

# SAMUT-SARI

The quarterly newsletter of the Philippines-Netherlands Biodiversity Research Programme for Development in Mindanao

Vol. 1 No. 1 June-August 2002

## The Biodiversity Research Programme: Focus on Mt. Malindang

The Biodiversity Research Programme (BRP) for Development in Mindanao is a five-year collaborative research programme jointly undertaken by Filipino and Dutch researchers in the area of Mt. Malindang and environs.

The programme is given financial support by the Netherlands Ministry for Development Cooperation (DGIS) through the SEAMEO Regional Center for Graduate Study and Research in Agriculture (SEARCA), which serves as the National Support Secretariat (NSS). A Joint Programme Committee (JPC) was formed to be the programme's policy-making body.

The programme consists of two major components: the research programme and support programmes. The research programme is a set of research themes that link research questions to real problems and opportunities in the communities and ecosystems in the research site. The research themes are further categorized as methodology development, knowledge expansion and improvement, and policy-oriented research. The support programmes are sets of organized activities which provide systematic support for cross-cutting needs of the research activities. These include community organizing; human resource development; information, education and communication (IEC); information management system; and networking.

The five-year programme consists of four major phases which are crucial for the success of the programme. These are the organizational set up and research projects development, fundamental or "first generation" research and support projects, "second generation" research and support

projects, and programme evaluation and redesigning. "First generation" researches

produce information, inventories and assessments that are needed as baseline or initial data for further research. "Second generation" researches are those whose results can be used to look more deeply into bio-social systems interactions, and provide knowledge for alternative strategies and policy development.

As part of the organizational set up, a Programme Management Office (PMO) was established in Oroquieta City, Misamis Occidental.

The BRP is a product of a participatory and consultative process involving various stakeholders such as farmers, fisherfolk, local government units, and government agencies.

In order to come up with research results relevant to the community, the BRP follows some guiding concepts in its biodiversity research. Each biodiversity research is location-derived and development-oriented. The research agenda, priorities and methods are based from the needs of the people and the biodiversity in the area. It promotes multi-stakeholder participation. It involves not only the scientific research community, but most importantly local communities and stakeholders, including local governments and nongovernment organizations. It is also systems-oriented and interdisciplinary. It brings together the natural and socio-economic/cultural components and

(continued on page 2)



Various stakeholders were actively involved in workshops and consultations for programme development.

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### BRP VISION

*Economically and culturally prosperous communities living harmoniously in a sustainable environment where biodiversity conservation is founded on an integrative and participatory research model.*

### BRP MISSION

*To undertake and promote collaborative, participatory, and interdisciplinary research that will promote sustainable use of biological resources, and effective decision-making on biodiversity conservation to improve livelihood and cultural opportunities.*

their interactions, which affect biodiversity. BRP also uses an integrated ecosystem or landscape approach. It recognizes the interconnection between ecosystems; acknowledging that what happens in one ecosystem affects the other ecosystems in the landscape.

Through the programme activities, BRP aims to contribute to conservation, management and sustainable use of biological resources, build and strengthen national capacity for biodiversity research, and promote research cooperation on equal footing.

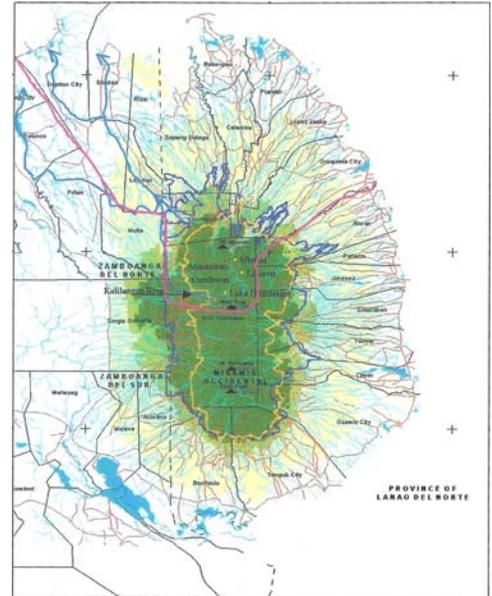
The research site is a geographical wedge in Misamis Occidental, in the island of Mindanao, approximately bounded to the west by Sapang Dalaga town and Murceilagos Bay, southeast by Aloran town and south by the municipality of Don Victoriano.

