progress in science and technology. Yet even this does not give a credible rationale for hope. After examining the modernization of the Philippines, Yoshihara Kunio observes that what has been achieved in the country is a "technologyless" industrialization[65]. Although the seeds of science and technology have been planted these have not

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65 Yoshihara, K., The Rise of Ersatz Capitalism in Southeast Asia, Ateneo de Manila Press, Quezon City, Metro Manila, 1988.

matured into a self-reliant knowledge structure that could maintain productivity.

In the natural resources sector, the loss of the base has not been used for the elaboration of technology that could invent substitutes or increase the efficiency of use. In the resource system view, the vital information and subsystem that controls the transformation of natural resources into finished products remains under the control of other countries. The local political economy of natural resources are still heavily influenced by foreign actors.

The Forests: From Emerald Green to Patches of Black and Brown

Tropical rain forests are the main features of the Philippine environment. For this reason, the state of the forests has been considered the surrogate of the state of the Philippine environment[66].

As late as a century ago, the Philippines was a sparsely inhabited archipelago covered by lush emerald green forests. This is still condition of some isolated, small uninhabitable islands. Just before the Second World War, the forest cover of the Philippines was about 75% of the total land area. The change from this cover of emerald green to the patches of black and brown is a post-war phenomenon. In 1934, the country had about 17 million hectares of intact virgin forests. At the end of 1990, areas with still adequate forest cover total 6 million hectares but less than 0.7 million hectares of these are old growth virgin forests. The Philippines is just beginning to feel the dreadful consequences of this ecological transformation. Figure 4.1 depicts the ecological problematique of the Philippines-rapidly declining forest cover and rapidly increasing population. In terms of the other indicators of conditions of the forest ecosystem, it has been estimated that as consequence of deforestation, about 74% of total habitats have already been lost. It is not possible to measure species extinction. However, the indications point to heavy losses.

In systems modeling the curves shown in Figure 4.1 usually indicate feedback relationships between causes and effects - vicious cycles similar to Figure 2.2. Population increase and deforestation are indeed related but both are driven by the same engine: the political economy of forestry.

The exploitation of the public forests was accomplished through the logging concession system. During the heyday of logging in the 60s and 70s, timber licenses for 25 years

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66 Factoran, F., Op.Cit.

(renewable for another 25 years) were given as spoils to political supporters or those who have the financial muscle for bribery and capital. A typical logging concession covers about 40,000 to 60,000 hectares with annual allowable cut of one to two cubic meters per hectare.

The government has not been able to collect the correct economic rent from the forestry concessions and thus, the concessionaires have been enjoying a windfall. In the 1970s, forestry contributed only 0.5 to 1.3 per cent of total government revenues. From 1970 to 1982, government revenues from forestry amounted to only 8.8% per cent of total export values[67]. The rent due the government went to the concessionaires as abnormal profits.

With their lucrative profits, the concessionaires have the financial clout to flaunt the formidable array of forestry regulations through corruption, the regulations on reforestation, timber stand improvement, and forest protection are hardly complied with by the concessionaires. In the late 1960s, when the government required downstream processing, the logging companies responded with only token compliance. They built small processing plants that were hardly utilized and continued their main business of exporting logs. As early as 1975, the government has already proclaimed a log export ban. However, the logging lobby successfully prevented its full implementation. In fact, the total log export volume declined by only 11% by 1980.

The political economy of forestry enabled the Philippine elites to get most of the wealth of the national patrimony. With their vast profits from logging, their political power is enhanced even more and their means for the corruption of the bureaucracy has been enlarged. With this power and influence, the logging industry has been getting substantial and undeserved concessions from the government.

However, it is clearly a self-destructive political economy. The government failure to collect the correct economic rent meant the loss of revenues that could be used for rural development. With low investments in the rural areas, the excess labor of the countryside cannot be abosorbed. This encourages migration to the residual forest areas. The increased occupation and cultivation of the forest areas further accelerate deforestation. This constitute a backlash to the industry itself. Because of the attrition of the forests, commercial forestry has suffered a declining role in the economy. For example, in 1968 timber production and wood processing made up almost one-third of total foreign exchange earnings. This fell to 12 percent in 1974, and sank to 6.6% in 1986. Forest-based outputs declined in real terms

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67 Repetto, R.,7 Op. Cit.

from 3.17 billion pesos in 1970 to 1.988 billion pesos in 1988[68].

The era of logging the natural forests in the Philippines is coming to an end. Not because a new wave of ecological enlightenment is upon us, nor is there a sudden emergence of social justice in this feudal country. Logging is reaching the limits of exhaustion. Most of the remaining forests are in high elevations and steep slopes. Logging areas are close to the borders of the mossy forests, where trees are stunted and little commercial value.

The logger's legacy and the kaingineros that follow in their wake consists of more than 12 million hectares of wastelands. The continuous operation of the logging industry beyond the threshold of diminishing returns means huge economic losses for the country as a whole. In 1980 for instance, 210,000 hectares were deforested. The recorded timber production for that year was 6.4 million cubic meters corresponding to 6.7 billion pesos of value added to the GDP. It also yielded $504 million of foreign exchange earnings. The government collected 294 million pesos in taxes. The loggers realized profits amounting to 1.75 billion pesos. The upland farmers generated 332 million pesos from the cleared land. However, there were environmental costs. The deforestation is equivalent to a loss of 10.3 billion pesos of one-time harvest value, not to mention the possibility of a long-term stream of income under a sustainable management regime. In terms of increased soil erosion alone, the losses were estimated to be 151 million pesos. Even without counting losses due to flooding, droughts, and loss of biodiversity, the Philippines lost 1.6 billion pesos due to commercial logging in 1980 alone[69]. And yet commercial logging of the natural forests continues, because powerful vested interests continue to reap lucrative profits, while the lowland farmers, the coastal fishermen, the country as a whole, and the future generations actually incurred economic losses. In essence, the existing political economy of forestry transfers wealth from the losers to the loggers who come from the elite of Philippine society.

Although there are conflicting estimates, there must be about 11 million people, eking out a marginal existence in the ecologically vulnerable forest lands. Their numbers appear to be increasing by 2.6% and by the year 2000 may reach 24 to 26 million. To provide for these millions some 8 million hectares will be needed. The slash and burn culture that sustains the upland population will mean altered hydrological regimes and increased devastation for the lowland farms, lower productivity and more poverty.

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68 DENR, Op.Cit.

69 DENR, Op. Cit.

The Croplands: Limits to Growth

The Malthusian drama is being played out in the croplands. What happens here determines the demographic complexion of the entire country. Over 60% of the population live in these areas and depend on agriculture for basic sustenance. The culture, history, and politics of the country arise from the lands that feed and clothe the country. The rice paddies yield not only grains but the roots of political and economic power. The seeds of past rebellions were also planted in some of these areas. Of the three principal ecosystems in the Philippines, the croplands are the most crucial to the present situation and future fate of the country.

Before the Conquista (Colonization by Spain), agriculture was probably confined to the fertile alluvial plains to the extent necessary to support the needs of a population of 1 to 1.5 million. The condition may be described as a delicate ecological equilibrium that supported a comfortable subsistence economy. According to O.D. Corpuz [70], "until 1570 there was great abundance of provisions, such as are produced in the country, namely rice, beans, fowl, swine, deer, buffaloes, fish, coconuts, bananas, and some other fruits, wine, and honey". From Chinese accounts, it is recorded that exports from the Philippines consisted of wax, cotton, pearls, tortoise shell, betel nut and jute cloth. There were no agricultural products[71]. The croplands during the pre-Spanish period perhaps covered less than 1 million hectares. Only those areas that were naturally suited for agriculture were actually under cultivation.

After the Conquista, the an export agricultural economy began to emerge. The Philippines began to export rice, sugar, tobacco, coffee, copra, hemp, indigo, spice, and even silk. According to Joaquin[72] these exports signified a technological revolution in the 16th and 17th centuries such the domestication of new crops, the coming of roads and bridges, and some degree of sophisticated processing. In our framework, this could be seen as the emergence of agricultural resource systems and a corresponding political economy. The links to the export markets also led to the expansion of agricultural lands. This process led to the development of the island of Negros in the 1870s into a large-scale resource system for the production of sugar.

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70 Corpuz, O.D., Op.Cit., I:102

71 Joaquin, Nick, Culture and History, p.6, Solar Publishing Corp., Metro Manila, 1989.

72 Joaquin, Nick, Ibid.

The early extensive commercialization of agriculture, the opening of new pueblos, and the cortes de madera led to serious ecological disruptions. In 1687, a severe locust plague struck many places in the country. At the end of the 17th century, the Spaniards reported the consequences of their mis-rule. They noted the disappearance of people and natural resources in some of the islands. The decrease in population was due to pestilence, occasional famine, and in general to the brutishness of corvee labor imposed on the Filipinos by the Spanish rulers. In other words, the brutal political economy led to serious ecological disruptions and human suffering.

By the mid 1700s, the Filipino population has recovered to its 1565 level and grew to about 2 million by the end of the 18th century. This expanded steadily to about 7.5 million at the turn of the 19th century. The growth rate of the population fluctuated between 1.2% to 1.8% in the 19th century and were constantly larger than 2% in the early decades of the 20th century. The ecological implication of this steady growth is the necessary expansion of the croplands.

From 1940s to the late 1950s cultivated land increased by 3.8% while the population grew by 3.1%. Thereafter, the rate of expansion of the cultivated land fell while the population kept a steady growth rate. By this time, the Philippines has practically reached the natural limits of expansion of agricultural land. Hordes of landless farmers are now being forced to migrate to the fragile forest lands and the crowded urban areas.

Centuries of abuse have drained most of the lowland soils of their nutrients. Before the advent of irrigation, fertilizers, and pesticides, the Philippine production from paddy cultivation was already lower than most Asian countries. At present 13 provinces are already severely eroded due to improper farming practices. Many others are vulnerable to erosion.

