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AGROECOSYSTEM MANAGEMENT POLICY  
SEMINAR WORKSHOP  
Asian Institute of Tourism  
Diliman, Quezon City  
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REPORT OF THE WORKSHOP

## INTRODUCTION

Development activities may result not only to intended direct benefits but also frequently to unplanned and/or delayed effects, beneficial or adverse on society. Along this context, the Bicol Integrated Area Development (BIAD) III (Rinconada/Buhi-Lalo) Project is a case in point.

In 1979, an agreement was made between the Republic of the Philippines and the US Agency for International Development (USAID) to implement BIAD III. The project forms part of a larger strategy of developing the resources of Bicol River Basin to improve the rural poor's quality of life. Well-meaning objectives are increasing agricultural productivity and employment opportunities, increasing farmers participation in development activities affecting them, and reversing the deterioration of upland watershed areas. Major components of the project are the construction of the Hydraulic Control Structure (HCS) at the outlet of Lake Buhi, channelisation of Tabao River outlet together with various irrigation works, the development of Irrigators Associations in the service area, and in the watershed, a variety of soil conservation measures based on agro-forestry practices.

The lead implementing agencies are NIA and BfD with BRBDP which is charged with the overall responsibility of coordinating development in the Bicol River Basin.

Despite these well-meaning goals, temporary as well as permanent problems associated with the Hydraulic Control

Structure operation surfaced in 1985 when the projects were nearing completion. (Full report in: The Agroecosystems of Buhi: Problems and Opportunities. PESAM-BPBDP Publication. January 1986).

In response to complaints from the inhabitants of the municipality, a multidisciplinary and multisectoral workshop was held last November, 1985, in Naga City, to discuss the problem and to identify a program of research and development which would lead to satisfactory solutions.

To keep the momentum of that workshop going and put more action to the proposed program of research and development, a follow-up workshop was held on July 8, 1986 at the Asian Institute of Tourism, Quezon City. This time the participants were policy/decision makers and planners of line agencies involved in development project planning and implementation; area development project directors; representatives of sectoral groups (farmers and fishermen) and non-government organizations; and representatives of funding agencies. This paper reports the outcome of that workshop.

#### OBJECTIVES

The follow-up workshop was aimed to achieve the following objectives:

- i. To provide an opportunity for policy makers and planners to gain an understanding of the problems and opportunities related to the multiple use of Buhi agroecosystems; Watershed, Lake, Tabao River, and Service Area.

2. To identify strategies and plan of actions for the implementation of prioritized research and development agenda as approved in the Naga workshop.
3. To introduce agroecosystems analysis methodology as an input to development planning and implementation, and demonstrate its applicability to other rural development projects in the country.

#### TARGET PARTICIPANTS

The list of participants is found in Appendix 1. There were 61 participants which include planners and decision makers, executive officers of area development projects, representatives from local government, NGOs, and funding agencies.

#### GENERAL PROCEDURE

The activities during the workshop are outlined in the Program (Appendix 3). The workshop started in the morning with the welcome address by Dep. Minister Jose Medina, Jr. who reviewed the development of approaches to rural and regional development. He concluded that a more analytical procedure would be needed to get a clearer understanding of the problems and opportunities associated with rural and regional development.

This was followed by the opening remarks of Deputy Minister Sarraga of MNR whose speech was read by Assistant Minister Leong. Director Robredo of BRBDP explained the background and overview of the workshop.

At the beginning of the workshop, each participant was given a copy of the proceeding in book form of the Naga workshop on "The Agroecosystem of Buhi: Problems and Opportunities." This book which serves as a guide throughout the workshop proved very useful in the succeeding discussions on agroecosystem analysis technique by Dr. Conway and the case presentations of Buhi agroecosystems by four PESAM staff.

In the afternoon, key issues in Buhi were summarized and this was followed by a panel discussion. The panel subjected the key issues to a more thorough discussion and proposed a plan of actions for implementation after the workshop. The plan of actions was also discussed during the open forum and approved by the body for implementation.

The other panel discussion in the afternoon focussed on agroecosystem analysis as a tool for planning rural and regional development. This was also followed by an open forum in which a plan of action at the policy level was also proposed.

The workshop ended with a wrap-up by Dir. Oñaño and a closing remarks by Exec. Dir. Limacaoco of NACIAD.

## HIGHLIGHTS OF THE WORKSHOP

The panel discussions and the open forum that followed them contributed much toward achieving the objectives of the workshop. Commitments were made by some agencies to help resolve critical issues related to the multiple use of the Lake Buhi and its watershed. The following is the summary of the results of the workshop.

1. The speeches of deputy ministers generally recognized that people beneficiaries should be involved right at the very start of any development planning so that their inputs could be considered.
2. There was general consensus for a need to organize a council that would involve the line agencies, local official and the beneficiaries of Lake Buhi. This council will make sound decisions on the use of lake water and how this resource should be best allocated to different users (e.g. irrigation, fishing and power generation).
3. Director Robredo of BRBDP suggested a name for the council as "Rinconada Resource Development Council." The creation of the Council was strongly recommended by the participants. Dir. Robredo promised to organize it as soon as possible.
4. A need for a Task Force whose job is simply to monitor the progress of implementation of prioritized problems of research and development for Buhi agroecosystem in the

project level as well as in the national level was firmly established<sup>1</sup>.

