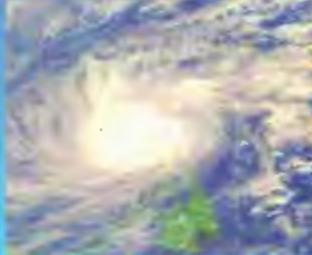


2007

*Crossing Disciplinary Boundaries
for National Development*



Annual Report



THE COVER:

Multidisciplinary collaborations in the past have benefited the world. The elucidation of the intricacies of the DNA molecule which was done through the collaborative efforts of British and American molecular biologists, and a British crystallographer, and physicist, is one example of this. Although to achieve under scientific success farfetched considering the very limited financial and logistic support, Filipino researchers and scientists are receiving at the moment, the NRCP, as mandated, continues to promote basic researches. Photos shown on the cover represent the variety of basic researches in the priority areas set by the Department of Science and Technology and supported by the NRCP.

VISION

A collegial body of highly-trained scientist and researchers, cohesively addressing the growing demand for knowledge, skills, and innovations; sharing expertise with all sectors of society; and effectively and efficiently contributing to the country's development and to the improvement of the quality of life of the Filipino people.

MISSION

Commitment to promote and support basic and problem-oriented researches, particularly those which are multidisciplinary, in the sciences as well as in the humanities, to identify and provide solutions to national issues and problems, and to generate new knowledge in preparation for the future.

Contents

Messages

Olivia C. Caoili, Ph.D. NRCP President	1
---	---

Napoleon P. Hernandez, DPA NRCP Acting Executive	2
---	---

2007 NRCP Accomplishments

Generation of New Knowledge and Technologies

Completed Projects	4
New Projects	5
On-going Projects	11

Basic Network Services

Thesis Grants	15
Dissertation Grants	17

Policy Services in Support of Membership

Seminars	18
Outreach Programs	19

International Science Network

22

Visayas Regional Science Cluster Meeting

24

Mindanao Regional Science Cluster Meeting

25

Policy Advisory Services

26

2006 NRCP Achievement Awardees

27

74th NRCP Annual Meeting - High Spots

28

74th NRCP Annual Meeting - Technical Paper Presentors

29

2007 NRCP Open House Activities

30

74th NRCP Anniversary Celebration

37

Human Resource Management

33

Financial Resource Management

35

2007- 2008 NRCP Governing Board Officials

36

2007- 2008 NRCP Division Chairmen

37

NRCP Organizational Chart

38



Message

The year 2007 was a busy one for the National Research Council of the Philippines (NRCP). On the eve of its Diamond Jubilee celebration, I am pleased to report on the Council's activities and achievements on the theme "Crossing Disciplinary Boundaries for National Development".

On March 6, 2007, the NRCP co-sponsored, with the Department of Science and Technology (DOST) and the Home Mortgage Development Corporation (HMDC) a one day "Conference on Shelter". Focusing on the various government and non-government initiatives to address the problem of shelter and affordable housing in a rapidly urbanizing society, the Conference dissected the causes and solutions to the problem from a multidisciplinary perspective. Policy recommendations were formulated based on the research results shared in the Conference. NRCP has summarized these in the published "Proceedings of the Conference" to guide researchers on priority areas for research and appropriate policy-making bodies for their decision-making.

On March 8, 2007, NRCP celebrated its 74th Anniversary with a General Membership Meeting at the Manila Hotel. The theme of the national meeting was "Crossing Disciplinary Boundaries for National Development." The papers presented at the plenary sessions demonstrated the wealth of knowledge generated from interdisciplinary and cross-disciplinary research on such topics as cultures of expression as source of cross-disciplinary thrusts in human productivity, weather forecasting and communications, integrating knowledge in the medical, pharmaceutical and chemical sciences in the management of epidemics, and adapting to climate change.

In May 2007, the Visayas Cluster of the NRCP conducted its Annual Conference in Visayas State University, Baybay Leyte. The papers presented at the Conference demonstrated the commitment of NRCP members in the Region to engage in basic research to promote national and social development.

On June 14-15, the NRCP was represented in the 7th Science Council of Asia (SCA) Conference on "Energy and the Environment" in Okinawa, Japan. A "Joint Statement on the Future of the Science Council of Asia" was adopted by Council members to govern the choice of joint SCA projects in the future. In addition, the delegates agreed on the venue for succeeding SCA Conferences. The Philippines, under the leadership of the NRCP, will host the 10th SCA Conference in 2010.

On June 15, 2007, the SCA had joint scientific sessions with the Science Council of Japan and on June 16, 2007 SCA had joint scientific sessions with the Pacific Science Association on "Energy and the Environment". The SCA Conference also approved a "Joint Statement on Energy and the Environment" which summarized the discussions of the three-day Conference.

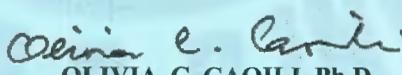
On August 3-4, 2007, the NRCP was represented by the President at the Joint Workshop of the Asian Consortium for Political Research (ACPR) in Seoul, Korea on "Democracy in Asia." Delegates to the Workshop shared experiences on democratic elections and governance in their respective countries in papers read at the Workshop.

On August 5, 2007, the NRCP President met with the President of the Korea Research Foundation (KRF) in Seoul, Korea to discuss future collaboration in research. The meeting paved the way for the signing of a Memorandum of Understanding between the two organizations for research collaboration and exchange visits of scientists.

The NRCP President was also busy responding to invitations to deliver papers and lectures to promote scientific research, in conferences such as, for example, on the 42nd Anniversary of the Philippine Association for Graduate Education (PAGE) on September 25, 2007; on the 103rd Foundation Anniversary of the Polytechnic University of the Philippines on October 4, 2007; on the 100th anniversary of the Philippine Legislature at The National Historical Institute on October 16, 2007; on the 5th Annual Meeting of the NRCP Mindanao Cluster on November 26, 2007 in Davao City and at the 2nd Conference on Graduate Research at the University of the Philippines Visayas, Iloilo City on December 5, 2007.

On December 8, 2007, the NRCP marked its 74th founding anniversary and unveiled its Diamond Jubilee Countdown Marker in Bicutan, Taguig City. This was followed by a Symposium on "Basic Research for National Development" at Traders Hotel featuring the advances in basic research among the 12 Divisions of NRCP. The celebration included the signing of a Memorandum of Understanding between the President of the Korea Research Foundation and NRCP to mark the beginning of research collaboration and exchange visits between scientists of each organization.

As the year came to a close, NRCP was preoccupied with preparations for its Diamond Jubilee Celebration on December 8, 2008. This will include the search for its outstanding researchers and the publication of a book highlighting the achievements and contributions of NRCP in 75 years. Indeed, NRCP's work of promoting basic research for national development goes on.


OLIVIA C. CAOILI, Ph.D.
President



message

In the year that has ended, the National Research Council of the Philippines remains steadfast with its THRUST -- promote and support BASIC RESEARCH, strongly anchored on addressing the urgent concerns of the national government particularly on safer environment, biotechnology, alternative energy sources, health products and technologies, ICT for community life, and conflict resolutions, among others, with the hope of having more life changing and life saving results.

In 2007, NRCP supported twenty eight researches: four are completed, eight are ongoing, and sixteen in several priority areas are to be implemented starting this year.

The Council granted financial support for the reproduction of seventeen master's theses and five doctorate dissertations.

As part of its outreach program, NRCP sponsored fifteen scientific seminars during the year on various areas of concerns — climate change, emerging infections, risk assessment of GMO products, organic agriculture, engineering research, mathematics, renewable energy, as well as shelter and development among others.

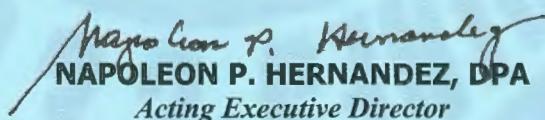
Worth mentioning is the conduct of the "National Conference on Shelter and Development: A Review of Housing Policies in the Philippines," organized in cooperation with the DOST and the Pag-IBIG Fund.

Discussions centered on present housing policies of government covering demand, supply, equitable distribution to beneficiaries, financing and needs of the military. Perceived inadequacies of existing policies were noted and recommendations were drafted to address priority issues.

Policy advocacy is a major role for NRCP. It has reviewed policies and when requested, provided technical advice in aid of legislation to the DOST and other government agencies. Policies were formulated in coordination with the National Academy of Science and Technology (NAST).

The signing of the Memorandum of Understanding (MOU) with the Korea Research Foundation in December 2007 is a significant accomplishment. This will strengthen and expand scientific collaboration on basic research in governmental, educational, and international policies; mathematical and natural sciences; social sciences; and humanities. Both partners will encourage their scientists to strengthen scientific and technological cooperation through joint research and development projects, exchange visits and training courses, exchange of experts, as well as technical workshops, seminars, and conferences.

At the NRCP the search for truth and knowledge will continue and the freedom to do so will prevail.



NAPOLEON P. HERNANDEZ, DPA
Acting Executive Director

2007 NRCP Accomplishments

Highpoints

- For the year 2007, a total of 28 basic research projects were supported by the Council, 4 were completed, 8 on-going, and 16 were new projects falling under the twelve areas of concern of the Council;
- Financial assistance was also extended for 13 Master's theses, and 9 Doctoral dissertations to students in various universities/state colleges distributed in the following disciplines: Biological Sciences, Agriculture and Forestry, Social Sciences, and Chemical Sciences;
- NRCP conducted 11 outreach symposia under the Outreach Program in collaboration with host state and private colleges/universities; sponsored and co-sponsored 15 scientific meetings; formulated and submitted 16 recommendations on bills relating to the following: Anti-Rabies Bill of 2007, limitations on the number of R&D projects a proponent can undertake, DOST Quick Response Team, Balik Scientists Program under DOST, granting of longevity pay and housing and quarter allowance for S&T Personnel, private sector in DOST-GIA programs/projects, guidelines on MS/PhD. Programs, guidelines for the grants-in-aid funds of DOST and its agencies, marketing strategies of DOST technologies, comments on the 2nd Outstanding Young Scientists, and recommendation on the inclusion of some important issues and concerns needed to be address in the DOST Planning Workshop;
- The Council sustained its membership to the following international bodies, namely: International Foundation for Science, Science Council of Asia, International Council of Scientific Unions, DFG, Pacific Science Association, International Geographical Union, International Union of Biological Sciences, Science Council of Japan, and Korea Research Foundation. The signing of the Memorandum of Understanding between NRCP and KRF was held in December 7, 2007 during the celebration of the 74th NRCP founding anniversary;
- Conferred Achievement Awards to 12 distinguished NRCP members during the 74th NRCP Annual Meeting, produced 5 publications, an in-house exhibit during the NSTW Open House Activities

with Mayor Sigfrido Tinga of Taguig City as guest of honor, unveiled the NRCP official signage and the 75th Anniversary Countdown Marker held at the NRCP Grounds, December 7, 2007, and provided library services to serve the information needs of its clients/library users;

- The 74th Annual Meeting of the Council was held at the Manila Hotel on March 8, 2008 focusing on the theme *Crossing Disciplinary Boundaries for National Development* with Secretary Romulo L. Neri of the National Economic and Development Authority (NEDA) as keynote speaker. Four papers were presented during the plenary cluster presentations: Cluster I-*Cultures of Expression as Source of Cross-Disciplinary Thrusts in Human Productivity* by Dr. Ramon P. Santos, Cluster II-*From Forecast thru Communication to Response: A Peek at Super Typhoon "Reming"* by Mr. Nathaniel A. Cruz, Cluster III-*Integrating Knowledge in the Medical, Pharmaceutical, and Chemical Sciences: Towards the Management of Epidemics* by Dr. Jean-Marc Olivé paper read by Dr. Maria Nerissa Dominguez, and Cluster IV-*Adapting to Climate Change* by Dr. Rodel D. Lasco;
- The Council's 74th Foundation Anniversary Celebration was held at Traders Hotel, Pasay City on December 7, 2007 with the theme *Basic Research for National Development*. The opening remarks was presented by Dr. Graciano P. Yumul, Jr., DOST Undersecretary for Research and Development, while Dr. Estrella F. Alabastro, Secretary, Department of Science and Technology, delivered an inspirational message. Four papers were presented: *Beyond Borders* by Dr. Michael L. Tan, *Atmospheric Energy Balance* by Dr. Roland V. Sarmago, *Research Initiatives in Basic Drug Discovery and Vaccine Development* by Dr. Gisela P. Concepcion, and *Dengue/Dengue Haemorrhagic Fever Revisited* by Dr. Nelia P. Salazar;
- NRCP continued to invest in human resource development with a total of 25 training courses, seminars/workshops attended by the management staff to broaden and enhanced their skills.

