FY 2016 PCAARRD LIST OF GRANTS-IN-AID PROGRAMS/PROJECTS

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
R&D Program on Abaca Fiber for Specialty Papers, Textile and Other High-End Products	Project 1. Characterization and Performance Evaluation of Fibers From High-Yielding and Virus-Resistant Abaca Hybrids for Textiles and Other Application	Poverty reduction and empowerment of the poor and vulnerable	The general objective of the project is to assess the effect of varietal improvement of abaca on the fiber properties and processability for textiles and related end-use. Specifically, it aims to: 1. Determine the physico-chemical properties of fiber from the identified Bunchy top virusresistant hybrid in comparison with the commercially available abaca grades in the market; 2. Assess the performance and determine the applicability of the S2 grade from each hybrid for textiles and dissolving pulp production; and 3. Determine the technical and economic viability of using the identified Virus Resistant Abaca (HB) for textiles.	Different grades of abaca from high-yielding and BTV-rsistant abaca breeds; 'Breeds for textile manufacture and dissolving pulp production	PTRI	Abaca farmers, plantation owners/pulp mills, pulp and paper industry and other allied industries, strippers, classifiers, traders, fiber exporters and processors/manufacturers, waste water treatment industry, government	1-Jan-15	31-Dec-17	ONGOING	7,557,581.20	704,722.60
R&D Program on Abaca Fiber for Specialty Papers, Textile and Other High-End Products	Project 2. Optimization of conditions for the production of abaca-reinforced packaging and printing/writing papers using recycled fiber	Rapid, inclusive and sustained economic growth	The project aims to establish conditions for abaca fiber-reinforced printing/writing paper and packaging paper. Specific objectives: â€¢ To establish reference values by evaluating samples of local and imported packaging and printing/writing papers; â€¢ To establish conditions for preparing/refining abaca pulp suitable for reinforcement; â€¢ To determine the effects of various proportions of abaca pulp with recycled fiber on the properties of paper; â€¢ To estimate cost of materials and assess technology for possible piloting/commercialization; â€¢ To conduct cost and benefits analysis using data from in-plant pilot runs; and â€¢ To prepare manuscript for publication/dissemination.	Technology for production of abaca-reinforced packaging paper and printing/writing paper using recycled fiber	FPRDI	Abaca farmers, plantation owners/pulp mills, pulp and paper industry and other allied industries, strippers, classifiers, traders, fiber exporters and processors/manufacturers, waste water treatment industry, government	1-Jan-15	31-Dec-17	ONGOING	5,270,338.70	1,698,511.96
R&D Program on Abaca Fiber for Specialty Papers, Textile and Other High-End Products	Project 3. Development of teabags and security/currency base papers using abaca pulp	Rapid, inclusive and sustained economic growth	The project aims to establish conditions for the local manufacture of specialty paper (tea bags, filter paper) and security/currency base paper. Specific objectives: â€¢ To evaluate samples of a type of specialty paper (tea bags/filter paper) and security/currency notes; â€¢ To evaluate pulps and blending proportions of pulp furnish for the production of specialty paper (tea bags, filter paper) and security/currency base paper; â€¢ To estimate cost of materials and assess technology for piloting/commercialization; and â€¢ To prepare manuscript for publication/dissemination.	Technology on pulping-bleaching-refining/blending for abaca fiber and other pulps to produce specialty/currency base paper	FPRDI	Abaca farmers, plantation owners/pulp mills, pulp and paper industry and other allied industries, strippers, classifiers, traders, fiber exporters and processors/manufacturers, waste water treatment industry, government	1-Jan-15	31-Dec-17	ONGOING	6,644,706.50	1,626,966.27
R&D Program on Abaca Fiber for Specialty Papers, Textile and Other High-End Products	Project 4. Processing of nanocrystalline cellulose from abaca pulp/	Rapid, inclusive and sustained economic growth	The project aims to establish conditions for the preparation of purified pulp and MFC/NCC from abaca fiber. Specific: • To establish/optimize pulping, bleaching, refining and extraction of MFC/NCC from the fiber; • To evaluate the properties of the purified pulps and MFC/NCC; and • To prepare report for publication and assess technology for possible piloting.	Purified pulp and MFC/NCC from purified pulp available for application studies (reinforcement, biopolymers, etc)	FPRDI	Abaca farmers, plantation owners/pulp mills, pulp and paper industry and other allied industries, strippers, classifiers, traders, fiber exporters and processors/manufacturers, waste water treatment industry, government	1-Jan-15	31-Dec-17	ONGOING	2,780,581.50	1,615,720.86
R&D Program on Abaca Fiber for Specialty Papers, Textile and Other High-End Products	Project 5. Electron beam-induced grafting of abaca/polyester nonwoven fabric and its application as toxic metal ion adsorbent	Rapid, inclusive and sustained economic growth	The project aims to develop a novel adsorbent from abaca nonwoven fabric through radiation-induced graft polymerization and to apply the modified abaca nonwoven fabric in removal of heavy metal ions in aqueous solutions using bench-scale column test. Specific: â€¢ To determine the optimum parameters for producing abaca nonwoven fabric that would give the minimum degree of grafting required for adsorption; â€¢ To optimize the procedure for electron beam-induced grafting of various monomers with functional groups or precursor functional groups for metal ion adsorption onto the abaca nonwoven fabrics using emulsion polymerization; â€¢ To assess the heavy metal ion uptake capacity of the grafted nonwoven fabrics by batch adsorption and bench-scale dynamic column experiments; â€¢ To assess the metal ion uptake kinetics and regeneration/reuse of the grafted nonwoven fabrics; and â€¢ To perform cost-benefit analysis of the final product (adsorbent material packed in column module).	Protocol for producing module from grafted abaca nonwoven fabric for heavy metal ion adsorption	PNRI	Abaca farmers, plantation owners/pulp mills, pulp and paper industry and other allied industries, strippers, classifiers, traders, fiber exporters and processors/manufacturers, waste water treatment industry, government	1-Jan-15	31-Dec-17	ONGOING	4,007,836.10	1,777,336.55
R&D Program on Abaca Fiber for Specialty Papers, Textile and Other High-End Products	Program Management Coordination	Poverty reduction and empowerment of the poor and vulnerable			PCAARRD		1-Jan-15	31-Dec-17	ONGOING	584,724.00	159,245.90

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	Advanced Evaluation of Abaca Hybrids with High Fiber Yield and Resistance to Bunchy Top Virus Selected Areas in Catanduanes, Bicol	Poverty reduction and empowerment of the poor and vulnerable	General: This proposal aims to evaluate the hybrid abaca planting stocks produced through tissue culture technique and disseminate to interested abaca farmers in Catanduanes area to meet the potential demand for abaca fibers for pulp and paper industry. Specific Objectives: 1. To produce 10,000 seedlings of abaca hybrids through tissue culture. 2. To establish two (2) hectares of abaca hybrids plantation and to determine the performance in three (3) selected municipalities in Catanduanes province. 3. To train abaca farmer cooperators and other abaca farmers on proper abaca production, fertilization, fiber harvesting, grading and baling. 4. To develop, produce and disseminate information, education and communication (IEC) materials and conduct promotional activities for abaca farmers and other stakeholders.	1. Production and distribution of 10,000 abaca seedlings in 2 hectares plantation in each of the 3 participating municipalities of Catanduanes province (Y1) 2. Establish 2-hectare abaca plantation (Y1) 3. Fifteen farmer's cooperators and at least 100 abaca farmers trained for abaca production, fertilization, fiber harvesting, grading and baling (Y4) 4. Developed IEC materials (200 leaflets, 200 brochures, 2 video recordings) and conducted promotional activities (Y4) 5. One publication in refereed journals (Y4)	UPLB, CatSU	1. Abaca Farmers 2. Stakeholders 3. Abaca Processors	1-Nov-16	31-Oct-18	NEW	4,998,429.00	886,716.42
	Establishment of Ten Hectares Abaca Hybrid Plantation at VSU and Evaluation of Fiber Quality for the Pulp Industry	Poverty reduction and empowerment of the poor and vulnerable	General: The general objective is to reinvigorate the abaca industry through enhanced and sustained development of abaca hybrids for the pulp industry. Specific: 1. To establish a ten hectare production area of hybrids (2 and 7). 2. To evaluate their fiber quality for the pulp industry.	Established 10 hectare area for the abaca hybrids. Produced 16,000 abaca hybrid seedlings for the 10 hectare area. Assessed and evaluated the abaca hybrids as to their fiber quality specifically its pulping properties.	VSU	Farmers/Farmer Cooperatives Nursery Operators Local Government Units Abaca Processor	1-Nov-16	31-Oct-19	NEW	4,893,698.00	709,166.80
	Mapping the Distribution of Abaca Bunchy Top in Different Cropping Systems and Analyzing Epidemic Risks in the Zamboanga Peninsula	Poverty reduction and empowerment of the poor and vulnerable	Mapping disease distribution, with new technologies like Geographic Information System (GIS) and predicting the course of its spread from foci of infection, with forecasting models, provide an opportunity to formulate management strategies designed to avoid epidemic intensification. These maps, likewise, allows the identification of growing areas that can be categorized with low risk of vulnerability to environmental change in the Zamboanga Peninsula. Specific Objectives: To survey the prevalence and incidence of abaca virus diseases in the Zamboanga Peninsula;to use Geographic information system (GIS) technology in creating maps of abaca virus disease distribution on the regional, provincial, town and barangay level; to determine the most and least vulnerable areas for new abaca plantations in the Zamboanga Peninsula based on cropping systems and GIS maps; to determine abaca distribution and varieties grown in the Zamboanga Peninsula; to describe the cropping systems practiced in abaca farms in the Zamboanga Peninsula including planting methods, population density, fertilizer management (if any), pest management, harvesting procedures, etc.;to assess the occurrence of aphid vectors in individual fields;to identify the species of aphids occurring in abaca plantations; o analyze rates of disease increase and spread from survey data; and to assess risk of future abaca virus disease epidemics due to climate change using the bunchSim computer simulation model.	1. GIS maps of abaca cropping areas and virus disease distribution in time indicating intensification, and in space indicating spread, in the Zamboanga Peninsula 2. Knowledge/Information of cropping systems and abaca varieties being planted in the Peninsula and possible relation to abaca bunchy top progression 3. Estimates of rates of disease increase and graphs of simulated epidemics and forecasts of risk of epidemics in abaca growing areas in the Peninsula 4. Formulation of appropriate abaca virus disease management strategies based on the above results 5. Better collaboration among government agencies and private growers on strategies regarding abaca virus disease management 6. No less than 3 technical articles to be published with possible titles as follows: a. Spread and intensification of abaca bunchy top in the Zamboanga Peninsula b. Using simulation modeling to predict risk of abaca bunchy top epidemics in the Zamboanga Peninsula c. Agronomic and cultural practices in abaca production in the Zamboanga Peninsula	Jose Rizal Memorial State University - Tampilisan, UPLB, PhilFIDA	Abaca growers/ farmers, government institution (DA-PhilFIDA), and researchers	1-Jan-16	31-Dec-17	NEW	4,995,080.00	2,752,415.00
	S&T Community Based Farm on Strengthening the Abaca Production Through Rehabilitation and Nursery Management in Sogod, Southern Leyte	Rapid, inclusive and sustained economic growth	1. To improve farm productivity and increase the productivity and increase the production of quality fiber from the current 20kg/ha/yr to 1200 kg/ha/yr starting 2017 due to use of high yielding and virus-resistant hybrids (HYVs). 2. To showcase the S&T based farming of abaca through the establishment of 2 demonstrations and 4 nursey farms for HYVs abaca. 3. To provide common service facilities to the 4 identified barangays. 4. To build capabilities of beneficiaries through trainings. 5. To build and enhance active linkages with other NGAs, SUCs, LGUs, farmer groups, processors and market clients.	1. Established four (4) nurseries for HYVR abaca. 2. Established two (2) demonstration farms at 0.5 hectare each for HYV abaca. 3. Developed one (1) training module on hybrid abaca production. 4. One marketing agreement forged. 5. Trained at least 10 abaca farmers and 10 personnel from partner member agencies/project staff on the appropriate S&T interventions for abaca production (Training on abaca fiber grading and classification/sorting. 6. Improved cultural management and post harvest facilities. 7. Increased yield through the use of improved stripping machines as common service equipment in the four (4) barangays.	DOST 8	NGAs, SUCs, LGUs, farmer groups, processors and market clients	1-Dec-14	30-Nov-17	ONGOING	3,812,664.00	999,219.00
National Aquafeeds R&D Program	Field Trial of Protein Enriched Copra Meal (PECM) as Feed Protein for Tilapia, Milkfish and Shrimp Aquaculture	Rapid, inclusive and sustained economic growth	a). Asses the feed value as a feed ingredient of PECM in milkfish, shrimp and tilapia cultured in a scale-up outdoor pond production system. b). Evaluate the growth performance, feed efficiency and biochemical composition of fish reared with diets containing PECM. c). Formulate optimized feeding guide in the use of PECM as feed ingredient in aquatic animal feeds.	1. Diets for tilapia, milkfish, shrimp with PECM as major protein ingredient, formulated. 2. Feed value and growth performance of PECM feed aquatic animals reared in outdoor scale-up production ponds, evaluated. 3. Influence of diets containing PECM on carcass composition, sensory quality, and consumer acceptability, elucidated	UPV	Fisher folks/traders/ feed industry; researchers/scientists, the general public and science in general.	1-Apr-16	31-Mar-18	NEW	10,840,723.00	5,576,909.00