5. Complementary to the creation of Task Force would be the putting up of a newsletter which could come up every two or three months to record what has happened in terms of research, results of development actions, what agreements have been made, what has happened in Buhi and so forth and so on. Dr. Conway volunteered that if somebody would publish it he would try to find some money to fund it. He noted that UPLB is good in producing newsletter.
6. It was recommended that NIA should finish its optimization model for the use of Lake Buhi Water.
7. Engr. V.F. Brusas of BIAD III promised that the lake water level would be maintained at 82 m this year.
8. Engr. V.F. Brusas also informed the body that a hanging bridge is being put up across Tabao River and it will be finished by September.
9. Mayor Villadares suggested that the local government of Buhi should chair the body that will manage Buhi Lake as a multipurpose resource. No objection to this was raised from the floor.
10. There was a recognition on the relevance of agroecosystem analysis in rural and regional development planning, but to institutionalize it in planning officer such as NEDA and NACIAD would require more exposure for

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<sup>1</sup>Dir. Robredo promised to organize the Task Force which would include, among other agencies, PESAM of UPLB.

these offices to the procedure than what was given in the workshop. Perhaps, a special seminar on the methodology for these offices might be appropriate.

11. It was agreed in the workshop that the key questions for research and development of Buhi agroecosystem be referred to an appropriate agency for resolution or action. The agencies identified for a particular issue are as follows:

<u>ISSUES</u>	<u>AGENCY</u>
<u>Buhi Systems</u>	
1. Satisfactory minimum lake level	NIA, BLG
<u>Watershed</u>	
1. Sustainable watershed productivity	BFD, PESAM
2. Impacts of access road	MPWH, PESAM
3. Tenurial conflicts	MAR
<u>Lake Buhi</u>	
1. Costs/benefits of maximum - minimum lake level	BFD, BFAR
2. Sustainable lake productivity	BFAR, PESAM
3. Effective Lake Buhi management	BRUDP
4. Domestic water supply	BRBDP
5. Drawdown effect on fish cages	BFAR

Tabao River.

- |                                       |            |
|---------------------------------------|------------|
| 1. Earth fill dam                     | MPWH       |
| 2. Benefit of filling Tabao River     | NIA        |
| 3. Traditional fishing and fish cages | BFAR/BRBDP |
| 4. Access bridge                      | NIA, MPWH  |
| 5. Tenurial conflicts                 | MAR        |
| 6. <u>Sinarapan</u>                   | BFAR       |

Lower Lalo.

- |                    |          |
|--------------------|----------|
| 1. Crop management | MAF, NIA |
|--------------------|----------|

## ADDRESSES

WELCOME ADDRESS  
Deputy Minister Jose Medina, Jr.  
Ministry of Agrarian Reform

The general immediate policy goal of the new government is to achieve economic recovery through productivity enhancement and improved equitable access to resources.

Agriculture and rural development play a priority and significant role in development programs and projects.

Historically this has been the case, perhaps in a lesser magnitude compared to industrialization which had been the pillars of the past government. Although balanced agro-industrial program had been emphasized, as a whole the agricultural and rural development suffered from this policy, and above the agricultural sector was made to subsidize the industrial projects.

All of these point to the invaluable role which strategies to agricultural and rural development will play for the country's survival, growth and development in the near future.

The Philippine experience in ARD strategies started with sectoral approach oriented towards increasing the productivity of particular commodities such as the Green Revolution package.

An accompanying strategy in targeting the commodities rice and corn was land reform which was intensively pursued.

What followed next was multisectoral approach which considered not only agricultural productivity enhancement but also calls on the provision of support services such as credit, infrastructure, marketing facilities, etc.

Still the approach was not sufficient in improving rural income even as improvement in production proved doubtful in many cases. In fact the approach to some extent resulted to undesirable impacts such as foreign dependency and environmental degradation, e.g. soil erosion, agricultural pollution, pest and diseases outbreak to name a few.

Given this situation, the integrated rural development approach was adopted to correct some of the limitations of the earlier approaches. The IRD included other components such as social services delivery which are believed to support increasing productivity.

The need to strengthen intra-regional linkages and structures has overshadowed IRD and paved the way for the recognition of a newer approach such as the Integrated Area Development. The IAD approach performs better in terms of increasing productivity and income but it has not addressed the issues of equitability and sustainability of the production system. There are environmental problems which have been recognized as major constraints in increasing productivity and improving income.

What can be learned from this historical overview is that we focused largely on the productivity issue in the past. While dramatic productivity level has been achieved, the stability and sustainability of such achievements have remained questionable. Aside from this the issue of equitability has not been considered.