Mt. Malindang was chosen because of its rich and unique landscape and biodiversity. Mt. Malindang is home to a number of biologically and economically important flora and fauna species. Four hundred ninety-four

species of plants, and 65 bird, 12 mammal and 11 reptile species were observed in 12 barangays within the Mt. Malindang Range.

Mt. Malindang is also an abundant and biologically significant source of fresh water for flora and fauna, and for the nearby communities. However, Mt. Malindang is on the brink of danger. A number of human activities become threats to its biodiversity. Increasing population in the coastal communities causes fast depletion of finfish, shellfish, and other mangrove, coral, and seagrass species. Incidence of poverty drives farmers in lowland ecosystem to cut trees or gather rattan and other nontimber forest products to increase their income.

Mt. Malindang is a valuable haven for biodiversity but a threatened one. Through the BRP's initiative for a research programme in the site, the results and experiences that can be acquired in its implementation can be used as basis for better research and sustainable development efforts in other similar areas in the country. ■



Research site of the Programme.

## MEMORANDUM OF UNDERSTANDING SIGNED BRP-Mindanao research institutions partnership for biodiversity research

Sharing the same concern for biodiversity conservation, eight research institutions in Mindanao team up with the Biodiversity Research Programme (BRP) for the implementation of biodiversity researches in Mt. Malindang and its environs. These are the Mindanao State University-Marawi (MSU), Mindanao State University-Iligan Institute of Technology (MSU-IIT), Central Mindanao University (CMU), Mindanao Polytechnic State College (MPSC), Davao Oriental State College of Science and Technology (DOSCST), Southern Philippines Agribusiness Marine and Aquatic School of Technology (SPAMAST), Mindanao State University-Naawan (MSU), and Research Institute for Mindanao Culture (RIMCU).

The partnership started when these research institutions submitted a number of proposals for biodiversity research in the said area. Ten lead researchers from these research institutions submitted a total of 11 research proposals. These underwent technical review by an external review committee and the Joint Programme Committee (JPC). From the 11 proposals, seven were approved for implementation. These are the coastal study, riverine/riparian study, policy study, IPM/arthropods study, Lake Duminagat study, floral resource inventory, and delivery systems project. These were approved because they reflect the programme's uniqueness in terms of landscape approach, knowledge generation, participatory nature, and innovativeness of research methodology.

The Heads of the participating research institutions and Dr. Ruben L. Villareal, SEARCA Director and Head of the BRP National Support Secretariat (NSS) signed a Memorandum of Understanding (MOU) in July 2001 to formalize their partnership. The MOU signifies that the research institutions accept the BRP goals, objectives, policies, general guidelines, and operational procedures. It also spells out their roles and responsibilities as well as the nature of funding support by the BRP.

The lead researchers likewise signed a Research Grant Agreement (RGA) to formalize their participation in the implementation of the approved researches. The RGA highlights the terms and conditions in undertaking research work for the BRP, including

their roles and responsibilities.

The partnership between the research institutions and the BRP is geared towards the fulfillment of the BRP's objectives in undertaking research for biodiversity conservation, and in strengthening capabilities for biodiversity research. ■

### 3rd JPC meeting held

The Joint Programme Committee (JPC), the policymaking body of the BRP, held its third meeting on 16-23 April 2002 at the Wageningen University and Research Centre, the Netherlands.

The meeting was attended by Filipino and Dutch JPC members, as well as the National Support Secretariat (NSS) - Programme Management Office (PMO) and Support Liaison Office (SLO) staff, and SEARCA Director Dr. Ruben L. Villareal. Dr. Delfin J. Ganapin, Jr., Chair of the JPC presided over the meeting.

The meeting was conducted to discuss the progress in the implementation of the Biodiversity Research Programme (BRP), to discuss and plan activities for Year 3 of the programme, and to draw in Dutch participation in biodiversity research for additional technical/research expertise and financial resources.

Aside from the discussions and agreements made during the meeting on a number of issues regarding the BRP such as the status of BRP funds, report on programme-level and project-level activities, observations and suggestions on "first generation" researches, and workplan for Year 3, among others, a SWOT (strengths, weaknesses, opportunities, threats) analysis of the programme was also tackled as suggested by Dr. Marc Lammerink, Vice-chair of the JPC.

