

Department of Science and Technology  
 Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD)  
 PCIEERD Projects per Key Result Areas (as of October 31, 2013)

Program/Project	Deliverables/Objectives	Duration		Implementing Agency	Location	FY 2013 Budget
		Start	Expected Date of Completion			
<b>KRA 2: Poverty reduction and empowerment of the poor and vulnerable</b>						<b>6,399,005.00</b>
DOST Online Practice Tests for the PSHS and DOST SEI Examinations	The project aims to provide an Internet-based program for authoring and delivery of PSHS and DOST-SEI practice examinations, including executables and source code.	07/15/13	01/14/14	UP Diliman	NCR	1,399,005.00
Human Resource Development	The projects aims to develop and enhance Filipino R&D and support capabilities to meet the present and future human resource requirements in the industry, energy and emerging technology sectors .	2013	2017	PCIEERD	NCR	5,000,000.00
<b>KRA 3: Rapid, Equitable &amp; Sustained Economic Growth</b>						<b>381,165,487.00</b>
<b>COMPETITIVE INDUSTRY &amp; MANUFACTURING</b>						<b>337,888,379.10</b>
<b>Electronics</b>						<b>157,005,022.00</b>
Product Development Center for the Electronics Industry	Theproject aims to establish and operate a product development center for the electronics industry.	10/01/12	09/31/15	ASTI	NCR	119,255,000.00
Establishment of an Advanced Device and Materials Testing Laboratory for Semiconductor and Electronics Industry (formerly National Testing Laboratory for Failure Analysis)	ADMATEL is a DOST national testing facility equipped with advanced analytical instrument for failure analysis and materials characterization. This laboratory is expected to enhance the global competitiveness of the semiconductor and other related industries.	01/01/13	2016	ITDI	NCR	26,856,022.00

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Flood Sensor Development and Installation of Street-Level Monitoring System for Flood-prone Records in Metro Manila	The project aims to: 1. determine strategic deployment sites 2. develop, produce, and install a system of urban flood monitors 3. ensure reliable data transmission and sustainability	11/01/13	12/31/14	ASTI	NCR	10,894,000.00
<b>Information and Communication</b>						<b>17,607,622.00</b>
<i>The Smart Wire Program</i>						
Proj. 1 - Energy Efficient Data Acquisition and Conditioning for the Smartwire Sensor Node	The project aims to develop energy efficient data acquisition and signal conditioning circuits for the SmartWire sensor node. The circuits will be used to measure electric current and temperature information, as well as perform the necessary signal conditioning, allowing for energy efficient information transmission and storage. The main components of the data acquisition and signal conditioning subsystem are analog-to-digital converters (ADCs) and filters. In the context of the SmartWire, these circuits must be able to operate in an energy-limited and very noisy environment.	10/01/12	09/30/15	UP Diliman	NCR	5,304,552.00
Proj. 2 - Integrated Energy Harvesting, Storage and Regulation for the Smartwire Sensor Node Project	The project aims to develop and prototype an integrated energy harvesting subsystem, with the ability to harvest energy from power lines, as well as ambient and/or radiated radio-frequency (RF) energy, that can be used to power a Smart Wire sensor node.	10/01/12	09/30/15	UP Diliman	NCR	10,626,535.00
Proj. 3 - Energy Ultra-Low Power Computation and Communication for the Smartwire Sensor Node Project	The project aims to develop and prototype an integrated ultra-low power and robust computation engine, control unit and communications processor for the Smart Wire sensor node. The communication subsystem includes the protocol processing as well as the physical layer interface for both power line and radio-frequency (RF) communications.	10/01/12	09/30/15	UP Diliman	NCR	1,676,535.00
<b>Nanotechnology</b>						<b>62,580,666.27</b>