The Coastal Zone: Tragedy of the Commons

Ecologically, the coastal zone is second only to the tropical forests in terms of biological diversity. The Mangrove swamps of the Philippines contains 47 species of flora, There are 22 species of beach vegetation and more than 2000 species of fish. It is the area of transition between the land and marine environment. The sediments and pollution of the land and waterways ultimately end up in the coastal zone.

Since the Philippines is made up of more than 7000 islands, with over 17000 kilometers of coastline, its coastal zone, including the territorial waters covers an area of 212 million hectares much larger than the total land area. Within the coastal

zone are 205,000 hectares of fishpond, 149,000 hectares of mangroves, and 350,000 hectares of coral reefs. There are substantial mineral deposits in the coastal zone. Eleven of the economically important metals and 13 of the 24 non-metallic minerals are found in these areas in significant quantities. The ten largest cities in the Philippines are in the coastal zone.

The concept of the coastal zone as an ecosystem is fairly modern and thus there are no historical accounts on the environmental changes and the evolution of structure of a political economy. However, the conversion of mangroves into privately owned or leased fishpond represents the same feudal patterns of control as the forests and the croplands. The conversion is actually a privitazation process where a communally owned mangrove swamps are turned into privately owned fishpond, with biological production remaining essentially the same.

Although coastal fishery is reserved for artisanal fishermen who employ inefficient traditional fishing techniques, the generally lax government regulators allow commercial fishermen equipped with modern technology to intrude in these waters. With their superior technology, they capture the lion's share of the harvests. The commercial trawlers destroy corals and other habitats on the ocean floor, which decreases the capacity for the renewal of the resource. Having been driven into poverty the artisanal fishermen are lured into using blast fishing and the use of cyanide in catching aquarium fishes. These operations are usually financed by entrepreneurs who get an inordinate share of the profits.

The coastal waters is the ultimate receptor of wastes and other chemical pollution. Lack of effective regulations cause these chemicals to be discharged into the waterways that ultimately pollute the coastal areas. Manila Bay is already showing increasing levels of pollution.

The combined effects of destructive fishing methods, the loss of habitats like the mangrove swamps and coral reefs, and pollution will certainly cause decline in coastal fishery. The catch per unit effort of fishermen has already been declining[73]. The trends in the coastal zone have all the signals of an impending tragedy of the commons.

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73 World Bank, Op. Cit.

V. From the Seeds of Colonialism, A Harvest of Wrath

The Ethical Legacy of the Encomienda

The year of the locust in 1687 was not the last. This was followed by many other natural disasters that made life quite difficult within the Spanish encomienda. The Spaniards attributed these to God's punishment for the evil deeds of the Filipinos. As O.D. Corpuz pointed out[74], these were in fact, the consequences of the rapid environmental changes on the environment at time because of the introduction of commercial agriculture, the building of new pueblos, logging for the construction of ships. When ecological disruptions are added to the tyranny and economic hardships in the encomienda[75], life could become intolerable even for the extremely patient Filipinos. During the early Spanish regime, a typical Filipino lived under three tyrannies. His civil life was controlled by the pueblo, his spiritual life was under doctrina[76] and his produce was under the encomienda. The Filipinos spent much of the next two centuries in revolts against their Spanish masters.

The Spanish colonial era is replete with the affirmation of our basic postulate that the political economy of the encomienda is an engine of impoverization of the peasants. The absolute control by the encomendero of the resource systems led to

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74 O.D. Corpuz, Op. Cit. I, p.104

75 Originally, the encomienda is an award given to someone who serve the Crown during the conquest. In return for governance and administration of justice among the subjects assigned to the encomendero. The encomendero has the right to exact tribute, exploit the labor, and share in the produce of the subjects. In practice, this was interpreted as almost absolute control of territories. In many cases the encomendero have not even seen their encomiendas but only collected the tributes.

76 Under the early Spanish rule, the souls of the natives in a pueblo is entrusted to a prelate who was supposed to provide Catholic instruction religious services. The territory of the prelate was called a doctrina. The prelate also exacted service and labor from his doctrina.

absolute poverty of the enslaved class and vast fortunes for himself. The resulting environmental stresses meant chronic misery from natural disasters, decreased production and enhancement of the vicious cycle of poverty. As the conquistador, the encomendero has no loyalty to the land. After making their fortunes, most of them returned to Spain.

Whereas, the encomienda was a temporary trust and were ultimately abolished, the haciendas were the legitimized land holdings of the friars who grabbed them from the innocent natives. They were permanent ownership and some which survived to the present. The haciendas were the cores of crop production. There was little distinction between the cruel inequities of the encomienda of the conquistador and the haciendas of the friars.

Immediately after the establishment of Manila in 1571, encomiendas covering all of Luzon, Cebu, Panay, and Jolo were granted. For the largest they were typically the size of present-day provinces. The smaller ones are the size of towns. The encomiendas were quite profitable as indicated by the many applications received by the Throne and the Governor-General in Manila. After realizing the cruelty of the encomienda system and concomitant decimation of the Filipinos and their natural resources, the system was withdrawn in 1718. But only for the new encomiendas. The older ones continued.

The haciendas flourished because of the growing involvement of the Philippine economy in the world trade. The export of crops was the impetus that led to the consolidation of land ownership into large estates or haciendas. These were mainly owned by the friars, the Spanish or Chinese mestizos and wealthy natives who ascended as the elite of Philippine society.

The commercialization of agriculture locked the peasants of the encomiendas and the haciendas to the vagaries of international trade. Because of the unsuitability of the land to monocultures, there have been brief flashes of economic growth and sudden collapse in various regions. In the 18th century Cagayan prospered because of tobacco. In the 19th century it was Bicol's turn with abaca, in the mid 20th it was Negros and Panay with sugar[77]. Today, Cagayan, Bicol, Negros, and Panay are the poorest provinces in the Philippines. The peasants did not have the lasting benefits from the "ups" of the economic cycle but they slide to lower levels of poverty with the "downs". The resource system and the political economy that drove it was concentrating more and more power and wealth to the elite.

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77 Kessler, R.J., Rebellion and Repression in the Philippines, Yale University Press, New Haven and London, 1989.

More than anything else, the brutal ethics of the encomienda determined the implicit moral framework of the political economy of natural resources in the Philippines. The relationship between landlord and peasant is not simply a tie between a patron and a client but a bondage between ruler and subject, between master and slave. There are of course modern laws that allow a more humane definition of this relationship. However, historical heritage of the encomienda weighs heavily on the consciousness of peasants who have not been informed of their rights or are not bold enough to assert these rights. Unless disturbed by political entrepreneurs, the ethics of the encomienda is presumed to be the norms of transaction in modern haciendas by both the peasant and the encomendero. Peasant exploitation has been ordained by the colonial history and endures in the mind-set of the actors. The encomenderos of the past are the warlords of the present.

Forest and mining concessions generally exhibit the social morality of the encomienda. Within the forest concession the concessionaire reigns supreme. Because of their huge profits, they could build schools and clinics in the nearby communities. The local officials and civil servants owe fealty to the concessionaire.

The situation is similar in mining towns such Toledo, Cebu or Sta. Cruz, Marinduque. The economic life of the community is almost totally dependent on the company. While a similar situation exists in the mining towns of the West, there is a fundamental difference. In the West, the company and the town is governed by a formal industrial relationship prescribed by the laws of the land. On the surface, and on paper, the situation is the same in the Philippines. a substratum of the encomienda system persists. The social memory of the encomienda lives in the servility of the workers and the haughtiness of the managers. The subservience of the town's officials to the company owners is reminiscent of the roles of the encomendero and the gobernador cillo. The company is sometimes the sole provider of schools, churches, clinics, and sometimes electrical power. In essence the mining towns are haciendas with a different product. The managers of the company are descendants of the hacenderos, and the workers are usually of peasant stock. The ethos is that of an encomienda.

Values and Violence

Under feudalism, there is a constant tension between submissiveness and rebellion in the Filipino psyche. There have always been hotspots for revolt in the Philippines since the Conquista. This is not surprising in a society where the ethos of the encomienda has been the dominating consciousness. What is surprising is that the level of virulence and geographic extent of the rebellion have been too limited to effect real social and political changes.

There is no shortage of theories of peasant revolution. A short review and critique of some of these are given by Hawes.[78] While we agree with Hawes that the most important consideration is the political economy of the in the case of the Philippines, we extend this further by proposing that the political economy is that of an encomienda and controlled by a unique transcendental system of Filipino values (see Figure 2.40). This system would explain the Filipino psyche which has its pillars in values which have either been imbibed by centuries of intensive colonial training or have evolved as his reaction to the same. They may provide the answers to why the Philippines has always been plagued by chronic little fires of rebellions that never quite became the conflagration of a revolution. The fissions of social conflict have not generated a chain reaction. Rebellion continually brews but never seem to burst into a revolution.

Filipino social interaction is determined by four related concepts: utang na loob, amor propio, pakikisama, and hiya.[79] To understand the history of rebellion in the Philippines the elements of the Filipino world view such as personalism, fatalism,and in-group orientation may also be invoked.[80] Other relevant Filipino values that may be relevant to civil strife are religious mysticism and the sentimental attachment to land.

During the Conquista, there was no Filipino nation. The natives identified themselves with a baranggay and his contact with foreigners were limited to Chinese and other Asian traders. Their resistance to the Conquista was motivated by the territorial imperative. The natural process of the fusion and integration of the baranggays was polluted by the Conquista.

The Conquista served in the name of the King of Spain and the Cross. Both inculcated and demanded personal allegiance from the native who has been until the Spaniards came, practiced respect and tradition handed down by his elders and worshipped the elements of nature. In the name of the King, he was made to believe that being conquered was a privilege and a debt to be repaid through his labors. Using the Cross, the Filipinos were labelled as heathens who badly needed conversion to a monolithic faith. In the service of both, he was made to feel inferior and ever-unworthy and therefore had to keep struggling to "deserve"

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78 Hawes, G. Op.Cit.