Therefore, there is a need to find a more analytical procedure which would improve our IAD approach to regional development in term of a clearer understanding of the problem and opportunities for rural communities.

This seminar workshop was organized as a follow-up to the November 1985 workshop in Naga City wherein the complex problems of Rinconada/Buhi-Lalo Integrated Development area were identified and prioritized, by a multisectoral and multidisciplinary participants using the framework of agroecosystem analysis technique. This time, however, our participants are policy/decision makers and planners of line ministries and other agencies directly involved in Buhi/Lalo IAD and representatives from other IAD's in the country. We are hoping that, at the end of the day, our participants shall have realized the concept of agroecosystem analysis technique and its potential application to other development projects in the country and shall have identified the implementation strategies of prioritized issue/problems that came out during the Buhi workshop last November follow-up action.

And so with this note, I would like to express, in behalf of PESAM and NACIAD our warm welcome to each of you. We hope your day is fruitful and pleasant.

OPENING REMARKS  
Deputy Minister Dante P. Sarraga  
Ministry of Natural Resources  
(Delivered by Asst. Minister Benjamin T. Leong)

The ecological problems that beset our country at present are of such magnitude that the President herself has made environmental management a priority of the new government. The legacy of the past regime's wanton disregard for nature resulted to - denuded forests, eroded topsoil, silted croplands, polluted rivers, dying lakes - has led an upland farmer from Buhi to say that "Today, we have only tears to yearn for the return of lost bounties."

Indeed, we are disappointed that we have lost so much natural resources in so short a time. But there is renewed hope that the new Aquino administration is serious about rectifying the situation.

The Ministry of Natural Resources is responding to this need to put things right. We have adopted the twin policy thrusts of resources development and conservation in order to provide access to natural resources for the greatest number of people, now and in the future.

Development focuses on the mobilization of natural resources for the upliftment of the socio-economic conditions of the poor majority. It is an established fact that 70% of all Filipino households are dependent on agriculture, while two-thirds of the population live below the poverty line. About 14 million of our people subsist on the resources found in our uplands. It is to these sectors of society that the MNR addresses its programs.

Conservation, on the other hand, concentrates on the programmed utilization of stock resources, systematic restoration of renewable resources, maintenance of a wholesome environment, and the inculcation of conservation consciousness in the general public. Through intensified reforestation efforts, the MNR hopes to eclipse the 100,000 hectare annual denudation rate of our forests, protect the remaining 2.2 million hectares of virgin forests that we have left, and rehabilitate our 37 watersheds, 15 of which have become critical.

It is therefore a welcome opportunity when a new management concept comes up that effectively combines development with conservation.

Lake Buhi, its uplands and watersheds, is a good venue for testing agroecosystem analysis as a tool for comprehending the problems and opportunities for rural development. I understand that there are 1,655 families in the lake Buhi watershed area, and 90% of its uplands are tenanted. With its 3% yearly increase in population, Lake Buhi could very well be a typical Philippine rural setting.

We are most interested in the results of the case study on Buhi. It is the responsibility of every development project planner to carefully weigh the benefits of his proposal vis-a-vis its harmful effects on the environment. With agroecosystem analysis providing a comprehensive background, project planners could easily achieve that state of harmony between development and conservation of which the American naturalist ALDO LEOPOLD spoke.

In welcoming you to this seminar-workshop, I would like to stress that the key to effective resource development and conservation is responsible stewardship. And stewardship entails individual responsibility. By devoting to the entire environment such care as each of us might give to his own patrimony, every small effort could be made to count, and in the end, tip the balance in favor of mother nature.

Thank you and good day.

## BACKGROUND AND OVERVIEW OF WORKSHOP

JESSE ROBREDO  
Director  
Bicol River Basin Development Program

Twelve years ago, the BRBDP was established to pilot test for the national government. The concept of integrated area development as a strategy is to enhance the socio-economic growth of depressed areas.

Goal of the program is a better quality of life for the people which it hopes to achieve—improved productivity and income, more equitable distribution of wealth, more employment opportunities, and improved health, nutrition and environmental quality. As a part of its strategy, the program enlisted the participation and involvement of all sectors concerned in planning and development efforts to make them the partners in the undertaking. Basically, the BRBDP is a test of the bottom to top planning strategy, designed to strengthen the foundation, not only of the agricultural sector of the economy but also other related endeavors what the resource is considered essential. In fact, during the early developmental activities of the program, water resource development was given the priority. One of the projects was the Rinconada Buhi/Lalo Irrigation Development project. This project was conceptualized in 1979 and was partly financed by the USAID with the total of P38 million.