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Development of DNA-based Nanobiosensors for Food and Environmental Applications	The project aims to develop field-operable DNA based biosensor technologies for rapid detection and identification of disease-causing microbial pathogens transmitted through water, food and the environment.	03/15/12	03/14/14	UPLB	Region IV-A	254,837.12
Polymer Electrolyte Systems Based on Carageenan for Solid State dye Sensitized Solar Cell	The project aims to develop and fabricate a solid type electrolyte system by investigating the use of carrageenan composites as polymer electrolyte. It will look into the optimization of self-assembly conditions, the impact of carrageenan molecular weight and electrolyte concentrations to achieve better ion transport.	01/01/13	12/31/13	De La Salle University/ UPLB	NCR/ Region IV-A	2,941,663.80
Synthesis of Carbon Nanotubes (CNT) - Silicon Heterojunction for the Fabrication and Assembly of a Solar Panel	The project aims to develop a solar panel that is cost-effective is extremely important, especially at these times when oil prices are high and renewable energy sources are called for.	01/01/13	12/31/13	UP Baguio	CAR	9,475,192.00
<i>Program: Development of Nanobiosensors and Nanostructured Materials from Agricultural By-products for Enhancement of Food and Agricultural Productivity and for Environmental Sensing and Remediation</i>						
<i>Sub-program 1 : Utilizing Nanomaterials from Indigenous Resources for Arsenic Detection and Removal from Groundwater</i>						

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Proj. 1 - Removal of Arsenic from Contaminated Water Using Modified Biopolymer-Silica Nanocomposite Materials	The project aims to extend the studies done previously on the remediation of arsenic-contaminated groundwater.	01/01/13	12/31/14	UPLB	Region IV-A	13,869,981.90
Proj. 2 - Detection and Analysis of Arsenic from Contaminated Water	The project aims to utilize nanomaterials from agricultural by-products for arsenic detection and analysis in water samples.	01/01/13	12/31/14	UPLB	Region IV-A	6,155,863.45
<i><b>Sub-program 2 : Nanobiosensors for the Detection of Food and Feed Contaminants and Diagnosis of Plant Diseases</b></i>						
Proj. 3 - Development of Nano-biosensors for the Detection, Monitoring and Diagnosis of Diseases of Banana and Abaca	The project aims to develop field-operable nano-biosensors for the detection, monitoring and diagnosis of plant viral diseases caused by ABTV and AMV in abaca and BBTV and BBMV in banana.	01/01/13	12/31/14	UPLB	Region IV-A	6,222,986.60
Proj. 4 - Development of Biofunctionalized Zinc Oxide Thin Films for Gas Sensing	The project aims to develop functionalized zinc oxide thin film as gas sensor.	01/01/13	12/31/14	UPLB	Region IV-A	2,375,466.90
<i><b>Sub-program 3 : Nanoencapsulation of Phytochemicals and Bioactive Substances from Bacteria for Protection, Stabilization and</b></i>						
Proj. 5 - Development of Nanoencapsulated Plant Growth Regulator Formulations Derived from Plant Growth Promoting Bacteria (PGPB) for High Value Crops Production and Tissue Culture of Coconut	The project aims to develop a nanoencapsulated plant growth regulator for high value crops.	01/01/13	12/31/14	UPLB	Region IV-A	2,783,311.90
<i><b>Subprogram 4: Value Addition of Agricultural Produce and Forest Products Through the Use of Bionanocomposite Films and Naturally Occurring Nanocrystalline Materials</b></i>						
Proj. 6 - Optimization and Bench-Scale Preparation of a Hemicellulose-Chitosan/tripolyphosphate nanocomposite Coating and its Use in the Post Harvest - Life Extension of Papaya (carica papaya) fruits	The project aims to optimize condition for the preparation and bench-scale production of a hemicellulose-chitosan/tripolyphosphate (polyphosphate) nanocomposite coating and evaluate its performance in extending the shelf life of some high-value Philippine fruits.	01/01/13	12/31/14	UPLB	Region IV-A	7,781,351.90