79 Kessler, R., Op.Cit.

80 Licuanan, P. "Psychological Factors in National Development", in The Philippines at the Crossroads: Some Visions for the Nation, Center for Research and Communication, Metro Manila, 1986.

the love of God and the "protection" of Spain. This perpetual struggle has kept him in bondage for more than three centuries. The moral justification of the encomienda was provided by the Doctrina.

"Utang na loob", literally translated as "debt from within" is a personal debt to someone who has done one a favor, creating a special emotional bond. It is what is invoked whenever one has to sacrifice his possessions or his position to repay the "debt". Because it is an emotional "debt", it is effectively unpayable and because it is such, he will be too ashamed to be bold enough to draw the line between gratitude and servility. This consequent attitude is called "hiya" or "shame". This "shame" was the psychological ally of the Spanish oppression and the continuing fertile ground for the political economy of the encomienda. The Filipino has been, in general, reluctant in resisting in system, doing so will make him a "filibustero" or an "outcast". This may explain why and how the Filipinos were able to endure the colonial impositions on his character, his livelihood, and his way of life.

This concept is also a guide to the Filipino's personalism, a world view that reduces social transactions into personal relationships. This was exploited by the clergy in treating the doctrina as his extended family, the shepherd and his faithful flock. In a nation of sheep, the tolerance for oppression is high. This accounts for the Filipino's legendary resignation to the dismal conditions of the encomienda.

"Amor propio" is the sense of personal dignity, the maintenance of the esteem of others. Personalism and amor propio makes the task of organizing for a larger cause transcending personal and family interests very difficult. Organized groups eventually disintegrate into competing factions which dilutes the strength of a fledgling union. The "in-group"is usually a small sphere of an extended family, good enough as a support group but too minuscule for social action.

Movements which ran on wide-ranging causes, larger than that of the family's, became an option only for the non-traditionalist. The in-group complex, limited loyalty only to family or at the best, to a group whose members are oriented similarly or share a long relationship. The psychological glue is "pakikisama" unspoken requirement to conform and to be pleasing in order to stay a member. Up to now, long after political independence, Philippine society is still essentially tribal. This tribalism extends beyond the still unassimilated indigenous communities and covers the modern tribes of professional groups, fraternities, kinship networks, and the supertribe of the elite consisting of less than 100 core families.

Filipino society evolved with a heritage of smallness[81]. Even before the Conquista, the small area of Manila Bay had three kingdoms: Maynilad, Tondo, and Pasay. To the Filipino, the nation was a small boat: the baranggay. And the Filipino realm is the barrio. And revolution is the rebellion of the baranggay.

The Filipino's fatalism is his coping mechanism for incredible hardship. He hopes with optimism that God sees his sufferings and will reward him, if not in this life, then in the next.[82] "Bahala na", derived from "Bathala Na" or "God will provide" provides him with two mental hinges : one is that suffering is necessary before reward is given and therefore suffering is part of his fate and; two, the assurance that God wills everything that happens to him. This fatalism also accounts for the mysticism and superstition Filipinos invoke or resort to when they fail to comprehend situations or natural events. He was made to believe that natural disasters were the wrath of God. This precluded them from gaining an appreciation for science and an indifference to technology. This has roots in the teachings of the Doctrina through the friar who represented God through his abuses and his brutal punishments. Because the religious indoctrination was largely in Spanish and executed by the cruel friar, there was again that sense of fear and remoteness towards God and His rules. This is what largely keeps the Filipino in the dark about his future, that which keeps him from scientifically exploring the principles which guide natural events and taking the reins in determining his own fate.

The revolts of the 17th century were caused either by excessive tribute or by the violation of the Filipino's affinity for the land. The Cagayan revolts of 1625-1630 were due to the people's resistance of resettlement and forced removal from their ancient places of abode[83]. However, the immediate causes could be traced to the transgression of Filipino values such as the hiya of being raped by a conquistador. Land grabbing by the friars and heavy tributes by the gobernadorcillo are infringement of pakikisama since the they were all part of the in-group. The cruel cortes the madera and the forced transfer of laborers to other distant places were a breach of the peasant's attachment to his land and baranggay. With the numerous rebellions that erupted during the Spanish colonial era could be traced to the infringement of the value system of the Filipinos. The set of values that nurtured tolerance and acquiescence to the oppressive encomienda also provoke the Filipino to violence and rebellion.

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81 Joaquin, N. Op. Cit.

82 Ibid.,p.876.

83 Corpuz, O.D., Op. Cit., I: p.121

The Ecology of Philippine Rebellions

Ecology in the sociological sense refers to the spacing and interdependence of people and institutions. From this perspective, the Conquista can be examined as the process of altering the existing social ecology of the Philippines by force. We would therefore expect that resistance will be stronger in those places with well established ecology. There was a high degree of social equilibrium in the Tagalog and Ilocano Provinces and Cagayan. The earliest revolts took place in these areas. In the muslim areas with strong ecology and supporting cultural framework, the Conquista failed miserably. This was also true for the upland societies of the cordilleras.

Most of the struggles of the 17th century were not uprisings but were wars of resistance as the Spaniards expanded and consolidated their rule over the archipelago. In the late 1500s there were sporadic and unconnected revolts all over the archipelago. There were revolts in 1583 and in 1585 among the Tagalog provinces and Pampanga. From 1590 onwards there were more frequent revolts.

Even in the loyal province of Pampanga, civil life was punctuated by revolts because of the dislocation of the peasants for the cortes de madera and the extremely heavy tributes imposed by the rulers. The personalism of the Filipinos was very evident in these revolts. After executing the local friar and the tax collector or the grievances temporarily appeased, peace was usually restored. It is interesting to note, however, that most of the uprisings were in protest to the forced imposition to shift to other crops such as in the case of the tobacco wars or the dislocation mandated by the cortes de madera. The areas of monocultures where the political economy of the encomienda were well established were also the hotbeds of the rebellion. We could also speculate that had the resistance to the cortes de madera had been more successful, the forests of Bataan, Pangasinan, and the Ilocano provinces would not have been easily ravaged which opened these areas to agricultural settlements for the peasants fleeing Spanish oppression.

In the 17th century when Catholicism has been assimilated with local animistic beliefs, there was a long history of religion-based movements. The religious mysticism of the Filipinos also provided a rather sophisticated and psychological channel for expressing discontent. The Church, which held vast haciendas that often provoked uprisings, was also the teacher of the liturgy of revolution. Throughout the 18th and 19th centuries charismatic and mystical leaders provided the means for ventilating discontent and instilling hope for salvation. However, some of these provoked violent confrontations with the

colonial government. These movements, although based on religious mystical themes became the precursors of larger organizations that transcended the prevailing tribal spheres. The longing for national identity has become one of the motivating forces for liberation (kalayaan) from the colonial yoke.[84] Underlying this nascent nationalism was the desire to reestablish the imagined utopia of the Philippines before the Conquista characterized as it were, by social peace, distributive justice, and ecological balance.

Beginning the late 19th century, civil strife in the Philippines was being driven by the complex structural conditions of the political economy, the behavioral force of the traditional values and emergent nationalism. The Revolution of 1986 was the inchoate mixture of all these. It was national in aspiration but severely constrained by traditional factionalism. It was mainly confined to the Tagalog provinces. The initiation rites and rituals of the KKK (the revolutionary organization) were heavily influenced by religious mysticism.

The Revolution of 1896 was a success in getting rid of the Spanish rule but it was overwhelmed by American colonialism. The Americans simply continued the hacienda system, introduced American style public education, and connected the Philippine resource systems to the American markets. After independence from the United States, the social ecology of the Philippines is an amalgam of incongruous elements. It has the political economy of the encomienda, an American style legislature and presidency, an immutable tribal Filipino consciousness, and a ravaged ecosystem. This social ecology is highly unstable, the various niches are still being contested and some parts have not been fully assimilated to the dominant body politick.

The current insurgency of the New People's Army is still basically dedicated to achievement of redistributive justice, the abolition of the encomienda, and the unconscious yearning for the primal social ecology of the Philippines before the Conquista.

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84 Kessler, R., Op. Cit.

VI. Prospects for Sustainable Development: Toward the Abyss

Sustainable Development: Beyond Rhetoric

The concept of sustainable development is now being widely promoted as the holistic approach to the problems of poverty and environmental degradation. The problem of the conservation of natural resources and environmental degradation in general cannot be isolated from the more generic problems of development. Although there is a science behind conservation, it is not a purely scientific proposition. Without determined political action, conservation programs will founder. In countries like the Philippines, it is not too meaningful to discuss conservation outside of the context of the political economy of natural resources. "Sustainable development" is the new fashionable paradigm in international circles who are concerned with environmentally benign economic development. It is unfortunate that the popularization of the concept is marked by a deluge of seductive rhetoric regarding sustainable development and while its operational meaning has not matured sufficiently to a universally accepted methodology.

The aphorisms of sustainable development lends an ethical allure to the concept but do not illuminate praxis. Some of the more popular folk sayings are the following:

> "Sustainable development is meeting the needs and aspirations of people without compromising the ability of future generations to meet theirs."
>
> "Sustainable development is based on the recognition that poverty is both a cause and a consequence of environmental degradation."
>
> "Sustainable development means living on the interest rather than on the capital stock of natural resources."
>
> "Sustainable development is development without destruction."
>
> "Sustainable development is economic growth within ecological limits."
>
> "Sustainable development is the attainment of material progress without compromising the life-support functions of natural systems."

Although sustainable development is still a vaguely defined concept, it calls for revolutionary changes in the ways we think about economics and ecology. A number of authors have pointed out

that the idea of sustainable development has very strong linkages with the political economy.[1] The measures recommended by the Brundtland Commission involved very radical structural reforms at the national and international levels. In all likelihood, these reforms will not be undertaken willingly by both developing and industrialized countries. The call for a New International Economic Order has been around for more than a decade and there has been no significant progress. The limitation of traditional economics as a science in dealing with environmental externalities is well known and yet there has been little progress in this regard. The free-market principles that still heavily influence the perceptions of decision-makers govern international economic relations and are prejudicial to sound environmental management in the developing countries. It will be decades before the intellectual baggage of economic theory could be shed in favor of the still unborn environmental economics.