It was also emphasized during the meeting that JPC is a policymaking body and not an executing body. The decisions and guidelines set by the JPC are to be carried out by the NSS/PMO and SLO.

The week-long visit in the Netherlands provided an opportunity for the participants to meet with representatives of various Dutch institutions like ALTERRA - Green World Research Institute, Advisory Council for Research Development (RAWOO), Netherlands National Herbarium (Rijksherbarium), Centre for Environmental Studies, Leiden University (CML), Netherlands National Natural History Museum (NATURALIS), International Institute for Hydraulic Engineering (IHE/Delft), Ministry for Development Cooperation (DGIS), and ETC- Ecoculture.

The JPC meeting is held twice a year. The first meeting was held in March 2001 in Oroquieta City, Misamis Occidental. The JPC reviewed the comments of the External Review Committee on the research proposals submitted by the researchers of Mindanao partner institutions for their final dis/approval. Two research proposals were out rightly approved during this meeting.

It was agreed during the second meeting, which was held in October 2001, that some of the researchers be

provided experts to assist in their projects. Additional two research proposals were also approved during the meeting.

The next meeting is scheduled on 16-20 September 2002 in Oroquieta City, Misamis Occidental. ■

### JPC meets with DGIS

The Biodiversity Research Programme (BRP) - Joint Programme Committee (JPC) met with the representatives of the Netherlands Ministry for Development Cooperation (DGIS) for the first time on 22 April 2002 at the Ministry of Foreign Affairs, the Hague, the Netherlands to report the progress in the implementation of the BRP.

The BRP delegation prepared a presentation for the DGIS highlighting the programme's evolution, general concept and guiding principles, as well as brief description of BRP's initially funded researches categorized as "first generation" researches.

Dr. Delfin Ganapin, Jr., Chair of the JPC informed the DGIS on JPC's decision on the basic elements of the BRP workplan for Year 3, the most important of which are (1) the shift to "second generation" researches, (2) the increased focus on social science and policy research, and (3) on research that promotes alternative livelihood and management of resources. Dr. Ganapin pointed out that there will be an increase in the number of research and support activities in Year 3 to achieve the overall goals of the programme.

The meeting provided an opportunity for the DGIS to raise a number of questions regarding the BRP where it may be discussed at length.

Dr. Ganapin officially closed the meeting by thanking the DGIS for its support. He gave the DGIS an assurance of the JPC's commitment for the continued success of the programme. ■



From left to right: Dr. Victor Amoroso, JPC member; SEARCA Director Dr. Ruben L. Villareal; Dr. Lijbert Brussaard, JPC member; Dr. Mariliza Ticsay, Monitoring and Evaluation Specialist; Dr. Marc Lammerink, Vice-chair of JPC; Dr. Delfin Ganapin, Jr., JPC Chair; and Dr. Gil C. Saguiguit, Jr., JPC member.

# PROJECTS PROFILE

## Participatory Biodiversity Assessment in the Coastal Areas of Northern Mt. Malindang, Misamis Occidental

### *Project Leader:*

Dr. Della Grace Bacaltos  
Professor & Director of Research,  
Southern Philippines Agribusiness  
Marine and Aquatic School of  
Technology (SPAMAST), Malita,  
Davao del Sur

Participatory Rapid Appraisal conducted in Murceilag Bay revealed that fish catch per unit effort of fisherfolk has declined. This problem was caused by overfishing and destruction of habitats (mangroves, seagrass and coral reef ecosystems). These threats have to be addressed for they may also occur in other parts of the coastal zone of Mt. Malindang. The establishment of Marine Protected Areas (MPAs), which requires baseline resource information, is one of the management strategies found necessary. The project will derive said information through assessment of coastal resources using interdisciplinary, multi-sectoral and participatory approach. The project hopes to bring benefits to local coastal communities directly and indirectly through development of their capabilities and empowerment in terms of resource management, and with the project's long-term goal of biodiversity conservation and sustainable development in the area, respectively.