Generation of New Knowledge and Technologies

Completed Projects

Governmental, Educational, and International Policies

E-Commerce Prospects of Filipino Farmers and Fishers Cooperatives

Mrs. Aurora S. Tolentino
Pasay City

This was a research project to find out the level of awareness and readiness of the cooperatives of farmers and fishers in Cavite about engaging in e-commerce. It was important to establish the level of awareness and readiness of the cooperatives so that the research will be able to make appropriate recommendations that will hasten the development and contribute to the success of e-commerce in Cavite. If the level of awareness and readiness would be from poor to zero this research would establish the reasons for such, identify problem areas, and recommend appropriate solutions.



Filipino Farmer (photo courtesy of www.tonyocorpuz.com)



Filipino Fisherman (photo courtesy of www.hord.org)

Official data showed that the agriculture and aquaculture production of Cavite was sufficient to supply a limited portion of the cyber market. Cavite has a stable and relatively IT-supportive government, providing free basic training at the Cavite Computer Center in Imus to all Caviteños. Cavite is home to several prestigious universities, business centers, manufacturing plants, malls, telephone and internet service providers like Globe, Smart and Digitel; as well as express courier services such as LBC, DHL, and FedEx.

Despite the above-mentioned e-commerce conducive factors, Cavite as a whole is not e-commerce ready. DigitalFilipino.com had no statistics on Cavite Internet users compared to its neighbor, Batangas, which recorded 150,000 Internet users and 30 Internet cafes as of 2004. Although Cavite has a Web site, it is static and not interactive as that of Quezon, which incidentally offers e-commerce, unlike Cavite.

A major initiative of this research was the writing of the project proposal to establish a community information center in Trece Martires to serve as e-commerce hub as well as a total ICT4D workshop for the government and people of Cavite.

Generation of New Knowledge and Technologies

Earth and Space Sciences

Analysis and Prediction of Rainfall Associated with the Southwest Monsoon Surge

Dr. Nathaniel T. Servando

Philippine Atmospheric Geophysical Astronomical Services Administration
Agham Road
Diliman, Quezon City

This project is a combined observational and numerical study of the weather disturbances which are associated with the rainfall episodes during the southwest monsoon (monsoon surge). The Pennsylvania State University – National Center for Atmospheric Research (PSU-NCAR) mesoscale model MM5 is utilized in the numerical simulation of the observed structure or characteristics of the monsoon surge.

Cases of two monsoon surge events in August 2004 and July 2002, were investigated. Analysis of the evolution of wind and satellite imagery through all the stages of development of a monsoon surge – from its initiation, through its intensification to the dissipation were undertaken in selected weather stations.

The monsoon surge occurs in connection with the presence of the monsoon across the northern tip of Luzon and tropical cyclones located east of the Philippines moving along this trough. Its development is indicated by the increase in the speed and the depth of the southwest monsoon flow. The mature stage is characterized by a considerable increase in speed of the southwest flow which covers a large area, accompanied by maximum rainfall located in the western side of Luzon and Visayas. After this stage of development, the southwest wind flow weakens and the areas affected by strong winds are reduced. The rainfall patterns are drift northward with decreasing intensities.

Numerical sensitivity experiments were performed to examine the dependence of rainfall forecasts on different cumulus parameterization. Results of forecast verifications show that simulation using the Kain-Fritsch convection scheme generate better rainfall forecasts.

Based on the analyses of the simulation results, the MM5 model was able to predict the observed features of the rainfall disturbance due to the monsoon surge. Thus, the model has demonstrated its potential use in forecasting the characteristics of the mesoscale rainfall distribution associated with the southwest monsoon surge in the Philippines.

New Projects

Governmental, Educational, and International Policies

Development and Validation of an English Vocabulary Program for Basic Education

Dr. Remedios Ralleta Navarro
University of Northern Philippines
Vigan, Ilocos Sur

For the 1st quarter, preliminary preparation and bibliographical research (stage I of the three stages of the Research and Development Cycle) was finished. The result of the English Vocabulary Level Test (Pretest) shows that the 43 Grade Six Pupils (28 boys; 15 girls) got FAIR in the 2,000 Word Level, FAIR in the 3,000 Word Level, FAIR in the 3,000 Word Level, and POOR in the 5,000 Word Level. Therefore, the Grade Six Pupils of the UNP Laboratory Grade School need help in all the word levels.

The Encouragement of Critical Thinking in *Sibika at Kultura* Among Grades 1 and 2 Pupils

Dr. Dolores G. Garcia
Pamantasan ng Lungsod ng Maynila
Manila

This aims to determine the extent to which critical thinking is encouraged in *Sibika at Kultura* (Civics and Culture) among Grades 1 and 2 pupils in three school divisions in the National Capital Region.

One of the goals of basic education is to develop the Filipino learners by providing them basic competencies in critical thinking. The results of the study will show, how adequately critical thinking is encouraged in Grades 1 and 2 Civics and Culture and (2) as needed will give suggestions toward this end employing the parameters on critical thinking in the works of Matthew Lipman and of cognitive psychologists.

Generation of New Knowledge and Technologies

Policy Study on the Age of Retirement of Government Employees

Dr. Marites G. Yee

Institute of Human Nutrition and Food
University of the Philippines Los Baños

To study the present policies related to the age of retirement and their viability to government employees and to the Philippine government as well.

The project will reveal if the present policies would still be applicable to the Philippine government and employees and if revision or improvement of policies will still be needed. Results will be of great help to the greater portion of the Filipino people, such as the public school teachers and government employees.

If the study would bring about changes and improvement in the policies, an improvement in the quality of life of the Filipinos and a longer life span for the working class of the Filipino people will be anticipated. The younger, stronger, and more creative new generation of government employees will eventually revolutionize and speed up the economy.

Mathematical Sciences

A Study on Self-Amalgamation of Certain Graphs: Focus on Bandwidth, Stability Number, Self-Amalgamation Number, and Other Graph Properties

Dr. Thelma C. Galliguez

Department of Mathematics
Northern Mindanao State Institute of Science & Technology
Ampayon, Butuan City

The proposed project aims to study n -amalgamation of graphs with a focus on bandwidths, stability numbers, and self-amalgamation numbers of special graphs, as well as other properties of self-amalgamation of graphs.

Computing the bandwidths of graphs in general is an NP-complete problem. Thus, most research in this area is restricted to classes of graphs. Applications of bandwidth have arisen in computer science involving scheduling and simulation problems. In general, investigations in graph theory and combinatorics are gaining strength due to their implications to algorithms and computer science. It is hoped that the results of the proposed research project will become useful to other researchers in computer science and the other applied fields.

Pharmaceutical Sciences

Study on the Antibiotic Potential of Extracted Bioactive Substances from *Caesalpinia sappan* L. (Family Fabaceae)

Dr. Claro M. Santiago

Industrial Technology Development Institute
Department of Science and Technology
Bicutan, Taguig City

Caesalpinia sappan L., Known locally as *kalumbibit*, grows abundantly in low and medium altitudes in dry woody areas in the northern part of the country. Bark and leaves of the plant were collected in Bantay, Ilocos Sur. The plant material was air-dried and later sun-dried before pulverizing the separated parts of the plant.

Five grams each of the powdered bark and leaves were defatted with hexane. The upper layer was decanted leaving the marc or residue. The residue was extracted with three solvent system following the protocol in "A Guidebook to Plant Screening: Phytochemical and Biological" and edited by Beatrice Q. Guevara.

The extracts obtained were generally greenish brown but a bit darker for the extracted bark and lighter for the leaves. This was observed for all the solvent systems used and for two extractions undertaken.

Validation and In-vitro Conservation of Selected Medicinal Plants in the Philippines

Dr. Lourdes B. Cardenas

Institute of Biological Sciences
University of the Philippines Los Baños

Since research and development of drugs from natural sources in the Philippines is a very expensive endeavor that could very well be beyond reach, it is considered prudent to work on plant species with known active constituents. The project also underscores our country's intent in optimizing the use of its valuable but limited resources.

Generation of New Knowledge and Technologies

Screening of Indigenous Herbal Plant Extracts for Antibacterial Activity

Ms. Betty Bantiany
Ifugao State College of Agriculture and Forestry
Nayon, Lamut, Ifugao

The study will explore new frontiers in the search for botanical biologically-active constituents of drugs. Discoveries of new compounds with antibacterial activity can provide breakthroughs in the field of microbiology. This project would benefit the pharmaceutical sector, indigenous medicine, and other end-users, and would provide invaluable information to botanists, chemists, and other researchers as well.



Gemmula speciosa turrid (Reeve, 1843)

Biological Sciences

Propagation Techniques in Endangered Sablot [*Litsaea glutinosa* Lour. Rob(Lour.) C.B. Rob]

Dr. Alfredo R. Rabena
University of Northern Philippines
Vigan City, Ilocos Sur

The research project will give people basic information on the easiest and fastest way to propagate the plant known by the Ilocano name *sablot*. The propagation of *sablot* will bring back raw materials necessary in the formulation of plastering materials used in the old ancestral houses in the Heritage City of Vigan which up to now are still in existence. The UNESCO is requiring the restoration of old houses using the original plaster which made the use of *sablot* as one of the key ingredients. Artisans and craftsmen, although knowledgeable of the process of plastering, do not have raw materials, i.e. *sablot* in the formulation to come up with a plastering substance.

The research project will help the people propagate and conserve *sablot*. The research will help also the Government of the City of Vigan particularly the Vigan Conservation Council in its quest for indigenous technologies proper to the conservation and restoration of the Ciudad Fernandina, now Vigan, in the UNESCO World Heritage List.

