AN INTEGRATED AND DYNAMIC ASSESSMENT OF SURADPU EXPERIENCE: A SYSTEMATIC CONCEPTUALIZATION

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Introduction

In the middle of 1983, a one-year grant for an exploratory study in the upland areas around Lake Balinsasayao was approved by the Ford Foundation. The study, designed to assess the general living conditions of the farmers and the overall biological status of the forested highlands, was completed in the middle part of 1984. A research report was produced entitled "Comprehensive Small-Scale Upland Agroforestry: An Alternative To Shifting Cultivation In the Balinsasayao Rainforest Region, Negros Oriental, Philippines." The report came up with a proposal for a research-action program on appropriate land use and forest protection in the uplands.

Using the theoretical perspective of human ecology, a new question was raised. Under a particular sociocultural and environmental condition, how do people respond to external intervention programs designed to improve their living situation? With this question in mind, the proposal that was integrated with the research report mentioned earlier was enriched by taking into account the issue just raised. The proposal was modified by setting up an action-research project where the field action program would serve as a research laboratory. This enriched proposal eventually was approved during the middle part of 1984 with a time span of three years.

To answer our human ecology question raised earlier, the field research laboratory was designed by involving two sites characterized by different environmental and sociocultural systems. One site is Lake Balinsasayao, about 800 to 1,000 meters above sea level. It has the following coordinates 9°22′ north latitude

and 123°10′ east longitude. Situated around 25 kilometers northwest of Dumaguete City, it still has around 40% of its forest cover intact and the rest are under various stages of floral succession caused by human activities. The site is occupied by lowland Cebuano farmers who migrated to the upland searching for land opportunities.

The other site is in Cangguhub, Mabinay, Negros Oriental, around 87 kilometers northwest of Dumaguete City. Situated around 200 to 300 meters above sea level, the site has the following coordinates: 9°38′ north latitude and 122°55′ east longitude. The forest is completely cleared and the area is covered with shallow-rooted grasses. The people occupying the site, unlike those found in Lake Balisasayao, are the native population. They are locally known as Ata or the Negritos.[1]

While the two sites differ ecologically and socioculturally they have one thing in common on outside intervention. In both sites, a farming systems development project was introduced.

As an action-research project, monitoring of various issue had been implemented at the start of the program, known a the Silliman University Research Action Development Progra in the Uplands (SURADPU). After three years of operation o the program, a one-year extension was granted by the For Foundation starting in December 1987. The support for th program from the Ford Foundation ended in November 198

For the research component of the program, various min research projects have been implemented since the program sta ed. A major publication of the program was accomplished wh 12 different research articles were published in a special iss

[1] The Negritos are locally known as Ata in Cangguhub, Mabin Negros Oriental. In the latter part of the paper, they will be called whenever they are mentioned.

of *Silliman Journal* (Volume 32, Numbers 1-4, 1975). These research articles include the following:

1. Exploring the Psychology of Upland Kaingineros;

2. Negrito Farm Productivity and Food Deficiency: Implications for External Intervention on Upland Agricultural Management;

3. Land Use Decision-Making in the Uplands: A Case Study of Lake Balinsasayao, Philippines;

4. Notes on Land Classification: A Case for Practicality;

5. Assessment of Nutritional Status of Residents in Lake Balinsasayao;

6. Niche Diversity and Welfare Among Lowland Migrant Swiddeners Around Lake Balinsasayao;

7. Economic Value of Lakes Balinsasayao and Danao To The Local Lake User Population;

8. Household Developmental Cycle Stage and Swidden Field Expansion: An Empirical Investigation;

9. Production Patterns, Household Developmental Cycle Stages and Participation of Household Members: The Case of the Lake Balinsasayao Lowland Migrant Upland Farmers;

10. Labor and Time Utilization Practices of Households Under Different Life Cycle Stages: Experience of the Lake Balinsasayao Lowland Migrant Upland Farmers;

11. Assessment for Development Potential in Technology (ADEPT): Research Strategy in the Uplands;

12. The Social Subsystems: A Conceptualization of the Lake Balinsasayao Upland Farmer's Experience.

Other research reports have been published in international monographs and books.

