Visayas State University

Visca, Baybay City, Leyte 6521-A, Philippines
Tel: +63 53 335 2600; Fax: +63 53 335 2601
website: www.vsu-visca.edu.ph

Office of the President

19 April 2012

MEMORANDUM NO. 148
Series of 2012

To: **All Faculty Members Concerned**

Re: **Program Proposal for Funding by CHED**

The Visayas State University submitted to the Commission on Higher Education a capsule project proposal for funding under the PHERNET Program that is meant to:

- increase research involvement of VSU faculty members
- increase the number of publications of VSU faculty members in refereed journals
- generate the intellectual property asset of the university
- generate new information and generate novel technologies
- catalyze development in the project site(s)

The capsule proposal has been evaluated by PCARRD and need to be repackaged as full-blown proposal. Related to this, please constitute yourselves to committees tasked to develop the detailed proposal of various projects and to integrate the outputs into one comprehensive and cohesive program by May 5, 2012.

Project Title	Team Leader	Members
Proj. 1 Soil and environmental quality enhancement in climate change-vulnerable marginal uplands	Dr. Victor B. Asio	Dr. Suzette B. Lina Dr. Anabella B. Tulin Dr. Renezita S. Come
Proj. 2 Development of improved and sustainable crop management for marginal uplands	Dr. Othello B. Capuno	Dr. Berta C. Ratilla Dr. Edwin A. Balbarino Dr. Lucia M. Borines Dr. Ma. Juliet C. Ceniza Dr. Beatriz S. Belonias Mr. Ulysses A. Cagasan Ms. Jedi Joy B. Mahilum
Proj. 3 Development of low-cost post harvest technologies for marginal uplands	Dr. Daniel Leslie S. Tan	Dr. Julie D. Tan Dr. Feliciano G. Sinon Prof. Alan B. Loreto Dr. Marcelo A. Quevedo Prof. Arsenio D. Ramos
Proj. 4 Improving livestock production system in marginal uplands	Dr. Lolito C. Bestil	Dr. Julius V. Abela Mr. Manuel D. Gacutan Mr. Angelo Francis F. Atole
Proj. 5 Assessment of socio-economic factors affecting food production in marginal uplands	Dr. Rotacio S. Gravoso	Dr. Editha G. Cagasan Prof. Ernesto F. Bulayog Dr. Julieta R. Roa Prof. Ma. Aurora Teresita W. Tabada

Dr. Othello B. Capuno is assigned to take the leadership of this undertaking. Attached are copies of the capsule proposal and comments from PCAARRD evaluators.

For utmost cooperation and immediate implementation.

JOSE L. BACUSMO
President

#276

OFFICE OF THE PRESIDENT
VSU. VISCA, BAYBAY CITY, LEYTE
RECEIVED
DATE/TIME: 4-18-12
BY:

Republic of the Philippines
OFFICE OF THE PRESIDENT
COMMISSION ON HIGHER EDUCATION

April 10, 2012

DR. JOSE L. BACUSMO
President
Visayas State University
Baybay, Leyte

Dear **DR. BACUSMO**:

This has reference to the program proposal submitted by Visayas State University titled: *"Enhancing Food Production and Environmental Quality in Climate Change Vulnerable Marginal Uplands of Eastern Visayas"* for CHED funding

The reviewer favorably endorsed the proposal with revisions to include the following:

- A clear and integrated framework for the program that will incorporate each component project;
- specific objectives for the program as well as a detailed line item budget (LIB) for each component project.

Please see attached reviewer's comments for reference and forms for your guidance.

Very truly yours,

ATTY. JULITO D. VITRIOLO, CESO III
Executive Director IV

PROPOSAL EVALUATION

Project Code : PO997020612

Program Title : Enhancing Food Production and Environmental Quality in Climate Change Vulnerable Marginal Uplands of Eastern Visayas

Proponent : Rotacio S. Gravosa

Implementing Agency : Visayas State University (VSU)

General Comments:

- The proposed program is within the priority commodities of VICARP, with VSU as base-agency, under the PCAARRD S&T Agenda and appears to be not duplicatory. However, for climate change, PCAARRD focuses on three thematic concerns, which are vulnerability impact assessment (VIA), mitigation, and adaptation. Although some of the component projects appear to be response mechanisms to mitigate and adapt to climate change, these are not clearly presented. The program may be recommended for funding after considering the following comments and suggestions:

- There is a need to revisit the specific objectives of the program so that they will not be presented as activity objectives. Furthermore, the specific objectives are very broad and appear to be mere titles of the component projects. There is a need to identify specific crops or livestock animals that will be covered by the project especially for projects 2, 3, and 4.