The people in the countryside will be tending such trees and will be supplying the raw materials (leaves) needed in the formulation of plaster used in the restoration of old houses, thus augmenting their income.

Reproductive Biology of the Turrid *Gemmula speciosa* (Reeve, 1843) Reproductive Anatomy and Gonadal Development

Dr. Suzanne Mingo-Licuanan
Marine Science Institute
UP Diliman, Quezon City

This research aims to provide basic knowledge on the reproductive biology of turrids, using the available species *Gemmula speciosa* (Reeve, 1843) (Family Turridae, Subfamily Turrinæ) collected from the waters of Cavite-Batangas (Philippines).

Toxoglossate gastropods are emerging as an important pharmacological resource. Interest in the turrid *Gemmula speciosa* stemmed from scientific research on another toxoglossate group, the Family Conidae. Over 20 years of significant research characterizing the component of the cone venom led to the importance of the *Conus* venom peptides as basic tools in neuroscience, as diagnostic agents, and as therapeutic drugs. These studies also reveal that there are still about 50,000 different conotoxins in the cone venom that need to be investigated. It is hypothesized that cone shells have evolved from the turrids, which may exhibit similar mechanisms of envenomation studied in *Conus*.

Generation of New Knowledge and Technologies

Agriculture and Forestry

Propagation and Nursery Management of Selected Flowering Trees Suitable for Urban Landscapes

Dr. Fernando Sanchez
Department of Horticulture
College of Agriculture
University of the Philippines Los Baños

Trees in urban landscapes perform significant functions primarily for aesthetic purposes by means of creating a pleasurable healthy environment through reduction of harmful effects of solar radiation and regulation of air temperature, wind and humidity. Trees may also serve as natural screen of air pollutants, control of glare and reflection and for attenuation of noise pollution through massive planting.

The direct economic benefits of trees are usually associated with energy costs by reducing the air conditioning costs at home due to the presence of these flowering trees, providing shade and windbreak.

The presence of flowering trees as landscape components also increase the commercial value of a particular area. Landscape homes are more valuable than non-landscape ones. It is very pleasant to see colorful landscape attractions for it soften the background or atmosphere of a congested environment specifically the metropolitan areas.

At present, the technology of vegetative propagation of flowering trees are not fully established, hence the supply of these trees is so limited thus they are very costly. The improvement on the availability and quality of planting stocks of these flowering tree species will then benefit both small and large-scale nursery growers in the landscape industry. Research study may be conducted to determine the appropriate propagation and nursery management and to determine the potential of these flowering tree species for urban landscaping.

Development of Information System on Lesser-Known Indigenous Plant Species Used in Organic Farming, Sustainable Farming Systems, Community Health Care and Food Supplements in the Cordillera, Northern Luzon

Dr. Damasa M. Macandog
Institute of Biological Sciences
University of the Philippines Los Baños

Indigenous knowledge is the knowledge that people in a given community has developed over time, and continues to develop. It is based on experience, often tested over centuries of use, adapted to local culture and environment, dynamic, and changing. There are many different types of indigenous knowledge. It includes information, practices, technologies, beliefs, tools, materials, experimentation, biological resources, human resources, education, and communication (IIRR, 1996). Indigenous knowledge systems are holistic and are the basis for self-sufficiency and self-determination. Proper documentation of these indigenous knowledge systems is very limited and quite fragmented.

A project website was developed to promote and disseminate information and project outputs available for researchers, students, agricultural workers among others. The first beta version will soon be launched and uploaded as some fine tuning are still being done to ensure user friendliness and accurate content of the website. The website was developed with the use of open source development platform and database. PHP language was used as front end while MySQL was used as backend for database. Cascading Style Sheet (CSS) was also used for interface and navigation design.

The information from the literature were reviewed and summarized. This served as the basis for the development of the information system (database) to organize and manage information on indigenous knowledge, indigenous plant species of upland communities in the Cordillera region. The database consist of seven (7) sections namely: (1) Sustainable indigenous farming system; (2) Organic farming system; (3) Community health care system; (4) Food and food supplements; (5) Cultural practices; (6) Construction and livelihood; and (7) Ornamental, landscaping and gardening. The structure of the database will contain species name, local name(s), location, site description, type of system, type of use and reference.

As of November 27, 2007, there were a total of 522 identified indigenous plant species. There were 73 plant species used in sustainable farming system; 132 plant species utilized as food; 64 plant species used for construction and livelihood; 33 plant species identified as ornamental, landscaping and gardening; 18 plant species used in local cultural practices; and 202 plant species used in community health care system.

Generation of New Knowledge and Technologies

Engineering and Industrial Research

Technical Viability Analysis of Using Jatropha Methyl Ester & Jatropha Oil Extract as Alternative and for 2-T Oil in Unmodified 2-Stroke Engine

Prof. Lot Ramirez

Technological University of the Philippines
Ayala Avenue, Manila

The project aims to determine the overall technical viability of using coconut methyl ester (CME) based oil and Jatropha oil extract as an alternative for petroleum based 2-T oil when used in unmodified 2-stroke gasoline engine.

This research shall address the problem of excessive emission of smoke and particulate matter from motorcycles and two stroke engines not only from its petrol fuel but also from the use of 2-T Oil, a petroleum base lubricant. The project aims to determine the technical viability of using plant-based oil lubricants as an alternative to 2-T oil focusing on two promising materials: Coconut Methyl Ester, CME and Jatropha Methyl Ester, JME.

Project Update:

Upscaling the Design and Fabrication of Oil Expeller Machine. The fabrication of an oil expeller machine used in extraction of oil from *Jatropha curcas* L. seeds which was completed in the first quarter required revision and upscaling by replacement of the hydraulic jack from a 10-ton press capacity to a 16-ton press capacity.

Jatropha Oil Extraction Process. Oil extraction from five sacks of *Jatropha curcas* L. seeds proceeds, producing a yield of about 14 liters of *Jatropha curcas* L. oil. The oil was collected in amber-colored bottles to minimize exposure to light.

Transesterification Process for Jatropha Oil. The process of transesterification requires and equipment as a reaction vessel fitted with stirrer and heat controller to keep it at 45°C-65°C, a separate tank for collection of glycerol and a washing tank to free the JME product from traces of the acid or base catalyst. The chemicals needed include methyl alcohol that will react with the fatty acid (jatropha oil) to produce the jatropha methyl ester and an acid or base as catalyst. The process was done in CHEMREZ.

Characterization of the Jatropha Methyl Ester. This is the major activity wherein CHEMREZ esterified the Jatropha oil and subjected the JME product into various quality tests for its characterization. The product passed 11 tests: Density, Viscosity, FAME content, Flash Point, Cloud Point, Acid Number, Free Glycerin, Total Glycerin, Methanol Content, Water Content and Appearance. It failed in two tests: oxidation stability and methyl laureate content which are both controllable. Test results are very significant as they suggest that JME has met the lubrication Standards, (when compared to 2-T oil). The JME will be sent to the DOE for further characterization tests and to confirm the test results done at CHEMREZ.

Generation of New Knowledge and Technologies

Social Sciences

Conflict Resolution: Philippine Style

Dr. Jasmin Acuna
College of Business Administration
University of the Philippines Diliman, Quezon City

To identify the common conflict situations experienced by three indigenous cultural communities (ICC) in the country.

To document the existing indigenous conflict practices that these indigenous cultural communities employ vis-à-vis the identified conflict situations.

To inquire if these conflict resolution practices are utilized in the Barangay justice system/Katarungang Pambarangay.

To analyze the factors that account for the utilization or non-utilization of the indigenous conflict resolution practices in the Katarungang Pambarangay.

To derive effective ways of conflict resolution from the indigenous conflict resolution practices described in the study.

The Philippines is one country where conflict situations exist and the military alone can not solve the problem. The proposed study will reach out to Muslim Communities in order to find ways how to live peacefully together. It will provide a literature review that will list studies which will help solve or produce peace, an important contribution to libraries of colleges and universities.

A Comparative Study of Peace Values of Muslim Residents in Iligan and Cagayan de Oro City

Dr. Ma. Concepcion O. Abaya
26 D. Lantana St.
Cubao, Quezon City

To make a comprehensive study of the peace values of Muslim residents in Cagayan de Oro City and Muslim residents in Iligan City.

To reinforce certain Muslim values vis-à-vis Christian Counterparts and identify factors that either prevent or contribute towards community building in the peace process.

It will provide data and information on how Muslims and Christians in Cagayan de Oro City and Iligan City live a peace process that contributes to development and make a probe on the peace perspectives of Muslims on the following aspects: Economy and Work, Relationship with Others, Spirituality & Prayer Life, Health, Ecology & Harmony, Wisdom & Education, and Social Community & Unity.

Status and Prospects of Sea Urchin Fisheries in Ilocos Sur

Ms. Alma Segismundo
University of Northern Philippines
Vigan City, Ilocos Sur

To determine the status and prospects of the sea urchin fisheries for the whole province of Ilocos Sur, since it has been found out that many fishermen in several coastal towns of the province are engaged in the cage culture of the sea urchin.

To determine the socio-economic profiles of all the fishermen involved in the cage culture of sea urchin; the culture methods and marketing practices; impact of sea urchin cage culture to the fisher folk; cost and return analysis; problems encountered, factors contributing to the problem, and recommended solutions.

It has been found out that sea urchin cage culture has improved the quality of life of the people living along the area. The results would contribute to the increase of income of the fisher folk in Ilocos Sur, since a wider dissemination of the prospects of sea urchin cage culture to all coastal communities will be conducted.

Physics

Frequency Dependence of the Solid-Liquid Phase Transition of Granular Polystyrene Beads

Dr. Marisciel Palima
Instrumentation Physics Laboratory
National Institute of Physics
UP Diliman, Quezon City

This project tries to answer the fundamental question on how materials behave when undergoing a drastic change in their properties, i.e. a phase transition. To study how the critical values change when an external periodic forcing on the system is present. Findings in this investigation may have direct impact on other studies such as in landslides, lahar mudflow and garbage management. The results of this investigation may not add significantly to the national income, but it can help alleviate the costs of disaster mitigation that comes with a scientific understanding of just how materials behave near a phase transition.

Generation of New Knowledge and Technologies

On-going Projects

Medical Sciences

Correlation of Pre-Transplant and Post Transplants

HLA Allosensitization with Graft Rejection in Renal Transplants

Dr. Florecita Padua

National Kidney Institute

Quezon City

The detrimental role of donor specific anti-HLA antibodies to the renal graft is well established. The presence of these antibodies is a contraindication to renal transplantation as it poses a risk for rejection. They may also develop post transplantation and may cause acute rejection. Non-donor specific pre-formed anti-HLA antibodies have also been shown in various studies to be detrimental to renal graft survival. This study is undertaken to investigate the role of HLA antibodies in acute and chronic rejection among our renal transplant patients. The results of this study may help guide the transplant physicians in their choice of the immunosuppression regimens adapted to a particular patient's anti-HLA antibody profile both before and after transplantation

Biological Sciences

Subcellular Localization, Isolation and Partial Purification of Mercury-binding Phytochelatins in *Chromolaena odorata* (L.) R.M. King et. H. Robinson

Dr. Gilda C. Rivero

Institute of Biology

University of the Philippines Diliman

Chromolaena odorata (L.) R.M. King & H. robinson plants were exposed to 0.0mg/L and 1.0mg/L Hg(NO₃)₂, to investigate the subcellular localization of mercury. Various subcellular fractions of the leaf blades (laminae) were separated through differential centrifugation. The Hg contents of each subcellular fraction and component were analyzed through Cold Vapor-Atomic Absorption Spectrophotometry (CV-AAS).