### *Lead Institutional Proponent:*

Southern Philippines Agribusiness  
Marine and Aquatic School of  
Technology, Malita, Davao del Sur

### *Collaborators:*

People's Organizations (POs),  
Nongovernment Organizations  
(NGOs), Local Government Units  
(LGUs), Department of Environment  
and Natural Resources (DENR),  
Department of Agriculture-Bureau of  
Fisheries and Aquatic Resources (DA-  
BFAR), Dr. Erik de Ruyter - IHE/Delft

## Comprehensive Assessment of Policies Affecting Biodiversity in Mt. Malindang and its Environs

### *Project Leader:*

Dr. Oliva Canencia  
Director of Research and  
Development, Mindanao  
Polytechnic State College  
(MPSC), Cagayan de Oro City

Results of the Participatory Rapid Appraisal in the upland, lowland, and coastal ecosystems within the focus research area implied a need to analyze existing local and national policies on biodiversity conservation. The researchers will assess and evaluate these policies in terms of their effectiveness, efficiency, relevance and acceptability to the communities. The study is envisioned to contribute to planning and decision-making of local and national policymakers.

### *Lead Proponent Institution:*

Mindanao Polytechnic State College,  
Lapasan, Cagayan de Oro City

### *Collaborators:*

DENR-Region X, LGUs, Indigenous  
People (IPs), Protected Areas  
Management Board (PAMB), DA,  
AusAID-Philippine-Australian  
Programme for Local Sustainability  
(PALS), National Commission on  
Indigenous People (NCIP), CARE-  
Agencies Working for Ecological  
Sustainability of Mt. Malindang's  
Environs (AWESOME), Department of  
Agrarian Reform (DAR)



*Panoramic view of Brgy. Lake Duminagat, one of the upland communities in Mt. Malindang.*

## Biodiversity Assessment of Arthropods in Upland Vegetable Growing Areas in Mt. Malindang

### *Project Leader:*

Dr. Emma Sabado  
Professor, College of Agriculture,  
Mindanao State University (MSU),  
Marawi City

This project will undertake assessment of economically important arthropods, pests, and beneficial insects associated with vegetables grown in the upland ecosystems of Mt. Malindang. This is in response to the insect pest problems of the community. There will also be a survey of ethno-entomological knowledge and pest control practices, which is important for the success of biodiversity conservation and sustainable use of resources in the research site. The researchers will use cost-benefit analyses of prevailing pest control practices and will study suitable natural enemies to vegetable growers to minimize the use of pesticide which will lead to the conservation of arthropod diversity of Mt. Malindang.

### *Lead Proponent Institution:*

Mindanao State University,  
Marawi City

### *Collaborator:*

Dr. Stephen Reyes - Department of  
Entomology, University of the  
Philippines Los Baños (UPLB)

## Participatory Biodiversity Inventory and Assessment of Lake Duminagat, Mt. Malindang Natural Park

### *Project Leader:*

Dr. Carmelita Hansel  
Faculty Member, Biology Department,  
Mindanao State University (MSU),  
Marawi City

Lake Duminagat has been identified as of great interest among the freshwater ecosystems in Mt. Malindang. It is the water source for irrigation, for industrial and domestic water supply as well as for food for the province of Misamis Occidental and some municipalities of Zamboanga del Sur and Zamboanga del Norte. It is also biologically significant as a water source for flora and fauna and as an area of high species diversity. In cultural terms, it is a sacred place for the Subanen people. This project aims to: (1) characterize the local communities surrounding Lake Duminagat in terms of their cultural and socio-economic profile, perception, beliefs and practices about the lake, and utilization of the lake and its resources, and (2) make an inventory of the lake's biodiversity, and assess and measure the lake's geophysicochemical characteristics. The researchers will use participatory methods, and both participatory and standard methods, respectively to obtain the data for the study. The researchers and local communities will work together to



*View showing Lake Duminagat's northern side.*

identify problems related to biodiversity conservation in Lake Duminagat and find solutions to these problems. This kind of approach will provide them with knowledge and insights on the dynamics of the linkage between the natural and social systems affecting the Lake Duminagat ecosystem. A long-term goal of this project is to empower the local communities to come up with a strategy of conserving and sustainably utilizing the lake's biodiversity and other resources in order to improve livelihood and cultural opportunities.