- Provide a clear and integrating framework on how the program and its component projects seek to address the vulnerability of marginal uplands to climate change.

- The budget being requested seems to be huge compared with the program activities/objectives. However, its reasonableness cannot be assessed/determined due to lack of budget details per component project/activity.

- A more detailed proposal is warranted for a more thorough review and evaluation.

COMMISION ON HIGHER EDUCATION
DETAILED RESEARCH AND DEVELOPMENT PROJECT PROPOSAL
(Form 1)
(For the Component Project)

I. **Program Title** : _____
Program Duration : _____

Project Title/s : _____
Program Leader : Telephone /Fax/Email : _____
Project Leader/s :
Agency /Institution / Address :

II. **Cooperating Agencies/institutions**
III. **Site of Implementation /Municipality /District/province/Region :**

IV. **Classification** :

Research:
- ☐ Basic
- ☐ Applied

Development:
- ☐ Pilot Testing
- ☐ Tech. Promotion

Mode of Implementation:
- ☐ Single Agency
- ☐ Multi Agency

V. **Discipline /s** :
VI. **Background of the Study**

VII. **Review/Survey of related Literature**

VIII. **Conceptual / Theoretical Framework of the Study**
IX. **Statement of the Problem**
X. **Methodology**
XI. **Significance of the Study**
XII. **Definition of Terms**

XIII. **Major Activities/Work plan**

XIV. **Expected Output/s**

XV. **Target Beneficiaries**
XVI. **Personnel Requirement**
XVII. **Budget**

XVIII. **Literature Cited**

XIX. **Capsule Curriculum (one-page CV.only of the proponents/researchers)**

Note: If the project is part of a program, this form should be submitted together with the detailed R&D proposal for the whole program.

CAPSULE PROPOSAL FOR CHED RESEARCH PROGRAM

Title of Research Program :	Enhancing food production and environmental quality in climate change vulnerable marginal uplands of Eastern Visayas
Program Leader:	Rotacio S. Gravoso
HEI/PHERNet Member:	Visayas State University
Telefax::	053 335 3838/Mobile: 09161432733
E-mail:	gravoso@gmail.com

1. Rationale

Marginal uplands are hilly and mountainous lands characterized by very low agricultural productivity and poor environmental quality. They are widespread in Southeast Asia and other parts of the humid tropics (e.g., Agustin and Garrity 1995; Sanchez 1976). Their low crop productivity is primarily caused by soil infertility resulting from soil degradation. Soil degradation is a severe global problem (Lal 1998; Science 2004) since 5 to 7 million hectares of agricultural land worldwide are annually degraded due to various physical and chemical processes (Steiner 1996) which are accelerated by high rainfall and storm events, deforestation, overgrazing, and unsuitable agricultural practices on mountain slopes (Nelson 1994). It is a major agricultural and environmental problem in the Philippines (Asio et al. 2009) due to the fact that an estimated 33 million Filipinos (more than one-third of the total population) are affected by land degradation according to the Global Assessment of Land Degradation and Improvement (Carating 2009).

According to Altieri (2002), resource poor-farmers (~ 1.4 billion people) in the developing world are located on these risk-prone marginal environments. In the Philippines, the poorest households, who are also the most vulnerable to climatic and economic shocks as well as the most food insecure, are living and farming on these marginal lands (Roa 2007). The agro-ecological conditions in these areas are typically not suited to intensive crop production systems due to low-quality soils, fragile hilly slopes, limited access to inputs or markets and extremely diverse and site specific conditions (Tyler 2004). But in the absence of a better alternative land, and inorder to survive, the poor farmers on these lands continue to engage in nonsustainable and destructive agricultural practices. Thus, research efforts are urgently needed to enhance food production and alleviate the difficult and risk-prone living conditions of these poor farming households. Such research should be holistic and needs to address the whole spectrum of biophysical and socio-economic factors affecting agriculture in marginal uplands. As many critical biophysical and socio-economic factors are location specific, it is important that any intervention to enhance food production be based on a good knowledge of these factors in a given marginal upland.