The idea of sustainable development itself is beset by a number of conceptual problems which inhibit its immediate implementation. These conceptual problems are discussed below.

The Knowledge Problem. If we are to manage natural systems sustainably, we must have a sufficient working knowledge of the dynamics of these systems. And this is not the case. The species composition, growth and evolution of a tropical rain forests are barely known to provide sound empirical justification for a sustainable management practice. This could also be said for most of the other ecosystems in the tropics, where there has been very little scientific research. The utilization of resources within ecological limits is not possible in practice if the thresholds have not been set with any kind of precision. Similarly, carrying capacities of ecosystems are sensitive functions of technological inputs. As mentioned above present-day economic theory is inadequate in dealing with non-market and non-fungible environmental resources. This epistomological gap erodes the convincing power of sustainable development as a practical concept for the promotion of human progress.

The Rationality Problem. Because of the knowledge gap, environmental management is haunted by the demon of "plural rationalities"[2]. Having no consistent, conventional source of knowledge and information promotes divergent perceptions on the sustainable use of natural resources. The notion of resource

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1 See, for example, Sustainable Development, by Michel Redclift, Methuen, Inc., New York, 1987.

2 Thompson, M., The Cultural Construction of Nature and the Natural Destruction of Culture, Center for Philosophy and Public Policy, University of Maryland, Working Paper 8, 1986.

depletion for one stakeholder is another's resource abundance. This is also manifested as the dissonant perception of environmental values between the North and the South. For a certain conservation issue such as protected areas, the North's justification could rely heavily on aesthetic values while the South will emphasize economic values. Furthermore, there are internal contradictions within the concept of sustainable development. One contradiction arises out of the failure of market forces to determine economic and environmental efficiency. This implies greater reliance on social contracts regarding the best possible action. In a highly unequal world, there is an inevitable bias in favor of the greed of the powerful over the needs of the impotent poor.

The Temporal Problem. There are eschatological reasons for believing that ultimately nothing is sustainable in the very long term. In the shorter term, the frontiers of sustainable development shifts further into the future with technological development. Resource-efficient and environmentally friendly technologies could radically alter our perceptions of sustainable development. The technological-fix syndrome among planners is the manifestation of this conceptual problem. The unsaid motto of the promoters of rapid growth seems to be: exploit, pollute, there will be technologies in the future that could deal effectively with these problems; posterity will take care of itself; genetic engineering will recreate the extinct species.

The concept of sustainable development can be understood using the systems framework shown in Figure 2.4. Sustainable development in this context means that the dynamics of the trancendal system, political economy, resource system and ecosystems are maintained over time without collapse in the sense of acute social conflict for the case of the political economy, irreversible changes in the ecosystems, and disintegration of the resource systems. In other words, sustainable development is the maintenance of overall systems stability as the productivity of the resource systems is enhanced. Most conceptions of sustainable development have focused on the stability of the ecosystems. Thus, a program on sustainable development should encompass a very wide range of concerns. It could include intervention in the trancendental system through projects in environmental education, the use of religious values to promote environmentalism, or the promotion of environmental awareness. In the political economy, initiatives in social equity, property rights, or natural resources accounting could be important in maintaining over all system stability. In the resource system, the use of clean technologies, and measures on pollution control could be relevant. Since local resource systems are almost always connected to foreign resource systems, the intricacies of interntional trade must also be examined.

Because of these theoretical problems, sustainable

development cannot be pursued with academic purity. To do so would relegate this concept to the dustbin of failed development paradigms. In spite of the serious conceptual difficulties associated with sustainable development, we cannot afford inaction because of this apparent philosophical paralysis. In some developing countries, like the Philippines, the situation has become quite serious. Strong measures are called for because the country appears to be on the verge of an ecological precipice. In this context, the sustainable development process could be a crude but pragmatic management of the greed and need of various constituencies, supported by a morally strong environmental advocacy. In the Philippines there are obvious things that could be done. The implementation of pragmatic, pro-environment natural resource policies, the pursuit of a determined agrarian reform program, regaining control of the forests from concessionaires, a sincere agroforestry and reforestation program, and the establishment of a National Integrated Protected Areas System are both obvious and imperative to save the day for sustainable development. A well planned, coordinated action agenda for these priority areas is of utmost urgency if present environmental trends are to be reversed.

Toward the Abyss

As pointed out in Section II, one of the indicators for the state of the ecosystems in the Philippines is biodiversity. We now examine this point.

There has been no systematic inventories of species in the Philippines. Thus, there is no direct measure of the rapid loss of the wealth of biodiversity. However, the old growth forest, the virgin mangrove swamps, and the undisturbed coral reefs, are very good surrogate measures for the state of biodiversity in the terrestrial, wetland, and marine environments. An examination of the data in this respect shows a very rapid loss over the last three decades. Over 90% of the old-growth dipterocarp forests, 70% of the virgin mangrove swamps, and 94% of the coral reefs, were totally destroyed or severely degraded during the last thirty years. For the species, this signifies a relentless march toward the abyss of extinction and environmental degradation with all its grave political implications. One estimate claims that about 60% of endemic Philippine flora are now extinct. In terms of fauna, we only know that 18 species of mammals, birds, and reptiles are in the list of endangered species and that the tamaraw and the Philippine eagle are on the verge of extinction. This is an indicator of the threats to the heritage of biodiversity in the Philippines.

That the limits of sustainability are already being reached is clear in municipal fisheries. The estimate for sustainable catch in near-shore fisheries in the Philippines is about 1.45 to

1.85 million metric tons per year. The annual catch for 1989 was already 1.7 million metric tons. The number of households dependent on municipal fishing has increased significantly during the last ten years and most are living below the official poverty line.[3]

We need to ask this crucial and fateful question: how much economic development did the Philippines buy for the terrible price it paid in terms of the irreversible loss of biodiversity and other associated ecological costs and their ramifications in terms of social conflict? We can only say for sure that economic conditions in the country are much worse today than 30 years ago. The country is now mired in quicksand of external indebtedness ($28.7 billion in 1991). Servicing this debt consumes a third of its export earnings.

Although economic losses due to the unsustainable management of natural resources are difficult to quantify, the magnitudes are widely believed to be staggering. The following gives an indication of economic losses:

> "Other losses to the future population, although more difficult to evaluate, are even more dramatic. It is clear that soil erosion is leading to significant losses of fertility in seven to eight million hectares of upland areas which will eventually be needed for crops or tree plantations. In areas of overgrazed grassland, as in the Magat Watershed, annual losses of soil and nutrient may cost more than $50 per hectare, on a replacement cost basis. There are about two million hectares of open grasslands nationwide, indicating an annual cost on the order of $100 million. Downstream losses - drastically shortened life of dams, increased maintenance and rehabilitation costs for irrigation facilities, and loss of crops due to flooding or decreased dry season water availability - are also significant. Estimates of <u>current</u> and future annual losses to fisheries arising only from excessive fishing pressure (excluding destructive methods) are in the range of $50 - $90 million. Loss of remaining habitats which harbor diverse and often unique flora and fauna of the Philippines entails future losses of potential tourist revenues (an industry which now annually generates over $600 million in receipts, and which has been growing at 17% per annum), and incalculable losses associated with the potential development of medicines, pharmaceutical, various biochemical products and planting materials based on the genetic pool now preserved in tropical forests and coral reef environments."[4]

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3 Roque, C.R., <u>Op. Cit</u>.

4 The World Bank, <u>Op. Cit</u>.

Another way of looking at the losses of destructive logging is to assume that the original 6 million hectares of dipterocarp forests are still intact and are being logged sustainably. This would have produced a sustainable yield of 15 million cubic meters representing an annual revenue of about $2 billion!.

Environmental degradation, economic decline, and economic inequity are all related in a complicated web of causation. That there are vicious cycles that engender persisting impoverization and environmental decay is quite plausible. One thing is certain: the development trajectory in natural resources chosen by the Philippines in the last three decades is not sustainable. The profligacy of the past represent huge economic losses for the present. The Philippines is now quite economically vulnerable and constantly besieged by civil strife. The potentials for economic and social cataclysms are high. For a country on the brink like the Philippines, there is no alternative to a sustainable development strategy.

Turning Point or Precipice?

From the last years of the Marcos Regime in the early 1980s and through the Revolution of 1986, to the present, the Philippines has been plagued by grave political and economic problems. Its preoccupation with survival precluded serious national debate on new development ideologies such the newly fashionable concept of sustainable development. Nevertheless, the strong environmental advocacy groups that have emerged after the Revolution in the Philippines and the worldwide renaissance of environmentalism promoted the notion of sustainable development in the country. In addition, the Multi-lateral Assistance Initiative - an international program led by the U.S. and Japan for the economic rescue of the Philippines - demanded the formulation of a national environmental program. Moreover, the law creating the new Department of Environment and Natural Resources required the preparation of such a program and its formal approval by the Cabinet.

In 1990, the Department of Environment and Natural Resources launched the Philippine Strategy for Sustainable Development (PSSD). This document enumerated ten strategies that are supposed to confront the issues of environment and development in the Philippines. Because of their relevance to conservation, these strategies are briefly discussed below.[5]

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5 Department of Environment and Natural Resources, Philippine Strategy for Sustainable Development, Quezon City, 1991.

1. The Integration of Environmental Considerations in Decision Making. This is the essence of sustainable development: the simultaneous consideration of environmental and economic concerns. It is contemplated that the tools of environmental impact assessment, natural resource accounting, and ecological land use planning will be the principal vehicles for the implementation of this strategy.