The results revealed the mobility and localization of Hg in 3 out of 4 of the subcellular fractions and components of the treated laminae.

These results may serve as baseline data towards the exploitation of this *Chromolaena odorata* as Hg phytoremediator. The isolation and partial purification of Hg-binding phytochelatins in *Chromolaena odorata* will be the subject of the second year research.

Generation of New Knowledge and Technologies

Agriculture and Forestry

Biodiversity of Soil Arthropods in Selected Pre and Post Land Conversion Ecosystems and Their Role in Maintaining Soil Fertility

Dr. Ireneo Lit, Jr.

Museum of Natural History

University of the Philippines Los Baños

Additional samples to complete seasonal distribution will be gathered and both taxonomic and ecological diversity indices will be determined. Laboratory experiments to demonstrate the role of anthropods in maintaining soil fertility still need to be conducted.



An arthropod

Isolation and Preliminary Characterization of Marine Bacteriophages Potentially Useful for Disease Control in Aquaculture

Dr. Arturo O. Lluisma

Marine Science Institute

University of the Philippines Diliman

Water samples from marine, brackishwater, and freshwater environments were collected from different sites. Juvenile and adult shrimps were also collected. Collection sites are the following:

- Batac, Ilocos Norte (April 9-10, 2007): Batac Fish Farm, Paoay Lake, and Sarnap Lake
- Balanga, Bataan (May 23, 2007): De Guzman Aqua Fish Farm
- Caatagan, Batangas (June 21, 2007)

Bacteria isolates (*Vibrio harveyi*) used in the isolation of bacteriophages were obtained from research agencies which previously isolated bacterial strains that are pathogenic to shrimps. One *Vibrio* strain was from NIMBB-BIOTECH, UP Los Baños. Three *Vibrio* strains from SEAFDEC, Iloilo were also used.

Attempts to isolate luminescent vibrios from water and shrimp samples were also done using standard

To isolate bacteriophages, the direct enumeration and the enrichment methods were performed. In the direct enumeration procedure, the samples (water or homogenized shrimp tissue samples) were analyzed by plaque assay (double-layer agar method), by liquid assay, and by spot-inoculation assay.

In the enrichment method, aliquots of the samples were mixed with cultures of bacterial isolates, and after incubation the mixture were analyzed through the three assays.

The direct enumeration method did not yield any bacteriophage. In the enrichment assays, crude (unpurified) enriched samples showed indications of bacteriophage activity. But upon filtration and PEG-purification, infection against bacterial isolates was not observed. Viral titer may be low, as the purification procedure probably caused significant loss of the phages.

As no phages have been isolated yet, there is a need for further sampling of potential phage sources. In addition, optimization of enrichment and purification protocols will be continued.

Sorption Characteristics of Bamboo Rattan and Vines in the Philippines

Dr. Marina G. Alipon

Forest Product Research and Development Institute

College, Laguna

The project is intended to determine the equilibrium moisture content (EMC) and dimensional changes of some bamboo species, rattan and threevines at various relative humidities (RH), and to derive their EMC curves. From the sorption isotherm, EMC and dimensional changes could be derived during desorption and adsorption at a range of RH met in actual us. Drying schedules of wood normally start from the sorption diagram and play an important role in most processing treatments. The available sorption diagram is valid for many North American and European wood species with low extractive content and adopted in kiln drying practices in the Philippines. Bamboo, rattan and some forest vines are important raw materials of the forest-based industries especially in the wake of depleting timber resources. To date, no information on sorption of the species of bamboo, rattan, and three vines included in this project is yet available.

Generation of New Knowledge and Technologies

Chemical Sciences

Screening for New and Antimicrobial Compounds from Plants of the Family Compositae

Dr. Consolacion Y. Ragasa
Chemistry Department
Dela Salle University
Manila

For the 1st and 2nd quarters of project implementation, improvised sorption set-up apparatus for conditioning experimental materials to various RH levels was devised.

Collection and preparation of samples have been completed, including monitoring of weight at green and room condition and 12% moisture content (MC) from six bamboo species (~3 – 4 year-old) namely; bolo [*Gigantochloa levis* (Blanco) Merr.], Kauayan tinik (*Bambusa blumeana* J. A. & J. H. Schultes), giant bamboo [*Dendrocalamus asper* (Schultes f.) Backer ex Heyne], buho [*Schizostachyum lumampao* (Blanco) Merr.], bayog [*Bambusa merilliana* (Elmer) Rojo & Roxas, comb. nov. [= *Dendrocalamus merrillianus* (Elmer) Elmer], and kauayan killing (*Bambusa vulgaris* Schrader ex Wendland), one species of rattan; palasan (*Calamus merillii* Becc.) and three vines; *Cayratia japonica*, *Ficus* sp. and *Thumbergia* sp.) have been completed.

For the 3rd and 4th quarters, the fabrication of sorption set-up

apparatus was finished. Conditioning of palasan samples at 15% and 21% MC has been done. All gathered data have been computed and tabulated. Data cannot be presented and discussed yet as these will be meaningful only when the conditioning of samples at other MC levels (~7%, 12%, 15% and fsp) have been completed. During these quarters, the humidity controlled cabinet (indispensable equipment for the project) bogged down delaying the conditioning of bamboo and vines to other MC levels.

The first year of the project resulted in one accepted paper in the Journal of Natural Medicines, an ISI listed journal published by Springer. *Blumea lacera* (Burm. F.) DC. afforded three compounds that were isolated for the first from the plant. The following is the abstract of the paper:

The dichloromethane extract of the air-dried leaves of *Blumea lacera* afforded an α -pinene-7 β -O- β -D-2,6-diacytetylglucopyranoside (**1**), 5,4'-dihydroxy-6,7,3'-trimethoxyflavone (**2**), and 3,5,4'-trihydroxy-6,7,3'-trimethoxyflavone (**3**). Compounds **1-3** showed moderate activity against *Candida albicans*, low activity against *Trichophyton mentagrophytes*, and inactive against *Aspergillus niger*. Compounds **1** and **3** indicated low activity against *Escherichia coli*, *Pseudomonas aeruginosa*, and *Staphylococcus aureus* and inactive against *Bacillus subtilis*, while **2** was inactive against the four bacteria tested.

Structure Elucidation of a Potential Anti-Inflammatory Constituent from *Cassia alata* L. Leaves

Dr. Irene Villaseñor
Institute of Chemistry
UP Diliman, Quezon City

Cassia alata (akapulko) leaves, collected from Montalban, Rizal, Philippines, were washed with tap water, drip-dried and further air-dried, homogenized, weighed (total weight of 1.80 kg) macerated with 100% methanol, and filtered to obtain a crude methanolic extract. The methanolic extract was concentrated in vacuo at 40°C giving a total dry weight of 384.0748 g (% yield=19.38%).

The crude methanolic extract, 348.0748 g was dissolved in 200 mL distilled water and was partitioned exhaustively with *n*-hexane. The resulting aqueous layer was further partitioned exhaustively with ethyl acetate. The hexane and ethyl acetate extracts were then concentrated in vacuo at 40°C. The ethyl acetate extract FD(2) (5.8387 g 0.324% yield) was subjected to thin layer chromatography using 25:75 acetone:chloroform.

Generation of New Knowledge and Technologies

The ethyl acetate extract, FD(2), with dry weight of 5.8387 g, was subjected to normal phase vacuum liquid chromatography (NPVLC) using silica gel G (Merck) or CaSO₄·H₂O (12-13.5%), bed volume 230 mL, gradient from 100% hexane to 100 % ethyl acetate with 10% increments. Final elution was done using 50:50 ethyl acetate:methanol and 100% methanol. Fractions were collected in 250 mL Erlenmeyer flasks giving 13 fractions. Fractions were subjected to thin layer chromatography (TLC) using 25:75 acetone:chloroform as solvent system. Fractions with the same TLC profiles were pooled and concentrated in vacuo at 40°C giving 5 fractions labeled as FD(2)A, FD(2)B, FD(2)C, FD(2)D, and FD(2)E. A compound with R_f0.38 was obtained from fraction (FD(2)B and eluted in 40:60 and 30:70 hexane:ethyl acetate. The FD(2)B fraction was concentrated in vacuo at 40°C (814.1mg, 0.0452% yield). Gel permeation column chromatography of FD(2)B using Sephadex LH-20 with methanol as eluent gave five fractions including FD(2)B3a, with dry weight of 180.2 mg (% yield=0.010%), with R_f0.42.

FD(2)B3a, with dry weight of 180.2 mg (% yield=0.010%) was further subjected to gel permeation chromatography using methanol as an eluent, and afforded three fractions labeled as FD(2)B3aA, FD(2)B3aB, and FD(2)B3aC, in which FD(2)B3aC, with an R_f0.418 was TLC pure. It is a neon green spot with tailing in 25:75 acetone:chloroform. FD(2)B3aC was further subjected to crystallization at 4°C with methanol as the solvent. The residue was filtered, giving 174.2 mg of yellow amorphous solid, FD(2)B3aC1.

Solubility tests for FD(2)B3aC1 were conducted before subjecting to RP-HPLC. The compound is soluble in methanol but insoluble in chloroform. The compound was further purified by isocratic liner elution reverse phase HPLC using 45% CAN with 0.05% formic acid:65%H₂O with 0.05% formic acid as solvent system. Peak 1 was analyzed for chemical and physical characterization.

Peak 1 of FD(2)B3aC1 was analyzed for chemical and physical characterization. The electrospray ionization-mass spectrum of FD(2)B3aC1-peak 1 has an m/z 282 in negative ionization mode. Its infrared spectrum has a dominant -OH peak at 3400 cm⁻¹, as was verified by the -O-H bending at 1300-1350 cm⁻¹, aryl-H vibration frequencies at 1585 cm⁻¹, an indication that the aromatic ring is further conjugated. The UV-vis spectrum has absorbance maxima at 271,325, and 387 nm. The ¹H-NMR, ¹³C-NMR and 2D characterization of FD(2)B3aC1-peak 1 are still underway.

The FD(2)B3aC1-peak 1 will be then subjected to anti-inflammatory assay.

Earth and Space Sciences

A Geochemical Approach to the Provenance Signatures of the Klondyke and Zigzag Formations and Its Implication on the Oceanic to an Island-Arc Setting Evolution of the Baguio Mineral District, Philippines

Dr. Carla B. Dimalanta
National Institute of Geological Sciences
College of Science
UP Diliman, Quezon City

To resolve the question on the tectonic evolution of Baguio and its vicinity, the source geology of the Klondyke and Zigzag sedimentary formations and their correlatives is being investigated. Petrology, paleontology and geochemistry are utilized to address this problem. Rock samples collected during the fieldwork in Baguio City and the nearby La Union area were subjected to petrographic, paleontological, and geochemical analyses. Twenty-nine sedimentary rock samples were collected in Tublay, Naguilian Road and Marcos Highway in Baguio and East Agoò, Damortis, and Rosario in La Union.