Eastern Visayas (Leyte and Samar) has one of the highest poverty incidence in the country today, with poverty incidence of 48.50% (De la Cruz, 2010). It has also large areas of marginal uplands where thousands of very poor farmers are living. Any effort to enhance agriculture and environmental conditions in these marginal uplands, which are vulnerable to climate change, will have considerable impact on the lives of the people in the Eastern Visayas region, hence this proposed research program. The program will be carried out by highly qualified faculty members/researchers of Visayas State University and is expected not only to develop technology interventions for the marginal uplands in the region, but also to contribute to the body of knowledge on marginal uplands in the humid tropics.

2. Objectives

2.1 General Objective

To accelerate the establishment of productive and sustainable agro-ecosystems and facilitate the improvement of farmer's income, food security and environmental quality of climate change-vulnerable marginal uplands in Eastern Visayas.

2.2 Specific Objectives

1. To evaluate the soil and environmental quality of marginal uplands in Eastern Visayas.
2. To develop sustainable methods and approaches to improve the soil and environmental quality of marginal uplands.
3. To develop low-cost and sustainable crop management technologies for marginal uplands.
4. To develop new crop varieties that are resistant to pest and diseases and tolerant to drought and flooding.
5. To develop low-cost postharvest technologies for marginal uplands.
6. To enhance livestock production of farmers in marginal uplands.
7. To assess the socio-economic factors affecting food prodsuction in marginal uplands.
8. To design, implement and evaluate interventions to improve the socio-economic condition of upland farmers.

3. Component Projects

3.1 Project 1: Soil and environmental quality enhancement in climate change-vulnerable marginal uplands (Team Leader: Dr. VB Asio; Team Members: Dr. IA Navarrete, Dr. SB Lina, Dr. RS Come, Dr. AB Tulin)

This component will focus on the evaluation of soil and environmental quality in marginal uplands and the assessment of soil factors and processes affecting crop production in such lands. It will also deal with the development of integrated nutrient management technique, carbon sequestration, and organic-based soil quality enhancement strategies.

3.2 Project 2: Development of improved and sustainable crop management for marginal uplands (~~Team Leader:~~ Dr. BC Ratilla; Team Members: Dr. LM Borines, Dr. MJ Ceniza, Dr. BS Belonias, U Cagasan)

This component will include the breeding of flood/drought tolerant and pest disease resistant crop varieties, development of improved cropping calendar and cropping systems, and water management techniques. It will also deal with the evaluation of agrodiversity in marginal uplands.

3.3 Project 3: Development of low-cost post harvest technologies for marginal uplands (Team Leader: Dr. DLS Tan; Team Member: Dr. JD Tan, Dr. FG Sinon, A Ramos)

This project will focus on the development/refinement/modification of drying and storage technologies for small-scale crop production in marginal uplands. It will also deal with the processing of functional foods using raw materials available in the region.

3.4 Project 4: Improving the livestock production system in marginal uplands (Team Leader: Dr. L Bestil; Team Members: Dr. J. Abela, M Gacutan)

This component is aimed at developing organic based technologies to improve livestock production in marginal uplands.

3.5 Project 5: Assessment of socio-economic factors affecting food production in marginal uplands (Team Leader: Dr. RS Gravoso; Team Member: Dr. EGCagasan, Dr. EF Bulayog)

This component will focus on the baseline assessment, gender, evaluation of indigenous technologies (coping mechanisms for climate change risk) and value chain analysis ("farm-to-fork" analysis), monitoring and evaluation of development interventions, and process documentation research.