The project has 2 major components, watershed development and irrigation development. The watershed component is presently 94% complete while the irrigation component was targeted for

completion by December 1986. A sub-component of the irrigation project is the construction of a control structure at the outlet of the Lake at Tabao River to control water allocation for the different users. During project construction, the target beneficiaries' response were overwhelming, formation of irrigators association and securing of right of way were easily facilitated. Upon operation of the system, rice production increase from 45 to 90 cavans per hectare per cropping season. Today, about P46 Million have been spent for the structure in the irrigation system. There was however one major hitch—the feasibility study done by ARBOP during that time did not pursue the emergence of fish cage technology in the lake area as a major factor to consider. As far as water allocation is concern, the new fish cage technology which incidentally had gain unprecedented popularity among the Buhinons now possess an anti-problem. Also flooding of rice land occurs during the maximum operation of the control structure while wells dried up in summer. On the other hand, the fishing ground on the lake are also affected in the drawdown when the water reaches the minimum level. The people of the Buhi therefore, express alarm over the unexpected developments. Hence, the first regional agroecosystem workshop was convened late last year to identify possible solution to the problem. Today, with the assistance of USAID and PESHAM, these national Agroecosystem Workshop aims to provide our policymakers with sufficient insights of the Buhi case. The workshop intends to elicit response from

policymakers, regarding the Lake Buhi exercise and to recommend the adoption of the agroecosystem management policy by concerned agencies. We believe that what we have here in Buhi, may well serve as guide post for other agroecosystem projects in the country. In the name of development, we again find ourselves in a rather ironic situation - the target beneficiaries are the very ones suffering from the negative impact of our development trust. Let us therefore join hands in rectifying the situation, the people of Buhi are backing on us. Thank you.

CLOSING REMARKS  
Executive Director J. Andres Limcauco  
National Council on Integrated Area Development

I am pleased to note that the distinguished participants to this important seminar-workshop share the interest and enthusiasm which we at NACIAD have towards the development of an effective agroecosystem management in rural development.

You may wonder why a multisectoral agency like NACIAD whose projects are mostly identified with the agriculture and infrastructure sectors seems so immersed with this science and art of environmental planning and management. You may also want to know why NACIAD is so interested in an endeavor which has sometimes been considered as merely incidental in many development projects of the government.

The answers to these questions are perhaps simple but nonetheless relevant to NACIAD's commitment to the pursuit of sound environmental management. For one, our agency has realized even in its early years of operation, the importance of environmental protection as part of major development programs, particularly those that exploit natural resources. For another, we at NACIAD recognize the importance of sustaining and preserving the country's natural resources which can only come about through environmental protection and conservation strategies. This is why NACIAD has conscientiously integrated ecological dimensions into its regular program of activities. Examples of these activities are evident in both our ongoing and pipeline projects.

Perhaps what may be considered as an IAD showcase in environmental protection is the integrated environmental project, adopted by the Palawan Integrated Area Development Program, which focuses on the efficient use and conservation of natural resources. This environmental project includes activities such as the inventory of flora and fauna to enable the formulation of a strategy that will conserve and protect these resources from exploitation.

The Mindoro Integrated Rural Development Project which was started in 1975 includes watershed protection as one of its seven major project components. To date, the project which is implemented by the Bureau of Forest Development, has established the critical watershed facilities and is instrumental in the cancellation of timber licenses covering an area of 18 thousand hectares thereby preserving forest reserves in the area.

In the Bicol River Basin Development Program, watershed development and management projects are implemented in the Buhi-Lalo and Rincondada areas. These involve activities such as erosion control, soil conservation and agroforestation.

We have realized in recent years however that while we have intensified upland and lowland environmental measures, we seemed to have neglected the lake ecosystem. Having come to this realization, it has been the policy of NACIAD since last year to review and assess the impact of our development programs with regards to the environment.

In November 1985, the Bicol River Basin Development Program (BRBDP) and the UPLB Program on Environmental Science and Management (PESAM), supported by the United States Agency for International Development, conducted the Buhi Agroecosystem Analysis Workshop, hoping to find solutions to the environmental problems that had arisen in that particular project area. The workshop, was conducted not only for the benefit of the people immediately affected by the environmental problem, but more importantly for its national significance. It was hoped that the agroecosystem methodology used, if proven successful, will be adopted in other project areas, and wherever it will be feasible. The results I am sure have been thoroughly discussed in this workshop.

The NACIAD is now looking closely at efforts that will assure the effective implementation of environmental management among its ongoing projects. This measure will safeguard unintended effects of IAD projects to the ecosystem. In its pipeline projects, NACIAD has likewise incorporated environmental aspects in its plans. We have so far prepared environmental profiles for the provinces of Pangasinan, Cavite and Batangas. Development plans for Cordillera, Aurora and Antique have also incorporated ecological dimensions in their respective programmed activities. Complementary to these, NACIAD is also conducting a continuous review of environmental policy issues. Since 1932, we have been conducting researches on the carrying capacity of land. Related to this, we are also involved in the integration of population in environmental conservation under

NEDA. NACIAD has also tied up with the National Environmental Protection Council on Environmental profiling. Also being arranged is the possible collaboration with the International Development and Research Center (IDRC) for an action-oriented research project which will improve the water supply of upland communities.

As part of our commitment to the pursuit of a sound environmental management, we have developed an in-house capability for environmental planning and management, ably assisted by local and foreign consultants.