Thin sections of representative rock samples were examined under the petrographic microscope. At least four hundred (400) grains were counted per thin section and were classified as quartz, feldspar, or lithic grains. The resulting point count data were plotted in ternary quartz-feldspar-lithic (QFL) diagrams for provenance interpretations. Thin sections of siltstones were examined for calcareous nanofossils to determine the geologic ages of the sedimentary units. Shells and shell fragments from some fine-grained samples revealed the ages of the fine-grained rock units.

In terms of the geochemistry, powders of the rock samples were submitted for analysis to determine the concentrations of major compounds, (e.g., SiO₂, TiO₂, Al₂O₃, Fe₂O₃, Na₂O, CaO, MgO) and trace elements (e.g., Zr, La, Sc, Th). The results of the geochemical analyses of selected rock samples will be used to determine the provenance signatures of the Klondyke and Zigzag formations. Further, plots of these data on determination diagrams will provide additional information on the source weathering and tectonic setting of the Baguio Mineral District.

Basic Network Services

THESIS GRANTS

Biological Sciences

Distribution and Abundance of *Hippocampus* Species in the Coastal Waters of Three Selected Municipalities of Northern Samar

Ms. Arizza Joy-Tan Evardone
University of Eastern Philippines
University Town, Northern Samar

Anti-Microbial Activity Screening of Methanolic Extracts of *Acanthus ilicifolius* L. *Clerodendrum inerme* L. and *Ceriops tagal*

Mr. Joewel T. Baidado
College of Nursing
Iloilo Doctors' College
West Avenue, Iloilo City

Growth and Development of *Agathis philippinensis* Warb. [Almaciga] in Response to Propagation Techniques

Mr. Chris Rey M. Lituanas
Mindanao Polytechnic College
Lapasan, Cagayan de Oro City

Lipid Peroxidation in Various Organs and Histopathology of the Digestive Gland in *Batisa violacea* Lamarck as Biomarkers of Pollution in the Catubig River, Northern Samar

Mr. Reiza R. Irinco
9 Malasila St., NIA Village
Tandang Sora, Quezon City

Plantlet Regeneration and Essential Oil Production in Vitro Cultures of Ilang-Ilang *Cananga odorata* [Lam.] Hook. f. & Thoms.

Ms. Andrea F. Lindain
705 Bonifacio St.
San Jose, Nueva Ecija

Nutritional Values, Physicochemical Properties, and Acceptability of Rice *Oryza sativa* L. Composite

Ms. Nona D. Nagares
B-10, L-10 Jardin Leonila
Barangay Maahas,
Los Baños, Laguna

Physical and Thermal Properties of the Red Seaweeds, *Eucheuma* spp. and *Kappaphycus* spp.

Ms. Cherryflor R. Balingasa
Bar. Salugan
Camalig, Albay

Cookies Made from Camansi [*Artocarpus camansi*] Seed Flour: Its Acceptability

Ms. Margie C. Tipan
Teacher Education Center
Aklan State University
Kalibo, Aklan



Oryza sativa L.



Agathis philippinensis Warb



Clerodendrum inerme L.



red seaweed



Cananga odorata (Lam.) Hook. f. & Thoms.



Hippocampus species

Agriculture and Forestry

The Dynamics of Pluralistic Agricultural Extension in Valencia, Negros Oriental, Philippines

Ms. Ellen Grace A. Tingson
Negros State College of Agriculture
Camingawan, Kabankalan City
Negros Occidental

Basic Network Services

THESIS GRANTS

Social Sciences

Strategy Variability in Arithmetic in Relation to Age, Problem Size, and Task Demand

Ms. Joyce Kathleen R. Lagdameo
8 Esteban St., Highway Hills
Mandaluyong City

Development and Validation of a Storybook Series Fostering Positive Attitudes Toward Children with Disabilities

Mr. Gereon Pilipino M. Pineda
Speciabilities Development Center
Biak na Bato St., Quezon City

Chemical Sciences

Vehicle Emission Testing and Air Pollution Detection in Naga City

Mr. Arturo C. Nealega
Camarines Sur National High School
Penafrancia Avenue, Naga City

Isolation and Characterization of the Bioactive Fractions from Carabao (*Bubalus bubalis L.*) Milk Lactoferrin

Mr. Amado A. Angeles
BF5 Catalan Compound
Silangan Road
UPLB, College, Laguna



Bubalus bubalis L.



Air pollution

Basic Network Services

DISSERTATION GRANTS

Biological Sciences

Conchological and Anatomical Studies of Selected Philippine Cone Snails

Ms. Zenaida G. Baoanan

Department of Biology

College of Science

Baguio City



Zea mays L.

Agriculture and Forestry

Growth & Yield of Two Corn [*Zea mays L.*] Varieties Applied with Varying Levels of Nitrogen, Phosphorus, Potassium, and Bio-N

Mr. Ador R. Picaza

University of Southeastern Philippines

Tagum Campus, Apokon

Tagum City, Davao City



Conus imperialis

Social Sciences

Child Labor Incidence in the Agricultural Sector of the Cordillera Region

Mr. Emerito A. Narag

Department of Labor and Employment

CAR, Cabinet Hill

Baguio City

A Trilingual Cebuano-Filipino-English Glossary of Terms in Fisheries

Ms. Tessie R. Gaurino

Southern Mindanao Mission of SDA

Corner City Heights & Cannery Road

General Santos City

Child Pornography in the Internet: Silent Epidemic

Ms. Linofe R. Aglubat

Nueva Ecija University of Science & Technology

Gen. Tinio St., Cabanatuan City

The State of Audit Practice in Selected Government Agencies: Basis for Policy Advocacy

Ms. Cecilia J. Sabio

Office of the Assistant Executive Secretary for

Internal Audit Office

Office of the President

Malacañang, Manila

Development and Validation of an Interdisciplinary Manual for the Use of Parents, Teachers, and Health Professionals for the Education of Children with Chronic Illness

Ms. Ma. Cecilia D. Licuan

College of Physical Therapy

DLSU Health Sciences Campus

Dasmariñas, Cavite

An Evaluation of the Fourth Year English Program of Laboratory High Schools in Northern Mindanao, Philippines

Ms. Nenita P. Silvano

Central Mindanao University/High School

Musuan, Bukidnon

Supply Chain Logistics Integration Performance of Philippine Food Packaging Firms

Mr. Randolph Von N. Salindo

Department of Business Management

College of Agriculture

Central Mindanao University

Musuan, Bukidnon

Policy Services in Support of Membership

SEMINARS

PAASE 2007 International S&T Conference and 27th Annual Meeting and Symposium

15-17 Feb. 2007
Century Park Hotel/De La Salle University
Manila

In his message, Dr. Alvin B. Culaba said that PAASE believes that science, engineering, and technology play an important role in sustaining economic growth. It focuses on the five priority areas of the government, namely: energy, health, biotechnology, environment and information and communication technology

The challenge is indeed formidable, but PAASE for the past 26 years has not wavered in its commitment to promote science and technology in this country through sharing their valuable energy, knowledge, experience, and successes with our aspiring Filipino scientists in the country.

Scientific Session: Critical Review of the Kingdoms of Organisms

16 February 2007
NRCP Patrocinio Valenzuela Hall
Bicutan, Taguig City

2007 Symposium on Coconut Oil: State of the Art

17 February 2007
Traders' Hotel, Manila

Research and Development Priorities on Climate Change

01 March 2007
Administration Building
University of the Philippines Los Baños
Laguna

2007 Engineering Research Conference

16 March 2007
Polytechnic University of the Philippines
Sta. Mesa, Manila

Paper Presentation on Diaspora, Remittances, and Poverty in RP's Regions

3 May 2007
Audio Visual Room, College of Social Sciences and Philosophy
University of the Philippines Diliman
Quezon City

Scientific Session on Emerging Infectious Diseases

28 May 2007
National Institutes of Health-Philippines
Manila

Roundtable Discussion on Research Funding Opportunities at NRCP - DOST

6 June 2007
De la Salle University
Manila

Scientific Session on Science-Based Risk Assessment of GMO Products

22 June 2007
NRCP Patrocinio Valenzuela Hall
Bicutan, Taguig City

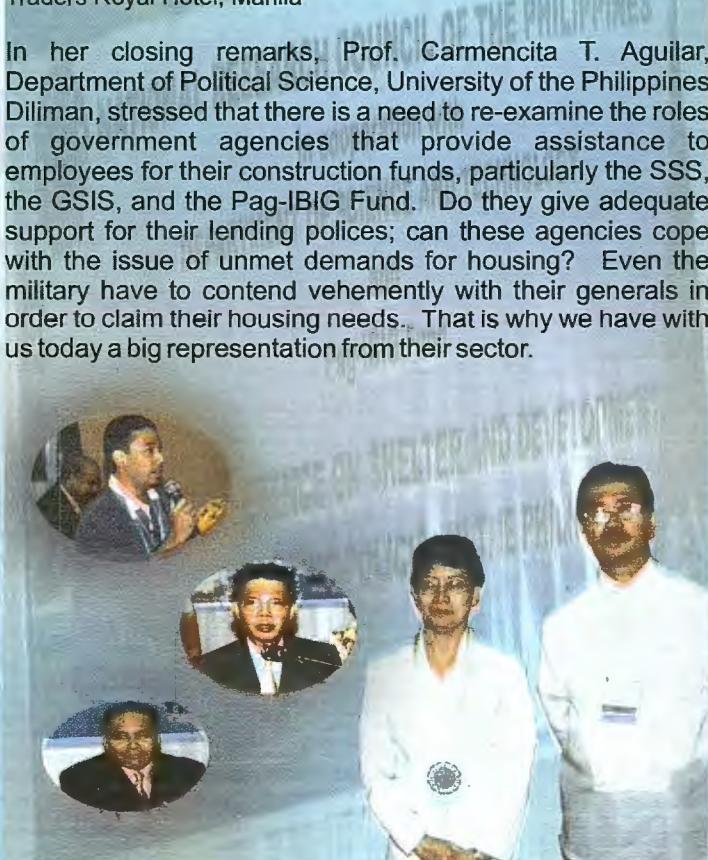
7th Taiwan-Philippines Symposium in Mathematics

25-27 October 2007
MMLDC (Meralco Training Center)
Antipolo, Rizal

National Conference on Shelter and Development

6 March 2007
Traders Royal Hotel, Manila

In her closing remarks, Prof. Carmencita T. Aguilar, Department of Political Science, University of the Philippines Diliman, stressed that there is a need to re-examine the roles of government agencies that provide assistance to employees for their construction funds, particularly the SSS, the GSIS, and the Pag-IBIG Fund. Do they give adequate support for their lending policies; can these agencies cope with the issue of unmet demands for housing? Even the military have to contend vehemently with their generals in order to claim their housing needs. That is why we have with us today a big representation from their sector.