4. Methodology

Conceptual framework. The very low farm productivity and poor environmental quality of marginal uplands is due to low-quality soils, erratic water supply, hilly or steep slopes, high rainfall and storm events, high incidence of pests and diseases, low biodiversity, non-sustainable farming practices, and lack of alternative livelihoods. The consequence of this low productivity include an insufficient and unstable supply of low-quality food for the farm household, low ability to absorb climatic or economic shocks or take risks, and seasonal out-migration of farming households. To alleviate these problematic situations requires innovative and sustainable farming technologies and alternative livelihoods that are based on sufficient understanding of the biophysical and socio-economic factors affecting agricultural production in every marginal upland.

a) Study sites - The program will be conducted in the marginal uplands of Villaba, Baybay, and Mahaplag, Leyte; Pinabacdao, Western Samar; Borongan, Eastern Samar, and Catarman, Northern Samar.

b) Project inception meeting – As soon as the program concept is approved, a program inception and planning workshop will be conducted to discuss expectations with stakeholders in the project sites, identify important research and development activities, and define the roles and functions of each stakeholder in the implementation and dissemination phases of the project.

c) Conduct of benchmark studies - After the inception meeting, benchmark studies will be conducted to determine the initial bio-physical and socio-economic conditions of the project sites.

d) Project planning workshops. -Project planning workshops will be held to plan the detailed research and development activities for each of the project components. Results of the bio-physical and socio-economic characterization benchmark studies will serve as inputs.

e) Field experiments, data collection and analysis – All the component projects will be conducted in each study site. Field experiments will be established which will be managed by the research team in collaboration with farmer cooperators. Data collection will employ the established methods and procedures. Soil, water and plant samples collected from each study site will be analyzed at the Soil and Plant Analysis Lab at VSU.

f) Design and implementation of development interventions – With participation of the stakeholders and project beneficiaries, development interventions deemed relevant will be designed and implemented in each project site.

g) Monitoring and evaluation - A process documentation team will document activities at all stages of the project from conceptualization to implementation to monitoring and evaluation. An external evaluation team composed of experts from other universities will be invited to conduct an annual project evaluation to identify project gaps and refine project methodologies.

h) Results and dissemination - Results and experiences gained from the project will be disseminated through articles in ISI scientific journals; farmer and community field days, trainings and seminars; knowledge products (e.g., video presentations, pamphlets and newspaper articles) for facilitate dissemination of knowledge generated through the program. In addition, a scientific conference will be organized to serve as a venue for the exchange of results and experiences with other researchers working on food production in degraded uplands in the Philippines and other countries.

5. Indicative Budget

Item	Year	Year 2	Year 3	Total
Personal Services	6,632,514.00	6,632,514.00	6,632,514.00	19,897,542.00
Maintenance and Other Operating Experiences	20,867,486.00	3,367,486.00	3,367,486.00	27,602,458.00
Capital Outlay	12,500,000.00			12,500,000.00
Total	**40,000,000.00**	**10,000,000.00**	**10,000,000.00**	**60,000,000.00**

References

Agustin PC and Garrity DP (1995). Historical land use evolution in a tropical acid upland agroecosystem. Agriculture, Ecosystems and Environment 53:83-95.

Altieri MA (2002). Agroecological principles for sustainable agriculture. In: Agroecological Innovations (N. Uphoff, ed.). Earthscan, London, pp: 40-46.

Asio VB, Jahn R, Perez FO, Navarette IA, and Abit SM Jr (2009). A review of soil degradation in the Philippines. Annals Tropical Research, 31:61-94.

Carating R (2009). The state of land degradation in the Philippines. SEARCA, Los Banos, Philippines.

De la Cruz, L.J. (2010). Philippine poverty situation 2010. Retrieved 15 December 2011 from www.slideshare.net/delacruz.philippine_poverty_situation_2010.

Lal R (1998). Soil quality and sustainability. In: Methods for Assessment of Soil Degradation (Lal R, Blum WEH eds). Adv. in Soil Science. CRC Press, Boca Raton, pp. 17-30.

Nelson RA (1994). Soil erosion and conservation in the Philippine uplands. A review and literature. SEARCA-UQ Uplands Research Project. Working Paper No. 3, Los Baños, Laguna.

Roa JR (2007). Food security in fragile lands. PhD Dissertation, Wageningen University, Netherlands.

Romney AK, Weller SC and Batchelder WH (1986). Culture as consensus: a theory of culture & informant accuracy. American Anthropologist 88: 313-338.

Sanchez PA (1976). Properties and management of soils in the tropics. Wiley, New York.

Science (2004). Soil and trouble. Science, 304:1614-1615;

Steiner KG (1996). Causes of soil degradation and development approaches to sustainable soil management. Margraf Verlag, Weikersheim.

Tyler S (2004). Participatory research for community-based natural resource management in Asia. JIRCAS International Symposium Series 12: 165-169.