Through the Buhi Agroecosystem Analysis Workshop which I understand, you have used today as a case study, you have been made to see how a well-meaning development project could generate unintended and adverse effects on its targetted beneficiaries all because of some conflicts arising from interacting agroecosystems. This emerging phenomenon has given us vital lessons which we as government planners and policy makers, cannot afford to ignore. It is my hope that the lessons learned and shared, the strategies you identified, and the policies you have discussed will materialize into more concrete proposals for adoption by your respective agencies.

On this note, may I thank PESAM and the London Imperial College for their joint effort of developing the agroecosystem analysis which we have applied as another important tool for understanding the problems and opportunities in integrated rural development. May I also thank the BRBDP for its cooperation

and the USAID which has been a generous supporter to these activities as exemplified in the Buhi workshop. It is our hope that other development institutions will take the cue so that similar exercises can continue. May I also thank the distinguished participants to this workshop for sharing their ideas, experiences and expertise.

Given the concerns aired by this forum this morning, I would like to reiterate that NACIAD will do its best to undertake environmental programs that are responsibly implemented and of course, people-oriented.

I am most optimistic that key government officials, policy-makers and experts spearheaded by the participants to this workshop will all work for the adoption and institutionalization of this agroecosystem management policy with utmost urgency.

Thank you and good day.

## SUMMARY OF ANALYSIS

ENRIQUE P. PACARDO

The Buhi Agroecosystems is a complex system of interacting components consisting of the upper watershed, the Lake Area, the Tabao Area and Irrigation Service Area. Such interaction may be characterized by the flow of materials and energy which, if left alone without man's intervention as in the old days, might attain a steady state condition. This is not the case at present, however, with its high and still increasing population the demand for limited resources has resulted to competition and exploitation in some instances.

Conflicting use of natural resources plus the putting up of infrastructures with the goal of "improving the socio-economic situations and quality of life of the poor" with little prior consideration to their environmental impacts, have led to effects some of which are detrimental to the population themselves. The impacts have created problems some of which are temporary but others are permanent. The temporary problems are flooding of rice field and drying out of fish cages.

The more permanent problems are:

1. Drying of groundwater wells
2. Drying up of dock at poblacion
3. Periodic drying of fish cages
4. Decline water quality
5. Erosion and sedimentation
6. Declining yields on Mt. Asug

The Buhi agroecosystems analysis held in November and participated by multisectoral and multidisciplinary group of citizens many of whom are directly involved in the conflict, provided a forum where many of these problems were discussed and mediated. The results of the analysis are key questions for research and development. The top priority questions are as follows:

A. The Buhi Systems As a Whole

1. How can a satisfactory minimum lake level (81.7 m) be maintained throughout the year, or at least be guaranteed up to the end of May?

B. Buhi Watershed

1. What is the maximum sustainable productivity of the watershed area?
2. What will be the overall consequences for the productivity, stability, sustainability and equitability of building an access road around the lake?
3. What government policy should be adopted to settle tenurial conflicts and human settlement problems in the Buhi Watershed?

C. Lake Buhi

1. What are the socio-economic costs and benefits that would accrue to the lakeside inhabitants at the minimum and maximum elevations of the lake water (79.65, 83.5, and 85 m a.s.l.)?

2. What is the maximum sustained yield of fisheries and subsequent fishing efforts that can be carried by the lake?
3. How can lake Buhi be managed effectively as a multipurpose resource?
4. What is the possible future water supply for people whose groundwater sources have dried up?
5. How can help be provided to fishermen whose fish cages have been affected by the drawdown?

D. Tabao River

1. How effective is the earth fill dam at the old Tabao River for water impoundment and as a means of transport?
2. Will filling-up of the old Tabao River be beneficial to the people of Buhi?
3. Will traditional fishing and fish caging be viable in the Tabao channel with the operation of the Buhi Lalo Project?
4. How is access for people across the west side of the Tabao River to be improved?
5. What government policy should be adopted to settle tenure conflicts and human settlement problems in the Tabao channel system?
6. How can sinarapan be maintained in the lakelets in the upland of the Tabao River system?

E. Lower Lalo

1. What improvements in crop management can increase the productivity and sustainability of irrigated rice farm?

EXCERPT FROM THE OPEN FORUM

## OPEN FORUM (MORNING SESSION)

Q. With the construction of a dam in Lake Buhi, do we have knowledge on the rate of siltation of Lake Buhi? This question is being raised because it has something to do with the life span of the lake itself.

A. No data on the matter. But this is a good area for research.

Q. What is being done to minimize soil erosion?

A. BRBDP introduces terracing technology and building of gabions.

Suggestion: Part of irrigation fee should be put in a trust fund for soil conservation strategies projects.

Q. 1. Did the group try to study population dynamics and distribution/migration?

2. Also, explain further sustainability and stability. Viewed on economic terms, these two are similar.  
(C. Cabrido)

A. 1. Again this is an area for research. A proposal on upland-lowland migration has been prepared.

Q. Problems arise from man's intervention. If man would only follow laws of nature... Now, land ownership/tenural arrangements affect conservation efforts. Owners of land tend to preserve agroecosystems.