DOST Secretary Estrella F. Alabastro and NRCP President/DOST Undersecretary for S&T Services Fortunato T. de la Peña lead this national conference with plenary paper presentors T - B: Mr. Jose Luis M. Oquiñena, Executive Director - Gawad Kalinga; Mr. Florentino E. España, Jr., Vice-President - Pag-IBIG Fund; and Mr. Romulo Q. Fabul, CEO/Commissioner - Housing and Land Use Regulatory Board representing Vice President of the Philippines Noli L. de Castro

Policy Services in Support of Membership

OUTREACH PROGRAMS

Seminar on Concepts of Renewable Energy and Indigenous Resources in the Ilocos Region
20- 21 September 2007
Provincial Capitol
Laoag City

The NRCP Division XII (Earth and Space Sciences) Outreach Activity, "Seminar on Concepts of Renewable Energy and Indigenous Resources in the Ilocos Region" was conducted on September 20-21, 2007 at the Provincial Capitol, Laoag City. A total of 82 participants, (62 LGUs, 11 Academe, 2 Private Institutions, 3 Media Practitioners, and 5 None-Governmental Agencies) attended the Seminar.

Topics covered were concepts, exploration and development of renewable energy, a detailed description of the 24.75 MW Bangui Bay wind energy project, wind meteorology, micro-hydro power technology: its social impacts, different hazards in the Philippines, wind velocity measuring instruments, and government response to society. The last part of the Seminar was a field visit to the Bangui Bay Wind Project in Ilocos Norte.

Roundtable Discussion on Sustainable Development

19-20 October 2007
Audio Visual Center, LRC Building
Ateneo de Zamboanga University
Zamboanga City

(in cooperation with Ateneo de Zamboanga University and DOST Region Office IX)

The NRCP Cluster II (Divisions of Mathematics, Engineering and Industrial Research, Physics, and Earth and Space Sciences), in cooperation with the Ateneo de Zamboanga University and the Department of Science and Technology-Regional Office No. 9, conducted a Roundtable Discussion on Sustainable Development which was held at the Audio Visual Center, LRC Bldg., Ateneo de Zamboanga University, Zamboanga City, 19-20 October 2007.

The papers presented were: Space Tools and Solutions for Monitoring the Atmosphere in Support of Sustainable Development -- Dr. Carina G. Lao, Asst. Weather Services Chief, PAGASA-DOST and the current Chair of NRCP Division XII and Cluster 2; Drought: Causes and Impacts -- Mr. Nathaniel A. Cruz, Weather Services Chief, PAGASA-DOST; Manufacturing and the Environment -- Dr. Alvin Culaba, Chair of CESDR-DLSU and Chair, NRCP Division VII; Atmospheric Energy Balance -- Dr. Roland V. Sarmago, Professor of the National Institute of Physics, UP Diliman and Chair NRCP Division IX; Mathematical Modeling -- Jose Maria P. Balmaceda, OIC, Institute of Mathematics, UP Diliman and Chair, NRCP Division II.

Seminar-Workshop on Research Capability Building for the Social Sciences Faculty of Selected Universities and Colleges in Central Luzon

19-20 October 2007
University Hostel
Bulacan State University
Malolos, Bulacan

The Seminar-Workshop was designed to: (1) help instill/develop the culture of research among faculty members teaching the social sciences in universities/colleges; (2) strengthen competence and update the knowledge of the faculty in the methodology of research in the social sciences; (3) increase the faculty members' appreciation of the value of research to enrich and improve instruction in higher institutions of learning; (4) assist faculty members in the social sciences to formulate/propose research projects that will be doable in one academic year.

Policy Services in Support of Membership

OUTREACH PROGRAMS

Seminar-Workshop on Research Capability Building for Science and Technology
21-22 October 2007
Northern Negros State College of Science and Technology
NONESCOT Hotel, Sagay City

At the end of the two-day Seminar-Workshop, the participants are expected to: 1) become acquainted on the mandate and role of NRCP; 2) become familiar with the research process; 3) acquire knowledge on sampling and data gathering techniques, validity of results, reliability of instruments; 4) acquire knowledge in presentation and statistical analysis of data; 5) be able to formulate research/project proposals in line with their field of specialization

Continuing Education for High School Science Teachers of Batong Malake
09 November 2007
DL Umali Hall
University of the Philippines Los Baños
Laguna

With the current issues brewing in the Philippines regarding the addition of two more years in the present educational system in secondary education, this seminar was designed to provide public science high school teachers with opportunities to be updated on the latest in biological sciences, provide the avenue to disseminate information to the public science high school teachers who play an important role in secondary education, and increase the awareness of public science high school teachers on the role of NRCP.

Seminar-Workshop on Organic Agriculture in Our Lives
22-23 November 2007
Audio-Visual Room
Marinduque State College
Boac, Marinduque

Highlights of the Seminar-Workshop included the opening ceremonies, scientific session, and farm visits. Seven technical papers were presented pertinent to Organic Agriculture and Forestry. Topics covered were organic agriculture: viewpoint from MSC, overview of organic agriculture development, economics of organic agriculture technologies, prospects and challenges of organic agriculture, organic vegetable production, composting: its value in organic agriculture, and prospects of organic livestock production.

Policy Services in Support of Membership

OUTREACH PROGRAMS

Outreach Seminar on Organic Farming: Bringing Organic Agriculture to our Regional Scientists and Extension Workers

3-4 August 2007
Benguet State University

(in cooperation with International Society for Southeast Asian Agricultural Sciences, Philippines, and Benguet State University)

Most of the participants were organic farming practitioners thus there were lively discussions after each of the paper presentations. Indigenous organic farming practices are abundant in the Cordilleras region but proper documentation is lacking. Many upland communities can learn from the indigenous knowledge of the other upland communities. Control of pests and disease in organically grown crops is a major concern of the farmers, thus the two presentations by organic farming practitioners were very interesting. The two presentations were extreme ends of pest control methods. One advocate the use of organic pesticides while the tenet of the other presentor rests on wholistic balance of the ecosystem. Many farmer participants shared their own worries regarding pest control.

The farmer participants saw as crucial in organic agriculture an information campaign for the promotion of the organic agriculture. This will increase consumers' awareness of organic certified products and the government should help the consumers to learn the organic standards (i.e., EO 41).



National Conference on Organic and Sustainable Agriculture: Cleaner and Safer Products from the Countryside Through Organic Agriculture

4-5 September 2007
University of Northern Philippines
Vigan, Ilocos Sur

(in cooperation with International Society for Southeast Asian Agricultural Sciences, Philippines, and University of Northern Philippines)

Issues raised by the participants. Most of the participants in this Conference are not aware of the basic principles and benefits of organic agriculture. A prime issue is the production of healthy food and development of healthy soil and plant environment. Most of the participants are not aware of these aspects of organic farming. Their foremost concern in their current farming practices is the returns from farming production. They are applying inorganic fertilizers and chemical pesticides to ensure higher yield from their crops. Active advocacy needs to be done in this region to promote the adoption of organic agriculture.

International Science Networks



KOREA RESEARCH FOUNDATION

Deutsche
Forschungsgemeinschaft
DFG

 **ICSU**
International Council for Science


SCA
Science Council of Asia



SCIENCE COUNCIL
OF JAPAN



IGU
UGI


 **National Science Council**

 **IUBS**
International Union of Biological Sciences


IFS

INTERNATIONAL
FOUNDATION FOR
SCIENCE

 **PACIFIC SCIENCE ASSOCIATION**



Strengthening International Research Collaboration

Korea Research Foundation/National Research Council of the Philippines

MEMORANDUM OF UNDERSTANDING

Basic Research Collaboration



**NRCP President Olivia C. Caoili and KRF President Sang-Man Huh sign
NRCP/KRF Memorandum of Understanding on scientific collaboration on basic research
during the celebration of the 74th NRCP founding anniversary held at Traders Hotel, Pasay City on 07
Decemeber 2007**

(toasting the forged agreement, L - R: Dr. Napoleon P. Hernandez, NRCP Acting Executive Director; Mrs. Jeong Ran Choi, Head, KRF Office of International Cooperation Program; Dr. Sang-Man Huh, KRF President; Dr. Estrella F. Alabastro, DOST Secretary; Dr. Olivia C. Caoili, NRCP President; and Dr. Graciano P. Yumul, Jr., DOST Undersecretary for R&D)



"I am very pleased that in this anniversary celebration of NRCP, I will witness the signing of NRCP - KRF MOU, which aims to strengthen and expand scientific R&D collaboration, exchange visits, training courses, exchange experts, and technical workshops", - DOST Secretary Estrella F. Alabastro

"Open laboratories is basically the name of the game, teamwork and linkages, awards and incentives, and increased international collaboration. It is for this matter that we congratulate the NRCP for initiating another international collaboration with KRF", -DOST Undersecretary for R&D Graciano P. Yumul, Jr.

Regional Clusters' Meetings

4th NRCP Annual Meeting - The Visayas Regional Cluster *Crossing Disciplinary Boundaries for National Development*

21 May 2007
Visayas State University
Baybay, Leyte



**Dr. Minda J. Formacion, NRCP Acting Executive Director Napoleon P. Hernandez,
NRCP President Olivia C. Caoili, VSU President Dr. Paciencia P. Milan, and
NRCP Chairman - Biological Sciences Priscilla C. Sanchez
lead the celebration of the 4th NRCP Annual Meeting for the Visayas Cluster**

Dr. Paciencia Milan, VSU President, in her speech encouraged the participants to help develop the culture of research in the academe despite the limited resources available and pursue science-oriented programs.

On the other hand, Dr. Olivia C. Caoili, NRCP President, raised the issue of inadequacy of logistical support for basic research despite the recognition of its importance in economic development.

Four technical papers presented:

- a. GIS: Tool for Planning and Decision Making
Prof. Margarita T. de la Cruz
University of the Philippines Visayas
Tacloban College
- b. OilSpills
Dr. Resurreccion Sabada
University of the Philippines Visayas
- c. Project Enrich: An Exploratory Study on a Bridging Program for College Work
Dr. Evelyn C. Cruzada
President
Leyte State University
- d. Soil Degradation in the Philippines:
Causes, Effects, and Remedies
Dr. Victor B. Asio
Head
Agronomy Department
Visayas State University

Dr. Othello B. Capuno, Director, VSU Research and Extension, in his closing remarks, reiterated the importance of basic research and its contribution to national development through various facets of policy formulation and program implementation.

Regional Clusters' Meetings

5th NRCP Annual Meeting - The Mindanao Regional Cluster *Cutting-Edge Technology*

26 November 2007
Wer Inn
J.P. Davies St.
Bajada, Davao City

Prof. Erwin P. Enriquez, Associate Professor – Ateneo de Manila University, talked on Nanotechnology as applied to surface coating, to the use of the Atomic Force microscope, and the use of the iron atom for Quantum Dot Technology.