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NATIONAL AQUAFEEDS R&D PROGRAM PROGRAM D. IMPROVEMENT OF MICROALGAE PASTE PRODUCTION FOR AQUACULTURE	Project 1. Pilot-testing of microalgae paste as feed for shrimp and milkfish hatcheries	Rapid, inclusive and sustained economic growth	General Objective: To determine the feasibility and viability of using microalgae paste as larval feed in milkfish and shrimp hatcheries. Specific Objectives : 1. To complete the larval rearing production cycles for milkfish and shrimp using the UPV microalgae paste as feed. 2. To determine the growth and survival of shrimp and milkfish larvae in hatcheries using microalgae paste. 3. To compare the nutritional impact of using the microalgae paste in shrimp and milkfish larvae against the conventional hatchery protocol. 4. To compare the operating cost of hatcheries utilizing the microalgae paste against the conventional hatchery using internally grown microalgae. 5. To compare the cost benefit of conventional hatchery with the full complement of natural food tank against a hatchery with reduced or no algal tanks. 6. To come up with a new protocol using algal paste in milkfish and shrimp hatcheries.	1. A new production protocol for milkfish & shrimp hatcheries using microalgae paste 2. Microalgae Paste tested and ready for commercialization.	University of the Philippines, Visayas	Aquaculture industries and backyard hatcheries will be the target beneficiaries of the microalgae paste technology.	1-Jul-16	30-Jun-18	NEW	4,170,088.00	2,277,544.00
NATIONAL AQUAFEEDS R&D PROGRAM PROGRAM D. IMPROVEMENT OF MICROALGAE PASTE PRODUCTION FOR AQUACULTURE	Project 2. Development of packaging and storage systems for microalgae paste	Rapid, inclusive and sustained economic growth	General Objectives: To develop appropriate packaging, storage and transport systems for microalgae paste. Specific Objectives: 1. To conduct physico-chemical, biological and microbiological quality analyses of the microalgae paste and spoilage pattern. 2. To compare the effect of packaging material, design , methods, storage system and its combinations on the quality of microalgae paste. 3. To optimize packaging and storage systems appropriate for the microalgae paste and determine its shelf life 4. To develop a protocol for handling, packaging , transport and storage of the micro algae paste. 5. To conduct economic analyses to evaluate commercial, ecological and social viability of the developed packaging and storage systems.	1. Physico-chemical, biochemical and microbial quality of microalgae paste; and changes during storage at ambient and chilled conditions; spoilage pattern and significant quality parameters identified 2.Appropriate package and storage system for quality microalgae paste 3. Determined shelf-life 4. A protocol for handling, packaging, transport and storage of the microalgal paste. 5. Comparison of cost and benefits of packaged microalgal paste vs commercially available micro algae paste	University of the Philippines, Visayas	Local aquaculture industry, the community, the socio-economic well-being of the Stake holders.	1-Jul-16	30-Jun-18	NEW	3,163,480.00	1,641,740.00
	Bamboo Grove Establishment for Climate Change Resiliency on Quinali "A" Sub-watershed in the Province of Albay	Rapid, inclusive and sustained economic growth	The general objective of the project is to rehabilitate the vulnerable segments of the Quinali "A" Sub-Watershed through the SAFE project. Specific objectives 1. To reassess the vulnerable river/streams banks; 2. To mobilize the LGUs, DENR and DA, that are the direct stakeholders of the Quinali "A" Sub-Watershed for the rehabilitation activities; 3. To produce bamboo seedlings and other appropriate planting materials for stabilizing the river/stream banks; 4. To establish the bamboo grooves and ensure its maintenance beyond the project; 5. To merge an alliance of stakeholders for policy directions towards sustainability of the project. 6. To produce IEC materials as part of an awareness and advocacy campaign.	YEAR ONE: 1. Reassessment of the river vulnerable river/streams banks; producing maps and proper documentation; 2. MOAs forged between and among concerned stakeholders; 3. Action plans of the respective LGUs, including policy drafts; 4. One bamboo nursery established at BUCAF site, with 27,500 QPMs and 25,000 potted vetiver grass; 5. 100 bamboo grooves established, protected and maintained; 6. IEC materials published and distributed. YEAR TWO: 1. Municipal ordinances to directly support the project; 2. 4-6 additional bamboo nurseries established at LGU sites; 3. 100 bamboo grooves established, protected and maintained; 4. IEC materials published and distributed; YEAR THREE: 1. 1-2 additional bamboo nurseries established at other LGU sites; 2. Additional 100 km bamboo grooves established, protected and maintained... for a total of 210 km; 3. Project sustainability and development plan prepared;	BUCAF	The target beneficiaries of the project are basically the stakeholders of the six LGUs that have their respective jurisdiction of the Quinali A sub-watershed, namely, the municipalities of Camalig, Guinobatan, Oas, Polangui, Libon and the City of Ligao. In totality, the Quinali A sub-watershed has about 330 kilometers stretch of rivers including its streams and creeks.	1-Oct-16	30-Sep-19	NEW	5,870,012.80	1,745,526.40
	Development of Micro-propagation Protocol for Four Economically Important Bamboo Species in the Philippines	Rapid, inclusive and sustained economic growth	This project generally aims to develop an efficient, reliable and cost effective in vitro micro-propagation protocol for mass propagation of four economically important bamboo species in the country. Specifically, it aims to: 1. To determine most suitable sterilization procedure for each bamboo species. 2. To determine most appropriate culture media/hormonal combination for explant establishment and shoot proliferation for each bamboo species. 3. To determine most effective hormonal combination/culture media for rooting each bamboo species. 4. To determine most suitable acclimatization procedure for better survival of plantlets for each bamboo species when transferred to ex vitro conditions. 5. To determine the impact of different fertilizers on the growth performance of the tissue-cultured plants under natural conditions. 6. To determine the cost of producing bamboo using tissue culture.	Micropropagation protocol developed for the four economically important bamboo species. Sterilization procedure developed for each bamboo species. Culture media capable of generating maximum number of shoots per explant per subculture cycle per year for each bamboo species. Culture media capable of generating maximum number of roots per explant per subculture cycle per year for each bamboo species. Acclimatization procedure developed to establish seedlings capable of surviving in the field for each bamboo species. Most appropriate fertilizer for optimum growth of tissue-cultured plants under natural conditions and field performance of tissuecultured bamboo and their genetic stability. Cost of producing tissue culture plantlet, nursery grown plantlets and cost of field outplanting and maintenance for each bamboo species.	ERDB	1. Bamboo Farmers – Provision of quality planting materials at low cost 2. Bamboo Industries – Provision of adequate supply of raw materials 3. Researchers – Provision of information on tissue culture of the 4 bamboos	1-Nov-16	31-Oct-19	NEW	4,664,164.59	2,784,668.53

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	Development of Strategies for propagules and Shoot Production of Three Bamboo Species in Pampanga	Rapid, inclusive and sustained economic growth	This project generally aims to develop strategies and establish baseline information for propagules and bamboo shoot production. Through this project, it is expected to haveenough supply of bamboo planting materialsanda year-round supply of bamboo shoots in Magalang and nearby areas. Specifically, it aims to: 1. Determine the best method of propagating bamboo propagules; 2. Increase survival rate of propagules from 50% to 70%; 3. Develop a suitable thinning regime for shoot production; 4. Determine suitable irrigation method for shoot production during the dry season; 5. Increase bamboo shoot production of kawayantinik (BambusablumeanaSchultes) from 6-7 edible shoots per clump in a year (Virtucio and Roxas, 2003) to about 10 shoots per clump per year; 6. Determine the best storage material and practices to prolong the shelf life of bamboo shoots prior to processing; and 7. Determine the cost of improving propagule survival rate and in DC Meeting, June 21 2016 improving shoot production as well as producing shoots offseason	Identified the best method of propagating propagules Improved survival rate by 50 to 70% Determined the most appropriate method of irrigation for shoot production Identified the suitable thinning regime for shoot production Increased the bamboo shoot production from 6-7 shoots per clump per year to 10 shoots per clump per year Identified the best material and method to prolong the shelf life of newly harvested bamboo shoots Produced IEC materials (1,000 copies) on propagules propagation, thinning and water regime for shoot production and prolonging shelf life of newly harvested shoots	PSAU	Bamboo is a marvelous resource that provides a myriad of benefits for billions of people. Development of bamboo resources is economically assisting impoverished people while at the same time stabilizing erodible slopes and flood-prone watersheds. The ability to substantially accentuate rapid growth through intensive management for commercialization purposes magnifies its many benefits.	1-Aug-16	31-Jul-19	NEW	4,757,622.00	1,585,874.00
	High quality charcoal from bamboo for industrial uses	Poverty reduction and empowerment of the poor and vulnerable	Produce high quality charcoal from bamboo	85% efficient bamboo charcoaling kiln with pyroligneous liquor recovery; Optimized carbonization temperature and time; High quality bamboo charcoal; and Investment profile for local and export markets for high quality bamboo charcoal.	FPRDI	Farmers, cooperatatives and furniture industry	2-Apr-14	30-Sep-16	ONGOING	2,494,624.50	243,089.75
	Performance evaluation of organic based preservatives from five Philippine plant species in the prevention and control of biodeteriorating organisms in bamboo	Rapid, inclusive and sustained economic growth	To determine the efficacy of wood preservative formulations of extracts or volatile oils from selected Philippine plant species.	The project is expected to come up with at least one (1) eco-friendly and cost-effective natural preservative formulated product from selected Philippine plants containing volatile oils. The efficacy of such formulated product against fungi and insects shall have been established both in the laboratory and field/actual conditions.	FPRDI, CMU	The development of the technology on the use of natural plant extracts or volatile oils and its derivatives will be a milestone in the field of wood preservation. The technology reduces the hazards due to the use of synthetic chemicals. If 30-40 % of the synthetic preservatives will be replaced by organic based compounds, there will be a sizeable volume in the reduction of imported preservatives and cost of importing preservatives.	1-Jan-14	31-Dec-16	ONGOING	3,498,981.00	726,701.00
	Soil erosion management in Taganibong watershed in Musuan , Bukidnon (Feb 6, 2013-Feb 5, 2016)	Integrity of the environment and climate change adaptation and mitigation	Reduce the rate of soil erosion and its influence on the water holding capacity of the area to where giant bamboo a it is planted.	Quantified soil erosion & waterholding capacity data for bamboo; Generated maps; Analyzed & interpreted soil erosion & water retention along bamboo plantations at varying slopes & spacing	CMU	Farmers, LGUs	6-Feb-13	5-Feb-16	ONGOING	2,405,066.78	87,522.00

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	Disease Indexing for Banana and Citrus: an NVSU-PCAARRD DOST Research and Service Facility for Cagayan Valley	Poverty reduction and empowerment of the poor and vulnerable	To develop a disease indexing laboratory in NVSU which will serve as a research and a service facility that can help in disease management for banana and citrus and support the implementation of a quality planting material production system in Cagayan Valley. (1) Enhance the existing NVSU facility for serology and PCR-based detection of BBTV, BMV, HLB, and CTV; (2) Provide disease indexing service to banana and citrus growers (nurseries and farms) in Cagayan Valley; (3) Establish a quality planting material production and disease management system in Nueva Vizcaya anchored on partnership with the local government units and covering banana and citrus nurseries and farms; (4) Map present disease incidence of BBTV in banana and HLB in citrus farms of Nueva Vizcaya as benchmark information; (5) Monitor disease incidence and productivity in the established system and smallhold farms accessing NVSU planting materials; (for traceability); (6) Coordinate with the Regional Development Council and provincial local government units the disease indexing of mother plants/trees and seedling nurseries and appropriate handling of infected materials; (7) Confirm using DNA-based detection, strains of BBTV and HLB in production areas of Nueva Vizcaya and Cagayan Valley; (8) Test on the application of bulk DNA analysis for an efficient yet reliable molecular detection of BBTV and HLB in nursery seedlings; (9) Develop and produce educational materials on disease indexing and quality planting materials production system based on unique experiences of the project.	A disease indexing facility in NVSU performing serology and DNA-based disease detection for BBTV, BMV, HLB, and CTV.	NVSU	Banana farmer organizations, growers, researchers, nurseries	1-Jan-15	31-Dec-16	ONGOING	4,998,038.00	864,656.00
	Enhanced Productivity of Lakatan and Saba/ Cardaba in Region 12	Poverty reduction and empowerment of the poor and vulnerable	The project aims to improve the productivity of smallhold local banana growers in selected pilot areas of the Cotabato Region through the application of integrated crop management (ICM) strategies and good agricultural practices (GAP)	120,000 Lakatan and 60,000 Cardaba planting materials produced by the USM tissue culture laboratory; protocol for banana mass propagation using male bud/ floral apex	USM, SKSU, CCSPC	1 tissue culture laboratory and 1 banana nursery; banana farmers	1-Apr-13	31-Dec-16	ONGOING	5,063,051.00	282,131.00
	Multi-location evaluation of naturally selected Saba strains with short stature and field evaluation of irradiated Saba/Cardaba	Poverty reduction and empowerment of the poor and vulnerable	To evaluate naturally-selected and irradiated Saba/ Cardaba strains with short stature (4 meter or less) and early maturity (harvestable at 12-16 months). (1) To mass propagate and evaluate the agronomic, yield and economic performance of different Saba strains with short stature (4 meter or less that are harvestable in 12-16 months) in a total of at least 10 ha in selected locations (Isabela, Nueva Vizcaya, Laguna, Oriental Mindoro, Davao City and Butuan), under farmerâ€™s field condition. (2) To study the acceptability and antioxidant properties of collected Saba strains with short stature to determine the best possible variety to be recommended to the farmers. (3) To conduct technology/ variety promotion and dissemination of promising naturally-selected Saba with short stature. (4) To conduct field evaluation of irradiated short-statured Saba/Cardaba. (5) To evaluate promising strains and selected irradiated mutants of Saba for resistance against Banana Bract Mosaic Virus and Bugtok.	Short statured (4m or less) early fruiting (harvestable in 12-16 months) Saba	UPLB, ISU, NVSU, BPI-DNCRDC	Banana growers, Agricultural officers/technicians, Non-government organizations, Researchers	1-Dec-14	30-Nov-17	ONGOING	17,383,389.00	3,898,719.59
	Multi-Location Performance Evaluation of A New Banana Bunchy Top Virus (BBTV) – Resistant 'Lakatan' Cultivar	Poverty reduction and empowerment of the poor and vulnerable	Make Lakatan banana production more profitable to small farmers by reducing losses due to banana bunchy top virus infection by 20% through adoption of disease resistant cultivars.	At least 5,000 BBTV-resistant Lakatan seedlings micropropagated and evaluated in five provinces; Agronomic, yield and economic data for new BBTV-resistant multi-line cultivar obtained; Variability of the mutant lines reaction to the viruses in five locations determined; Five demonstration field trial sites (with at least 1200 plants) established; Five Lakatan mutant lines registered with NSIC and IAEA and PNRI data base; Five seminars and five field days conducted; At least 15,000 BBTV-resistant Lakatan disseminated/ distributed; Recommended BBTV-resistant Lakatan mutant lines for commercial production; BBTV incidence in farmer's field reduced by 20%; and At least 2 research articles on the performance and adoption of mutant lines published.	UPLB, DA, QSU, CVSU, BPI	Banana growers; Agricultural officers/ technicians; Non-government organizations; Researchers	1-Apr-13	31-Dec-16	ONGOING	8,280,608.00	626,000.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
Program A. Hatchery and Nursery Operations of Blue Swimming Crabs Portunus pelagicus	Project 2. Development of Nursery Culture for the Blue Swimming Crabs Portunus pelagicus	Rapid, inclusive and sustained economic growth	The blue swimming crab is one of the commercially important crab species which are not sold only as live or frozen but also as canned products. Uncontrolled fishing especially for canning will result in declining stocks in the near future. A significant decrease in the population has been reported in the major fishing grounds in the country (Ingles, 2004; Ingles and Flores, 2000). In anticipation of further decline in the wild, seed production through aquaculture must be done. Preliminary attempts in producing juveniles were done in outdoor tanks (Maheswarudu et al., 2008), but very low survival was obtained. Cannibalism was pointed out to be the main cause of mortality. Crab juveniles molt frequently and the newly molted crab are soft hence they are more vulnerable to cannibalism in a communal system. Several factors have been found to affect the degree of cannibalism such as availability of refuge (Luppi et al, 2001; Moksnes et al., 1998), type of shelter or substrate (Day and Lawton, 1998, Pottle and Elner, 1982; Ut et al., 2007), stocking density (Rodriguez et al., 2007; Ut et al., 2007), intactness of body (Karplus et al., 1989) or molt stage (Lipcius and Herrnkind, 1982). Further investigation of these factors will be useful in reducing cannibalism in this species. Methods to culture early crab instar will be developed to come up with a viable nursery technology for the blue swimming crab. This will serve as the link between larval rearing and growout culture.	1. Salinity requirement of later crab instar stages 2. Most suitable feeding regime for nursery 3. Optimal stocking density for tanks or ponds 4. Most suitable holding system, shelter or refuge for nursery phase determined 5. Cost and return analysis for both tank and cage nursery systems determined 6. Viable nursery rearing method for the blue swimming crab	SEAFDEC	Municipal blue crab fisheries sector, blue crab processors and exporters, traders, coastal Communities/fisherfolk, coastal managers, researchers, potential blue crab growers, LGUs	1-Feb-14	31-Dec-17	ONGOING	6,159,208.00	2,198,251.80
Program A. Hatchery and Nursery Operations of Blue Swimming Crabs Portunus pelagicus	Project.1. Improvement of Larval Rearing Protocol for Blue Swimming Crabs Portunus pelagicus	Rapid, inclusive and sustained economic growth	The focus of this project is to improve the larval rearing protocol of the blue swimming crab to increase the survival rate of the megalopa and crab instar. The cost and return analysis in the hatchery phase will be determined. The development of a viable technology will be useful for the grow-out or stock enhancement purposes.	1. Transport of ovigerous and non-ovigerous crabs 2. Existing larval rearing protocol (hatchery) refined 3. Increase in the survival rate of megalopa from 3-5% to 6-10% 4. Cost and return analysis for the hatchery phase 5. Standard hatchery protocol among partners 6. Science-based hatchery technology disseminated to SUCs and industry stakeholders (at least 3 hatchery adoptors)	SEAFDEC	Municipal blue crab fisheries sector, blue crab processors and exporters, traders, coastal Communities/fisherfolk, coastal managers, researchers, potential blue crab growers, LGUs	1-Feb-14	31-Dec-17	ONGOING	4,654,513.00	1,340,871.42
Program B. Developing Grow-out Culture Technology for Blue Swimming Crabs Portunus pelagicus	Project 1. Conditioning and Transport of Hatchery-Reared Blue Swimming Crab	Rapid, inclusive and sustained economic growth	The project aims to improve survival of juvenile blue swimming crabs from the nursery particularly during and after transport, and by conditioning the hatchery-bred juveniles to adapt to their new environment (pens and ponds).	1. Transport technology for juvenile crabs 2. Differences in the morphological characters and behavior between the hatchery-reared and wild blue swimming crabs 3. Conditioning technology of juveniles 4. Suitable substrate and stocking density for pen culture 5. Manual on transport and conditioning of juvenile crabs	UPV	Municipal blue crab fisheries sector, blue crab processors and exporters, traders, coastal Communities/fisherfolk, coastal managers, researchers, potential blue crab growers, LGUs	1-Feb-14	31-Dec-17	ONGOING	6,731,381.00	1,676,971.75
Program B. Developing Grow-out Culture Technology for Blue Swimming Crabs Portunus pelagicus	Project 2. Developing Pond Grow-out Culture Technology of Blue Swimming Crab	Rapid, inclusive and sustained economic growth	The project focuses on the development of the grow-out culture of blue swimming crabs in ponds.	1. Pond grow-out tehcnology for blue swimming crab 2. Handbook on pond growout system for blue crab	UP Tacloban	Municipal blue crab fisheries sector, blue crab processors and exporters, traders, coastal Communities/fisherfolk, coastal managers, researchers, potential blue crab growers, LGUs	1-Feb-14	31-Dec-17	ONGOING	8,401,763.00	2,035,435.48