*Lead Proponent Institution:*  
Mindanao State University,  
Marawi City

*Collaborators:*  
LGUs, DENR, PAMB



*Elderly Subanen residents with Prof. Victoria Quimpang.*

## Development of Delivery Systems for Biodiversity Conservation and Research in Mt. Malindang

### *Project Leader:*

Dr. Emmanuel Lariosa  
Professor & VP for Academic Affairs,  
Central Mindanao University (CMU),  
Musuan, Bukidnon

The project is aimed towards the development and piloting of efficient and appropriate delivery system for the dissemination of BRP research results and other biodiversity conservation concerns in Mt. Malindang. This will be based on the indigenous knowledge and practices of resource users in the research site to enable them to be more responsive to real-life problems. Activities of the project include (1) production of information, communication and education (IEC) materials for biodiversity conservation awareness, (2) pretesting of these materials in selected communities within the research site to determine their comprehensibility, acceptability and relevance, and (3) evaluation of delivery system.

*Lead Proponent Institution:*  
Central Mindanao University,  
Musuan, Bukidnon

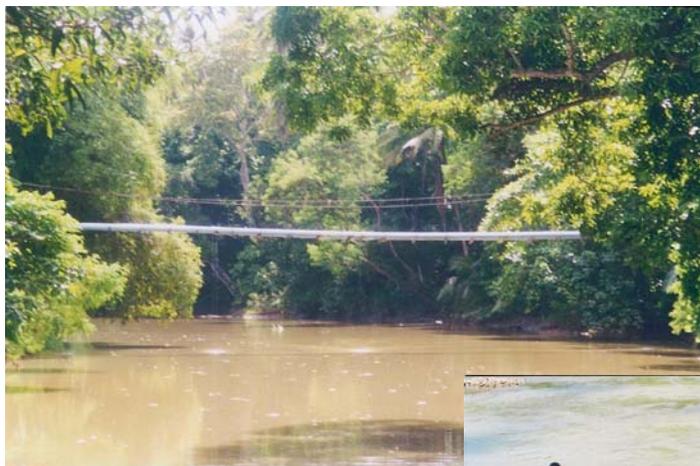
*Collaborators:*  
LGUs, Local Organizations  
(Indigenous Groups), CARE-  
AWESOME, BFAR, AusAID-PALS

## Community-Based Inventory and Assessment of Riverine and Riparian Ecosystems in the Northeastern Part of Mt. Malindang

### Project Leader:

Dr. Proserpina Gomez-Roxas  
Professor, Mindanao State University (MSU), Naawan, Misamis Oriental

This project focuses on Langaran River, which plays an important role in the upland-lowland interactions in the Mt. Malindang landscape. However, the river is literally disturbed and exploited. There are three dams along the river; the water is used to irrigate vast rice fields; and massive quarrying occurs from upstream to downstream. To bring about ecological and conservation awareness to the communities in the research area, the researchers will conduct a participatory inventory of vascular flora and fauna, and assessment of habitat status. The community will be involved in the research process to enable them to understand the nature and value of biodiversity for them to manage the Langaran River on a sustainable basis. The data that will be obtained will



Langaran River in Tipolo, Plaridel.

serve as basis for further studies on the dynamics of the relationships between human and the river and riparian ecosystems.

### Lead Proponent Institution:

Mindanao State University, Naawan, Misamis Oriental

### Collaborators:

Central Mindanao University, Mindanao State University-Marawi, Xavier University, LGUs



Langaran River is a threatened ecosystem due to massive quarrying activities.

## Development of Participatory Methodology for Inventory and Assessment of Floral Resources and their Characterization in the Montane Forests of Mt. Malindang

### Project Leader:

Dr. Jose B. Arances  
Professor & Director of Extension, Central Mindanao University (CMU), Musuan, Bukidnon

An inventory and assessment on the kinds of biodiversity resources in Mt. Malindang is necessary to make an effective strategy for the sustainable use of these resources.



Floral resources abound in Mt. Malindang (Photo courtesy of Dr. Proserpina Gomez-Roxas).

Researchers will design approaches and methodologies integrating participatory principles in the standard methodology for resource inventory and assessment.

The project will have three research sites: upper montane, lower montane and lowland forests. Local research partners in the community will undergo parataxonomy training, and a

permanent one-hectare plot will be established in each research site for the identification and monitoring of floral species. The project hopes to achieve in-depth understanding and knowledge

on biodiversity management and conservation in the Mt. Malindang forests.