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Proj. 7 - Development of Pectic-Collagen/Nanocellulose Biocomposite Coatings from Mango Peel and Nata de Coco for the Post-harvest-Life Extension of Mango ( <i>Mangifera indica</i> L. cv Carabao) and Bell Pepper ( <i>Capsicum annuum</i> L.) fruits	The project aims to prepare bionanocomposite coatings from polymeric materials derived from food processing and agricultural waste and apply these to high-value Philippines fruits to extend their postharvest-life.	01/01/13	12/31/14	UPLB	Region IV-A	972,176.90
Proj. 8 - Nanotechnology for the Philippine Forest Products Industry - Cellulosic Nanocrystals from Selected Philippine Bamboo Species	The project aims to extract cellulosic nanocrystals from selected Philippine bamboo species for possible application as nanocoatings to improve durability of wood and other forest-based construction and furniture materials.	01/02/13	12/31/14	UPLB	Region IV-A	1,118,275.65
<i>Subprogram 5: Performance Analysis of Nanosilica Powder from Rice Hull Ash for Use in Various Agricultural Applications</i>						
Proj. 9 - Characterization and Performance analysis of nanosilica powder incorporated in biodegradable film based on cassava starch for food packaging applications	The project aims to develop nanosilica powders from rice hull ash and to analyze the effectiveness of biodegradable film based on cassava starch incorporated with nanosilica powder for food packaging application.	01/01/13	12/31/14	UPLB	Region IV-A	6,997,766.90
Proj. 10 - Performance Analysis of Nanosilica-in-Fluid Dispersion (Nanofluid) Used as Coolant in Heat Exchanger	The project aims to analyze the performance of nanosilica-in-fluid dispersion (nanofluid) derived from rice hull ash in a mini heat exchanger.	01/01/13	12/31/14	UPLB	Region IV-A	903,916.90
Proj. 11 - Evaluation of Nanosilica Powder from Rice Hull Ash Used as Silicon Fertilizer for Tomato ( <i>Lycopersicon esculentum</i> )	The project aims to evaluate the potential use of nanosilica powder from rice hull ash silicon fertilizer for tomato.	01/01/13	12/31/14	UPLB	Region IV-A	727,874.35

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<b>Genomics</b>						<b>16,310,022.34</b>
Capability Building in Research and Development on Genomics: Establishment of the Philippine Genome Center DNA Sequencing Facility	The project aims to establish a research and service infrastructure for NGS technologies through the DNA Sequencing Core Facility of the Philippine Genome Center as part of the country's capacity building in genomics and bioinformatics.	01/01/12	12/31/14	Philippine Genome Center	NCR	7,761,528.29
Capability Building in Research and Development on Genomics: Establishment of the Bioinformatics Core Facility	The project aims to initiate the establishment of a central facility, i.e., the Core Facility for Bioinformatics of the Philippine Genome Center (PGC-CFB), that will not only serve the bioinformatics needs of the genomics researchers but also catalyze the further development of the field of bioinformatics in the country.	01/01/12	12/31/14	Philippine Genome Center	NCR	8,548,494.05
<b>Biotechnology</b>						<b>19,674,288.05</b>
<i>Enhancement of Biotechnology Products and Services for Food, Feed and Other Agro-Industrial Applications (3 Sub-programs)</i>						
<i><b>Sub-Program 1: Large Scale Production and Application of Enzymes for Food and Feed Applications</b></i>						
Proj 1 - Validation of Scale-Up Production of Microbial Rennet	The project aims to validate the developed production process for scale up liquid and granulated microbial rennet, ensure the microbiological safety of the process, apply in the preparation of other types of cheese and rennet casein preparation.	03/01/12	02/28/14	BIOTECH-UPLB	Region IV-A	1,423,448.00
Proj 2 - Pilot Scale Production of BIOTECH Cellulase and Alpha-Amylase for Food and Feed and Other Industries	The project aims to produce commercially important enzymes in large scale for application in the food, feed and other industries.	03/01/12	03/01/14	BIOTECH-UPLB	Region IV-A	1,918,164.00
Proj 3 - Establishment of Bioprocess Systems for the Production of Pili Pulp Oil and Protein Enriched Residue for the Food and Feed Industries	The project aims to establish and optimize the production of oil and protein enriched residues from pili pulp and to test the process and evaluate product quality.	03/01/12	03/02/14	BIOTECH-UPLB	Region IV-A	973,124.00
<i><b>Sub-Program 2: Scale-Up Production of Probiotics for Food and Feed Applications</b></i>						