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
Cacao Pest Management Program: Biological-Based Approaches	Project 1. Extraction and Evaluation of Pheromones and Kairomones as Potential Monitoring and Managing Tool Against Cacao Insect Pests: Pod Borer and Mirid Bug	Rapid, inclusive and sustained economic growth	1. To extract and identify the sex pheromone from CPB and CMB and kairomone from cacao pod 2. To purify and synthesis sex pheromone and kairomone compounds 3. To evaluate the biological activity of sex pheromone and kairomone on CPB and CMB in the laboratory 4. To develop pheromone lures and traps from field testing of sex pheromone and kairomones in catching CPB and CMB	Develop effective composition and formulation of sex pheromone and kairomone for monitoring and managing CPB and CMB Mass production of purified and synthesize composition of sex pheromone and kairomone for commercialization An offer to growers in the rapidly expanding organic products sector that will be provided by the naturally derived pest control materials major insect pests and diseases using sex pheromone and kairomone for pest monitoring and management. Primary investment opportunity in the commercialization and marketing of unique insect traps using sex pheromone and kairomone Increase the country's competitiveness on good quality cacao beans for local and international markets Output will be documented in the form of reports, extension materials, and journal articles.	DLSU	The Biologically-Bassed IPM program to be developed by this proposed program will target 80-90% efficiency compared to the existing farmers practice of chemical control and sleeving. Chemical Control commands high management input translated to lower income for the farmers. Additionally, it is not environment friendly. Sleeving is a good alternative to chemical control especially for pests attacking cacao pods, however it is very laborious and even more time consuming because cacao trees continuous to produce pods practically everyday when it reached reproductive stage. Currently, not all farmers use sleeving because of time constraint and the cost of the plastic sleeves. Chemical control and sleeving are not for long term control	1-Feb-16	31-Jan-18	NEW	3,277,015.00	1,974,076.00
Cacao Pest Management Program: Biological-Based Approaches	Project 2. Exploration, Identification, Mass Rearing and Field Release of the biological Control Agents Against Cacao Pod Borer and Cacao Mirid Bug	Rapid, inclusive and sustained economic growth	1. To survey biological control agents with direct association with CPB and CMB 2. To retrieve the cacao pod borer egg parasite Trichogrammatoid ea cojuangcoi found in Mindanao and the entomopathogens Beauveria bassiana previously found infecting cacao mirid bug in Luzon 3.To test the efficiency of the biological control agents with confirmed association with cacao pod borer and mired bug 4.Develop mass rearing procedures for the selected efficient biological control agents 5. To develop efficient release strategy for the mass reared biological control agents	Identify and record potential biological control agents of CPB and CMB Confirmation of biological control agents for mass production Develop field release strategy and distribution method for mass reared biological control agents Develop mass rearing manual for small scale (farmers' level) and commercial scale (for biological control industry) Primary investment opportunity in the commercialization and marketing of biological control agents Increase the country's competitiveness on good quality cacao beans for local and international markets Output will be documented in the form of reports, extension materials, and journal articles	DLSU	The Biologically-Bassed IPM program to be developed by this proposed program will target 80-90% efficiency compared to the existing farmers practice of chemical control and sleeving. Chemical Control commands high management input translated to lower income for the farmers. Additionally, it is not environment friendly. Sleeving is a good alternative to chemical control especially for pests attacking cacao pods, however it is very laborious and even more time consuming because cacao trees continuous to produce pods practically everyday when it reached reproductive stage. Currently, not all farmers use sleeving because of time constraint and the cost of the plastic sleeves. Chemical control and sleeving are not for long term control	1-Feb-16	31-Jan-18	NEW	3,292,503.00	1,963,033.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
Cacao Pest Management Program: Biological-Based Approaches	Project 3. Biological Control and Development of Nano-BioSensor for Fungal Diseases of Cacao	Rapid, inclusive and sustained economic growth	To develop a Biological-based Pest Management Program for the control of the major insect pests and diseases of cacao, namely: cacao pod borer, cacao mirid bug, cacao pod rot, and vascular streak disease 1. To develop monitoring and managing tool against insect pests of cacao using pheromone and kairomone traps 2. To mass produce efficiently biological control agents of insect pests and diseases of cacao for inoculative release in cacao farms 3. To establish biosensor system for early detection of vascular streak disease and black pod rot using nanotechnology 4. To utilize efficiently naturally occurring particle film materials as biocoating agents to control pests attacking cacao pods	Describe the isolation, identification, possible mode of action, and evaluation of mycoparasitic isolates of bacteria and fungi with potential for biological control of VSD and BPR. Available nanobio-sensory system for early detection and rapid response to manage the diseases Primary investment opportunity in the commercialization and marketing of biological control agents Increase the country's competitiveness on good quality cacao beans for local and international markets	UPLB, PhilMech	"The Biologically-Bassed IPM program to be developed by this proposed program will target 80-90% efficiency compared to the existing farmers practice of chemical control and sleeving. Chemical Control commands high management input translated to lower income for the farmers. Additionally, it is not environment friendly. Sleeving is a good alternative to chemical control especially for pests attacking cacao pods, however it is very laborious and even more time consuming because cacao trees continuous to produce pods practically everyday when it reached reproductive stage. Currently, not all farmers use sleeving because of time constraint and the cost of the plastic sleeves. Chemical control and sleeving are not for long term control	1-Apr-16	31-Mar-18	NEW	4,794,882.00	2,741,379.00
Cacao Pest Management Program: Biological-Based Approaches	Project 4. Particle Film Technology as Coating Agent and Carrier of Mycoparasites for the Control of Insect Pests and Diseases Attacking Cacao Pods	Rapid, inclusive and sustained economic growth	To utilize efficiently naturally occurring particle film materials as biocoating agents to control pests attacking cacao pods	Identification of best clay particle type and spreader-sticker as biocoating agent against pests attacking cacao pods Impact assessment of the selected biocoating agent against pests attacking cacao pods Development of efficient biocoating agents with lengthened surface coverage for a fewer application schedules Primary investment opportunity in the commercialization and marketing of the selected biocoating agents Training of farmers and agricultural technicians on field application and impact assessment Increase the country's competitiveness on good quality cacao beans for local and international markets Output will be documented in the form of reports, extension materials, and journal articles	DLSU	The Biologically-Bassed IPM program to be developed by this proposed program will target 80-90% efficiency compared to the existing farmers practice of chemical control and sleeving. Chemical Control commands high management input translated to lower income for the farmers. Additionally, it is not environment friendly. Sleeving is a good alternative to chemical control especially for pests attacking cacao pods, however it is very laborious and even more time consuming because cacao trees continuous to produce pods practically everyday when it reached reproductive stage. Currently, not all farmers use sleeving because of time constraint and the cost of the plastic sleeves. Chemical control and sleeving are not for long term control	1-Feb-16	31-Jan-18	NEW	3,702,285.00	2,014,174.00
Functional Genomics Assisted Development of Gene Markers for Economically Important Traits in Cacao and Rubber Production Varietal Improvement	Project 1. Functional Genomics Assisted Development of Gene Markers for Economically Important Traits in Cacao Production and Varietal Improvement	Rapid, inclusive and sustained economic growth	The project aims to: a) develop and establish a gene marker and EST for library database in cacao and b) use the established gene marker/EST database for cacao improvement through functional genomics	Analyzed gene markers for 5 cacao HYVs	USM, UPLB	Researchers/ Technicians	16-Feb-15	15-Feb-18	ONGOING	12,668,488.00	1,565,253.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
Pinoy S&T Services for Farmers and Entrepreneurs Program (PSF)	S&T Community-Based Farm (STCBF) on Improved Integrated Crop Management Practices (IICMP) for Cacao Rehabilitation in the City of Mati, Davao Oriental	Rapid, inclusive and sustained economic growth	Generally, the project aims to rehabilitate the old and unproductive cacao farms of some selected ARBs and upscale their productivity through STCBF that will showcase the improve integrated crop management practices (IICMP) in rehabilitating old cacao plantations. Specific Objectives: 1. Transfer knowledge and skills to 15 selected ARB cooperators the improved integrated crop management practices (IICMP) in rehabilitating old cacao farms to become productive by 50%-60% or from 1 kg per tree per year to 1.5-1.6 kg per tree per year; 2. Establish one (1) cacao nursery (100 sq.m. with a capacity of 5,000 seedlings and will be producing high yielding recommended clones namely UF-18, PBC-123, W-10) and establish 1/2 ha bud wood garden/scion grove (1,000 plants capacity and can produce 50,000 scions after 1 year); 3. Develop the capability of the cooperators in increasing their farm profitability; 4. Promote wider dissemination of the recommended IICMP on cacao rehabilitation and value adding through the production of manual on cacao rehabilitation and processing.	Trained at least 15 ARB farmer cooperators on IICMP and rehabilitated at least 15 hectares of their old and unproductive cacao farms a. Fertilized existing cacao trees (Y1-Y3) b. Installed water impounding dam (Y2) c. Rehabilitate by side grafting and chupon grafting (Y2) d. Cleaned and maintained cacao fields using provided tools (Y1-Y3) 2. Produced at least 5,000 high-yielding and high quality cacao planting materials (UF18, W10, PBC123) to be used in rehabilitating old cacao farms of the cooperators and other adopters a. Established 100 sqm nursery (5,000 seedling capacity) at DOSCST demo farm (Y1) and maintained (Y2-Y3) b. Established 5,000 sqm scion grove / budwood garden (50,000 scions per year) at DOSCST demo farm (Y1) and maintained (Y2-Y3) 3. Enhanced the capability of the cooperators in producing high quality cacao beans that can pass both local and export standards a. Conducted Farmers' Field Day (Y3) b. Conducted training on cacao processing (Y3) c. Provided solar drier and fermentation boxes as CSF (Y2) d. Processed high quality cacao beans (Y2-Y3) 4. Increased their profitability from an estimated gross income of 26,000-32,500 (400-500 # of trees X	DOSCST	Cacao Farmers / Agrarian Reform Beneficiaries	1-May-14	30-Apr-17	ONGOING	3,391,195.00	1,436,401.03
	Development of Sensor Devices for Cacao Quality Measurement	Rapid, inclusive and sustained economic growth	Develop a sensor-based instrument for determining freshness and quality of freshly harvested wet cacao bean	Electronic-based sensor for quality measurement for newly harvested and wet bean cacao with the following features: suitable for rapid assessment, non-destructive sampling an assessment, portable that could be used in the field, does not need high level of technical expertise to operate; Prototype of cacao bean quality meter	PhilMech	Cacao farmers, buyers, and processors	1-Feb-15	31-Jan-17	ONGOING	3,405,702.00	1,046,106.84
	Adoption of DOST-FNRI Technology in Stabilized Brown Rice Production By LGU Jaro, Leyte	Rapid, inclusive and sustained economic growth	General: The project aims to improve the economic condition of the municipality of Jaro, Leyte, through S&T Interventions on the development of brown rice industry as an alternative to the heavily damaged coconut industry of the town. Specific: 1) To adopt the DOST-FNRI developed technologies on Stabilized Brown Rice 2) To produce and market stabilized brown rice 3) To establish a Common Service Facility for stabilized Brown Rice Processing	1) Stabilized Brown Rice technology of DOST-FNRI transferred and adopted; 2) Produced high quality brown rice offered to the market at an affordable price; 3) Established 1 CSF for Stabilized Brown Rice Processing (minimum of 200sq.m. floor area) with a production capacity of 50 sacks per day; 4) Produced and printed IEC materials and 1 training module on the technologies to be used in the project.	DOST 8	Farmers and Rice consumers in Leyte	4-Jan-16	30-Jun-17	ONGOING	999,965.00	635,500.00
	S&T Based Farm on the Use of Trichoderma Microbial Inoculant (TMI) for Increased Survival and Early Establishment of Tree Crops in Cacao-Coffee Agroforestry System for the Aytas (Magbukun Tribe) in Kanawan Negritos Reservation Area in Morong, Bataan (Old Title:Establishment of Species-based Cacao-Coffee Agro-forestry System in Kanawan Negritos Reservation Area (KNRA) in Morong, Bataan)	Rapid, inclusive and sustained economic growth	General: To integrate the use of compost and Trichoderma microbial inoculant (TMI) in Aytas agroforestry system to ensure higher survival rate and establishment of tree crops in reforestation site and in farm lots of Ayta families in Kanawan Negrito Reservation Area in Morong, Bataan, thereby presenting a long term livelihood option for the IPs as well as conserving and expanding the remaining forest in the reservation Specific: 1) To Improve the coffee, cacao and other tree seedlings' survival and establishment in the grassland site (10 ha) and increase Ayta farmers' annual crop yields (200 m2) with the use of TMI and Trichoderma-generated compost; 2) To engage the Aytas to plant coffee and cacao and maintain their tree crops in their family farm lots; and 5 3) To continue reforestation of brush land (10 ha) contiguous to the remaining forest patches in KNRA.	Year 1 1. Change in attitudes and responses of the Aytas to the agricultural interventions presented by the project; 2. Strategy for Ayta families' adoption of planting of coffee and cacao in their farm lots; 3. 30% increase of yield of Aytas annual agricultural crops; 4. expansion of forest cover in the reservation from 28 ha sec forest to 30 ha; viable agroforestry system in the reservation; Year 2 5. 20% increase of growth rate of cacao and coffee from the model Aeta farm (2ha farm lot) in comparison to the performance of trees in the other farmer's farm lots 6. 20% increase in survival rate, growth and shorter gestation period of planted coffee/cacao on grassland site 7. expansion of forest cover in the reservation from 30 ha sec forest to 38 ha; viable agroforestry system in the reservation; 8. Publishable journal article drafted;	UPLB	The Magbukún Aytas in the KNRA in Morong, Bataan	27-Oct-16	26-Oct-18	NEW	3,151,235.20	1,825,617.60