Since the two sites where our program had been implemented were viewed as field research laboratories, various mini-research projects were continuously implemented as mentioned earlier.

These mini-research projects were evaluative in nature and documentation of processes and experiences. On the whole, these served to assess the impact of the program on the two sites while at the same time, documenting the developmental processes.

Seven research areas can be identified from the mini-research projects. These are the following: (1) social subsystem; (2) strategy of upland extension; (3) productivity of farms; (4) marketing; (5) health and nutrition; (6) lifestyle and value systems; (7) the biophysical subsystems.

MINI-RESEARCH PROJECTS

This paper will attempt to conceptualize various empirical findings the mini-research projects generated. The abstraction is designed to improve our understanding of developmental processes in the uplands under varying environmental and socio-cultural conditions.

(1) Social Subsystems

The human ecosystem essentially, has two components. One is the biophysical subsystem which consists of the physical and the natural environment. The other is the social subsystem which includes the social units within a human population such as social groups and the patterns of relations between members within a social group.

The social subsystem in the uplands is threatened at presen by dissident groups who have communistic leanings. In area where forests are still available, the problem is real since natura covers (such as the forest) provide the group physical protectior The paper on "The Insurgency And Development Process In Th Uplands: An Analysis of the Lake Balinsasayao Experience" (I Cadeliña), provides information as to how the group survive in a forest area such as Lake Balinsasayao. This problem doe not exist in the other project site in Cangguhub, Mabinay.

While it is true that the anti-government elements (know as the New People's Army or NPA) do not pose a threat to the loc social unit, they have challenged the local social organization in

rectly and subtly; thus, weakening the efficiency of the farmers' social structure in attaining their collective and individual goals. The threat of the NPA on the social subsystem of Lake Balinsasayao in contrast to that of the Ata in Cangguhub, Mabinay, Negros Oriental can be partly explained by the differences in the biophysical environment between Lake Balinsasayao and Cangguhub.

The social subsystems of the lowland migrant farmers in Lake Balinsasayao and the Ata in Cangguhub are not socially closed. They are "open systems" which allow the population to engage in any form of social and economic transaction with the outside groups. Such transaction may involve the use of the resources within the niche of the Lake Balinsasayao and the Ata farmers by outside groups. For survival purposes, the farmers have maintained mechanisms and processes through which their socioeconomic benefits are preserved.

The paper on "Inter-Group Resource Use Patterns In Two Upland Communities in Negros Oriental" (R. Cadeliña) in this volume analyzes the way the Lake Balinsasayao and the Ata farmers provide access for themselves and for other groups to resources that are available within and outside of their ecological zones. Four processes are identified to achieve accessibility of resources to users in Lake Balinsasayao and Cangguhub: (1) complementarity; (2) competition; (3) accommodation; (4) subordination.

> 'Complementarity is a social process whereby conditions, resources and opportunities of different levels are made available to individuals coming from different groups. The philosophy is that resources, goods, or technology that are not available to an individual can be made accessible to him from other groups via one's own other resources."

> "Subordination is a process by which a particular group serves the other with a lesser return. In short, there is a subordinate-superior relationship. Normally, the arrangement is voluntary since there is a pressing need for both ends to establish the relationship."

"Competition is a very subtle process of displacing one from his domain by another through the use of an irresistible medium like money. This usually happens during critical periods."

"Accommodation is a friendly attempt between groups to allow each other to have access to the resources of the respective groups. Such mutual access can take the form of exchange where resources of different nature, qualities and quantities are involved. The exchange process could take various forms like generalized sharing, balanced reciprocity and trading."