2. Proper Pricing of Natural Resources. Studies of natural management in the Philippines are unanimous in the conclusion that natural resources in the Philippines are grossly underpriced and that this is one of the principal causes of rapid depletion.[6] This will be pursued through the inclusion of the costs of environmental externalities to the cost of natural resources, which the government could recover through taxes. In pollution control management this is usually referred to as the "polluter pays principle."

3. Property Rights Reform. In the Philippines, because of weak government regulatory enforcement, natural resources have assumed the characteristics of "open access resources". This generates signals for misuse and overexploitation. The strategy calls for the development of secure access rights system to communities and individuals so that long-term stake for protection and sustained productivity is encouraged.

4. Establishment of a National Integrated Protected Areas System (NIPAS). This is a direct response to the problem of the conservation of biodiversity. The present system of national parks and sanctuaries has been totally neglected and needs to be redesigned and re-established. Because this is obviously crucial, this must be considered as the pivotal strategy. This is discussed in some detail below.

5. Rehabilitation of Degraded Ecosystems. This refers mainly to the reforestation program and the modest efforts directed at the revival of some river systems.

6. Strengthening of Residuals Management in Industry. The plan is to explore new approaches to pollution control beyond the usual end-of-pipe control systems. The more comprehensive framework of materials policy involving recycling, resource recovery, and appropriate product design will be researched on and developed.

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6 See for example, World Bank, Op. Cit.;, Reppeto, R., The Forest for the Trees ? Government Policies and Misuse of Forest Resources, World Resources Institute, Washington, DC, 1988; DENR, Master Plan for Forestry Development, Quezon City, 1990; Various policy study papers at the DENR.

7. Integration of Population Concerns and Social Welfare in Development Planning. All natural resource management studies have pointed to the already very high population density of the Philippines and the high population growth rate as a critical factor in sustainable development. The challenge is how to implement a population program in a dominantly Catholic country.

8. Inducing Growth in the Rural Areas. The most visible and serious cause of environmental deterioration is the huge influx of people in the ecologically fragile areas of the uplands, coastal zones, and over-crowded urban centers. The main reason is the inability of the economic system to absorb the excess labor pool being produced yearly by profusely procreating population. Economic growth in the rural areas, through coordinated measures in agrarian reform, rural industrialization, and policy reforms in agriculture is seen as the right strategy in this regard.

9. Promotion of Environmental Education. This is contemplated to meet two important objectives. Firstly, in order to get public support, the citizens must be able to understand and appreciate the complex issues revolving around environment and development. Secondly, a knowledge base about local ecosystems and natural resources is crucial to their proper management. This could involve the development of secondary, tertiary, and graduate programs in environmental science, ecology, and resource economics.

10. Strengthening of Citizens' Participation and Constituency Building. This strategy implies the encouragement and support of Non-Governmental Organizations, specially the environmental advocates and the development-oriented groups. The main objective here is to educate people on the environment-development linkage and to promote the ideology of sustainable development. The Government should encourage the networking of the various groups and provide them access to the mass media.

The PSSD is a comprehensive set of general principles and measures addressing the salient environment and development issues in the Philippines. Its holistic view of the problem of conservation as something rooted in the political economy of the country is encouraging. If official sanction from the Cabinet imply the commitment of funds for the implementation, then the PSSD could be a turning point in the inexorable ecological decline and political instability of the Philippines. However, this is not the case. The official imprimatur is only pure blessing without cash. The Philippines is in the midst of a severe financial crisis and the funding of PSSD is once again the casualty of the battle of priorities. There has been no significant increase in the budget for conservation or of the programs related to sustainable development. The reforestation

program and the feasibility studies and design of NIPAS are funded out loans and development assistance. An environment sector loan has recently been signed with the World Bank in further pursuit of environmental projects. In short, under the present financial crisis, the PSSD is being implemented at the cost of additional national indebtedness. In view of the suspected connection between international debt and sustainable development[7], the issue that must be confronted is whether the implementation of the PSSD through further borrowing will push the Philippines into the ecological precipice or finally reach that long-desired turning point toward sustainable development.

While the promotion of environmental education, the encouragement of citizen participation, and the development of constituency are standard items in national agendas, these are not mere platitudes. If they are pursued with energy, sustainable development as a paradigm, will be strengthened in both the philosophical and pragmatic senses.

There are two essential ingredients missing in the PSSD. One is a sustainable financial strategy. Although it is beyond the scope of this paper, the financing should be based on self-reliant sources and untied grants. Income expected from the proper pricing of natural resources and the increased economic rent could be used to finance the PSSD in a bootstrapping fashion. Another possibility is the expansion of the debt-for-nature swap program. Although unplanned, initiatives are being undertaken in this direction. This bold initiatives in environmental financing is one source of optimism for increased prospects for sustainable development in the Philippines.

The second missing ingredient is an order of battle, a strategy for achieving the strategies for sustainable development, a meta-strategy, a core strategy.

The Twilight Strategy

The Philippines is about to fall into the vortex of irreversible ecological damage, continuous economic decline, and acute social conflict. In terms of ecology, the Philippines has been described as an eleventh-hour country or a hot spot in biodiversity conservation[8]. For those who are intimately familiar with the Philippines, these are accurate assessments. With ninety

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7 World Commission on Environment and Development, Our Common Future, Oxford University Press, Oxford and New York, 1987.

8 World Bank, Op. Cit, and McNeely, J. et Al, Conserving the World's Biological Diversity, IUCN, Gland, 1990.

percent of the original forest cover gone and a tripling of the human population, it is the twilight of the species in the Philippines. It is only barely an hour before an impending ecological darkness. This metaphor and its sense of urgency and certain fate should shape the short-term strategies for long-term sustainable development of the country.

The utmost priority should be given to property rights reform and other initiatives directed at immediate redistribution of wealth. The other is the protection of the environment from further deterioration because the country's poorest depends on natural resources. The twilight strategy involves the immediate implementation of an offensive and defensive elements. The destruction of the environment is akin to subversion because it could ultimately lead to acute social conflict. The campaign to rescue the Philippine environment should be considered the moral equivalent of war. A determined, large-scale government and NGO-led offensive on the enforcement of natural resources laws should be undertaken now. No less than an armed task force adequately equipped with aircraft and modern communication gear would suffice. The primary target should be the big-time illegal loggers, the cheating concessionaires, the dynamiters and commercial fishermen using forbidden fishing equipment in fish sanctuaries. It is obvious that a campaign of this nature could only be undertaken with the cooperation of a bureaucracy aroused the prospect of a national destiny in peril and possessed by the devil of a bold political will. Needless to say the cooperation of the military establishment is imperative for success.

Fortunately, the government has tested this strategic offensive. In forestry, it has commissioned an airborne surveillance team to pinpoint illegal logging areas. A cooperating military unit is immediately sent to the area to apprehend the perpetrators of the crime. This initiative accounted for the very large confiscation of illegal timber by the DENR last year. In fisheries, the bantay-dagat program, which involves the NGO and Coast Guard elements in high-speed boats, has been effective in places where they are deployed. If this kind of tactic is carried on a much larger scale, there will be a justifiable turn to a more optimistic outlook for sustainable development in the Philippines. This initiative must now be enlarged to include a campaign to obliterate the existing network of patronage between politicians, the military, the bureaucracy, and big business. This is indeed a tall order. It is nothing short of a call to arms against the dominant forces of Philippine society. Knowing this, pessimism about the future could be seductively attractive. However, for a country that has swiftly overthrown a formidable regime like Marcos' this awesome task could be within the range of possibilities.

The other element of the twilight strategy is the immediate and active defense of the remaining sites of ecological value.

This is mentioned in the PSSD as merely the establishment of a NIPAS. In essence, this should be viewed as an urgent defensive posture against the millions of people who are being driven by landlessness and unemployment to the ecologically fragile uplands, national parks, watersheds, wildlife sanctuaries, and coastal areas. The NIPAS project is now it its design phase and the actual implementation on the ground is targeted for 1992. Needless to say its success is crucial to the conservation of strategy. And success cannot be assured unless the project is carried out with the proper sense of urgency, social sensitivity on the plight of the marginally poor, and political pragmatism. The project is crucial to the strategy and a more detailed discussion is merited.

Islands of Redoubt

The process of establishing the NIPAS is as important as its ultimate realization. In a country characterized by land hunger, mass poverty, and chronic agrarian conflict, the NIPAS project has all the potential for serious controversy. Virtually all the actors in the political economy have stakes in the project. The indigenous groups who are occupying some biologically important areas and are using the virgin forest for livelihood will resent the imposition of rules on protected areas. The capitalists, specially those in the logging and ranching industries will almost certainly resist the prohibition to practice their calling in some of the envisioned protected areas. The lowland peasant groups will support the project when they begin to understand the role of protected areas in protecting the soil and the water regime. The environmental groups are natural allies of the NIPAS project. The implementation of the project will entail an enlightened management of the forces of these classes of stake holders. The protected areas will be islands of redoubt, the last lines of defense from the degradation arising out of the combined forces of need and greed. The present plans for the NIPAS require the inclusion of the remaining virgin areas under state protection. Thus, if vigorously implemented the NIPAS could become a powerful instrument to reverse the ecological destiny of the Philippines. The NIPAS is the crucible for sustainable development of the Philippines.

In spite of official reports about statistics and profiles of protected areas in the Philippines, there is no functioning system of national parks and sanctuaries on the ground. Except for a couple areas supported by international environmental organizations, the national park system is only on paper. In 1975, the Development Academy of the Philippines conducted a thorough study of the national parks. The findings confirmed what the environmentalists already knew: that the state of the national parks is intolerably dismal. All the parks were found to be in various degrees of disintegration. All were plagued with

illegal settlements and logging. In fact, a careful reading of the bureaucratically sanitized report of the Protected Areas and Wildlife Bureau will further confirm the serious state of devastation of the national parks[9]. In a study conducted by the Natural Resources Management Center[10], it was shown that the chaos on the ground are matched by an equally serious confusion in the national park legislation. For instance, it was discovered that there are overlapping and inconsistent legislation in fourteen of the national parks. Some parks have no technically defined boundaries and some don't even exist physically. In short, it is quite obvious that there is an urgent need to establish a new system of protected areas physically as well as a need to provide a new legal foundation for the system.