He said that nanotechnology is the design, fabrication or synthesis based on molecular structures and in the nano scale. He talked about titantium oxide as surface coating material with inherent "self -cleaning" capability. He said that titanium oxide is a very cheap raw material used in paints, and is now being used as coating for tiles, in nanothickness or nanoconcentration.

The thin film coating is so thin that when exposed to an energy source, specifically solar radiation, sunlight or UV light hydroperoxides are generated and these have sterilizing or disinfects microorganisms and decomposes organic materials it comes in contact with. Now, this technology is used in tiles and ceramics, and other consumer applications as "no-flush" toilet bnowls-no water needed floors and sinks.

On the other hand, Prof. Raphael Guerrero, Associate Professor – Ateneo de Manila University, talked on photonics and his works on Development of Elastomeric Optics.

He used gold and silicone to make elastic or flexible substrates for diffraction grating, silicone microlenses and thermal sensors. He called this material as "stretchable gold" which may be found in such applications as multiples storage.

The same system is applied on storing different information and yet being able to access each separately and swiftly as in "multiplex CD, which stores numbers of songs, lyrics, accompaniment, among others.

Policy Advisory Services

Recommendation ascribed

Passing of SB Bill No. 2452 or Anti-Rabies Bill of 2007 - An Act Providing for the Control and Elimination of Rabies, Prescribing Penalties for Violation and Appropriating Funds thereof.

DOST Proposed Limitations on the Number of R&D Projects a Proponent can undertake in a given time.

DOST Quick Response Team.

2- Outstanding Young Scientists, Inc., National Convention Proposal.

Implementing Rules and Regulations (IRR) on the Balik Scientists Program under DOST.

Guidelines on the Granting of Longevity Pay and Housing and Quarter Allowance for S&T Personnel Under R.A. 8439.

Policy Paper on Private Sector in DOST-GIA Programs/Projects.

Guidelines on M.S./Ph.D. Programs for Inclusion under the PCASTRD Human Resources Development Program.

Amendments of DOST Administrative Order No. 006 dated 14 October 2004, Guidelines for the Grants-In-Aid Funds of Department of Science and Technology and Its Agencies.

Marketing Strategies of DOST Technologies.

Formulation

Guidelines and Implementing Rules of the NRCP-Tan Yan Kee Foundation National Awards for Excellence in Research

2006

NRCP Achievement Awardees



Dr. Carla B. Dimalanta
Dr. Elena R. Mirano
Dr. Maribel G. Nonato
Dr. Wilson O. Garcia
Dr. Milagros C. Guerrero
Dr. Aura C. Matias
Dr. Ceferino P. Maala
Dr. Gerard L. Penecilla
Dr. Carmelita F. Domingo
Dr. Romulo A. Virola
Dr. Allan B. de Guzman

Earth and Space Sciences
Humanities
Chemical Sciences
Physics
Social Sciences
Engineering and Industrial Research
Agriculture and Forestry
Pharmaceutical Sciences
Medical Sciences
Mathematical Sciences
Governmental, Educational, and International Policies

Dr. Claro M. Santiago, awardee for Biological Sciences, was indisposed during the awarding ceremonies.

74th NRCP Annual Meeting

Polkabal/Rigodon Halls
The Manila Hotel
08 March 2007

Highspots



"To accelerate knowledge creation, Philippine government needs to increase budget for R&D and field extension work, develop on-line certificate courses, strengthen partnership and networking arrangements with private sector, academe, and international institutions..."

NEDA Secretary Romulo L. Neri



"Once our country reaches the levels of research efforts comparable with our Asian neighbors, then we can expect the flow of innovations to be sustained to attain our desired economic development..."

DOST Secretary Estrella F. Alabastro



"As 2007 unfolds and as I turn over this leadership, I am confident that NRCP will surpass and double this year's accomplishment and steadfastly face future challenges..."

NRCP President Fortunato T. de la Peña

74th NRCP Annual Meeting

Polkabal/Rigodon Halls
The Manila Hotel
08 March 2007

Technical Paper Presentors



"With the advent of modern technology and the commodification of every aspect of human production, cross-disciplinary inquiry into the future conditions of human life becomes even more imperative in the light of the competitive and disjunctive nature of globalized commerce and industry..."

Dr. Ramon P. Santos

Prof. Emeritus, College of Music
University of the Philippines Diliman



"The aftermath of super typhoon Reming is indeed a disaster, but good things happened -- everybody comforted each other and we saw the resilience of the Filipino people, young and old, the Filipino flag proudly hoisted everywhere..."

Mr. Nathaniel A. Cruz

Chief, Weather Branch
PAGASA - DOST



"Communication with the public, media, and other stakeholders is one key element, while global partnership and rapid sharing of data and information enhance preparedness and response..."

Dr. Maria Nerissa Dominguez vice Dr. Jean-Marc Olive

World Health Organization Representative to the Philippines



"Climate change will cause changes in the natural ecosystem -- animals and plants may become endangered or even extinct due to the destruction of their natural habitats, thus, overall adaptation strategy should focus on identifying these vulnerable areas, the most at risk, and which species associated with the identified areas would be affected in terms of loss of biodiversity resources..."

Dr. Rodel D. Lasco

Program Coordinator
World Agroforestry Center

2007 NRCP OPEN HOUSE ACTIVITIES

17 - 20 JULY 2007



ACTIVITIES



In-House Exhibits

- The Human Genome
- Global Warming
- Emerging and Re-emerging Infectious Diseases
- Natural Disasters
- NRCP Funded Basic Research

Film Shows

- THE BODY ATLAS**
Making Babies
Viruses and Bacteria

THE RAGING PLANET

- Tsunami
Thunderstorm
Earthquake
Tropical Cyclone

Lecture Series

- Alternative Energy
DR. ALVIN B. CULABA
Director
Center for Engineering and Sustainable Development Research
De La Salle University

Global Warming

- MR. NATHANIEL A. CRUZ**
Chief, Weather Branch
DOST - PAGASA

Global Warming

- MS. ROSA T. PEREZ**
Chief, Weather and Flood Forecasting Center
DOST - PAGASA

NRCP OPEN HOUSE ACTIVITY



... a person would not learn or a country as a whole would not economically prosper in doing the same thing over and over again.. we need fresh and young minds, like you, who aim high and are willing to innovate and accept changes. the country needs people like you if it wants to catch up with the global demands for S & T competent intellectual resources...

HONORABLE SIGRIFIDO R. TINGA
Taguig City Mayor



... you were all invited for you to increase your awareness on the current global S & T issues like global warming and infectious disease and what the DOST is doing to address these... I advise all of you to study harder, particularly in Mathematics and Science so that in the future you may be able to pursue careers in S & T and be part of the DOST family...

DR. ESTRELLA F. ALABASTRO
DOST Secretary



... this year the DOST chose the theme - Science, Technology, and Innovation for Progress to prepare all of us to address the global demand for innovation in the future... I do hope, from here on, you will increase your interest in Science and Technology...

DR. OLIVAC C. CAOILI
NRCP President



74th NRCP Anniversary Celebration

NRCP - DOST Compound
Bicutan Science Community
08 December 2007



Acting Executive Director Napoleon P. Hernandez and NRCP President Olivia C. Caoili unveil the Official NRCP Diamond Jubilee official signage alongside with the 75th Anniversary Logo with the tag line Bringing Great Ideas to Life, while some members of the NRCP Governing Board look on.



TRON, the official DOST Mascot graces the occasion and leads the CP Sta. Teresa Elementary School Drum and Lyre Band in the parade inside the DOST Complex.

Human Resource Management

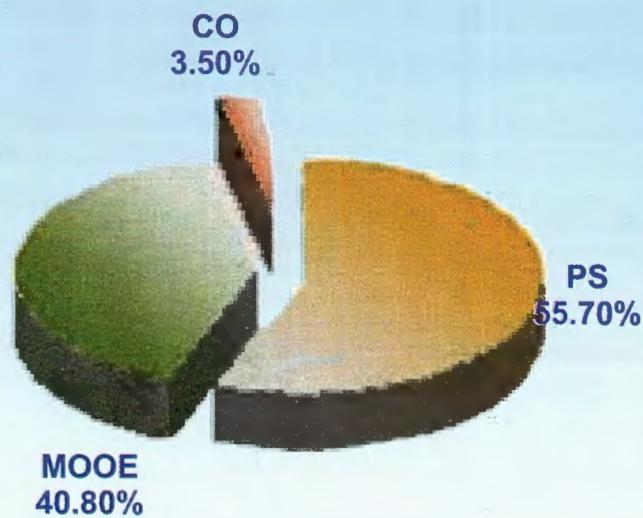
Title	Venue	Date	Personnel
2007 Symposium on VCO: State of the Art	Traders Hotel Manila	February 7	Ms. Ruby B. Villavicencio Ms. Lolita J. Moreno Ms. Mary Rose M. Martin Mr. Ricky A. Curato
Social Impact Assessment of the Rationalization Program	STII Mini-Theater	February 26	Mr. Manuel F. Velasco
2007 APEC R&D Management Training Program	Korea	March 12	Dr. Napoleon P. Hernandez
One-Stop Information Shop for Mature Technologies in the Philippines	PCARRD ICT Training Room	March 7	Mr. Alejandro R. Salamat
Launching of the Livelihood Lending Facility for Government Employees	Philippine Trade Training Center	May 2	Ms. Lanie P. Manalo Mr. Mario D. Marquez Mr. Ricky A. Curato Mr. Agustin A. Ceneta, Jr.
NRCP Team Building Program	Rosegold Resort, Calatagan, Batangas	May 10-11	NRCP Personnel
Lecture on Drug Abuse and Preventive Medicine	DOST Executive Lounge	May 24	Ms. Lolita J. Moreno Ms. Edna B. Bongon Mr. Felix L. Llantada Mr. Agustin A. Ceneta, Jr. Mr. Angelito S. Salarda Mr. Victoriano G. Morbos Mr. Victorino M. Tagalicud Mr. Antonio A. Mariano Ms. Luz A. Aramil Ms. Edna B. Bongon Ms. Rustica C. Artalejo Ms. Melinda L. Perez Ms. Elena C. Palafox
4 th GSIS Members Conference	GSIS Theater	May 30	
Alternative Dispute Resolution Training	Roof Deck Prestige Tower Condominium, Ortigas Center	June 4-8	Ms. Mary Rose M. Martin
Participation in the 109 th Independence Celebration	Luneta Park	June 12	Ms. Mary Christine T. Avanzado Ms. Edna B. Bongon Ms. Lina N. Alferez Ms. Ma. Josefina B. Marin Mr. Teodoro U. Llarvez Mr. Antoino A. Mariano
Alternative Dispute Resolution Internship Program	DTI-NCR, Makati City	June 12-22	Ms. Mary Rose M. Martin