Resources in the uplands are generally scarce. Goods and opportunities are very limited that the use of these resources usually lead to inter-individual and inter-group conflict. How the social system of upland population resolves these conflicts and how it handles the problem of scarce resources are questions that are worthwhile exploring in the upland. The paper on "The Politics of Scarce Resources Among the Ata: An Experience Derived From Their Farming Systems Development Projects" (R. Cadeliña), answers these questions. The study reveals that the Ata resolve conflict that emanates from the use of scarce resources on an individual or societal basis. When conflict involves persons who are socially or biologically related, both individuals work hard to resolve their own conflicts. When it involves unrelated individuals who belong to two different social subgroupings, the individuals concerned generally are not in a position to resolve confict. A neutral system such as the traditional political organization, has to serve as the mediator to resolve conflict. This usually involves social punishment whoever is found to be at fault.

On the other hand, the Ata handle the problem of scarce resources through seven different measures: compensatory measures; exchange and trade; population control; generalized sharing; technological shifts and development; reduction of consumption; and mortgage of resources.

(2) *Strategy for Extension*

Given the social subsystem of the farmers in Lake Balinsasayao and Cangguhub, specific extension strategies have been implemented in the two areas. Among the lowland migrant upland farmers of Lake Balinsasayao, extensive use of the community organizing (CO) approach is employed. Among the Ata in Cangguhub, CO approach has not been employed since the Ata, unlike the Lake Balinsasayao farmers, have their own traditional sociopolitical systems. The tradition provides a sense of political organization to the Ata which we do not want to disrupt. On the other hand, since the lowland migrant upland farmers in Lake Balinsasayao do not have any traditional sociopolitical system, there is none that will organize the group into one social unit and no traditional sociopolitical system will be disrupted if CO has been introduced. Hence, CO is a strong initial activity in Lake Balinsasayao.

The paper on "Community Organizing In the Uplands: The Lake Balinsasayao Experience" (R. Cadeliña and V. Dioso), outlines the experiences and the emerging concept of CO in Lake Balinsasayao. Four phases of CO processes are identified. They are the immersion phase, social preparation phase, community organizing proper and organization of work groups. This whole effort has been challenged by the presence of the NPA in the area. The paper on "The Insurgency and Development Process In The Upland: An Analysis of the Lake Balinsasayao Experience" (R. Cadeliña) provides a case under which the efficiency of the CO structure has been weakened. Since the NPA has challenged the social subsystem of the Lake Balinsasayao farmers, the CO input in the area has been threatened. This is expected since the CO input has become an integral part of the social subsystem of Lake Balinsasayao. The paper by Cepeda, Delfin and Ligutom on "Leadership Development: The SURADPU Experience" in this volume finds community leadership in Lake Balinsasayao very weak. This weakness is partly attributed to the presence of the NPA in the area.

All farming systems development inputs in Lake Balinsasayao have been channelled through the CO and all labor costs in the implementation of inputs on the farm have been handled by the

farmers. Since the Lake Balinsasayao farmers have succeeded in storing food, farm developpment has been observed not to compete with their daily food needs.

On the other hand, a different approach was employed for the Ata in Cangguhub. Being traditionally known as hunters and collectors, the Ata have never succeeded in storing food. Hence, getting food constitutes one of their daily activities. Any extended farm development will therefore contradict with their daily food quest. A contractual agroforestry scheme was therefore employed for the Negritos in Cangguhub. The Paper on "Contractual Agroforestry Scheme: An Experience Towards Agroforestry Development Among The Negritos of Central Negros" (R. Cadeliña), provides a detailed analysis of the approach. The issue on alternative approach is further discussed in another paper "Alternative Extension Strategies For Native Population In The Uplands: The Case of the Ata in Cangguhub, Mabinay, Negros Oriental" (R. Cadeliña). The papers claim that under the contest of the Ata, the alternative approaches are appropriate.

(3) *Productivity of farms*

It was initially assumed that if the farming systems devel opment inputs have positive impact on the farming activitie of the cooperators, the farm productivity level of the participant should increase. The increase is assumed to be the result of ef fective nutrients use by plants and controlled pest outbreaks du to the implementation of an appropriate cropping systems an improved soil management in the uplands.