The issue therefore is: What is the best tenure arrangement?

The same is true in the lake area. Fishcages have higher catch but only so much fish cages can be accommodated.

Otherwise, there will be overcrowding and adverse effects on transport route.

- A. 1. BFAR should give exact area allotted for fish cages...  
The next question is who would finance key projects and when do these projects start? (Mayor Mercurio)
2. BRBDP is accepting responsibility (Dir. Robredo)
3. Equitability of access to resources is as important as equitability of benefits (Conway)
4. The proposed fish sanctuary is already crammed with fish cages. Logging is rampant. But going to BFAR and BFD is just like going through a wall. (OIC Villadares)

PANEL DISCUSSION: BUHI AGROECOSYSTEM (AFTERNOON SESSION)

Dir. Robredo

1. A beneficiary action team has been organized.
2. Irrigation should be given priority.

Engr. Brusas

1. For 1986, Buhi can irrigate more than 50% of area intended for irrigation.
2. Lake water level is being maintained at 82 meters.
3. We propose a MOA be signed by agencies concerned specifying maximum and minimum water level of the lake for each month.
4. How effective is the earth dam in Tabao River for water impoundment and transport? After 3 years, the dam replaced the bridge. There is no sign of failure of the dam.
5. A hanging bridge is being put up over Tabao River. It should be ready by September.

Mayor Villadares

1. There is already money released for an access road around the lake. It will improve the socio-economic conditions and peace and order situation. Also, tourism may improve.
2. The local government should chair the body managing Buhi Lake as a multipurpose resource.
3. Lake Katugday needs to be re-stocked with sinarapan.

Mayor Mercurio

1. People insist water drawdown at 87 m.
2. From March to October, water drawdown is around 81.53, all below the agreed 87 m. We don't have to experiment on lower levels. Otherwise people would again complain.
3. Infrastructure in Baao and Bula should be suspended.
4. How far down is the excavation in Tabao River?  
(Engr. Brusas replied 80 meters)  
  
The promise of below 81 has been violated. This statement is made for the record.
5. Iriga City desires Itbog Falls as a source of water. But many barangays right in Buhi are water starved.

Cabrido

- We should send the key questions for thorough, intensive study to concerned agency(ies).

CARDENAS - CONCEPCION - TALISAYON PANEL DISCUSSIONTalisayon:

1. It makes sense to create the Rinconada Resource Development Council.
2. Feasibility can be studied by academicians but urgency has to be determined by the people.
3. Decisions needed include how much the farmers will gain from irrigation and how much the fish cages will lose. If we can reduce this to peso values, the better. The computer model should be upgraded to generate data on social benefits/cost analysis.
4. I suggest the following:
  1. Research denote on information generation for good decision making.
  2. BRBDP should strengthen its clout. If the military is needed, ask their help.

Concepcion:

1. Let us consider spatial coherence of information.
2. Aspirations of the people must be understood. What is their level of satisfaction?
3. What is the area of integration? The lake? The watershed?
4. Where lies the problem? The data generated should be geared on this.
5. The methodology should focus on the uplands.

Cardenas:

1. Agroecosystem analysis requires interdisciplinary approach.
2. What optimum mix is best for Lake Buhi as a multipurpose resource?
3. Agroecosystem analysis should be applied at early stage of development. It should be welcomed now that options are still open.
3. Agroecosystem analysis is quick and clean, simple and scientific. For institutionalization, it could be brought to NEDA as well as NACIAD for consideration. Nevertheless, institutionalization can start at the grassroots.

Dr. Catalan

One of the things that I have always fought for is the prioritization of the multiple uses. Maybe this can be based on seasonal changes. For instance during the summer time, there maybe one sector which would be more important than the others. But there is really a need for prioritization of multiple uses. And also, one of the experiences that has been observed among the utilization of resources in the Philippines is, that at the end the people living around the area, the resource, is the last group of people that benefit from the resource. And I had seen this in Lake Buhi wherein we wish to satisfy the irrigation requirement in Lalo Area at the expense, it seems it was done, at the expense of the fishermen around Lake Buhi. So, I think I just want to air their comments but really I had lost track of the what has happened because I had transferred to another unit and I just wanted to raise those questions.

Dr. Conway

Can I just make two or three points in response to what has been said. I like to first say that how much I agree with Dr. Talisayon's point that the most crucial factor is generating the right kind of decision on environment, it might be that this lake development council is the right thing to do. My only comment is when it gets in critical issues, it must

rely on facts and its finding the right kind of facts. We've seen this very clearly in terms of the lake level that is required. If you don't have enough facts then everybody shouts at each other even though you got the decision making form. You get decisions and you get shouted and so the tricky thing for me is to create the right kind of decision making form and to generate the most appropriate facts for your decision making form and only those facts and not the whole valley as well, that's the tricky thing that we had to do.