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Proj 1 - Dev't. of Probiotic Starter Cultures and Adoption of Technology for Functional Food	The project aims to further develop technologies for the production of probiotic-based functional foods and produce starter cultures in a pro-active collaborative manner with local government units and small and medium scale industries.	03/01/12	02/28/14	BIOTECH-UPLB	Region IV-A	2,130,949.00
Proj 2 - Application of Probiotic for Fish and Prawn	The project aims to evaluate and test the probiotic products on aquatic animals, as follow-up to previous studies conducted on swine and poultry.	03/01/12	02/28/14	BIOTECH-UPLB	Region IV-A	1,591,656.00
<b>Sub-Program 3 - Improvement and Commercialization of Microbial-based Fertilizers and Plant Growth Promoters</b>						
Proj 1 - Improvement and Product Development of Microbial-Based Plant Growth Promoter	The project aims to formulate, develop & test a new BioGro™ to withstand stress level conditions such as climate change effects.	03/01/12	02/28/14	BIOTECH-UPLB	Region IV-A	1,813,532.00
Proj 2 - Large Scale Production, Improvement and Commercialization of Nitro Plus Legume Inoculant	The project aims to develop an enhanced NitroPlus™ by using beneficial organisms as co-inoculants with capacity to increase nodule occupancy and affect symbiotic N fixation and solubilize phosphorus.	03/01/12	02/28/14	BIOTECH-UPLB	Region IV-A	1,961,932.00
Proj 3 - Optimization and Scale-Up Production of MykoPlus for the Biofertilizer and Bio-Organic Fertilizer Industries	The project aims to optimize bio-process and scale up the production of MykoPlus.	03/01/12	02/28/14	BIOTECH-UPLB	Region IV-A	1,594,083.00
<b>Program 1 - Utilization/ Conversion of Sago Starch into Value-Added Products: Ethanol and Lactic Acid</b>						
1.1 Cloning and Expression of Raw Starch-Digesting Amylase Genes from <i>Saccharomycopsis fibuligera</i> and <i>Saccharomycopsis bubodii</i> for Direct Ethanol fermentation	The project aims to characterize the putative RSDA genes from <i>Saccharomycopsis fibuligera</i> and <i>Saccharomycopsis bubodii</i> 2066 and express them in <i>E. coli</i> .	01/01/12	12/31/13	UP Mindanao	Region XI	246,512.55
1.3 Direct Lactic Acid Fermentation of Sago Starch without the costly starch pretreatment using <i>Enterococcus faecium DMF78</i> : Pilot Scale Costing of the Process	The project aims to verify in the larger-scale, 30L and later in the 300L fermentator the capability of the microorganism to retain its productivity, efficiency and optical purity which had been reported in the lab scale.	01/01/12	12/31/13	UP Mindanao	Region XI	3,757,176.50

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<b>Program 2 : Sago Bioresource Assessment for Sustainable Industry Utilization using Remote Sensing, Geospatial and Suitability Analyses</b>						
2.1 GIS-Assisted Assessment of Yield of Sago or Sustainable Industry Utilization	The project aims to assess the current and future potential yield and availability of sago for sustainable sago-starch industry that put into consideration the influence of existing land use and tenure in sago areas, atages of phenological development of sago, and the current demand and future needs of sago products.	01/01/12	12/31/13	UP Mindanao	Region XI	1,629,002.00
2.3 Mapping of Sago habitats from optical and radar images using suitability relationships	The project aims to produce detailed resource maps to determine spatial distribution of crop production and fishery areas in the country.	01/01/12	06/30/13	UP Diliman	NCR	269,676.00
<b>Program 3 : Sago Bioresource Conservation and Sago Flour Production</b>						
3.1 Clonal Propagation of Sago Palm	The project aims to continue research efforts on sago palm micropropagation started during the first phase of the Sago Biotech Program.	01/01/12	12/31/13	UP Mindanao	Region XI	365,033.00
						<b>14,349,946.00</b>
<b>Food Industry</b>						
Strengthening the Testing and Analytical Capabilities of the Regional Laboratories to Support the Competitiveness of Local Industries (STARLABS)	The project aims to strengthen the capacity and capability of DOST RSTLs in delivering relevant, timely, cost-effective and accurate analytical and testing service to address the testing needs of the MSMEs.	06/01/12	05/31/14	DOST Regional Offices	DOST Regional Offices	10,378,000.00
<b>Program on Technological Support for the Upgrading of Local Cacao and Cocoa Industry (Project 1 to 4)</b>						
Proj. 2 - Microbial Community and Biochemical Profiling for Microbial Augmentation and Development of Quality Indicators for Cacao Fermentation and Processing	The project aims to document the microbial community and chemical profile as a result of local practices on cacao fermentation.	01/01/13	01/03/15	BIOTECH-UPLB	Region IV-A	914,231.00
Proj. 4 - Design and Fabrication of Equipment for the Production of Local Coca Products	The project aims to open up avenues for the processing of cacao and promote its agricultural production.	01/04/13	01/03/15	ITDI	NCR	1,713,245.00