Initial analysis on the effects of soil protection devices an cropping systems on crop production, however, show inconclusiv result in Lake Balinsasayao. The paper on "Production and Cro ping Styles: An Analysis of Results of Intervention On Coope ators and Demo Farms In Lake Balinsasayao" (R. Cadeliña states that "the inclusive evidence concerning the relationshi between total production and the implementation of the soil pr tection devises and the increasing variety of leguminous cro planted on the farm requires further documentation. Intuiti

and common sense, however, suggest that they do, in fact, affect production. Perhaps, since the processes have effects which are long term, the gestation period is not yet long enough to have these effects manifested."

A more recent study, "Productivity Level of Test Farms Under Various Cropping Systems: The case of the Lake Balinsasayao Project" (R. Cadeliña and E. Yrad), however, shows an indication that cropping system has, in fact, affected production. Of the four test farm cases using different cropping styles, one case yields the highest level of production.

In another site in Cangguhub, the effects of rockwalling and cropping systems on the Ata farm production are more conclusive than what we found in Lake Balinsasayao. The paper on "Productivity Changes of the Ata: Effect of Agricultural Intervention on Native Tribal Population" (R. Cadeliña and R. Puracan), concludes that the Ata farms have increased their productivity level by 53% to 55% after rockwalling and appropriate cropping system were introduced. The positive change in production can be attributed to the improvement of the soil condition brought about by rockwalling. As we will see in the later part of this volume, the soil pH and the macronutrient (NPK) content level of the soil of the Ata farms increased after rockwalling was introduced.

4) Marketing

Even under a subsistence farming system in the uplands, the farmers still have to market a portion of their products to derive cash in order to purchase the goods the farmers cannot physically produce. The welfare that the upland farmers derived from farming can therefore be improved if they get an effective marketing system of their products. In places where the farmers have concentrated on the production of vegetables because of the favorable climatic conditions, the more the farmers have to depend largely on the market systems. Vegetables have to be converted into staple product for the daily subsistence of the farmers. To derive substantial welfare from the vegetable products,

the farmers should get a good process of product conversion through the marketing system, a problem true among the Lake Balinsasayao farmers.

The paper by Caluscusan and Fontelo on "A Survey of Sample Farmers on Marketing Practices In Lake Balinsasayao" shows that there is a need among the farmers in the site to develop an efficient marketing system. Returns have been negatively affected by factors such as weather, distance, and peace and order. Distance and weather can bring damage to vegetable products during travel, bringing low prices to their products. Disruption of peace and order can force farmers to dispose of their products at a very cheap price. These problems are inherent in upland communities where forests are still found as we saw earlier. The NPAs generally have occupied these areas in Negros Oriental for consideration of physical protection.

It has been identified by Caluscusan and Fontelo that the farmers do not get an optional price of their products since their customers are generally the middlemen. If the farmers can hit a market largely consisting of the ultimate consumers, they would be able to strike a better price for their products.

A study on "Assisted Marketing Program: An Analysis of Resource Exchange Between a Lowland Academic Community and An Upland Swiddening Population in Negros Oriental, Philippines" (R. Cadeliña), shows that the farmers get an increase in welfare by around 70% if their products were sold in an effective marketing system. Our experience with assisted marketing program for the uplands reveals that through effective information monitoring on prices and getting the right customers who are the ultimate consumers, the farmers get better profit from their products. This can be done by identifying established communities as the target customers without necessarily excluding the outsiders since they add to the total market. In our case, we utilized the academic community of Silliman as the core market of the farmers' products and the surrounding communities as additional markets.

(5) *Health and Nutrition*

The health and nutritional condition of the local population can represent one major indicator of welfare the population may derive from economic development projects. It was therefore initially assumed at the start of the program that any change in health and nutritional condition of the farming population in Lake Balinsasayao and the Ata farmers in Cangguhub during the later dates is caused by SURADPU.