The almost total neglect of the national parks by the government is a reflection of the low priority of conservation. Parks management used to be an insignificant office in the Bureau of Forest Development (BFD), an office where recalcitrant forestry officials are placed to pasture. During the Marcos Regime, the BFD were actually being ruled by cronies in the logging business rather than by the Ministry of Natural Resources. Over the last three decades, the Parks and Wildlife Office was a sore thumb sticking out of a Bureau whose main concern was logging, euphemistically called forest development. Consequently, there had been six institutional changes in parks management over this period. The creation of the Protected Areas and Wildlife Bureau after the 1986 Revolution, was a signal of the emergence of a new political will for conservation.

The crisis in the system of national parks is also an opportunity to use it as the touchstone for sustainable development. With strong funding support from international groups[11], the NIPAS could be used as the primary instrument for the dismantling of the political economy of natural resources in the Philippines which was the motive force for the perpetuation

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9 DENR, Profile of National Parks in the Philippines, Quezon City, 1989.

10 Natural Resources Management Center, An Analysis of Laws and Enactments Pertaining to National Parks, Quezon City, 1983.

11 The design and legislative studies for NIPAS is being funded by a $2 million grant from the Japanese Government. It is expected that 10 sites will developed in 1992 through funding by the Global Environmental Facility. The passage of a new law on protected areas is a conditionality for the release of a concessional environmental sector loan by the World Bank amounting to $281 million.

of the vicious cycle of poverty and environmental destruction.

Although the main objective of NIPAS has not yet been explicitly articulated, the goal is to place the last adequately remaining stands of forest (including mangrove swamps) under the regime of protected areas. Biologically significant marine areas and wetlands will also be covered. If this objective is accomplished, roughly 20% of the total land area of the Philippines will be under the public domain and actively managed by the agencies of government. These will include those presently designated as protected areas (roughly 1.4 million hectares), proclaimed watersheds, the remaining old growth forests (less than a million hectares) and adequately stocked secondary growth forests. Considering that at present 52% of the total land area is under permanent government ownership as forest lands, this goal does not appear radical enough at all at first look. However, the forest lands have been leased out to concessionaires, and even if it were not so, the government cannot effectively manage such a huge area. Moreover, of the 16.3 million hectares of forest land, 5.9 million hectares are open lands and 3.8 million hectares are inadequately stocked.[12] With only about 6 million hectares to manage, and with the infusion of funds for protected areas from abroad, the diversion of money used for the supervision of the logging industry, and emerging political will for conservation, meeting this revolutionary agenda of NIPAS does not appear impossible.

The concept of protected areas as used by the International Union for the Conservation of Nature and Natural Resources[13] and by the NIPAS Project is sufficiently flexible to achieve the necessary policy reforms in Philippine forestry. There are ten categories proposed in a national system of protected areas. These are Strict Nature Reserve or Scientific Reserve, National Park, Natural Monument or Natural Landmark, Managed Nature Reserve or Wildlife Sanctuary, Protected Landscape or Seascape, Resource Reserve, Anthropological Reserve or Natural Biotic Area, Multiple Use Management Area or Managed Resource Area, Biosphere Reserve, and World Heritage Site.

The strategy of the NIPAS Project is to place all the remaining virgin areas of forest, mangrove swamps, and wetlands under the category of Strict Nature Reserves or National Parks. The adequately stocked second growth forest could be placed under the category of Resource Reserve which could be used to supply

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12 Forestry Development Center, U.P. in Los Banos, Fifty Forestry Development Program for the Philippines, Los Banos, 1985.

13 MacKinnon, J. et Al, Managing Protected Areas in the Tropics, IUCN, Gland, Switzerland, 1986.

the local wood needs during the transition to sustainable forestry. Proclaimed watersheds and areas surrounding the Strict Nature Reserves and National Parks will under the category of Multiple Use Management Area. Areas under occupancy by tribal groups and are the subject of many tenurial controversy may be considered as Anthropological Reserve. This has the added advantage of yielding to the legitimate claims of the indigenous communities without upsetting the present Torrens System of land tenure in the Philippines.

The NIPAS Project includes the formulation of a new law on protected areas. The draft of the law has already been submitted to the Philippine Congress as a bill. This bill recognizes the various categories of protected areas and places the sites mentioned above under a tentative NIPAS valid for three years until they are permanently proclaimed after the proper technical delineation of boundaries. If the NIPAS bill is approved with the important features intact, a quiet revolution in conservation, forestry, land use, and land tenure would have been achieved. The prospects for sustainable development will be boosted. If carried out as envisioned, the NIPAS will not only be islands of redoubt for conservation but also the advanced outposts for the campaign to revamp the political economy of natural resources in the Philippines.

Dismantling the Political Economy of Natural Resources

There is wide recognition of the view that the Philippines is trapped in a vicious cycle of population growth, poverty, environmental degradation, decreased productivity, more poverty, and further population growth.[14] This is the context that provoked the present Secretary of Environment and Natural Resources to say:

> "With a high population growth rate the country is like a patient on a treadmill furiously running faster and faster, each stride becoming more difficult, but not getting anywhere".[15]

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14 This is the theme of various works, such as the World Bank, Op.Cit, USAID, Op.Cit., Manila, 1989; Porter, G., and Ganapin, D., Resources, Population, and the Philippine Future: A Case Study, World Resources Institute, Washington, 1988 and Factoran, F., Population, Resources, and the Philippine Future: An Ecological Perspective, Paper presented at the First Rafael Salas Forum, Quezon City, October, 1989.

15 Factoran, F., Op. Cit.

There is no single cause for this vicious cycle. It is not population growth alone, or poverty or environmental degradation. Rather, the vicious cycle is a systemic defect, a manifestation of positive feedback loops in the dynamics of the political economy. As such the problems spawned by poverty and environmental decay will grow in intensity until a breaking point is reached and manifested as acute social conflict. Unless something is done to revamp the political economy, this appears to be the certain outcome of dynamics of Philippines' unfortunate historical heritage.

The political economy of natural resources is driven by economic inequity in terms of highly unequal access to natural resources, the economic instruments of production, and political power. This is aggravated by the failure of government to collect the correct economic rents from the beneficiaries of environmental resources. This system is perpetuated by a very small network of elites wielding a disproportionate share of economic and political power.

Quietly and without the glare of revolutionary rhetoric the PSSD in general and the NIPAS project in particular are addressing the political economical issues. The commitment to integrate environmental consideration in decision-making could lead to some progressive reforms in macro-economic planning and regional planning that could insure the proper allocation of environmental externalites, which are often paid for by the poor. At the regional level, the EIA requirement for projects, if wisely implemented, could achieve this result. At the macro-economic level, the project on natural resources accounting which is aimed at proper computation of the GDP by taking into account the loss of the capital of natural resources could redefine the direction of investment priorities that could favor rural industrialization rather than more resource exploitation.

The current effort to achieve the proper pricing of natural resources through administrative fees and taxes and the collection of the correct economic rent will have salutary effects in reforming the political economy. Hopefully, the excessive profits of the loggers and miners will no longer be available for corrupting the regulators of the industry or financing their quest for political power.

The commitment to property rights reforms in natural resources is aimed at correcting the highly distorted system of access to natural resources. In the NIPAS Project, some of the still viable forest areas could be devoted to multiple use areas where the marginal upland communities are the principal beneficiaries. There is already an existing pilot Community Forestry Program, where some logging areas will actually be turned over to communities and NGOs. This year, the DENR has made the social forestry program its flagship program.

A relative large conservation trust fund is presently being established in the Philippines. About $ 5 million a year will be contributed to the fund during the next five years. This funds will be transferred to a newly created private Philippine foundation thorugh debt-for-environment mechanism. Since the discount rate is about 50% at present, the total endowment of the foundation will be about $50 million after five years. The income from this fund is earmarked for the activities of environmental NGOs in the Philippines. The availability of funds for the activities of the private environmental advocates will greatly alter the bargaining power of the actors in the political economy of natural resources. With their expected commitment to sustainable development and their greatly increase financila clout, the present dangerous trends in the Philippines could still be possibly altered in new and more promising directions.

There is no guarantee or even encouraging indications at present that the political economy of natural resources in the Philippines is in fact weakening. This would depend on the political will, sincerity, and tenacity of the implementors. However, the PSSD and the NIPAS project show that there is profound political understanding of development issues by the ruling bureaucracy. This, in itself is already remarkable progress for sustainable development and the start of the erosion of the foundations of the political economy of natural resources.

However, the enlightenment of a few in government and in the NGO movement is hardly sufficient for a critical turn around in national affairs. A Congress dominated by landlords and a feckless President has diluted the agrarian reform bill into the anemic Republic Act 6657. Yet the implementation of this loop-hole-ridden law has been extremely tortuos and slow. There has been four Secretaries of Agrarian Reform since 1987 and this has resulted in policy chaos in the bureacracy. The President's own Hacienda Luisita decided to exploit the loop hole in the law and thus setting an example for the other big landlords[16]. The other big industrial land holders like Del Monte and the Marubeni Industrial Estate have also managed to go around the actual redistribution of the land to the tenants. Even at this point, only after the second year of implementation of Republic Act 6647, we can declare it to be a failure. In an effort to salvage its image, the public domain in the ecologically fragile uplands will most probably be distributed with haste to the landless. The ecological impact would be grave. And the vicious cycle of poverty, environmental decline, and decreased productivity would

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16 R.A. 6657 provides the distribution of stock certificates to tenants in lieu of actual physical possession of the land. A referendum among the tenants is held for this purpose.

be given an added momenttum.