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Process Improvement and Waste Minimization in Chichacorn Manufacturing	The project aims to improve and optimize the process for chichacorn manufacturing in compliance to food safety and the Philippine National Standard (PNS) for chichacorn products.	05/15/13	05/14/14	Northwestern University (NWU)	Region I	1,186,970.00
Fabrication of Biomass Fired Steam Kettle for the Production of Concentrated Coconut Water Generated by Copra Makers as Intermediate Material for Coconut Beverage	The project aims to fabricate a biomass fired steam kettle for the production of concentrated coconut water suitable for small farmers in the village.	06/01/13	08/31/13	ITDI	NCR	157,500.00
<b>Support to Industry Competitiveness</b>						<b>50,360,812.44</b>
Establishment of Phil. Inst. of Integrated Circuits	The project aims to address the shortage in manpower in IC designs by creating a pool of engineers in IC design sector.	09/01/13	06/30/16	UP Diliman	NCR	15,595,272.91
<i>Coils and Cells</i>						
Developing Capability to Investigate Gel Composite Viscoelasticity	The program aims to develop human resource with capabilities in developing instrumentation for investigating the microhelogy of biopolymers and networks.	06/01/13	05/31/15	University of San Carlos	Region VII	3,151,275.20
Developing Capability to Implement Optical Tweezers with Microfluidics for Homogenized Gelling	The program aims to develop human resource with capabilities in developing instrumentation for investigating the microhelogy of biopolymers and networks.	06/01/13	05/31/15	University of San Carlos	Region VII	346,330.20
Developing Capability for High Throughput Cell Elasticity Sorting	The program aims to develop human resource with capabilities in developing instrumentation for investigating the microhelogy of biopolymers and networks.	06/01/13	05/31/15	University of San Carlos	Region VII	733,855.20
Information and Promotion	The project aims to promote literacy and appreciation of the industry, energy and emerging technology fields as well as assist in accelerating transfer and commercialization of DOST/PCIEERD-generated technologies.	2013	2014	PCIEERD	NCR	5,420,000.00

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Field Deployment and Effective Testing of LEAP Software	The project aims to improve the English proficiency skills of Filipino students.	09/01/13	08/30/14	UP Diliman	NCR	13,052,070.80
Capacity Building in Basic Space Technology Development- Implementation of a CANSAT Design as a Demonstration of an Overall Satellite Dev't. Process	The project aims to: 1. introduce micro/nano satellite technology 2. development and implement local CanSat design as a demonstration of the overall process of satellite development 3. promote Space Technology Applications at the university level	02/01/13	03/30/13	UP Diliman	NCR	110,000.00
Baseline Research of the 10-Year National Space Technology and Applications (STA) Masterplan	The project aims to provide the following information essential to the development of the 10-year national space technology and applications masterplan.	07/01/13	12/31/13	Manila Observatory	NCR	2,500,000.00
Support to Policy Development and Coordination	The program aims to analyze, review, formulate, and recommend policies and regulations to support the development of priority sectors under PCIEERD. Activities are pursued in consultation with industry stakeholders, experts and technology end-users, of the Council.	2013	2016	PCIEERD	NCR	3,500,000.00
Support to R&D Management	The program aims to support the implementation, monitoring and transferring of Science & Technology based projects.	2013	2016	PCIEERD	NCR	4,902,008.13
Gender and Development Program	The program aims to consider gender equality in providing policies, plans, programs, and technology transfer services regarding Science & Technology.	2013	2016	PCIEERD	NCR	1,050,000.00
<b>EFFICIENT TRANSPORT SYSTEM</b>						<b>22,721,772.00</b>
Rapid Electric Vehicle Charging (CharM)	The project aims to develop a charging system for EV similar to the behavior of a conventional gasoline station such that the EV user would like to replenish the energy in the storage tank as quickly as possible.	01/01/13	06/30/14	UP Diliman	NCR	15,010,176.00