The Study on "Health Condition of Upland Farmers: A Study on the Effects of the Upland Development Program In Lake Balinsasayao" (R. Cadeliña and V. Cadeliña) concludes that the present health condition of the Lake Balinsasayao population is better than five years ago. Although the episode of illness at present tends to be longer, the over-all percentage of illness incidence is lower. The study utilizes two sets of data from a synchronic 1982 study and a diachronic 12-month monthly study from March 1986 to February 1987.

In addition, the paper claims that "there is a consistent pattern revealed using the anthropometric measurements. If ever malnutrition exists, the three measurements consistently show only first degree malnutrition . . . . Nonetheless, the overall health situation is found to be a lot better than that prevailing in 1972. The establishment of SURADPU has improved the level of awareness on the part of the local mothers concerning proper nutrition, prevention of illness, sanitation and family planning."

In 1988, a synchronic study comparing the health condition of the Lake Balinsasayao farmers and the Ata farmers in Cangguhub was conducted. The study on "Morbidity Patterns of Upland Farmers: A Comparative Study Between Lake Balinsasayao and the Ata Population Groups" (R. Cadeliña and V. Cadeliña), concludes that the incidence of illness among the Ata is higher by around 53% to that of the Lake Balinsasayao farmers. This is not surprising since we find more food as revealed in other studies in Lake Balinsasayao than in Cangguhub. Food production is higher in Lake Balinsasayao than what we found among the Ata in Cangguhub.

The study by Fontelo and Lim on "Nutritional Assessment Among the Negrito Families in Cangguhub and Cebuano Families Around Lake Balinsasayao," concludes that recently, Balinsasayao farmers have better nutritional condition and have higher calories available to individual farmers compared to that in 1982. It is claimed that such increase in caloric production is caused by the projects introduced in Lake Balinsasayao.

On the other hand, the Negritos in Cangguhub have access to lower amount of calories compared to that found in Lake Balinsasayao. Such difference empirically supports our earlier claim why we tend to find higher morbidity rate in Cangguhub than that in Lake Balinsasayao.

While it is true that the farming systems development project being introduced to the Ata has improved their production as we mentioned earlier, such increase in production has not yet reached the level or surpassed that of Lake Balinsasayao. We have to remember that the ecosystem of the Ata is more degraded compared to that of the farmers in Lake Balinsasayao.

In order to improve the health condition of the upland population, health services have to be accessible to the population. However, for various reasons, health services are generally absent in the uplands. F. Lozano's paper proposes the training of a barangay health worker (BHW) among residents in the community. Lozano has outlined the manner in which the training will be undertaken in her paper on "A Barangay Health Worker's Training Course For The Upland Development Program In Lake Balinsasayao."

(6) *Lifestyle And Value Systems*

Another aspect of human life that may be affected by development project is the lifestyle of the people and their value system. Value system is directly related to the people's lifestyle. The way people live is affected by the manner they perceive things. The way they live and act are behavioral translations of the people's value systems.

Is there a change in the lifestyle of the farmers around Lake Balinsasayao after SURADPU has been introduced? C. Cadeliña answers this question in her paper on "After SURADPU: Lifestyle of the Lake Balinsasayao Farmers" by utilizing synchronic data on economic and social behavior of the members of the households of farmers from Lake Balinsasayao. Through recall, the respondents are asked to compare saving and consumption patterns, material acquisition, expenses for services, utilization and distribution of goods and services, and social and cultural involvement between the two periods — before and after SURADPU. The study reveals changes in some of these areas compared.

The changes in the lifestyle of the Lake Balinsasayao farmers are coupled with a value system that put premium on things that are higher than the basic need for food. A study by B. Abregana on "Things of Importance: What Marginalized Farmers in Selected Sites in Negros Oriental Are Concerned With," concludes that the Lake Balinsasayao farmers are concerned with issues higher than that with the Ata in Cangguhub are concerned about. The ability of the Lake Balinsasayao farmers to be more successful than the Ata in food production allows the former to think on issues that are on a higher plane than what the Ata can afford to think about. Such improved value system of the Lake Balinsasayao farmers has led to a lifestyle relatively different from what they have before the implementation of SURADPU.