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
	S&T Community-based Farms (STCBF) for a Sustainable Cacao Production in Bukidnon	Rapid, inclusive and sustained economic growth	General objectives: This project aims to promote cacao HYV new plantations for a Climate Change-Primed and Sustainable Cacao Production in Bukidnon / Northern Mindanao through the Science and Technology Community-Based Farms (STCBF) approach. Specific Objectives: a) To establish one hectare organic cacao HYV bud-wood garden and nursery (accredited by BPI) in CMU, Bukidnon; b) To capacitate the rural people of Bukidnon in organic cacao HYV budwood garden and nursery operations and intercropping with annuals; c) To showcase and encourage wider adoption of organic HYV budwood garden and nursery and intercropping with annual crops for cacao; d) To enhance the active participation of and empower the community, particularly, the LGU/s and local organizations in promoting HYV budwood garden and nursery, intercropping with annuals, and water impounding for cacao production; and e) To identify and evaluate the norms, roles and responsibilities of men and women in the production of cacao	Year 1 a. Established and maintained at least eight linkages with various cacao stakeholders; b. Organized four (4) clusters of 37 cacao farmers from four (4) municipalities; c. Capacitated at least 42 cacao farmers, CMU staff, and LGU technicians on cacao nursery, budwood garden and plantation establishment and management; d. Established onehectare accredited cacao nursery and budwood garden under the CMU management; e. Promoted cacao nursery-budwood garden technologies thru Technology Field Day and/or cross visits; f. Developed, translated and/or distributed at least one IEC materials/ training modules and videography; Year 2 g. Maintained at least eight linkages with various cacao stakeholders; h. Maintained the onehectare accredited cacao nursery and budwood garden under the CMU management; i. Capacitated at least 42 cacao farmers, CMU staff, and LGU technicians on new cacao plantation establishment and management with intecropping; j. Established 9.25 hectares of new cacao plantation cum demo farm (0.25 hectare per farmer) with intercropping in four (4) municipalities; k. Promoted cacao plantation technologies thru Technology Field Day and/or cross visits; l. Developed, translated and/or distributed at least one IEC materials/ training modules and videography; m. Conducted an initial gender-sensitive business and	CMU	Cacao tree growers and other farmers	1-Aug-16	31-Jul-19	NEW	4,724,072.71	2,287,687.00
Citrus Resources Research for Development in Cagayan Valley (CRR4DCV)	Project 1. Value Chain Analysis for Citrus in Cagayan Valley	Poverty reduction and empowerment of the poor and vulnerable	General The study aims to analyze the citrus value chain and suggest areas of interventions to upgrade the chain. Specific 1. To analyze the nature and structure of the industry that include value chain mapping, description of key players and their functions, nature of interfirm relationships, market and market opportunities, and price and cost structures; 2. To identify the support services, enabling environment such as formal rules and regulations, socio-cultural norms and behavior in the industry; 3. To determine constraints and opportunities; and 4. To recommend S&T interventions and policy reforms for addressing gaps/constraints.	27. Value chain map of selected citrus commodities 28. Key players and their functions 29. Market and price and cost structure 30. Constraints and opportunities of the selected commodities 31. S&T and policy recommendations to enhance the citrus industry in the region	NVSU	1. Citrus Growers in Nueva Vizcaya and Cagayan Valley 2. Traders, processors and input providers 3. Researchers/ Breeders 4. Nursery owners/operators 5. Agricultural Technicians 6. R&D planners, researchers, policy makers	16-Nov-16	30-Apr-18	NEW	2,256,047.94	447,082.99
Citrus Resources Research for Development in Cagayan Valley (CRR4DCV)	Project 2. Genebank and Database Profile of Citrus Genetic Resources	Poverty reduction and empowerment of the poor and vulnerable	General The aim of the project is to conserve and document citrus cultivars and available local citrus genetic resources for the purpose of breeding, research and utilization in the Philippines. Specific: 1. To collect, characterize, identify, evaluate and conserve citrus genetic resources/germplasm throughout the country especially promising accessions for breeding, research and utilization; 2. To develop a database profile of citrus cultivars and germplasm with standard descriptions and produce DNA fingerprints for selected germplasms; 3. To design an initial online resource system for managing all information about citrus resources in the Philippines with standard descriptions and the database to be linked to the National Plant Genetic Resources Laboratory's (NPGRL) documentation system; 4. To conduct capability building by organizing training programs on PGR conservation and management, computer and information systems; and 5. To develop and produce/reproduce Information, Education and Communication (IEC) materials on citrus genetic resources.	1. A total of thirty-one (31) citrus species collected and characterized; of this total, 1-3 accessions per species collected in twenty two (22) species while 5-15 accessions collected for each of the remaining nine (9) citrus species averaging to 134 accessions; 2. At least three (3) mother trees grown, and maintained/conserved in large earthen pots for each distinct germplasm for an average of 402 mother trees maintained in the genebank; 12 3. Molecular fingerprints of at least five (5) for each native and backyard cultivars and local citrus collections; 4. A database profile of citrus cultivars and germplasm with standard descriptions; 5. A central database system for citrus genetic resources linked with NPGRL's documentation system; 6. At least two (2) training programs organized and sponsored on PGR conservation and management, molecular characterization, computer and database systems and operations; and 7. Published at least one (1) article per component study in refereed scientific journal and three (3) IEC materials on citrus cultivars and germplasm conservation and management.	NVSU	1. Citrus Growers in Nueva Vizcaya and Cagayan Valley 2. Traders, processors and input providers 3. Researchers/ Breeders 4. Nursery owners/operators 5. Agricultural Technicians 6. R&D planners, researchers, policy makers	16-Nov-16	15-Nov-19	NEW	11,863,915.99	4,057,172.39

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
Citrus Resources Research for Development in Cagayan Valley (CRR4DCV)	Project 3. Establishment of Quality Planting Materials Production System for Citrus in Nueva Vizcaya	Poverty reduction and empowerment of the poor and vulnerable	General To establish and implement a quality planting materials production system for citrus in Nueva Vizcaya. Specific 1. To enhance the foundation/budwood increase block of NVSU and nurseries of the university and MAGRO, Kasibu for the production of HLB- and CTV-free planting materials; 2. To increase seedling production of NVSU (from 3,000/year to at least 7,000/year) and of the Municipal Agriculture nursery (from 1000 to at least 2,000/year); 3. To index 200 mother trees in NVSU and in other production areas for HLB and CTV; 4. To develop a web-based map from geotagging of citrus mother trees serving as budwood sources for production of planting materials; 5. To train at least 10 nursery operators/owners and interested individuals on disease-free planting material production, rapid propagation techniques, and effective nursery management; 6. To establish a techno-demo farm that will utilize NVSU disease-free planting materials, and provide assistance to an existing citrus orchard on management of pests and diseases and improved production technologies; and 7. To publish at least one (1) article in a refereed scientific journal and produce at least two (2) kinds of IEC materials on management of pests and diseases and improved production technologies.	1. A model system for production of quality planting materials of citrus 2. Improved one (1) foundation and budwood increase blocks and two (2) citrus nurseries 3. Increased seedling production of NVSU (from 3,000/year to at least 7,000/year) and of the Municipal Agriculture nursery (from 1000 to at least 2,000/year) 4. 200 indexed citrus mother trees in the NVSU Foundation and Budwood Increase Blocks and 90-100% indexed budwood sources in production areas 5. Developed web-based map based on geotagging of infected and non-infected citrus mother trees 14 6. BPI-accredited NVSU and MAGRO nurseries 7. Established one (1) new orchard established with NVSU citrus planting materials; one (1) existing orchard adopting improved production and pest and disease management practices 8. Published at least one (1) article in scientific refereed journal and produced at least two (2) IEC materials on nursery management and orchard establishment 9. Trained at least ten (10) nursery operator on production of disease-free planting materials, rapid propagation technique, and nursery management 10. Conducted at least two (2) farmers' field day	NVSU	1. Citrus Growers in Nueva Vizcaya and Cagayan Valley 2. Traders, processors and input providers 3. Researchers/ Breeders 4. Nursery owners/operators 5. Agricultural Technicians 6. R&D planners, researchers, policy makers	16-Nov-16	15-Nov-19	NEW	7,851,441.83	3,021,316.34
Citrus Resources Research for Development in Cagayan Valley (CRR4DCV)	Project 4. Development of Pests and Diseases Management Systems for Sustainable Citrus Production in the Philippines	Poverty reduction and empowerment of the poor and vulnerable	General The project aims to develop pest and disease management systems for sustainable citrus production in Cagayan Valley. Specific: 1. To establish current incidence and severity of major diseases and population dynamics of vectors and major insect pests; 2. To develop a system for monitoring and forecasting of major insect pests and diseases; 3. To verify and modify current practices for control and management of major insect pests and diseases; and 4. To validate on-farm the most effective and sustainable control and management strategies for major pests and diseases which can increase yield by 20-30%.	1. Data on current disease prevalence of (e.g. HLB, CTV etc.) 2. Population dynamics of the Asian citrus psyllid, aphid 3. Document with description of local citrus diseases and insect pests 4. One (1) integrated and systematic spraying schedule to control major pests and diseases of citrus 5. At least seven (7) control strategies employing IPM and IDM techniques 6. At least seven (7) IPM/IDM organic-based control tactics against pests and diseases of citrus 7. Seven (7) verification trials or demonstration trials harnessing the best control tactics identified 8. Seven (7) demonstration trials combined with good agricultural management practices as well as IPM and IDM strategies 9. At least five (5) organic-based biopesticides 10. Four (4) pilot testing showcasing the most effective organic-based biopesticides	NVSU	1. Citrus Growers in Nueva Vizcaya and Cagayan Valley 2. Traders, processors and input providers 3. Researchers/ Breeders 4. Nursery owners/operators 5. Agricultural Technicians 6. R&D planners, researchers, policy makers	16-Nov-16	15-Nov-19	NEW	9,506,255.32	2,019,607.59
	Deployment and Validation of SARAI Technologies and Systems	Integrity of the environment and climate change adaptation and mitigation	General: To deploy SARAI-developed technologies to a select group of farming communities and validate the acceptability and sustainability of these technologies. Specific: 1. To assess the target clients' readiness, capability, and resources for the technology/systems adoption; 2. To deploy SARAI Systems and Technologies to 3 provinces in Luzon; and 3. To monitor the implementation/acceptability/adoption of the technologies and systems through collection of feedback from validation activities.	Deployed and validated SARAI technologies/systems (SEAMS, WAISS +CSMS, Knowledge Portal and mobile apps) Capacitated LGUs and DOST Regional Offices on SARAI technologies/systems Number of trained technicians: at least 39 LGU: 27 (9 MAO, 18 AgTechs) SUC: 6 Others: 6 Updated soil moisture monitoring database Updated maps (land classification maps, production areas, damage monitoring maps) MAIZE Nutrient Expert: Number of farmers provided sit-specific recommendations; number of farmers utilizing the recommendation; increased productivity of those farmers Information on: 1. Stakeholders profile 2. Feedback and suggestions from the deployment activities 3. Feedback and suggestions from the validation activities Guide for improving and fine-tuning of the existing SARAI technologies/systems	UPLB	PCAARRD Regional Consortia, Regional Agricultural Officers, Municipal Agricultural Officers, Farming Communities and Academe	1-Nov-16	31-Oct-17	NEW	5,000,000.00	1,825,810.00
	PCAARRD's El Niño Action Program	Integrity of the environment and climate change adaptation and mitigation			PCAARRD		1-Oct-15	31-Dec-16	ONGOING	4,999,000.00	1,965,882.18