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ITS - Development of the Philippine Metropolitan Advanced Travel Info System for Bad Weather (Phil MATIS)	The project aims to develop a web-based application that will build on the existing system of the MMDA and will interface with DOST's NOAH in terms of mapping and weather information.	02/18/13	02/17/14	UP Diliman	NCR	7,711,596.00
<b>SUSTAINABLE ENERGY</b>						<b>20,555,335.90</b>
Wind Resource Assessment for Wind Power Systems	The project aims to support the Phil. Government efforts in order to promote the development and utilization of renewable energy resources in the country.	01/01/13	07/01/14	PAGASA	NCR	5,865,600.00
Pilot Testing of Wind Turbine Generator	The project aims to pilot – test the Wind Turbine Generator developed under the DOST Program: “Wind Turbine Generator”.	01/01/13	06/30/14	UP Diliman	NCR	7,005,465.90
Design and Implementation of a Power Distribution System for Data Centers	The project aims to design and implement a centralized power distribution system for data centers that will consist of [A] Power distribution units that can measure the energy consumption of several electric sockets and send this information, together with temperature and humidity measurements to a central computer; and [B] A central computer that would receive, archives, and organize the data sent by the PDUs.	01/01/13	12/31/13	UP Diliman	NCR	1,077,072.00
Study for the Implementation of a Smart Green DOST Compound	The project aims to develop architectural design programming and planning that are geared towards achieving the identified project values in using relevant smart technologies and highest standards of green building practices	03/01/13	08/31/13	ASTI	NCR	999,140.00
<i>Smart Grid Technology for Filipino Households</i>						

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Acceptability Studies for Prepaid Metering and Smart Home System	The project aims: 1. to develop a model that describe the factors that determine the consumers' decision to witch to prepaid metering 2. to describe consumers' preferences regarding a prepaid metering system and to incorporate these in the development of a prepaid metering system.	07/01/13	06/30/15	UP Diliman	NCR	1,556,070.00
A Smart Home Platform for Consumer Acceptance Studies	The project aims: 1. to design a smart home platform that could inform the consumers of their energy consumption patterns. 2. to deploy the smart home platform in several household to assess its contribution towards achieving energy conservation. 3. to incorporate in the design of the smart home the recommendation gathered in the surveys that could maximize its effectiveness.	07/01/13	06/30/15	UP Diliman	NCR	2,083,004.00
An Advanced Metering Infrastructure Emulator for Consumer Acceptance Studies	This project aims: 1. to design an emulator that can implement the features of an AMI 2. to deploy the emulator over several household to stimulate a small-scale metering infrastructure 3. to use emulator to conduct consumer studies with respect to demand response such as prepaid metering 4. to incorporate in the design of the AMI the recommendations gathered in the surveys to maximize its effectiveness.	07/01/13	06/30/15	UP Diliman	NCR	1,968,984.00
<b>KRA 5: Integrity of the environment and climate change mitigation and adaptation</b>						<b>7,435,508.00</b>
<b>ENVIRONMENT, CLIMATE CHANGE ADAPTATION AND DISASTER RISK REDUCTION &amp; MANAGEMENT</b>						<b>7,435,508.00</b>
Modeling of Fate and Transport of Heavy Metals in Surface Waters: From Source at Mining Site to Downstream Receiving Waters	The project aims to apply, develop and possibly modify an existing transport model to calculate this risk.	06/01/13	05/31/15	UP Diliman	NCR	5,662,000.00

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Green Technology and Active Community Engagement (ACE) Model Towards Estero de Paco Revival (Proj. 3)	The project aims to develop the in-situ bioremediation technique for Estero de Paco water by the determination of proper application method and concentration of local biominerals that can significantly improve the characteristics of estero water and meet DENR standards for class C fresh water.	11/15/12	05/14/14	Adamson University	NCR	587,300.00
The Use of Radon in the Monitoring of the Phil. Fault and Valley Fault System and its Implication as an Earthquake Precursors	The project aims to use radon as potential geochemical precursor of earthquake along the northern segment of the PF and VFS. and to contribute instrengthening the monitoring program being undertaken along the northern segment of the PF and VFS.	02/01/13	12/31/14	PNRI	NCR	1,186,208.00
<b>GRAND TOTAL</b>						<b>395,000,000.00</b>
<b>2013 GIA FUNDS</b>						<b>395,000,000.00</b>