Biophysical Subsystem

Finally, one important question has to be asked: "Has the farming systems development effort improved the biophysical subsystem of the farms of the Lake Balinsasayao and the Ata farmers in Cangguhub?" Since SURADPU used the farm system of a household as the point of entry for the program, the effects of the program should be manifested by some improvements in the plant life support system from the soil.

A study by R. Pa-alan and A. Cadeliña in this volume on "Soil Nutrients From Different Successional Stages In Lake Balinsasayao," shows that the pH and the macro nutrient value

of the soil under various cultivation stages with soil conservation measures introduced have an increasing value almost similar to that of the soil under primary forest. The study concludes that the farmers need not shift farm plots from one site to another if they follow the appropriate farming systems introduced by SURADPU.

In another site where soil degradation has already reached an advanced stage, a study on the "Effects of Contoured Rockwalls on Soils: The Ata Experience" (R. Cadeliña and R. Puracan), indicates a positive change on pH and macronutrient reading of soils.

EMERGING EXPERIENCE

The human ecology perspective provides an appropriate philosophy in organizing our efforts toward developing upland communities. SURADPU, as a development package for the island of Negros Oriental, allows us to see the interfacing of two subsystems in a human ecosystem. We see how the social subsystem interrelates with the biophysical subsystem and vice versa from which various socioeconomic results have been generated. Results are depicted in various areas or issues, such as productivity, marketing, health and nutrition, and the life-style and value systems. These results are found not to be isolated from each other but highly interrelated, thus, affecting each other. The data demonstrate positive changes on these results, indicating success of SURADPU in achieving its general goals. Forest protection and forest conservation as its indirect objectives appear to be realized. The remaining forest cover has stood within the reasonable limits of our expectation. In 1987, a group of physical science researchers had indicated only around 25% of the total watershed area of Lake Balinsasayao to be deforested—very much lower than what we anticipated.

The peculiar physical nature of most upland communities has provided opportunities for the NPA's existence in the area and to challenge and threaten the viability of the social subsystem in the uplands. Such condition has negatively affected

social subsystem in the area to optimize the implementation of development efforts. Under such circumstances, SURADPU has tried to maintain neutrality with the NPA and the military. Nevertheless, such position does not improve the iffeciency of community organization.

The efficiency of a particular strategy in bringing the benefits of development to the farmers depends on the sociocultural context of the clientele population. Community Organization (CO) approach appears to be effective for farmers who do not have any traditional sociopolitical system. On the other hand, household level approach appears to be more effective among tribal population possessing traditional sociopolitical structure such as the Atta. This therefore suggests that CO should not necessarily be considered as a prerequisite for a successful development effort. As defined in this paper, CO is a deliberate effort of creating a social structure in the community through which extension services are channeled.

The nature of development program determines whether CO is necessary or not. Farming systems development which is largely implemented on a household level can be appropriately introduced without any CO processes. Other projects, however, such as cooperatives, require CO as the backbone. This suggests therefore that any development worker will have to consider whether CO is required or not; and also to consider the nature of the project and the sociocultural nature of the people involved.

Development strategy has to take into account the social subsystem and the biophysical subsystem as well. Prioritizing of development activities requires careful assessment of the two interacting subsystem of the human ecosystem. For instance, soil conservation and regeneration should take precedence over cropping systems in a condition where soil degeneration has reached an advanced stage. Cropping systems development is meaningless in a highly eroded farm lands. Plant support from the soil has to be assured before new planting systems are introduced. Otherwise, soil conservation can be introduced simultaneously with cropping systems development or even later. This is possi-

ble, since in a place where topsoil is still relatively intact, plant life support system from the soil is still available. We saw this from our Lake Balinsasayao and Cangguhub experiences.

A rigid blueprint for development in the uplands is meaningless. Our experience shows that development design has to be resilient for adjustments and modifications. The human ecology perspective employed by SURADPU allows such adjustments and modifications in our priorities for services and activities.