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
	Rehabilitation Strategies for Critical Mangrove and Coastal Forests in Coastal Communities of Western and Northwestern Leyte (COASTAL FORESTS REHAB PROJECT)	Rapid, inclusive and sustained economic growth	Assess the current socio-economic and biophysical condition of the prospective mangrove and coastal forest areas which will serve as a basis in the identification and implementation of alternative rehabilitation strategies Identify and develop through participatory process site- and situation specific mangrove and coastal forest rehabilitation approaches Adopt and implement IEC approaches to increase awareness, understanding; and appreciation of coastal communities on service value of mangrove and beach forests to mitigate climate change and for conservation of biodiversity Identify and evaluate possible gender roles of and responsibilities affecting men's and women's participation in the rehabilitation efforts Determine the impact of the project on the ecological and socioeconomic condition of covered communities Make policy recommendations for responsive and sustainable management and protection of critical mangrove and coastal forests while providing livelihood opportunities to local communities	1. Baseline socio-economic and biophysical profile of selected mangrove and coastal forests sites produced to include maps and situation analysis. 2. Local mangrove and coastal forests rehabilitation and management plan put in place in every partner local community. 3. Established mangrove and coastal forests Rehabilitation cum demo sites in selected coastal communities which are expected to serve as effective protective greenbelt against strong winds, big waves and storm surges, and as training-demo sites for local communities. 4. Creation of mangrove and beach forests-based livelihood opportunities for local communities 5. Created and/or strengthened local POs for coastal and mangrove forests management and protection 6. IEC materials (such as booklets and videos) on mangrove and coastal forests rehabilitation developed and disseminated 7. Established local mechanisms and/or governance alternatives for sustainable management and protection of critical mangrove and coastal forests sites (eg. local declaration of critical mangroves as protected mangrove sanctuary, local ordinance for coastal forest protection and sanctuary establishment, etc.) 8. Established and/or strengthened linkages with LGUs of Baybay City and Isabel, Leyte, DENR-CENROs in Baybay	VSU	The target beneficiaries of this proposed project will be the typhoon affected coastal communities of Baybay City in Western Leyte, and Isabel in Northwestern part of Leyte. Local governments at the barangay, municipal and city levels will also be benefited in terms of technical support through the capacity-building activities of the project such as training and in planning and/or program development for mangrove and coastal forests rehabilitation, management and protection. Owners and operators of economic establishments in the coastal areas such as beach resorts, coastal ecotourism parks and restaurants, and industrial establishments are part of the stakeholders who will be directly benefited. This	1-Aug-15	31-Jul-18	ONGOING	3,500,000.00	457,698.00
Improvement of Coconut Varieties through Genomics, Genetics and Breeding for a Competitive and Sustainable Philippine Coconut Industry	Project 1. Coconut Genome Sequencing: A Resource for Coconut Genetic and Varietal Improvement - UP	Poverty reduction and empowerment of the poor and vulnerable	Sequence/assemble the genomes of a representative Tall and Dwarf coconut variety and from the assembled genomes	Two (2) finished grade genomic sequence of Philippine heirloom varieties: one tall variety, Laguna Tall (LAGT) and one dwarf variety, Catigan Green Dwarf (CATD) of coconut	UPD	Coconut farmers, coconut organizations and communities extension workers, LGUs	15-Jan-14	14-Jul-17	ONGOING	33,544,733.00	8,513,776.00
Improvement of Coconut Varieties through Genomics, Genetics and Breeding for a Competitive and Sustainable Philippine Coconut Industry	Project 2. Biomarker Development and Molecular Mapping for Coconut Genetic and Varietal Improvement	Poverty reduction and empowerment of the poor and vulnerable	Generate molecular markers from the assembled genomes of Tall/Dwarf coconut varieties and map the biomarkers, genes, QTL loci on coconut linkage map	At least 10 molecular markers associated with early flowering, fast growth, oil and nut yield, and water content and quality; one (1) linkage map of coconut	UPD, PCA	Coconut farmers, coconut organizations and communities extension workers, LGUs	15-Jan-14	14-Jan-19	ONGOING	30,470,378.00	4,946,349.00
Improvement of Coconut Varieties through Genomics, Genetics and Breeding for a Competitive and Sustainable Philippine Coconut Industry	Project 3. Gene Expression Analysis Towards Coconut Genotyping and Varietal Improvement	Poverty reduction and empowerment of the poor and vulnerable	Utilize gene expression analyses for copra yield and early flowering traits in a represenative Tall/Dwarf coconut variety for generation of molecular markers	a) Purified total RNA from appropriate tissues of the eight (8) representative coconut varieties expressing and not expressing the four (4) target traits; b) Composite RNA from LAGT and CATD; c) Barcoded NGS libraries for each coconut variety, with Illumina MiSeq paired-end sequencing adapters; d) Draft transcriptome sequences of the eight coconut varieties; e) Putative gene markers conferring each target trait; f) Identified coconut varieties from the PCA germ plasm collections which possess the genetic markers for each specific target trait (early flowering, fast growing, high nut yield, or high water content and quality)	UPD	Coconut farmers, coconut organizations and communities extension workers, LGUs	15-Jan-14	14-Jul-17	ONGOING	26,593,673.00	7,598,306.00
Improvement of Coconut Varieties through Genomics, Genetics and Breeding for a Competitive and Sustainable Philippine Coconut Industry	Project 4. Gene Expression Analyses for Oil Biosynthesis, Makapuno and LonoTraits	Poverty reduction and empowerment of the poor and vulnerable	Utilize gene expression analyses for oil biosynthesis, Makapuno and Lono traits for generation of molecular markers	At least three (3) gene identified for oil biosynthesis of high-yielding variety, Makapuno and Lono; at least three (3) developed marker specific for the gene identified.	UPD, PCA	Coconut farmers, coconut organizations and communities extension workers, LGUs	15-Jan-14	14-Jul-17	ONGOING	15,117,294.00	2,591,547.00
Improvement of Coconut Varieties through Genomics, Genetics and Breeding for a Competitive and Sustainable Philippine Coconut Industry	Project 5. Coconut Gene Expression in a Model Monocot Zea mays L. Proof of Concept Oil Biosynthesis	Poverty reduction and empowerment of the poor and vulnerable	Develop a genetically modified corn expressing coconut genes associated with oil biosynthesis	At least five (5) genes verified for metabolic pathways of coconut; at least five (5) transformation cassette constructed	UPD	Coconut farmers, coconut organizations and communities extension workers, LGUs	15-Jan-14	14-Jul-17	ONGOING	27,141,793.00	5,485,238.19
Improvement of Coconut Varieties through Genomics, Genetics and Breeding for a Competitive and Sustainable Philippine Coconut Industry	Project 6. Marker-assisted breeding in coconut targeting productivity and major industrial traits	Poverty reduction and empowerment of the poor and vulnerable	Identify and select for San Ramon Tall cy Orgullo and single cross-hyrbrids for regional release using marker assisted selection	At least two (2) synthetic varieties developed through MAS for dissemination to farmers; three (3) varieties—Outstanding Tall, San Ramon and PCA Hybrid, selected through MAS for dissemination to farmers	UPD, PCA	Coconut farmers, coconut organizations and communities extension workers, LGUs	15-Jan-14	14-Jan-19	ONGOING	26,943,679.00	3,665,207.65
Improvement of Coconut Varieties through Genomics, Genetics and Breeding for a Competitive and Sustainable Philippine Coconut Industry	Project 7. QTL mapping in coconut for high yield oustanding quality of copra oil and other coconut majoy by-products	Poverty reduction and empowerment of the poor and vulnerable	Identify QTL and develop sequence-specific DNA markers for yield and copra quality from an advanced PCA mapping population	a) Polymorphic DNA markers between parental population b) Genetic linkage map of coconut c) Mapped QTLs for coconut productivity, and yield/quality of copra oil and other nut major by-products d) Validated coconut QTLs e) Robust DNA markers for routine marker-assisted breeding derived from validated coconut QTLs and underlying candidate genes	UPD, PCA	Coconut farmers, coconut organizations and communities extension workers, LGUs	15-Jan-14	14-Jan-19	ONGOING	22,188,646.00	3,594,102.61

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
Improvement of Coconut Varieties through Genomics, Genetics and Breeding for a Competitive and Sustainable Philippine Coconut Industry	Project 8. Development of web-based breeding resource and Eco-TILLING towards insect resistance breeding	Poverty reduction and empowerment of the poor and vulnerable	Construct a genome-based database for coconut with breeder tools/browser and develop molecular markers targeting glandular trichomes and scale insect resistance	a) Password protected web-based genome database of Cocos nucifera consisting of sequence assemblies and annotations, genome-wide SSR markers and pre-installed breeder tools and genome browser. b) Characterized coconut glandular trichome loci/genes tagged with sequence-specific DNA markers. c) NGS-EcoTILLING platform in coconut for glandular trichome genes and related genetic factors. d) Coconut plant/s that exhibit differential reaction against scale insect infestation and SNP markers tagging the candidate resistance loci. e) At least one (1) publication of significant research finding in ISI journal	UPD, PCA	Coconut farmers, coconut organizations and communities extension workers, LGUs	15-Jan-14	14-Jan-19	ONGOING	62,511,670.00	11,880,973.93
Improvement of Coconut Varieties through Genomics, Genetics and Breeding for a Competitive and Sustainable Philippine Coconut Industry	Project Management and Coordination	Poverty reduction and empowerment of the poor and vulnerable	To determine the genetic and molecular mechanisms involved in coconut oil biosynthesis and in makapuno and lono phenotypes.	a) Technical Progress Report; b) Reviewed project accomplishment; c) Monitored the project implementation; d) Terminal Report	UPD, PCAARRD	Coconut farmers, coconut organizations and communities extension workers, LGUs	15-Jan-14	14-Jan-19	ONGOING	8,518,420.00	1,317,238.08
Reinvigorating the Philippine Coconut Industry through Coconut Somatic Embryogenesis Technology	Project 1a. Mass propagation and pilot utilization of plumule-derived plantlets of Tall and Dwarf coconut varieties through CSet for Batangas and Quezon	Poverty reduction and empowerment of the poor and vulnerable	The project aims to mass propagate plumule-derived coconut planting materials primarily to establish new planting in coastal zones and replant the typhoon-damaged, and coconut scale insect- infested palms. It also aims to advance the agricultural biotechnology capability in the Philippines on the rapid mass propagation of coconut planting materials	Technology transfer & adoption of CICY-Mexico's protocol for in vitro culture of coconut using somatic embryogenesis Identified high yielding Tall & Dwarf coconut varieties/hybrids responsive to the protocol Tissue culture laboratory upgraded and equipped for effective mass propagation of high yielding coconut varieties/hybrids	UPLB	Smallhold coconut growers who are dependent on coconut farming as their livelihood.	1-Oct-14	30-Sep-19	ONGOING	29,293,247.00	5,537,469.59
Reinvigorating the Philippine Coconut Industry through Coconut Somatic Embryogenesis Technology	Project 1b. Mass propagation and pilot utilization of plumule-derived plantlets of Tall and Dwarf coconut varieties through CSet for Laguna, Rizal and Cavite	Poverty reduction and empowerment of the poor and vulnerable	The project aims to mass propagate plumule-derived coconut planting materials primarily to establish new planting in coastal zones and replant the typhoon-damaged, and coconut scale insect- infested palms. It also aims to advance the agricultural biotechnology capability in the Philippines on the rapid mass propagation of coconut planting materials	Technology transfer & adoption of CICY-Mexico's protocol for in vitro culture of coconut using somatic embryogenesis Identified high yielding Tall & Dwarf coconut varieties/hybrids responsive to the protocol Tissue culture laboratory upgraded and equipped for effective mass propagation of high yielding coconut varieties/hybrids	UPLB	Smallhold coconut growers who are dependent on coconut farming as their livelihood.	1-Oct-14	30-Sep-19	ONGOING	28,593,331.00	7,255,070.34
Reinvigorating the Philippine Coconut Industry through Coconut Somatic Embryogenesis Technology	Project 2. Mass propagation of plumule-derived plantlets of Tall and Dwarf coconut varieties through CSet for Region VI, VII, and VIII	Poverty reduction and empowerment of the poor and vulnerable	The project aims to mass propagate plumule-derived coconut planting materials primarily to establish new planting in coastal zones and replant the typhoon-damaged, and coconut scale insect- infested palms. It also aims to advance the agricultural biotechnology capability in the Philippines on the rapid mass propagation of coconut planting materials	Technology transfer & adoption of CICY-Mexico's protocol for in vitro culture of coconut using somatic embryogenesis Identified high yielding Tall & Dwarf coconut varieties/hybrids responsive to the protocol Tissue culture laboratory upgraded and equipped for effective mass propagation of high yielding coconut varieties/hybrids	VSU	Smallhold coconut growers who are dependent on coconut farming as their livelihood.	1-Oct-14	30-Sep-19	ONGOING	25,538,489.00	4,814,351.10
Reinvigorating the Philippine Coconut Industry through Coconut Somatic Embryogenesis Technology	Project 3. Mass propagation of plumule-derived plantlets of Tall and Dwarf coconut varieties through CSet for Davao Oriental and Davao del Norte	Poverty reduction and empowerment of the poor and vulnerable	The project aims to mass propagate plumule-derived coconut planting materials primarily to establish new planting in coastal zones and replant the typhoon-damaged, and coconut scale insect- infested palms. It also aims to advance the agricultural biotechnology capability in the Philippines on the rapid mass propagation of coconut planting materials	Technology transfer & adoption of CICY-Mexico's protocol for in vitro culture of coconut using somatic embryogenesis Identified high yielding Tall & Dwarf coconut varieties/hybrids responsive to the protocol Tissue culture laboratory upgraded and equipped for effective mass propagation of high yielding coconut varieties/hybrids	UPM	Smallhold coconut growers who are dependent on coconut farming as their livelihood.	1-Oct-14	30-Sep-19	ONGOING	25,394,301.00	5,528,556.63
Reinvigorating the Philippine Coconut Industry through Coconut Somatic Embryogenesis Technology	Project 4. Mass propagation and pilot utilization of plumule-derived plantlets of Tall and Dwarf coconut varieties through CSet for Albay, Camarines Sur, and Masbate	Poverty reduction and empowerment of the poor and vulnerable	The project aims to mass propagate plumule-derived coconut planting materials primarily to establish new planting in coastal zones and replant the typhoon-damaged, and coconut scale insect- infested palms. It also aims to advance the agricultural biotechnology capability in the Philippines on the rapid mass propagation of coconut planting materials	Technology transfer & adoption of CICY-Mexico's protocol for in vitro culture of coconut using somatic embryogenesis Identified high yielding Tall & Dwarf coconut varieties/hybrids responsive to the protocol Tissue culture laboratory upgraded and equipped for effective mass propagation of high yielding coconut varieties/hybrids	PCA	Smallhold coconut growers who are dependent on coconut farming as their livelihood.	1-Oct-14	30-Sep-19	ONGOING	26,434,280.00	6,496,732.68
Reinvigorating the Philippine Coconut Industry through Coconut Somatic Embryogenesis Technology	Project 5. Mass propagation and pilot utilization of plumule-derived plantlets of Tall and Dwarf coconut varieties through CSet for Camarines Norte, Catanduanes and Sorsogon	Poverty reduction and empowerment of the poor and vulnerable	The project aims to mass propagate plumule-derived coconut planting materials primarily to establish new planting in coastal zones and replant the typhoon-damaged, and coconut scale insect- infested palms. It also aims to advance the agricultural biotechnology capability in the Philippines on the rapid mass propagation of coconut planting materials	Technology transfer & adoption of CICY-Mexico's protocol for in vitro culture of coconut using somatic embryogenesis Identified high yielding Tall & Dwarf coconut varieties/hybrids responsive to the protocol Tissue culture laboratory upgraded and equipped for effective mass propagation of high yielding coconut varieties/hybrids	BUCAF	Smallhold coconut growers who are dependent on coconut farming as their livelihood.	1-Oct-14	30-Sep-19	ONGOING	25,262,092.00	7,016,524.47