### Lead Proponent Institution:

Central Mindanao University, Musuan, Bukidnon

### Collaborators:

Dr. William Sm. Gruezo (UPLB), Dr. Colin Ridsdale (Rijksherbarium), Dr. Leontine Visser (Wageningen University), Dr. Benito Tan (National University of Singapore), Barangay Captains/Subanens of Mansawan, Gandawan and Lake Duminagat of Municipality of Don Victoriano

# *The people behind the BRP*

## Dutch Partners:

Ministry for Development  
Cooperation (DGIS)  
Dr. Leen Boer  
Dr. ATH van Oosterhout

Advisory Council for Research  
Development (RAWOO)  
Dr. Gert van Maanen  
Dr. Ed Maan  
Mr. Paul Smits

Support Liaison Office (SLO)  
ETC-Ecoculture,  
Leusden, The Netherlands  
Mr. Rene Van Veenhuizen  
Ms. Sandra Oomkes

International Institute for Hydraulic  
Engineering (IHE/Delft)  
Dr. Erik de Ruyter  
Dr. Patrick Denny

ALTERRA-Green World Research  
Institute  
Dr. Paul Hillegers  
Dr. Marleen Van den Top  
Dr. Aart vanden Berg  
Dr. Anton Stortelder

Centre for Environmental Studies,  
Leiden University (CML)  
Dr. Gerard Persoon

Netherlands National Herbarium  
(Rijksherbarium)  
Dr. Pieter Baas  
Dr. Colin Ridsdale

Netherlands National Natural History  
Museum (NATURALIS)  
Dr. Jan Krikken  
Dr. Jan van Tol  
Dr. Bert Hoeksema

## Joint Programme Committee (JPC)

Dr. Delfin J. Ganapin, Jr. - Chair, JPC  
Chairman, Philippine Federation for  
Environmental Concerns  
Blk. 28 Lot 17 Diego Silang St.,  
Commonwealth, Quezon City

Dr. Gil C. Saguiguit, Jr.  
Deputy Director for Professional Services  
and Administration  
SEARCA, College, Laguna 4031  
Philippines

Dr. Victor B. Amoroso  
Professor & Vice President for Research  
and Extension  
Central Mindanao University  
Musuan, Bukidnon

Dr. Leontine Visser  
Professor of Anthropology  
Wageningen University and Research  
Centre, The Netherlands

Dr. Lijbert Brussaard  
Professor of Soil Biology  
Wageningen University and Research  
Centre, The Netherlands

Dr. Marc Lammerink - Vice-Chair, JPC  
Director, FMD Consultants  
2023 DA 17 Haarlem  
The Netherlands

## National Support Secretariat (NSS)

Address:  
SEAMEO SEARCA  
College, Laguna 4031  
Tel. No. (+63) (49) 536-2290  
Fax: (+63) (49) 536-4105  
E-mail: [mvt@searca.org](mailto:mvt@searca.org)

Dr. Ruben L. Villareal  
Head, NSS & Director, SEARCA

Dr. Gil C. Saguiguit, Jr.  
Programme Coordinator

Dr. Mariliza V. Ticsay  
Monitoring and Evaluation Specialist

Ms. Aurelia C. de Juras  
Support Secretary

Ms. Olivia A. Oabel  
Financial Analyst

Mr. Arnel R. Oabina  
Bookkeeper

Ms. Carina S. Fule  
Jr. Research Assistant

## Programme Management Office (PMO)

Address:  
270 Gen. J. Ozamiz St.  
Poblacion I, Oroquieta City  
Misamis Occidental  
7207 Philippines  
Tel. No. (+63) (88) 531-2122  
Fax: (+63) (88) 531-2117  
E-mail: [brppmo@oroquieta.com](mailto:brppmo@oroquieta.com)

Mr. Carlo C. Custodio  
Programme Manager

Staff:  
Mr. Jovial B. Anoling  
Mr. Pershing S. King

## The Researchers

Participatory Biodiversity Assessment in the Coastal Areas of Northern Mt. Malindang, Misamis Occidental

*Project Leader:*

Dr. Della Grace Bacaltos  
Professor & Director of Research, Southern Philippines Agribusiness Marine and Aquatic School of Technology (SPAMAST), Malita, Davao del Sur

*Study Leaders/Collaborators:*

Dr. Lea A. Jimenez  
DOSCAST, Mati, Davao Oriental  
Dr. Patria Rosales-Apao  
MSU-IIT, Iligan City  
Dr. Erik de Ruyter  
International Institute for Hydraulic Engineering

Comprehensive Assessment of Policies Affecting Biodiversity in Mt. Malindang and its Environs