Second point I would like to make. There were quite a lot of discussion this afternoon on maximum sustainable yields, optimum land use, optimum allocation of resources and so on. And I think these are important concepts with important goals. And one of the dangers is that you can generate a research program to decide on an optimum and then you finally publish the optimum, and about 6 months later the optimum shifted. And so all the time we are racing on optimum that's moving. And one of the most difficult thing is how do you do that. How do you keep racing this optimum and I think we still don't have answers to that. Traditional cost benefit analysis, traditional land use planning, tend to be relatively slow and tend to as were always logged behind the real optimum that there is. And I think that's an important research goal.

Third, somebody has suggested to me a very good idea. And I want to suggest this idea. You see, if we can take up, and it is, it could be very useful, if we could have a

Buhi newsletter which could come up, every 2 or 3 months or something like that which simply record what has happened in terms of the result of the research, the results of the development actions, what agreements had been made, what has happened in Buhi and so on and so forth. I don't think it takes a lot of work, I don't think it will take 2 or 3 pages and perhaps someday we could produce that. I know that UPLB is very good in producing newsletter, maybe they should. If somebody would like to produce it, I will go and try to find some money for it.

Dr. Talisayon

It is true that we need facts and that is the situation in the Philippines. We need facts and the right facts to make decisions, and in addition to that, we had some sad experiences like the Chico River Dam. And this is not only a matter of insufficient facts, but inadequate scope of participation. We don't want just engineer looking at the project. We would like for example an anthropological, sociological would also be involved, which is the beauty of this method. You assure that all disciplines are involved. You know, if you send a civil engineer in the area, he will not be able to see much else except the contour, the stream flow and I mean all those physical things and he was trained to do it. And so it is really an error of properly defining the system. So an error of viewpoint - and if the decision making and planning would had been more multidisciplinary or the scope of

participation is larger and certainly will also include the people - beneficiaries in the local level as part of the participation, then we will be avoiding disasters.

The other point is on the model building and how useful a model should be and how could this model be needed to address to even seasonal changes in priority as Zeny has mentioned. If I were to construct a model of the Rinconada area, the simplest I would try is a water balance model which incorporates the watershed all down to Lake Bato. Of course the inputs will be rainfall and then water level at the two lakes, streamflow or some key points. And it must be very simple so that this model could predict and simulate what are the results of certain actions at the level of the engineer or whoever is assigned to man the loose gate. For example if the gate is open so much, what is the results? And let's say if rainfall is so much only for the x- months, what is the result? I think it is good to construct a rather simple water balance model. That will be useful not only to people in Los Baños but the engineers down below. And with this model one could predict and even use this model for scheduling problems depending on the contingency at the moment whatever is the rainfall and the available water at the moment. I don't know what is the computer model that you are thinking about, but this is one area that I am referring to. This model could be upgraded rather easily to a social benefit costing so that you can compute benefits each time you just input rice price

prevailing in that given point in time and so on. You know, prices fluctuate so that it could also be one of the variables that the model can allow for. This is just a suggestion.

Bridgs Jaime (NEDA)

- institutionalization of the agroecosystem as a tool for planning.
- reflect the ignorance of people like me to this new field as far as planning is concerned.

Since we had to address this institutionalization, my question is that the new strategy method Dr. Cardenas here mentioned as actually a simple quick tool, where in fact, the impression I got after the presentation where we got all the list of researches we have to do to be able to make decisions, I said, my God! so much research work, so much survey data gathering, so much talk. And thus you say so much clean and simple. And so maybe the thing for us who are ignorant, we have to be clarified as to what existing tools do you have if you have models, what existing data base are available. What theoretical frameworks hypothetical or could be held available to planners that they can use at this time and what is its utility at this point in time, beyond that you have to tell us what are the gaps and what are to be done. I think that would be a first step to be able to get planners to see how this can be institutionalized and this time, with existing data base, how far can we go and how much more needs to be done?

Dr. Cardenas

There are certain advantages of the agroecosystem analysis which I have mentioned earlier but there are also weaknesses which probably I should not tell first but we know it's simple because within the span of four days, we were able to come to a consensus of what are the priority issues/question and what we need to be done. That a lot of researches became necessary, is not of the meeting of the participants of the workshop. That part of the workshop happened after the facts are collected already. We are in a lot of complications that came about and so many unforeseen and unexpected and delayed events occurred. And this necessitated this additional research question you have mentioned. Bridge, however I would not venture to say that had it not been done earlier, the same research question would had not been raised. Maybe if the decision was really to, if we knew all along that if the water would not be enough for all of them to use, land uses, for all these investments, and one decided to go ahead then these issues will still arise at least we could start the research much earlier than now which is subsequent to the fact. But I hope you agree with me that had this happened earlier certain decisions would have been avoided which now have very costly consequences including the researches that need to be conducted. But I think the consequences on the people adversely affected by this are those that have to suffer more and perhaps those that have to pay back the loan which means us, if really the rule called could not be implemented because of social pressures.