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
Reinvigorating the Philippine Coconut Industry through Coconut Somatic Embryogenesis Technology	Project 6. Mass propagation and pilot utilization of plumule-derived plantlets of Tall and Dwarf coconut varieties through CSet for Zamboanga del Norte, ARMM and Region XII	Poverty reduction and empowerment of the poor and vulnerable	The project aims to mass propagate plumule-derived coconut planting materials primarily to establish new planting in coastal zones and replant the typhoon-damaged, and coconut scale insect- infested palms. It also aims to advance the agricultural biotechnology capability in the Philippines on the rapid mass propagation of coconut planting materials	Technology transfer & adoption of CICY-Mexico's protocol for in vitro culture of coconut using somatic embryogenesis Identified high yielding Tall & Dwarf coconut varieties/hybrids responsive to the protocol Tissue culture laboratory upgraded and equipped for effective mass propagation of high yielding coconut varieties/hybrids	PCA	Smallhold coconut growers who are dependent on coconut farming as their livelihood.	1-Oct-14	30-Sep-19	ONGOING	27,691,134.00	8,863,620.30
Reinvigorating the Philippine Coconut Industry through Coconut Somatic Embryogenesis Technology	Project Management Coordination	Poverty reduction and empowerment of the poor and vulnerable	The project aims to mass propagate plumule-derived coconut planting materials primarily to establish new planting in coastal zones and replant the typhoon-damaged, and coconut scale insect- infested palms. It also aims to advance the agricultural biotechnology capability in the Philippines on the rapid mass propagation of coconut planting materials	Technology transfer & adoption of CICY-Mexico's protocol for in vitro culture of coconut using somatic embryogenesis Identified high yielding Tall & Dwarf coconut varieties/hybrids responsive to the protocol Tissue culture laboratory upgraded and equipped for effective mass propagation of high yielding coconut varieties/hybrids	PCA	Smallhold coconut growers who are dependent on coconut farming as their livelihood.	1-Oct-14	30-Sep-19	ONGOING	20,474,300.00	2,153,886.03
	Development of Molecular Diagnostic Tools for Armored Scale Insects (Hemiptera: Diaspididae) and Their Natural Enemies on Coconut and Associated Crops - Phase 2	Poverty reduction and empowerment of the poor and vulnerable	General To utilize genetic markers for accurate identification of armored scale insects and their natural enemies Specific 1. To identify molecular markers for confirmation determination and resolution of species within the armored scale insects species complexes; 2. To generate DNA barcodes to facilitate identification of morphologically close or similar species and contribute to the understanding of possible origins of invasions and spread of infestation; 3. To generate DNA barcodes for the endemic natural enemy species of armored scale insects attacking crops associated with coconut; 4. To utilize these DNA barcodes in molecular phylogenetic studies of the family Diaspididae and their natural enemies for improved classification and basis of molecular identification system; and 5. To discover SNPs for A. rigidus population differentiation.	1. Protocol optimized for DNA barcoding of armored scale insects and their natural enemies 2. DNA sequences of Philippine armored scale insects species deposited in the GenBank and Barcode of Life Database (BOLD) 3. DNA sequences of Philippine species of natural enemies associated with armored scales insects deposited in the GenBank and BOLD 4. SNP as molecular markers of A. rigidus populations 2 5. Peer-reviewed scientific publications	UPLB	Other scientists and researchers in pest management, plant quarantine officers, PCA researchers and officers. Generated data will be uploaded into local database which will be accessible and useful to the farmers.	1-Oct-16	30-Sep-17	NEW	3,334,384.26	2,198,027.14
	Establishment of Coconut Seedgardens for Eastern Visayas	Poverty reduction and empowerment of the poor and vulnerable	The project generally aims to restore lost productivity of calamity-sticken areas in Eastern Visayas through establishment of local nurseries/seedgarden to provide quality planting materials for coconut replanting.	Conservation of the remaining coconut genetic resources in Eastern Visayas; Farmer-owners of at least 6 selected tall coconut populations and 6 coconut nursery managers equipped for the production of coconut planting materials; Established at least 6 coconut nurseries as viable microenterprise in Eastern Visayas with the capacity to produce at least 50,000 affordable and good quality seedlings for the planting and replanting activities for 150 ha coconut farms	VSU	Coconut farm owners; Coconut farmers; Coconut breeders; Coconut retailers/traders/processors, SUCs and LGUs in affected municipalities of EV 1. Naval State University-Biliran Campus, Biliran Leyte 2. Eastern Samar State University (ESSU), Borongan City 3. Province of Samar - Catbalogan City 4. Province of Southern Leyte - Maasin City 5. National Coconut Research Center- Visayas, VSU, Baybay, Leyte 6. Southern Leyte State University, Bontoc, Southern Leyte 7. Municipal Local Government Unit of Santa Rita, Samar	1-Dec-13	30-Apr-16	ONGOING	2,731,432.00	26,400.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
	Mass Production and Release of the Parasitoid, Comperiella sp. Against Coconut Scale Insect, Aspidiotus rigidus	Poverty reduction and empowerment of the poor and vulnerable	General To mass produce efficiently the Comperiella sp. for inoculative release in the field particularly in the new areas of coconut scale insect invasion Specific To develop a mass rearing protocol for Comperiella sp.; To determine the best field release strategy for Comperiella sp.; To evaluate the success of establishment and spread of Comperiella sp. in the release site of Comperiella sp. particularly in the new area of coconut scale insect invasion; and To measure the effect of insecticide(s) including biopesticide(s) on Comperiella sp. to ascertain the field conservation of Comperiella sp.	The rearing method that will be developed for Comperiella sp. will be able to mass produce the parasitoid the shortest time to respond quickly to new invasion of A. rigidus in other parts of the country particularly in northern Luzon, the Visayas and Mindanao coconut growing areas. The most efficient release strategy that will be selected from the test will ensure the viability of the parasitoids and stable establishment for a sustainable biological control system. Establishment and spread of the parasitoids will be attained. Natural spread with significant increase in population of parasitoid will be the outcome of the initial release of the parasitoid and not relying on repeated releases in the same area. Compatibility of the chemical control (synthetic insecticides or biopesticides) will be identified to conserve the presence of the biological control agents in the coconut plantations. This will ensure that the level of population of the coconut scale insect be maintained significantly at a low level which will make the pest status of coconut scale insect as just minor pest.	DLSU	Local coconut farmers, farming communities, extension workers, stakeholders, decision makers, researchers	1-Sep-15	31-Aug-17	ONGOING	4,978,150.00	1,493,482.88
	Morphology-based Diagnostics of Armored Scale Insects (Hemiptera: Diaspididae) and Their Natural Enemies Infesting Coconut and Associated Crops - Phase 2	Poverty reduction and empowerment of the poor and vulnerable	General To develop morphological diagnostic tools for armored scale insects and associated natural enemies to facilitate the formulation of appropriate management strategies for scale insect. Specific 1. To study the taxonomy of coconut-infesting and related species of the genus Aspidiotus and other armored scale insects of the tribe Aspidiotini; 2. To conduct taxonomic revisions of armored scale insect genera belonging to the tribes Diaspidini, Lepidosaphini and Parlatoriini, with emphasis on those that include complexes or species that infest coconut and associated crops; 3. To survey natural enemies of armored scale insects infesting coconut and associated crops in the Philippines; and 3 Project Objectives 4. To study the taxonomy of insect parasitoids and predators attacking armored scale insects infesting coconut and associated crops in the Philippines	1. One (1) set of morphology-based identification keys of armored scale insects and their natural enemies and illustrated diagnostic guides incorporating morphological data from other life stages of armored scale insects 2. Compendium of scale insects attacking coconut 3. Baseline information on the natural enemies of armored scale insects infesting coconut and associated crops in the Philippines 4. Checklist of natural enemies of armored scale insects infesting coconut and associated crops in the Philippines 5. Reference collection of natural enemies of armored scale insects infesting coconut and associated crops in the Philippines 6. IEC Materials - publication, pamphlets 7. Four (4) or more peer-reviewed scientific publications	UPLB	The clientele in pest management and diversity studies will be farmers, planters, plant quarantine officers, PCA researchers and officers, researchers, non-research staff, students and the interested public. This could support the conservation of the natural enemy species attacking armored scale insects infesting coconut and other associated crops. More importantly, this could help the clientele to identify the potential natural enemies that could efficiently control injurious armored scales insects in the future.	1-Oct-16	30-Sep-17	NEW	3,462,905.32	1,978,002.66
Coffee Productivity and Quality Enhancement Program	Genomics-assisted Identification of Molecular Markers for Pest and Disease Resistance and Aroma in Philippine Specialty Coffee	Poverty reduction and empowerment of the poor and vulnerable	The project basically aims to : 1) determine the molecular identification of NSIC-registered Arabica and Liberica varieties and strains that will be used as reference strains for next generation sequencing (NGS); 2) identify molecular markers for pest (berry borer and scale insect) and disease (leaf blight and rust) resistance, yield and aroma of reference NSIC-registered varieties and strains through microsatellite (SSRs) and SNP analyses by NGS	Molecular IDs/barcodes of reference NSIC-registered Arabica and Liberica varieties and strains; Molecular marker each for pest resistance, disease resistance, aroma and yield	UPD	Coffee farmers, breeders, researchers and scientists from academe and industry	1-Feb-15	31-Jan-17	ONGOING	12,162,663.00	4,571,650.00
Coffee Productivity and Quality Enhancement Program	Project 2. S&T Based Soil, Nutrient and Water Management for Coffee in the Philippines, Activity 1. Efficient Soil, Nutrient and Water Management for Enhanced Coffee Productivity Through Isotope Tracer and Related Techniques	Rapid, inclusive and sustained economic growth	The project will recommend appropriate fertilizer recommendation and water management using smart farming techniques (analytical procedures, systems, devices and tools) for soil, water and plant tissue analyses such as isotope tracer techniques, soil sensing techniques	Calibration models for coffee; Variety-specific fertilizer and water management recommendation	PNRI, SKSU	Coffee farmers, processors	1-Feb-15	31-Jan-17	ONGOING	11,107,250.00	5,271,437.00
Coffee Productivity and Quality Enhancement Program	Project 3. Development of Improved Postharvest Technologies for Coffee, Component 1. Design and Development of an Improved Coffee Depulper	Rapid, inclusive and sustained economic growth	The project will develop coffee postharvest machineries (depulping machine, mechanical drying, moisture meter and sensors)	Developed machineries for coffee postharvest activities	PhilMech	Coffee farmers, processors	1-Feb-15	31-Jan-17	ONGOING	1,396,416.00	3,633,717.00
Creating Growth in the Countryside Through Development of Appropriate Technologies on Coffee Production and Processing	Project 1. Enhancement of Micropropagation Techniques to Meet the Demand for Quality Planting Materials	Poverty reduction and empowerment of the poor and vulnerable	Enhance and optimize propagation technique for rapid and massive production of coffee cultivars	Optimized protocol on callus induction phase, differentiation phase, embryo development and plantlet regeneration, rooting of coffee plantlets and acclimatization for tissue culture coffee seedlings; 1.2 million tissue-culture planting materials distribution in production nurseries; Training manual on Coffee Seedling Production Nursery Management; Conducted training on tissue culture coffee seedling production nursery management.	CVSU	Coffee farmers, researchers, processors, extension workers, consumers	1-May-13	17-Jul-17	ONGOING	15,282,305.00	1,104,644.65

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
Creating Growth in the Countryside Through Development of Appropriate Technologies on Coffee Production and Processing	Project 3. Remote Sensing and Geographic Information Systems Technologies for Improved Coffee Farm Productivity	Poverty reduction and empowerment of the poor and vulnerable	Conduct suitability mapping and assess nutrient and water variability for coffee production areas in the Philippines using remote sensing and geographic information systems;	Map of coffee growing areas in GIS format derived from RS imageries; map of areas in the Philippine showing suitability of growing coffee; models for predicting soil physico-chemical and moisture properties of soils in coffee farms through proximal sensing of soil.	CVSU	Coffee farmers, researchers, processors, extension workers, consumers	1-May-13	17-Jul-17	ONGOING	7,938,581.00	218,939.75
Creating Growth in the Countryside Through Development of Appropriate Technologies on Coffee Production and Processing	Project 4. Standardized Evaluation of Philippine Specialty Coffee Quality for Doemstic and Export Markets	Poverty reduction and empowerment of the poor and vulnerable	Improve the quality of Philippine specialty green coffee beans (GCB) and enhance the cup quality of Philippine specialty coffee	Upgraded one Philippine coffee quality center; at least two cup profiles of Arabica and Liberica; trained at least 80 coffee farmers and stakeholders; accredited at least 10 local coffee cuppers; and six calibration models for coffee contents (moisture, ash, protein, chlorogenic acid and caffeine contents)	CVSU	Coffee farmers, researchers, processors, extension workers, consumers	1-May-13	17-Jul-17	ONGOING	3,323,985.00	284,125.91
Geophysical Coral Mapping	Geophysical Coral Mapping	Integrity of the environment and climate change adaptation and mitigation	The Philippines have not thoroughly explored its deep sea water, the resources it holds and the potentials of these resources for future socio-economic benefits. This is an initial step to explore deep sea resources particularly the country's deep sea corals. Deep sea explorations in other countries have revealed unexpected diversity of the coral ecosystem on continental shelves, slopes and ridge systems. It is important for the Philippines to initiate the same activities before foreign countries start these activities within the country's territory. One good starting point is to start mapping the deep sea coral resources of the country as they may host, and provide habitat for fish and invertebrates. It is not remote as well that they may provide resources with bioactive compounds essential to the pharmaceutical industries.	1) Detailed bathymetric chart of a portion of the Apo Reef. 2) Substrate map of a portion of Apo Reef. 3) Map of potential sites of occurrence of deep sea corals in selected sites in Apo Reef. 4) Initial detailed bathymetric chart and substrate map of a portion of the Patnanungan Reef. 5) Initial map of potential sites of occurrence of deep sea corals in Patnanungan Reef.	UP MSI	DENR, BFAR, Biodiversity researchers, coastal community	1-Jul-14	30-Jun-17	ONGOING	37,588,480.00	2,497,038.00
National Assessment of Coral Reef Environments (NACRE)	Project 1. Synoptic Investigation of Human Impacts on Nearshore Environments (SHINE): Coral Reefs	Integrity of the environment and climate change adaptation and mitigation	The Philippines at present has little information on the current status of its coral reefs and how this has changed over the last few decades. This is despite the pioneering assessment efforts between 1976 and 1981, when more than 500 reef sites were surveyed (Gomez et al 1981). This lack of any recent, large-scale, standardized inventories and assessments of coral reefs in the country has also meant that a consistent national policy and program for the conservation, sustainable use, and management of reefs has yet to be developed. The objectives of this include: Mapping the distribution of coral communities in representative sites around the Philippines; assess the current state of these coral communities using commonly used metrics such as hard coral cover and biodiversity, and their vulnerability and resilience to threats such as coral bleaching; establish a monitoring system to allow the quantification of changes in the structure of these reefs, and allow for projections of future state based on various scenarios.	Nationwide assessment on the status of coral reefs and recommendations on legislation, policies, and programs for the conservation and sustainable use of coral reefs and associated environments	DLSU	Policy makers; academic institutions; coastal communities and their local governments	1-Jul-14	30-Jun-17	ONGOING	29,812,599.00	8,868,398.05
National Assessment of Coral Reef Environments (NACRE)	Project 2. People and the Environment: Assessment of Reef-fish Resiliency and Associated Livelihoods (PEARRAL)	Integrity of the environment and climate change adaptation and mitigation	The widespread and continued deterioration of coral reefs in the Philippines has large implications to biodiversity conservation and the well-being of coastal communities. Because of their strong association to their habitats, reef fishes are likewise affected by similar threats that face coral communities in the reefs in addition to threats from its multiple values (e.g. natural heritage, fisheries, tourism, etc.). Information derived from this project will not only provide updated reports on the status of Philippine reef-fishes, but will also contribute to our understanding of their socio-economic values, how they can be impacted by threats, and their resiliency given their multiple values to the people.	Status report of reef fish communities and site profiles of fisheries and other livelihood in Tawi-Tawi, Sarangani, Zamboanga, Pollilo, Sorsogon, Camarines Norte, Palawan, Romblon, Masbate, Iloilo, Biliran, Cebu, Bohol, Samar Island, Leyte, and parts of northern and eastern Mindanao Establishment of a monitoring and evaluation-response and feedback system (MERFS) in Bolinao, Pangasinan; Lian, Batangas; Sablayan, Mindoro Occidental; Taytay and Tubbataha, Palawan; and, Island Garden City of Samal. Additional monitoring sites will also be established in Visayas and Mindanao after the field assessment.	UPD	Policy makers (local and national); On-site partners (e.g. community, LGU, academe, NGO, etc.); Resource users (fishers, tourists, coral reef researchers, etc.)	1-Jul-14	30-Jun-17	ONGOING	32,167,100.00	10,718,109.64
National Assessment of Coral Reef Environments (NACRE)	Project 3. Synoptic Investigation of Human Impacts on Nearshore Environments (SHINE): Reef-Associated Habitats	Integrity of the environment and climate change adaptation and mitigation	There are relatively few studies conducted and being reported on the status of mangroves and seagrasses in different areas of the Philippines. Available studies conducted focused mostly on density and cover and less on the ecological and economic values of these ecosystems. The lack of public knowledge on the condition of these habitats vis-a-vis their ecological and economic importance perpetuates the exploitative nature of utilization of these valuable areas (Duarte et al, 2008).	Status reports on status of mangroves and seagrasses in Lian, Batangas; Bolinao, Pangasinan; Taytay, Palawan; Caramoan, Camarines Norte; Loon and Maribojoc, Bohol; IGaCoS, Davao; Assessment of natural and human impacts on the study mangroves and seagrasses of the priority sites for the given year and their vulnerability and resilience to future changes due to these impacts; and Establishment of a monitoring system in Mati, Davao; Sablayan, Mindoro; Bantayan, Cebu. Bioeconomic model for the management of associated habitats	DLSU	Reef fishers, MPA Managers, coastal fishers, coastal communities, and food and fishing industries Other potential beneficiaries are reef and coastal fishers, coastal managers and communities, and food and fishing industries adopting the technology in other area/region/province	1-Jul-14	30-Jun-17	ONGOING	9,990,288.00	3,638,603.23