*Project Leader:*

Dr. Oliva Canencia  
Director of Research and Development, Mindanao Polytechnic State College (MPSC), Cagayan de Oro City

*Study Leaders:*

Dr. Edgardo Aranico  
MSU-IIT, Iligan City  
Prof. Marina Segumpan  
CMU, Musuan, Bukidnon

Development of Delivery Systems for Biodiversity Conservation and Research in Mt. Malindang

*Project Leader:*

Dr. Emmanuel Lariosa  
Professor & VP for Academic Affairs, Central Mindanao University (CMU), Musuan, Bukidnon

*Study Leader:*

Prof. Lucy B. Ledres, M.A.  
CMU, Musuan, Bukidnon

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*Study Leaders/Collaborators:*

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Professor & Vice President for Research and Extension, CMU, Musuan, Bukidnon  
Dr. William Sm. Gruezo  
UP Los Baños, Laguna  
Dr. Colin Ridsdale  
Botanist, National Herbarium Nederland, Universiteit Leiden  
Dr. Leontine Visser  
Professor of Anthropology, University of Amsterdam, The Netherlands  
Dr. Benito C. Tan  
Bryologist, Dept. of Botany, University of Singapore

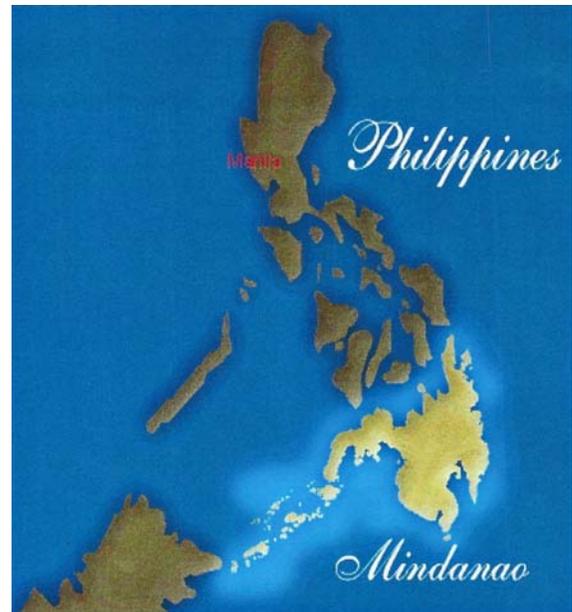
Biodiversity Assessment of Arthropods in Upland Vegetable Growing Areas in Mt. Malindang

*Project Leader:*

Dr. Emma Sabado  
Professor, College of Agriculture, Mindanao State University (MSU), Marawi City

*Study Leaders:*

Dr. Stephen G. Reyes  
UP Los Baños, Laguna  
Prof. Nida A. Llupa  
MSU, Marawi City



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*Project Leader:*

Dr. Proserpina Gomez-Roxas  
Professor, Mindanao State University (MSU), Naawan, Misamis Oriental

*Study Leaders/Collaborators:*

Dr. Renato Boniao  
MSU, Marawi City  
Prof. Annabel Gorospe  
MSU, Marawi City  
Prof. Sherwin Nacua  
MSU, Marawi City  
Dr. Linda Burton  
Director, Research Institute for Mindanao Culture (RIMCU)

Participatory Biodiversity Inventory and Assessment of Lake Duminagat, Mt. Malindang Natural Park

*Project Leader:*

Dr. Carmelita Hansel  
Faculty Member, Biology Department, Mindanao State University (MSU), Marawi City

*Study Leaders:*

Prof. Victoria Quimpang  
CMU, Musuan, Bukidnon  
Dr. Teresita Poblete  
MSU, Marawi City

*SAMU'T-SARI* is the official publication of the BRP. Its name was derived from the Pilipino term for biodiversity which is "samu't-saring uri ng buhay." *Samu't-sari* means variety.

Editor: **Dr. Mariliza V. Ticsay**

Writer: **Ms. Carina S. Fule**

Contributors: **Dr. D. G. Bacaltos, Dr. O. Canencia, Dr. E. Lariosa, Dr. E. Sabado, Dr. J. Arances, Dr. C. Hansel, Dr. P. Gomez-Roxas**

Layout: **Ms. Carina S. Fule**

**Ms. Leah Lyn D. Domingo**

Advisers: **Dr. Gil C. Saguiguit, Jr. Dr. Ruben L. Villareal**