The general elections scheduled for 1992 offers a flicker of hope for real change but the odds favor the resurgence of the traditional politics of patronage and spoils. The little candles that lighted the people power uprising in 1986 are now all burned out. . the uncertainties of the tottering rule of Cory Aquino, the ugly head of feudalism has resurfaced, enlarged and more ferocious, heralding the coming dark nights of economic decline, environmental degradation, grinding poverty, and civil strife.

Amidst

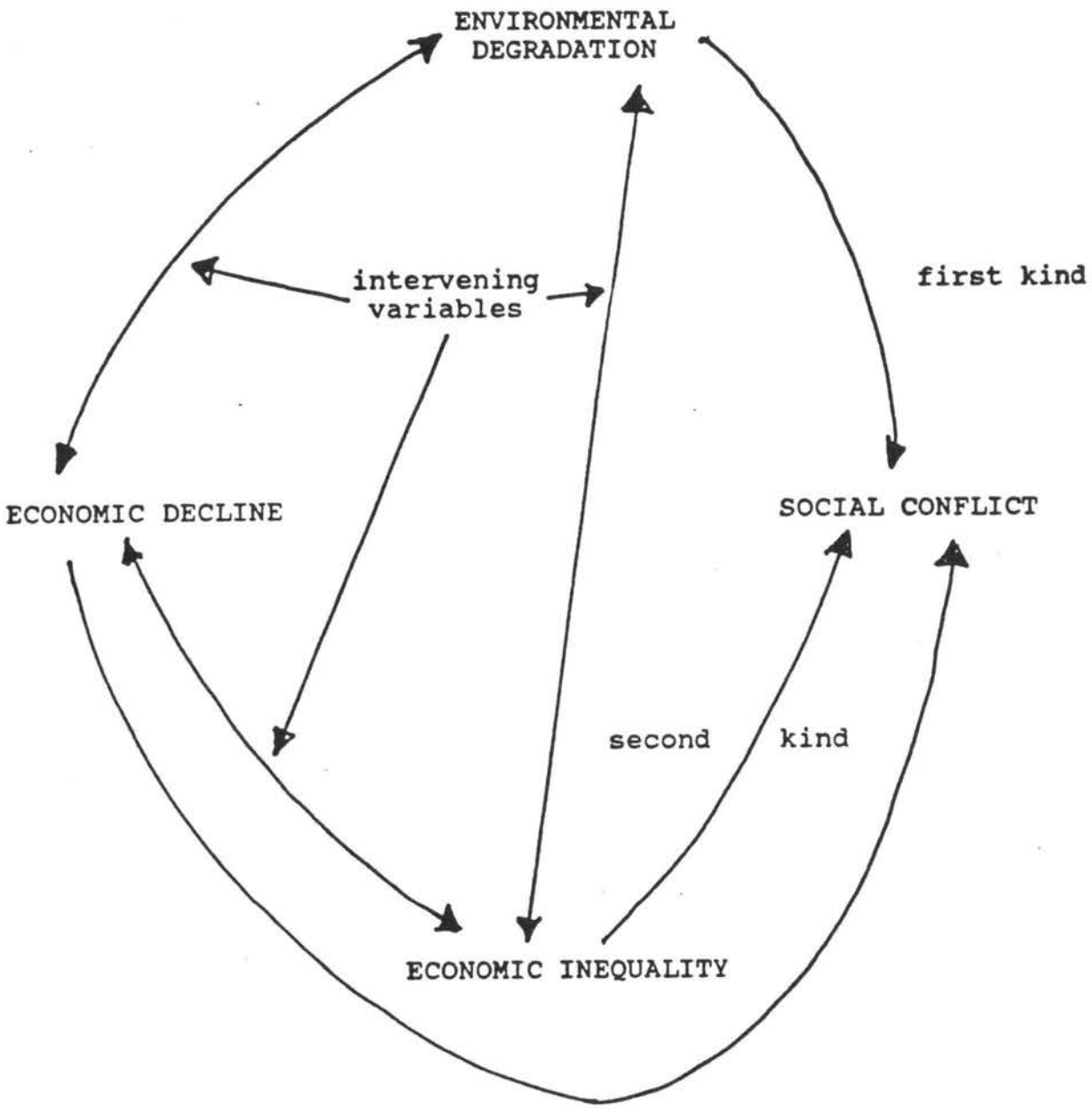


FIGURE 1.1 KINDS OF ENVIRONMENTAL CONFLICTS

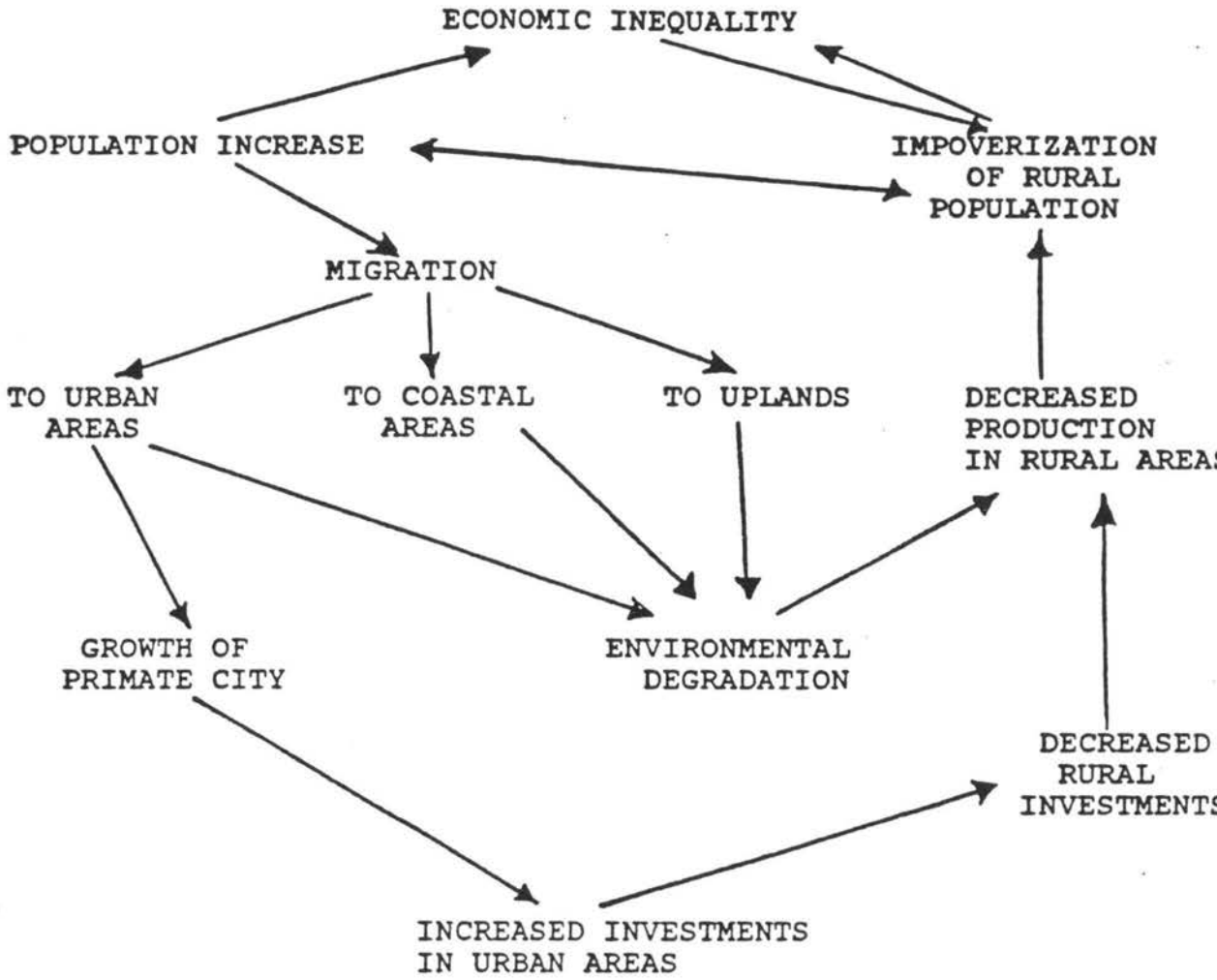


FIGURE 2.1 VICIOUS CYCLES

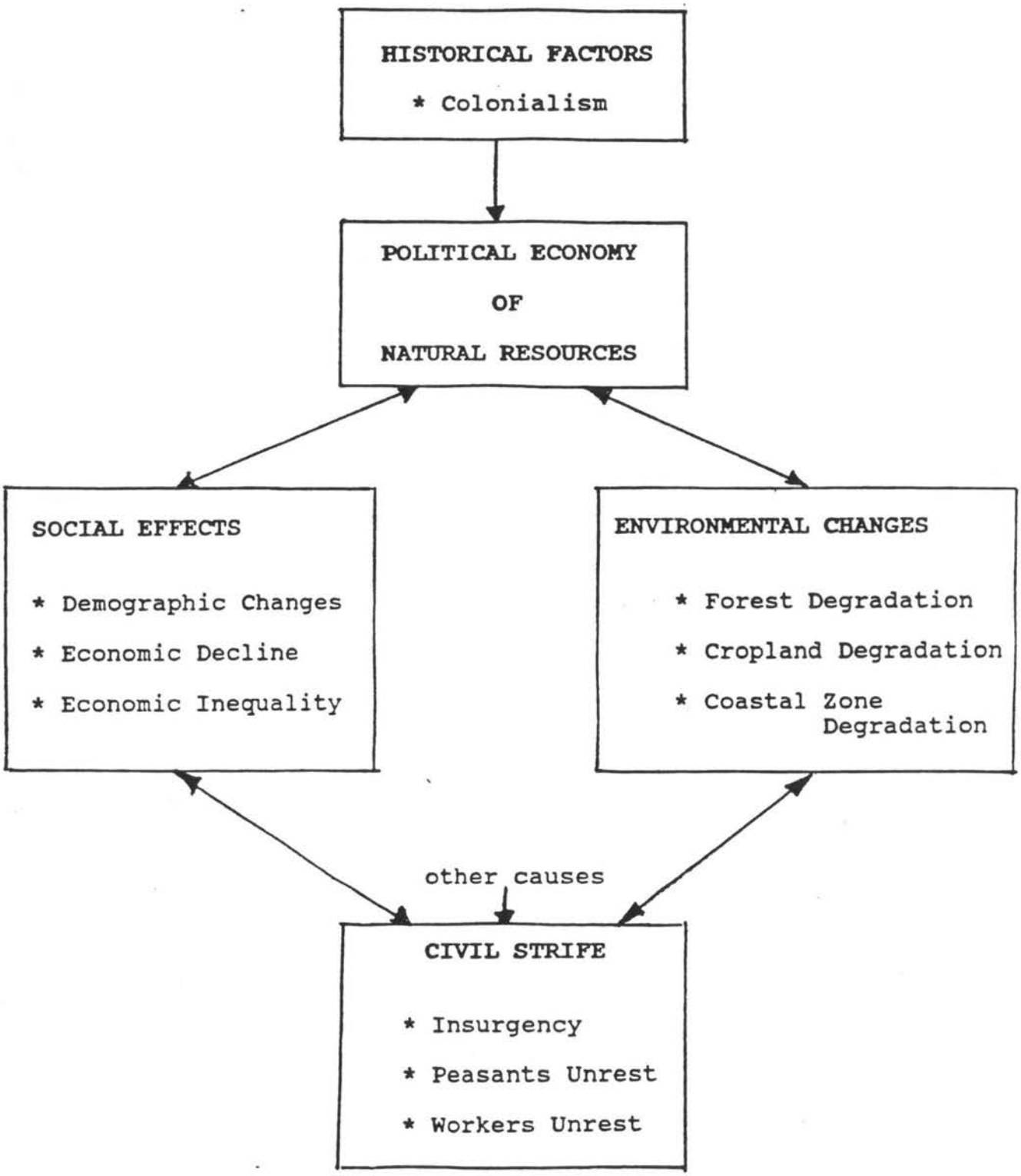
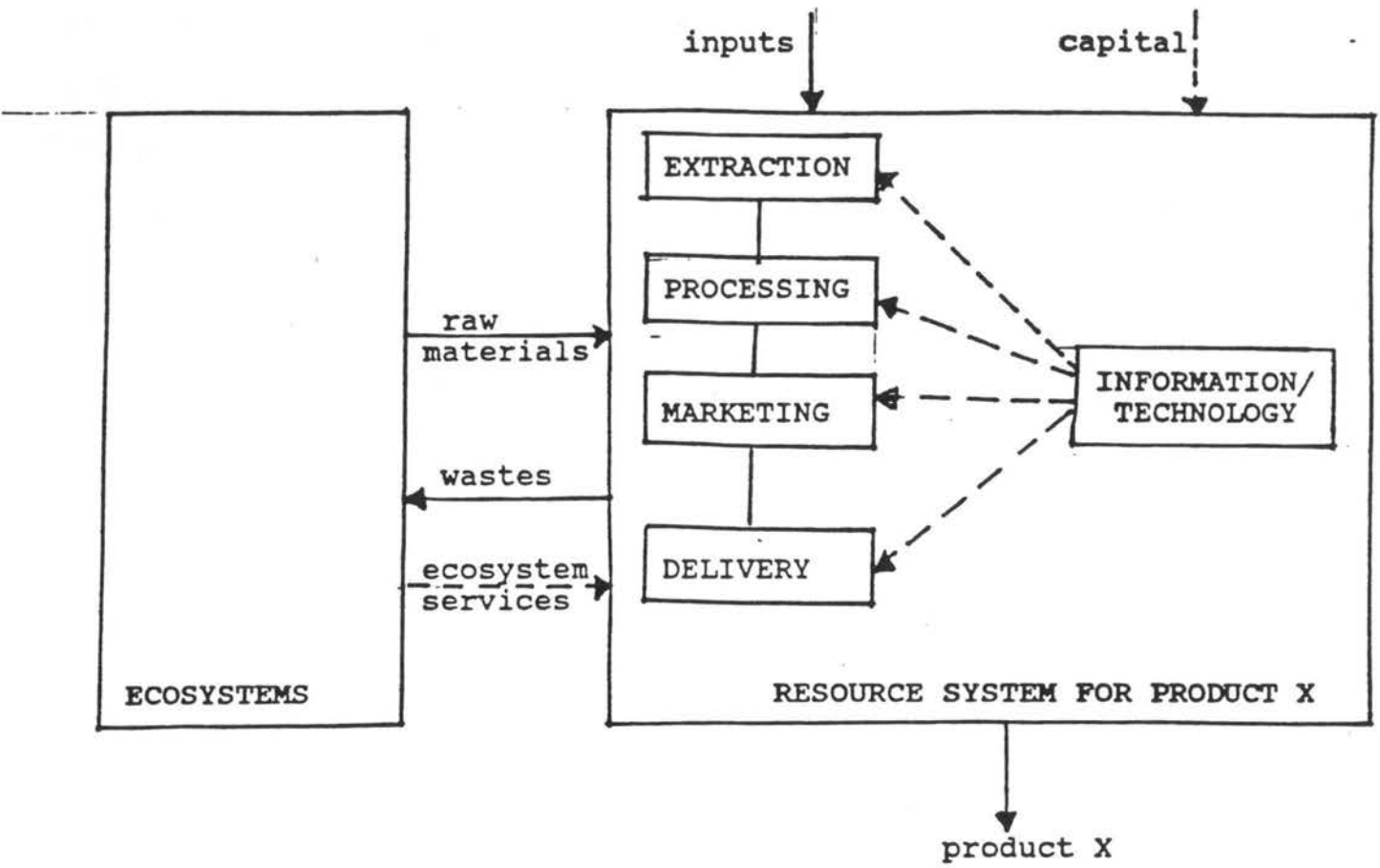


FIGURE 2.2 CONCEPT FRAMEWORK



Legend:

——— material flow

– – – – information flow

FIGURE 2.3 THE RESOURCE SYSTEM

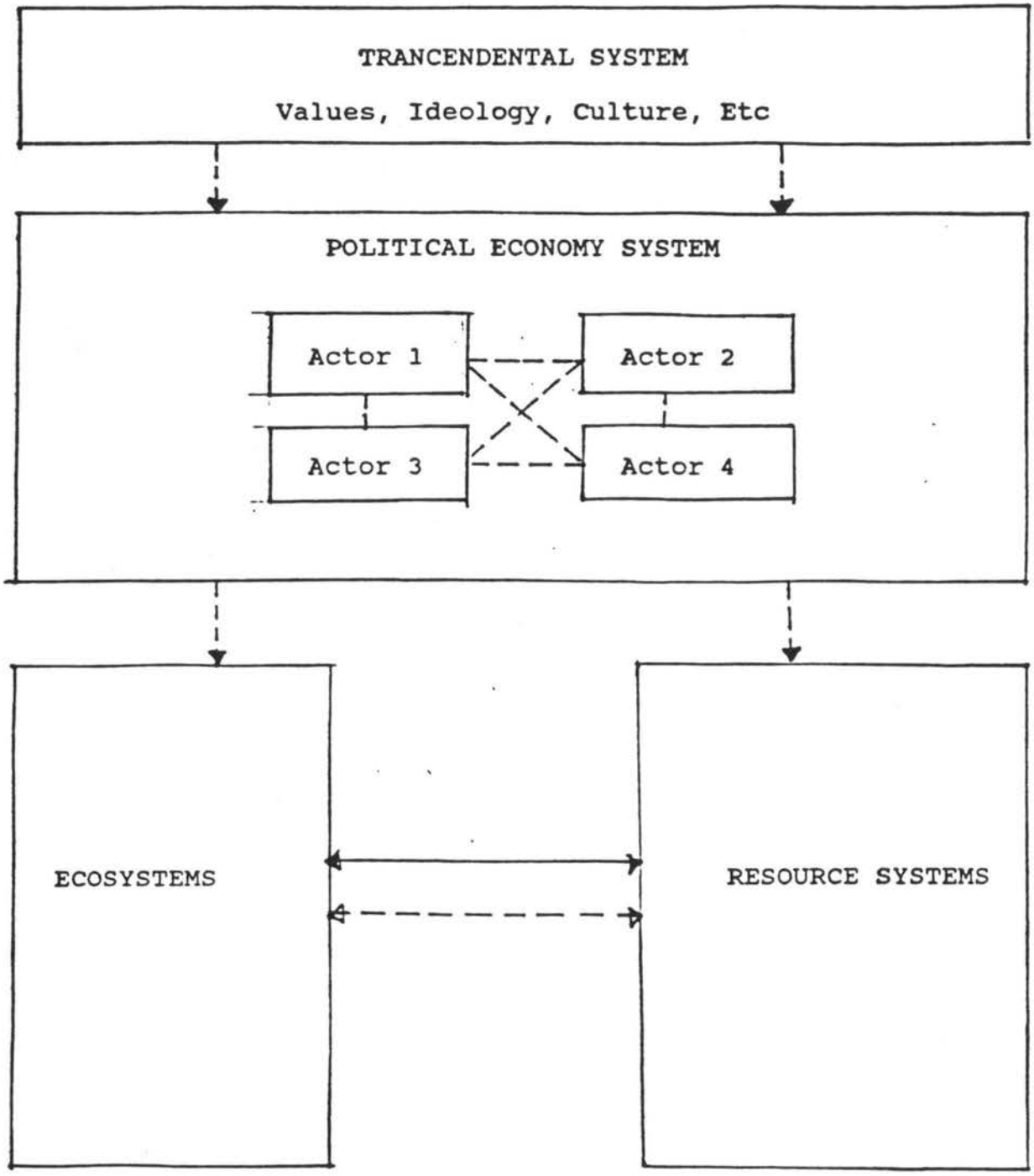


FIGURE 2.4 SYSTEMS VIEW OF THE POLITICAL ECONOMY