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
National Assessment of Coral Reef Environments (NACRE)	Project 4. Watershed and Ocean Parameters for Assessment of Coral Reef Health	Integrity of the environment and climate change adaptation and mitigation	Management of coral reefs entails determining the boundaries of the management unit. Factors affecting the state of coral reefs such as recruitment can occur at scales much bigger than the size of the local reef or marine protected area (MPA). Habitat or population connectivity is a function of larval dispersal distances and this can range from a few kilometers to a few tens of kilometers. In some cases and for some species, this may even extend to a few hundreds of kilometers. Sedimentation is one of the leading causes of habitat degradation in Philippine coral reefs, particularly the fringing reefs of the larger islands with sizable watersheds. Poor soil management in agricultural lands and mining areas have led to increased sediment load to the coastal waters. Both sedimentation and population connectivity become external factors if management of the reef are limited to local scales. The objective of this project is to determine connectivity patterns and spatial scales and identifying potential erosion hotspots within the watershed for each of the study sites to incorporate these external issues when formulating management plans for the country's coral reefs.	☑ High resolution hydrodynamic and connectivity matrices and watershed models for Surigao del Sur (Lanuza and Lianga), Tawi-tawi, Northern Visayas (Masbate, Romblon and Marinduque), Calamianes Group in Palawan. ☑ Field surveys for Tawi-tawi; Romblon; Calamianes, Palawan. ☑ Manuscript for publication	UPD	Local government environment managers; Government agencies (DENR and DA-BFAR); Marine science academic community	1-Jul-14	30-Jun-17	ONGOING	14,201,760.00	3,783,866.99
National Assessment of Coral Reef Environments (NACRE)	Project 5. Coral Reef Knowledge Management System: Bayesian Belief Network Modeling and Remote Sensing	Integrity of the environment and climate change adaptation and mitigation	With all the studies done on coral reefs in the Philippines and supported by knowledge from reefs in other countries, tools can be developed to evaluate the condition of coral reefs, determine the relative impacts of different stressors, and assess potential management scenarios from existing data and experts' knowledge. However, there are still significant gaps in knowledge and data about many coral reef processes. There is great uncertainty involved in evaluating reef health or predicting impacts of management interventions. A Bayesian Belief Network (BBN) is one of the few tools that can integrate both quantitative data and qualitative information (e.g., from experts' perception) to allow to look at systems more holistically than piecemeal. Developing a BBN model will help synthesize current knowledge of coral reefs in the Philippines which can be used to identify stressors that need to be prioritized and to evaluate potential impacts of management scenarios. A BBN model can also add value to existing monitoring programs by synthesizing the different parameters being collected (e.g., coral cover, fish biomass and composition, invertebrates, environmental parameters, etc.) to come up with a better and more complete picture of reef condition.	☑ Report on the State of Philippine reefs and ecosystem goods & services based on available literature and expert's knowledge ☑ Complete BBN model using Netica ☑ Case studies on application of the BBN model	UPD	Coral reef researchers; Local governments planning for coral reef resource use management; National agencies for evaluating national reef conditions;	1-Jul-14	30-Jun-17	ONGOING	6,707,996.00	1,986,711.82
Production of Corals for Reef Restoration: Program A: Production of Corals Through Sexual Reproduction	Project 1: Culture Technologies for Coral Propagules From Eggs and Larvae	Rapid, inclusive and sustained economic growth	The use of sexually-derived corals (from eggs and larvae) as outplant materials in restoring degraded reefs has been increasingly recognized as contributing to conservation of genetic diversity of restored coral population (Shearer et al. 2009; Omori 2011). Enhancement of larval supply by release of cultured coral larvae on reefs is one of the options for reef rehabilitation which was shown to dramatically increase coral recruitment potential (Heyward et al. 2002). However, no enhancement in coral recruit abundance was recorded in artificial substrates subjected to enhanced larval supply (Edwards et al. in prep.).	Trained personnel (from MSU-TCTO and USC, at least 2 from each institution) on coral spawning and rearing up to larval stage to size appropriate for use in reef restoration; 18-mo old juveniles of three coral species (at least 5000 per species or equivalent to 1% survival rate); Method to culture coral from eggs to colonies of appropriate size for use in reef restoration, at around 1% survival rate; Three peer-reviewed publication on culture technology for corals for reef restoration; Manual on sexual propagation of reef-building corals for reef restoration; Information dissemination activitiy for coastal community	UPD	Coral reef conservation practitioners, environmentalists, reef coral aquarists, eco-tourists, and the academe, local communities	1-Jan-14	31-Mar-17	ONGOING	8,991,706.59	2,664,434.95
Production of Corals for Reef Restoration: Program A: Production of Corals Through Sexual Reproduction	Project 2a: Sexual Reproduction in Selected Coral Reef Species Across the Philippine Archipelago (Luzon)	Rapid, inclusive and sustained economic growth	To elucidate the temporal pattern of reproduction of selected reef corals in three regions (Luzon, Visayas, Mindanao) in the Philippines and to produce a handbook on sexual reproductive pattern of selected Philippine reef coral species.	1. Monthly record of reproductive status in 10 coral species from three study sites as assessed through 'rapid sampling' and histological examination 2. Observation of spawn slicks in selected sites 3. Three peer-reviewed publications on the reproductive pattern of selected corals from the Philippines 4. Handbook of reproductive strategies and timing of selected coral species in the Philippines	UPD	Coral reef conservation practitioners, environmentalists, reef coral aquarists, eco-tourists, and the academe, local communities	1-Jan-14	31-Mar-17	ONGOING	8,769,895.00	2,492,286.18
Production of Corals for Reef Restoration: Program A: Production of Corals Through Sexual Reproduction	Project 2b: Sexual Reproduction in Selected Coral Reef Species Across the Philippine Archipelago (Visayas)	Rapid, inclusive and sustained economic growth	To elucidate the temporal pattern of reproduction of selected reef corals in three regions (Luzon, Visayas, Mindanao) in the Philippines and to produce a handbook on sexual reproductive pattern of selected Philippine reef coral species.	1. Monthly record of reproductive status in 10 coral species from three study sites as assessed through 'rapid sampling' and histological examination 2. Observation of spawn slicks in selected sites 3. Three peer-reviewed publications on the reproductive pattern of selected corals from the Philippines 4. Handbook of reproductive strategies and timing of selected coral species in the Philippines	USC	Coral reef conservation practitioners, environmentalists, reef coral aquarists, eco-tourists, and the academe, local communities	1-Jan-14	31-Mar-17	ONGOING	4,094,992.00	1,202,641.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
Production of Corals for Reef Restoration: Program A: Production of Corals Through Sexual Reproduction	Project 2c: Sexual Reproduction in Selected Coral Reef Species Across the Philippine Archipelago (Mindanao)	Rapid, inclusive and sustained economic growth	To elucidate the temporal pattern of reproduction of selected reef corals in three regions (Luzon, Visayas, Mindanao) in the Philippines and to produce a handbook on sexual reproductive pattern of selected Philippine reef coral species.	1. Monthly record of reproductive status in 10 coral species from three study sites as assessed through 'rapid sampling' and histological examination 2. Observation of spawn slicks in selected sites 3. Three peer-reviewed publications on the reproductive pattern of selected corals from the Philippines 4. Handbook of reproductive strategies and timing of selected coral species in the Philippines	MSU	Coral reef conservation practitioners, environmentalists, reef coral aquarists, eco-tourists, and the academe, local communities	1-Jan-14	31-Mar-17	ONGOING	4,102,454.00	1,151,993.00
Production of Corals for Reef Restoration: Program B: Molecular Genetic and Genomic Studies of Coral Resilience in support of coral restoration and rehabilitation efforts	Project 1: Identifying Resilient Coral Species	Rapid, inclusive and sustained economic growth	Current emphasis in coral reef science is placed on the importance of reef resilience, defined as the capacity to absorb disturbance and adapt to change while essentially retaining structure and function (Walker et al. 2004). Studying coral responses to environmental stress can significantly contribute towards identifying physical, ecological, and biological factors for evaluation of reef health and resilience. Determine the effects of elevated temperature, lowered pH, and increased nutrient levels on the growth and survivorship of 20 common coral species. Resilient and susceptible species will then be identified.	List of resilient and susceptible coral species to ocean warming, acidification and eutrophication; Characterization of physiological limits for various stressors: temperature, pH, and nutrient load; Identification of Symbiodinium clades, their spatial- and host-species distribution in representative biogeographic regions, and their association with resilient or susceptible host corals	UPD	Researchers, LGUs, coastal community	1-Jan-14	31-Mar-17	ONGOING	19,750,711.00	3,591,223.83
Production of Corals for Reef Restoration: Program B: Molecular Genetic and Genomic Studies of Coral Resilience in support of coral restoration and rehabilitation efforts	Project 2: Exploring Molecular Mechanisms Underlying Coral Resilience to Thermal Stress	Rapid, inclusive and sustained economic growth	Examining the molecular mechanisms underlying coral susceptibility or tolerance to stress will promote an integrative understanding of the processes that allow corals to survive and adapt to the changing ocean environment. Examine the molecular mechanisms underlying thermal stress tolerance in corals, to provide a basis for identifying molecular determinants of resilience that will support an enhanced resilience-based reef restoration and management effort	Transcriptome sequencing, gene expression analysis and experimental validation of sequencing results; Identification of genes putatively involved in the thermal stress response; Development of molecular markers for examination of thermal stress response and resilience	UPD	Researchers, LGUs, coastal community	1-Jan-14	30-Jun-17	ONGOING	11,159,002.00	2,067,182.09
Production of Corals for Reef Restoration: Program B: Molecular Genetic and Genomic Studies of Coral Resilience in support of coral restoration and rehabilitation efforts	Project 3: Developing Genetic Guidelines in support of coral restoration and rehabilitation (Included Project 4. Sexual Propagation of Corals and Reef Restoration: Developing Genetic Guidelines Towards Enhanced Resilience)	Rapid, inclusive and sustained economic growth	While reef restoration may be a feasible option in response to coral mortality due to short-term and infrequent physical disturbance (eg ship groundings, typhoons), managing for resilience presents better prospects for maximizing the adaptive potential of coral reefs and mitigating extinction risk for the long-term (Pandolfi et al. 2011). However, genetic factors which have a bearing on fitness and adaptive potential of coral reefs receive are generally not considered in the design and monitoring of coral restoration projects. Ultimately, developing resilience-based guidelines for reef restoration and management – such as the identification of resilient biological units (species, populations, sexually-derived propagules), and delineating spatial limits in outplantation strategies to manage and preserve genetic diversity and adaptive potential of populations – are necessary to focus reef restoration initiatives to achieve greater success rates. Generate and analyze genetic data for sexually-produced coral propagules and natural populations to be used towards development of genetic guidelines for coral restoration.	Development of genetic markers for 2 coral species which are candidates for restoration; Estimates of genetic diversity and population genetic structure of natural coral populations for 2 species along the western Luzon coast; Guidelines for coral restoration using sexually-produced propagules incorporating genetic data	UPD	Researchers, LGUs, coastal community	1-Jan-14	30-Jun-17	ONGOING	6,566,828.00	1,726,041.83
Roll-out of Coral transplantation Technology Using Asexually Reproduced Corals to Improve Productivity of Coral Resources for Sustainable Fisheries and Enhance Competitiveness of Underwater Tourism	Application of Coral Transplantation Technology to Improve Productivity of Coral Reef Resources for Sustainable Fisheries and Harness Potentials of Alaminos City,Pangasinan for Underwater Tourism	Rapid, inclusive and sustained economic growth	To roll-out coral transplantation and coral nursery establishment using asexual reproduced transplantation materials to improve productivity of coral resources for sustainable fisheries and enhanced underwater tourism. 1. To aesthetically enhance damaged reef by undertaking coral restoration through transplantation. 2. Set-up and deploy CNU with transplantation materials. 3. To jump start coral restoration service industry by developing a pool human resources for coral restoration. 4. To harness the full potential of the resources for underwater tourism by identifying and documenting group of dive sites and promote science-based coral reef management.		Pangasinan State University		1-Jul-14	31-Mar-17	ONGOING	4,449,063.00	422.00
Roll-out of Coral transplantation Technology Using Asexually Reproduced Corals to Improve Productivity of Coral Resources for Sustainable Fisheries and Enhance Competitiveness of Underwater Tourism	Application of Coral Transplantation Technology to Improve Productivity of Coral Reef Resources for Sustainable Fisheries and Harness Potentials of Anda,Bohol for Underwater Tourism	Rapid, inclusive and sustained economic growth	To roll-out coral transplantation and coral nursery establishment using asexual reproduced transplantation materials to improve productivity of coral resources for sustainable fisheries and enhanced underwater tourism. 1. To aesthetically enhance damaged reef by undertaking coral restoration through transplantation. 2. Set-up and deploy CNU with transplantation materials. 3. To jump start coral restoration service industry by developing a pool human resources for coral restoration. 4. To harness the full potential of the resources for underwater tourism by identifying and documenting group of dive sites and promote science-based coral reef management.		BISU		1-Jul-14	31-Mar-17	ONGOING	5,061,270.00	2,786.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
Roll-out of Coral transplantation Technology Using Asexually Reproduced Corals to Improve Productivity of Coral Resources for Sustainable Fisheries and Enhance Competitiveness of Underwater Tourism	Application of Coral Transplantation Technology to Improve Productivity of Coral Reef Resources for Sustainable Fisheries and Harness Potentials of Bagac, Bataan for Underwater Tourism	Rapid, inclusive and sustained economic growth	To roll-out coral transplantation and coral nursery establishment using asexual reproduced transplantation materials to improve productivity of coral resources for sustainable fisheries and enhanced underwater tourism. 1. To aesthetically enhance damaged reef by undertaking coral restoration through transplantation. 2. Set-up and deploy CNU with transplantation materials. 3. To jump start coral restoration service industry by developing a pool human resources for coral restoration. 4. To harness the full potential of the resources for underwater tourism by identifying and documenting group of dive sites and promote science-based coral reef management.		BPSU		1-Dec-14	31-Mar-17	ONGOING	5,306,875.00	81,524.43
Roll-out of Coral transplantation Technology Using Asexually Reproduced Corals to Improve Productivity of Coral Resources for Sustainable Fisheries and Enhance Competitiveness of Underwater Tourism	Application of Coral Transplantation Technology to Improve Productivity of Coral Reef Resources for Sustainable Fisheries and Harness Potentials of Guinsiliban,Camiguin for Underwater Tourism	Rapid, inclusive and sustained economic growth	To roll-out coral transplantation and coral nursery establishment using asexual reproduced transplantation materials to improve productivity of coral resources for sustainable fisheries and enhanced underwater tourism. 1. To aesthetically enhance damaged reef by undertaking coral restoration through transplantation. 2. Set-up and deploy CNU with transplantation materials. 3. To jump start coral restoration service industry by developing a pool human resources for coral restoration. 4. To harness the full potential of the resources for underwater tourism by identifying and documenting group of dive sites and promote science-based coral reef management.		Camiguin Polytechnic State College		1-Dec-14	31-Mar-17	ONGOING	5,145,243.00	74,015.48
Roll-out of Coral transplantation Technology Using Asexually Reproduced Corals to Improve Productivity of Coral Resources for Sustainable Fisheries and Enhance Competitiveness of Underwater Tourism	Application of Coral Transplantation Technology to Improve Productivity of Coral Reef Resources for Sustainable Fisheries and Harness Potentials of Honda and Ulugan Bay,Puerto Princesa Palawan for Underwater Tourism	Rapid, inclusive and sustained economic growth	To roll-out coral transplantation and coral nursery establishment using asexual reproduced transplantation materials to improve productivity of coral resources for sustainable fisheries and enhanced underwater tourism. 1. To aesthetically enhance damaged reef by undertaking coral restoration through transplantation. 2. Set-up and deploy CNU with transplantation materials. 3. To jump start coral restoration service industry by developing a pool human resources for coral restoration. 4. To harness the full potential of the resources for underwater tourism by identifying and documenting group of dive sites and promote science-based coral reef management.		Palawan State University		1-Dec-14	30-Jun-17	ONGOING	5,967,075.00	177,918.00
Roll-out of Coral transplantation Technology Using Asexually Reproduced Corals to Improve Productivity of Coral Resources for Sustainable Fisheries and Enhance Competitiveness of Underwater Tourism	Application of Coral Transplantation Technology to Improve Productivity of Coral Reef Resources for Sustainable Fisheries and Harness Potentials of Pagudpud, Ilocos Norte for Underwater Tourism	Rapid, inclusive and sustained economic growth	To roll-out coral transplantation and coral nursery establishment using asexual reproduced transplantation materials to improve productivity of coral resources for sustainable fisheries and enhanced underwater tourism. 1. To aesthetically enhance damaged reef by undertaking coral restoration through transplantation. 2. Set-up and deploy CNU with transplantation materials. 3. To jump start coral restoration service industry by developing a pool human resources for coral restoration. 4. To harness the full potential of the resources for underwater tourism by identifying and documenting group of dive sites and promote science-based coral reef management.		DMMMSU		1-Dec-14	31-Mar-17	ONGOING	4,019,839.00	104,344.63
Roll-out of Coral transplantation Technology Using Asexually Reproduced Corals to Improve Productivity of Coral Resources for Sustainable Fisheries and Enhance Competitiveness of Underwater Tourism	Application of Coral Transplantation Technology to Improve Productivity of Coral Reef Resources for Sustainable Fisheries and Harness Potentials of Sta.Cruz Island, Zamboanga City for Underwater Tourism	Rapid, inclusive and sustained economic growth	To roll-out coral transplantation and coral nursery establishment using asexual reproduced transplantation materials to improve productivity of coral resources for sustainable fisheries and enhanced underwater tourism. 1. To aesthetically enhance damaged reef by undertaking coral restoration through transplantation. 2. Set-up and deploy CNU with transplantation materials. 3. To jump start coral restoration service industry by developing a pool human resources for coral restoration. 4. To harness the full potential of the resources for underwater tourism by identifying and documenting group of dive sites and promote science-based coral reef management.		Zamboanga State College of Marine Sciences and Technology		1-Dec-14	31-Mar-17	ONGOING	5,887,243.00	61,655.96
Roll-out of Coral transplantation Technology Using Asexually Reproduced Corals to Improve Productivity of Coral Resources for Sustainable Fisheries and Enhance Competitiveness of Underwater Tourism	Application of Coral Transplantation Technology to Improve Productivity of Coral Reef Resources for Sustainable Fisheries and Harness Potentials of Subic Bay for Underwater Tourism	Rapid, inclusive and sustained economic growth	To roll-out coral transplantation and coral nursery establishment using asexual reproduced transplantation materials to improve productivity of coral resources for sustainable fisheries and enhanced underwater tourism. 1. To aesthetically enhance damaged reef by undertaking coral restoration through transplantation. 2. Set-up and deploy CNU with transplantation materials. 3. To jump start coral restoration service industry by developing a pool human resources for coral restoration. 4. To harness the full potential of the resources for underwater tourism by identifying and documenting group of dive sites and promote science-based coral reef management.		BPSU		1-Dec-14	31-Mar-17	ONGOING	2,644,875.00	89,705.28