33 rd FNRI Seminar Series on Food and Nutrition Researches and S&T Activities	FNRI Building	July 10-11	Ms. Alicia C. Mercado
NAST 29 th Annual Scientific Meeting	Manila Hotel	July 11-12	Ms. Ruby B. Villavicencio Ms. Melinda L. Perez Ms. Elena C. Palafox
1 st Workshop on Program Design, Planning and Management of the ADR Training Program	Mabini Hall, Malacañang, Manila	August 15	Ms. Mary Rose M. Martin
Hands-On Training/Seminar on the Government Electronic Procurement System	GEPS Office	August 16-17	Ms. Lolita J. Moreno
Conference on Public Welfare Development Program	Mabini Hall, Malacañang, Manila	September 10-11	Ms. Adelaida E. Jasareno Ms. Jesus S. Piquero
2 nd Workshop on Program Design, Planning and Management of the ADR Training Program	Mabini Hall, Malacañang, Manila	September 19	Ms. Mary Rose M. Martin
Short Course on Digital Imaging with Adobe Photoshop	Meralco Foundation Institute	October 6 – Nov. 3	Mr. Jowi A. Carteciano
2007 Korea Research Foundation – Capacity Building Program for Research Management	Korea Research Foundation	Nov. 12 - 17	Dr. Napoleon P. Hernandez
Participation in the Celebration of the "National Day for Overcoming Extreme Poverty "	Open Air Auditorium, Rizal Park, Manila	October 17	Ms. Mary Christine T. Avanzado Ms. Ma. Josefina B. Marin Ms. Mary Rose M. Martin Mr. Antonio A. Mariano
3 rd Workshop on Program Design, Planning and Management of the ADR Training Program	Mabini Hall, Malacañang, Manila	November 19	Ms. Mary Rose M. Martin
DOST Planning Conference	Calamba City, Manila	November 27 - 28	Mr. Salvador G. Tan
R&D Survey Lead Enumerators ' Conference	Calamba City, Manila	November 28 -29	Mr. Salvador G. Tan
Usapang K	DOST Executive Lounge	December 10	Ms. Alicia C. Mercado Ms. Lanie P. Manalo Ms. Rhodora S. Tuplano Ms. Clarita A. Dela Cruz Ms. Edna B. Bongon Ms. Ma. Josefina B. Marin Mr. Agustin A. Ceneta Ms. Mary Rose M. Martin
4 th Workshop on Program Design, Planning and Management of the ADR Training Program	Mabini Hall, Malacañang, Manila	December 12	Ms. Mary Rose M. Martin

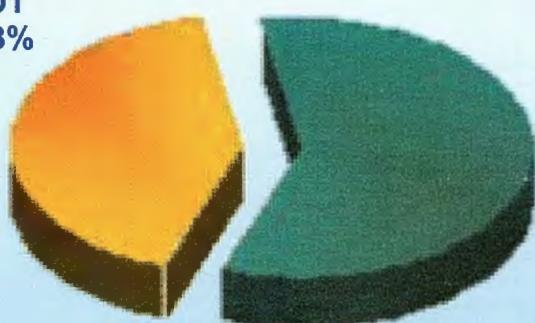
Financial Resources Management

Distribution of Expenditures by Classification

PS	P15,010
MOOE	10,993
CO	949
Total	26,946



MFO1
41.73%



MFO1 – R&D Network Services	P15,701
MFO2 – Policy Advisory Services	11,246
Total	26,946

Distribution of Expenditures by MFO

2007 - 2008
**NRCP GOVERNING BOARD
OFFICIALS**



DR. OLIVIA C. CAOILI
President



DR. JAIME C. MONTOYA
Vice-President



DR. PRISCILLA C. SANCHEZ
Treasurer



PROF. LOURDES E. RESUBAL
Assistant Treasurer



PROF. MAURICIA D. BORROMEO
Corporate Secretary



DR. CARINA G. LAO
Assistant Corporate Secretary

MEMBERS-AT-LARGE



DR. REYNALDO B. VEA
President
MAPUA Institute of Technology

Academician
National Academy of Science and Technology

DR. TEODULO M. TOPACIO, JR.
*Professor Emeritus and
Former Dean*
College of Veterinary Medicine
University of the Philippines Los Baños

Academician
National Academy of Science and Technology

DOST REPRESENTATIVE



DR. GRACIANO P. YUMUL, JR.
Undersecretary for Research and Development
Department of Science and Technology

2007 - 2008
NRCP Division Chairmen

DR. SOCORRO M. RODRIGUEZ
Chairman
Governmental, Educational, and International Policies Division



DR. ALVIN B. CULABA
Chairman
Engineering and Industrial Research Division



DR. JOSE MARIA P. BALMACEDA
Chairman
Mathematical Sciences Division



DR. OLIVIA C. CAOILI
Chairman
Social Sciences Division



DR. JAIME C. MONTOYA
Chairman
Medical Sciences Division



DR. ROLAND V. SARMAGO
Chairman
Physics Division



PROF. LOURDES E. RESUBAL
Chairman
Pharmaceutical Sciences Division



DR. ALICIA M. AGUINALDO
Chairman
Chemical Sciences Division



DR. PRISCILLA C. SANCHEZ
Chairman
Biological Sciences Division



PROF. MAURICIA D. BORROMEO
Chairman
Humanities Division



DR. JOSE E. HERNANDEZ
Chairman
Agriculture and Forestry Division



DR. CARINA G. LAO
Chairman
Earth and Space Sciences Division



NRCP MANAGEMENT STAFF



DR. NAPOLEON P. HERNANDEZ
Acting Executive Director



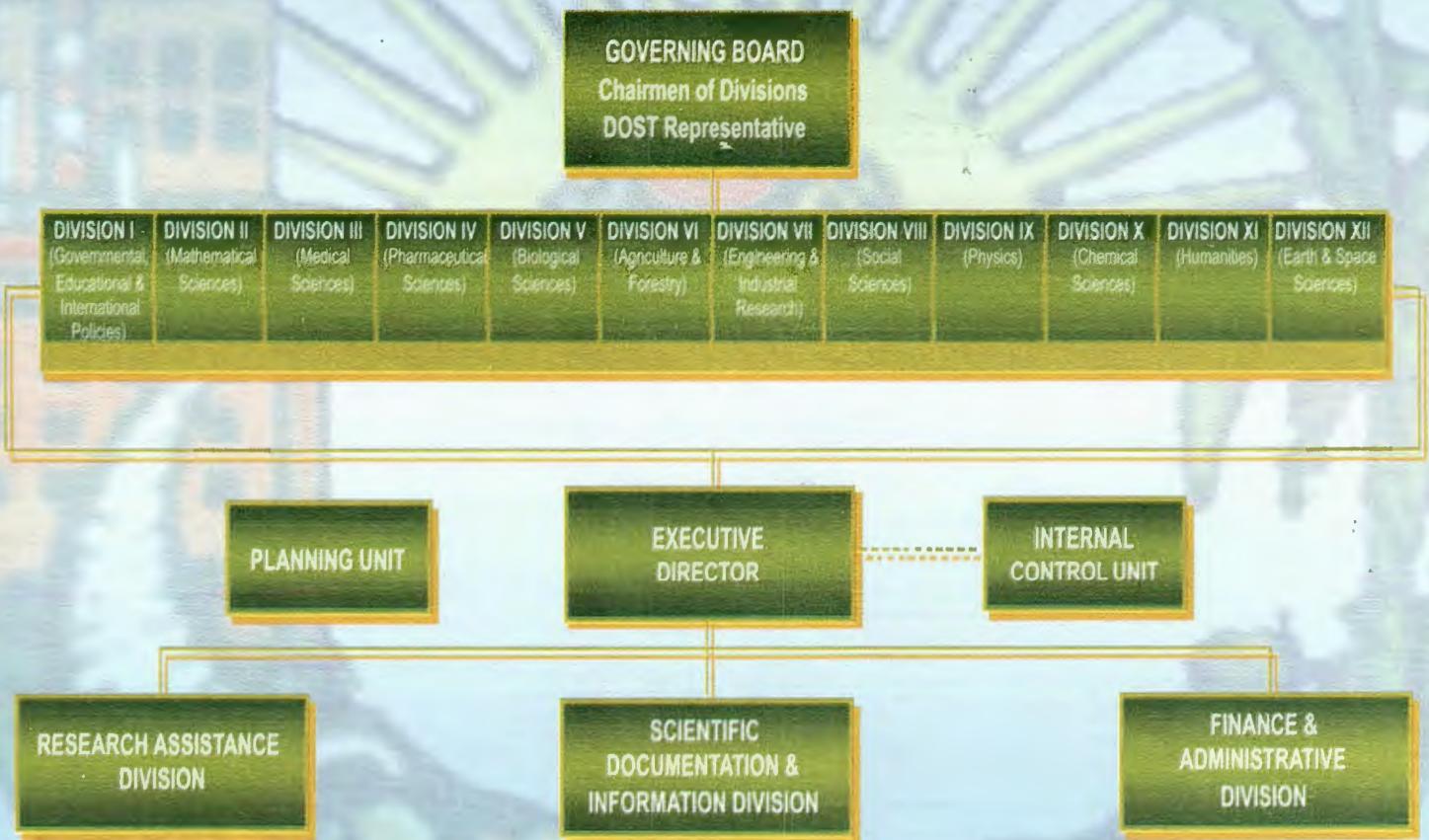
MS. ALICIA C. MERCADO
Chief, Scientific Documentation and Information Division



MR. SALVADOR M. TAN
Chief, Research Assistance Division

National Research Council of the Philippines

ORGANIZATIONAL CHART



...with a total of 3,136 Associate and Regular members spread over the 12 Scientific Division...

NRCP Nating Mahal

**Itaguyod ang NRCP
Itambuli ang kanyang layon
Sa ating bayan at bukas
Tayo'y maging tanglaw.**

**Sukatin natin ang mga panaginip
Sa tayog ng ating mga pithaya
Sa lalim ng ating pananalig
Ialay sa lahi ang ating biyaya.**

**Bawat dahon, katas at ugat
Bawat hayop, kulisap at ibon
Bawat bundok, lawa at lambak
Ay duyan ng ating nasa't layon.**

**Ang agham ng lipunan't politika
Ang himaymay ng titik at atom
Diwa't himig ang arte't matematika
Balangaw ng lahi sa pagsulong.**

**Magkawil bisig, taliba ng dunong
Manalig tayo sa bukal ng lupa
Sa daigdig ay aahon
Mag-alay sa samyo ng diwa.**

**Dunong ay lakas ng bayan
Landas sa kinabukasan
Ibandila and NRCP
NRCP ay mabuhay.**

08 December 1933

NRCP



08 December 2008

Bringing Great Ideas to Life

The *75th Anniversary logo* is in sync with NRCP's nationalistic mission. There is the RISING SUN with THREE BIRDS flying towards it. The RISING SUN signifies HOPE. The sun has TWELVE RAYS that symbolize NRCP 12 SCIENTIFIC DIVISIONS. The THREE BIRDS signify LUZON, VISAYAS, and MINDANAO. Each BIRD is positioned at a certain angle to symbolize PROGRESS. The BIRDS are in a GEOMETRIC SHAPE to show how TECHNICAL and SCIENTIFIC NRCP is;

Thus, the LOGO shows NRCP as the Philippines' HOPE FOR INDUSTRIALIZATION.

Colors are very much like NRCP. The color BLUE is associated with KNOWLEDGE, POWER, INTEGRITY, and SERIOUSNESS. The color YELLOW is associated with JOY, OPTIMISM, and HOPE.