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The social pressures are very realistic. I think no engineer will stake his life there and possibly open up the lever to below 81.7.

Ex-Mayor Mercurio

It seems that about 60% of what has been repeated here is right here in this little book, like we were saying set up an interim management group it's in page 248.

We are really suffering, and 7 or 8 months had elapsed since we talked about all these mitigating measures and yet nothing has been done about it.

I'm glad Mr. Robredo has promised to be responsible and to help to OIC of Buhi, I will keep on really plugging. I think Mr. Armentia has authority to commit or he said 81.7. We'll remember that.

The fact is that NIA has not come to a tripartite agreement. We made some initial moves when I was Mayor, it never come to concretization of things we really wanted to do, ang mga NPC, NIA and local government. And what happened? NPC wants water, open; we complained, close. NIA wants water open, and then NPC opens some more then we close a little. This is the practical side of these and if we can only make that little bulletin which was mentioned by Dr. Conway. Let's inform people some more, its here, somewhere in the position paper of Mr. Bon.

Jojo Remigio (NEPC)

While the ex-mayor proposed very good cure by "reading more and more now the blue book, I think that simply points out fact what Dr. Talisayon said earlier probably a (noble) management of this ditch system has to be evolved to manage the problem that arise in the Buhi Area and the environs because what I see here is the conflict between centralization on one hand, the overwhelming presence of national agencies, their sometimes technocratic arrogance in imposing what they see as clean and quick solutions to the problems in the area. Where in fact, the conflict will surely enter the picture because the interest of the local people as articulated by the representatives of the OIC's here by ex-mayor, by the grassroot in certain areas will certainly have much of a bearing on whatever plans in how for example relevant or pertinent agroecosystem analysis as a methodology would eventually prove to be useful or not in the long run.

Mr. Angeles of the ANGO

I would like to follow up to Dr. Cardenas statements about the importance of grassroot organization. I myself am working with NGO and I appreciate his comment regarding the participation or the acceptance of NGO's with regards to planning. We believe that NGO's have a role in the agro-economic system analysis because NGO's compliment what government cannot do because we have also a role that we could reach other (e.g.

villages) and also the government has their limitations and we also have ours. But if could compliment our works at the grassroot level we could get more detail.

In addition to this I would like to emphasize that to make of people participate from the start of this analysis, make them more responsible and that whenever there is a project they could appreciate it. So it's more of a shared responsibility.

Dr. Lansigan

Agroecosystem Analysis is not the only tool that we need for making decisions. For the information of the body, there are now efforts being made in making techniques or procedures that would compliment the use of agroecosystem analysis as a tool for decision making, for example techniques for extended benefit cost analysis. There are other techniques that are being developed like trade off analysis techniques.

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AGROECOSYSTEMS MANAGEMENT POLICY SEMINAR-WORKSHOP  
ASIAN INSTITUTE OF TOURISM  
DILIMAN, QUEZON CITY  
JULY 8, 1986

P R O G R A M

MORNING SESSION		Mr. Ino Manalo Moderator
8:30 - 8:30	Registration of Participants	
8:30 - 8:40	Welcome Address	Dep. Min. Jose Medina, Jr. Ministry of Agrarian Reform
	Opening Remarks	Dep. Min. Dante P. Sarraga Ministry of Natural Resources
8:40 - 9:10	Background and Overview of Workshop	Dir. Jesse Robredo BRBDPO
9:10 - 9:40	Agroecosystem Analysis as a Tool for Development Planning and Implementation	Dr. Gordon Conway Center for Environmental Technology, Imperial College of London
9:40 - 10:00	B r e a k	
10:00 - 10:20	Case Presentation of Buhi Agroecosystems: Buhi Watershed	Dr. Antonio Alcantara
10:20 - 10:40	Lake Buhi	Dr. Rogelio Tagarino
10:40 - 11:00	Tabao River	Dr. Felino Lansigan
11:00 - 11:20	Irrigation Service Area	Dr. Enrique Pacardo
11:20 - 12:00	OPEN FORUM	
12:00 - 1:00	LUNCH BREAK	
AFTERNOON SESSION		Mr. Candido Cabrido, Jr. Moderator
1:00 - 1:30	Summary of Analysis & Issues in Buhi and Recommendations	Dr. Enrique Pacardo
1:30 - 2:30	Panel Discussion & Open Forum: Buhi Agroecosystem	Dir. Jesse Robredo Engr. Virgilio F. Brusas Mayor Isauro M. Villadares Ex-Mayor Crispin S. Mercurio Mr. Candido Cabrido, Jr.
2:30 - 3:30	Panel Discussion & Open Forum: Agroecosystem Analysis - Methodology, Applications, and Institutionalization	Dr. Marlito Cardenas Dr. Rogelio Concepcion Dr. Serafin D. Talisayon Participants
3:30 - 3:45	B r e a k	
3:45 - 4:00	Wrap-up Session	Dir. Wilfredo Olaño
4:00 - 4:15	Closing Remarks	J. Andres A. Limcaoco Acting Exec. Director

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