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
Pinoy S&T Services for Farmers and Entrepreneurs Program (PSF)	S&T Community-Based Farm on Enhanced Cacao and Coffee Production in District 1 of Zamboanga del Sur	Rapid, inclusive and sustained economic growth	This STCBF project hopes to capacitate at least 15 coffee/cacao farmers in Zamboanga del Sur to increase their yield and production through the application of appropriate S&T interventions.	• Increased hectarage planted to cacao and coffee by at least 30 hectares through the adoption of improved practices on cacao and coffee production • Organized cacao and coffee farmers into 3 clusters through the S&T community-based farm approach • Trained more than 30 cacao and coffee farmers and 12 technicians on the appropriate S&T interventions for cacao and coffee production • Produced and distributed at least two (2) IEC materials on coffee and cacao production • At least two (2) project staff trained on producing varieties and planting materials of cacao and coffee and other related laboratory analyses	DOST 9	Cacao and coffee farmers	1-Jun-14	30-Sep-16	ONGOING	3,429,862.00	694,520.00
SMARTER APPROACHES TO REINVIGORATE AGRICULTURE AS AN INDUSTRY (SARAI) IN THE PHILIPPINES	Proj. 1. Model Development and Crop Forecasting	Integrity of the environment and climate change adaptation and mitigation	Generate, evaluate and employ crop models in order to launch a crop-forecasting platform available for the entire country for the 6 priority crops and produce forecasting models for crop advisories and crop forecasting	Updated cropping calendars for rice, corn and perennial crops (coconuts, coffee, cacao, bananas) under current climate and Projected climate change conditions	UPLB	Agricultural sector, farmers, Department of Agriculture, LGUs, researchers, policy makers, students	4-Nov-13	30-Apr-17	ONGOING	70,889,014.00	5,673,943.00
SMARTER APPROACHES TO REINVIGORATE AGRICULTURE AS AN INDUSTRY (SARAI) IN THE PHILIPPINES	Proj. 2. Environmental Characterization and Development of Integrated Crop Management	Integrity of the environment and climate change adaptation and mitigation	Establish an Automatic Weather Stations (AWS) + ground sensor network, update soil, land suitability and crop environmental information to develop an integrated crop management database/protocols	Technical database of crop-environmental data as inputs to crop simulation models, and for crop production suitability assessment; Crop suitability maps for different climatic scenario; Installed AWS with network connectivity to a central data server providing daily rainfall data, humidity, wind speed, minimum, maximum and average daily temperatures in target farms throughout the country; Installed ground sensors that measure soils moisture contents and nitrogen content of soil in test farms throughout the country; Database of weather and soil parameter data to serve as inputs to crop forecasting model development and refinement; and Integrated crop management modules for the 6 crops.	UPLB	Agricultural sector, farmers, Department of Agriculture, LGUs, researchers, policy makers, students	4-Nov-13	30-Apr-17	ONGOING	53,145,648.00	6,710,736.00
SMARTER APPROACHES TO REINVIGORATE AGRICULTURE AS AN INDUSTRY (SARAI) IN THE PHILIPPINES	Proj. 3. SARAI Knowledge Portal: Development of an Integrated and Collaborative Web-based Information System for Climate Change Resilient and Sustainable Crop Production in the Philippines	Integrity of the environment and climate change adaptation and mitigation	The proposed knowledge portal will serve as a gateway and host to the management information systems, decision support systems and knowledge management systems for each of the six priority crops: rice, corn, banana, coconut, coffee, and cacao. The portal system will provide a comprehensive service in terms of access to real-time data, database platform among multiple institutions and interdisciplinary consortia, through sharing scientific experiments, data, and results. Besides information sharing, the infrastructure will also address the growing need to create a framework to enable collaborative, cross-disciplinary research, by enabling researchers to dynamically interact with others, collaboratively author, annotate, review, comment on others' data, and discuss their research. With the digital inclusion initiative of DOST, this project can provide the content and services to digitally empower Filipino farmers and policy makers for scientific farm level management decisions under uncertain situation brought about by climate change.	An online knowledge portal facilitating the building integration and management of service-oriented architecture (SOA) applications. Workflows, content management, social networking, mobile web delivery, simplified usability and administration, open standards, security, and stability are also supported by the portal.	UPLB	The Agriculture sector, Farmers, Department of Agriculture, Local Government Units, Researchers, Policy makers, Students	4-Nov-13	30-Apr-17	ONGOING	5,704,389.00	1,021,032.30

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
SMARTER APPROACHES TO REINVIGORATE AGRICULTURE AS AN INDUSTRY (SARAI) IN THE PHILIPPINES	Proj. 4. Capacity and Knowledge-building	Integrity of the environment and climate change adaptation and mitigation	This projects aims to serve the ecompassing activity that will bind all the independent studies of this research program to ensure that their outputs are translated into building abilities, relationships, and values that will enable the farming communities to improve their productivity .	1. Established links with the host areas, concerned government agencies, LGUs and farming communities 2. Developed learning framework based on the diagnosed learning needs of the different communities 3. Information materials on Climate Change, DRR, and agriculture for 6 crops produced 4. Training modules relevant to the various crop production systems and on the use of the online platform 5. At least 2 capacity building activities based on Year 1 outputs of Project 1 and Project 2 conducted. This include a) crops planting considerations, b) use and collection of weather/climate data, use and interpretation of on-site sensors, c) use of the developed online platform; and d) local crop risk assessments 6. Leaflets and information kits based on Year 1 results of Project 1and Project 2 produced 7. At least 2 capacity building activities based on Year 2 outputs (crop modelling and forecasting for banana, coconut, coffee and cacao) produced 8. Report on the capacity building activities conducted by the program, which include suggestions of local and national stakeholders for improvement and how to guarantee SARAI sustainability assessed	UPLB	The Agriculture sector, Local Government Units, Researchers, Policy makers, and extension workers and farmers or farmer-scientists designated by DA	4-Nov-13	30-Apr-17	ONGOING	6,756,885.00	4,302,182.04
SMARTER APPROACHES TO REINVIGORATE AGRICULTURE AS AN INDUSTRY (SARAI) IN THE PHILIPPINES	Proj. 5. SARAI Mainstreaming	Integrity of the environment and climate change adaptation and mitigation	The project is concerned with 1) the identification of policy issues that can be addressed by the outputs of this research program and formulation of policy papers; 2) the organization planning and scientific meetings to ensure that outputs of this research program are circulated among the concerned agencies, academic institutions, and various stakeholder groups; 3) building a consortium among the various SUCs to ensure the prolonged sustainability of this program, after funding from DOST has ceased; 4) publication of research outputs in peer-reviewed journals; and 5) establishment of a Crop-Climate Forecasting and Modeling Laboratory within the UPLB system to ensure that continued support of the University (through faculty/student researches) is institutionalized.	1. Crafted science-based policy recommendations for the agricultural sector for use in both medium and long-term planning. Policy recommendations may include subjects on mainstreaming of smarter farming techniques, use and deployment of advance monitoring technologies, changes in financing procedures/protocols and different insurance mechanisms 2. Establishment of a Crop Forecasting Laboratory in UPLB to ensure the sustainability of the established system, even after the program ends 3. Establishment of a consortium among the participating SUCs 4. Publication of research outputs in peer-reviewed journals 5. Efficient program implementation	UPLB	Agriculture sector (specifically farmers of rice, corn, banana, coconut, coffee and cacao), Local Government Units, Researchers, Policy makers, and extension workers	4-Nov-13	30-Apr-17	ONGOING	10,557,509.00	1,455,902.00
	Alternative Crop Shelter Design for High-Value Crops (Brocolli, Lettuce, Strawberry) Production in the Highlands	Rapid, inclusive and sustained economic growth	Assess crop shelter design for improved durability and functionality suitable for specific highland crops and conditions; monitor temperature & humidity variations inside and outside the crop shelters over the growing seasons; evaluate the effect of shading on crop water requirements; evaluate the performance of HVCs under diff. surface covering mat'ls. in protected environment; pilot test developed prototype under actual field conditions.	Year 1 Features/Characteristics of local greenhouses/crop shelter currently used in crop production Prototypes of improved crop shelters based on crop requirements and farmers' preferences Information on the degree of climate regulation achieved with different cladding materials Improved crop shelter designs in terms of structural strength and functionality for specific crops Evaluated performance for 1st cropping season of selected high-value crops under different surface covering materials in a protected environment Year 2 Evaluated effect of shading on crop water requirements Evaluated performance of HVCs grown under different structure-induced micro-climates during the 2nd cropping season Identified structures best suited for lettuce and broccoli Year 3 Identified structures best suited for strawberry Established economic viability of alternative crop shelter design for HVC production	BSU	farmers involved in HVCs production and who are willing to engage (and invest) in protected cultivation systems for increased production; small entrepreneurs; consumers	1-Jul-15	30-Jun-17	ONGOING	4,994,778.00	1,008,032.00
	Assessment of the Financial Incentive Mechanisms: Technical Audit of Selected S&T Projects	Transparent, accountable, and participatory governance			PCAARRD		1-Nov-15	29-Feb-16	ONGOING	640,636.16	81,874.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
	CEPA (Communication, Education and Public Awareness) and policy review towards improving coastal erosion management in the Philippines	Integrity of the environment and climate change adaptation and mitigation	1. To promote awareness of various stakeholders on the problem of coastal erosion; 2. To enhance knowledge, awareness and capacity for coastal erosion management through the development of appropriate communication, education and public awareness materials for specific target audiences; 3. To review existing policies related to coastal erosion; and, 4. To identify policy gaps and recommend new policies for coastal erosion management	End of the project Outputs • CEPA materials (leaflets, posters, modular primers, teaching materials) • Capacitated tertiary teachers (members of the PCAARRD Consortia and other SUCs) • Policy recommendations for coastal management that PCAARRD can advocate before a legislative body Year 1 • Webpage • Policy Review • Training • Pre-tested CEPA materials Year 2 • Final drafts of CEPA materials • Finalized website • Policy recommendations	UPD	Tertiary teachers and students, NGAs, LGUs, DRRRM practitioners, stakeholders, coastal residents, PCAARRD	15-Sep-16	14-Sep-18	NEW	4,999,357.00	2,603,116.00
	Effect of Nanomaterials on the Soil Microbial Community and Microbial Inoculants	Rapid, inclusive and sustained economic growth	General: To assess the impact of nanomaterials on the soil microbial community and microbial inoculants. Specific: • To assess the effect of nanomaterials on the soil microbial community using culture-dependent and independent analysis • To assess the effect of nanomaterials on the survival of gusA-labelled PGPB inoculum strain in the soil and in the rhizosphere • To assess the effect of nanomaterials on the efficacy of microbial inoculants on high value crops.	Y1:Changes in the bacterial and fungal populations in the soil Molecular profile of the soil bacterial community Gus-A labelled microbial inoculum strain Y2: Molecular profile of the soil fungal community. Identified microorganisms that were affected by the nanomaterials Information on the effect of nanomaterials on the survival of PGPB inoculum strain in the soil and in the rhizosphere Information on the effect of nanomaterials on the efficacy of microbial inoculants Safety assessment of soil microbial community and microbial inoculants as affected by nanomaterials At least two scientific publications on the results of the research project	UPLB	• Regulatory agencies • Nanomaterials producers • Researchers, student	1-Oct-16	30-Sep-18	NEW	4,954,985.00	2,625,454.60
	Enhancing PCAARRD's Intellectual Property Management through Prior Art Search and Patent Landscape Assessment	Rapid, inclusive and sustained economic growth	IPOPHL's patent analysis and landscaping efforts and its provision of expertise in patent search are a means to assist innovative enterprises, R&D institutions as well as PCAARRD. The patent analytics and landscape portion of the project will be performed on the identified priority commodities of PCAARRD. The Patent Landscape Reports are envisioned to serve as a reliable reference in crafting priority R&D programs and evaluating future proposals to be funded by PCAARRD. The prior art search and assessment portion of the project will focus on the technology generating ongoing R&D projects of PCAARRD. The search reports will help determine early IP management strategies needed for the technologies in the pipeline. Specifically, the project aims to a. Assist PCAARRD in the evaluation and assessment of quality R&D outputs and help increase the possibility of patent grant through prior art search. b. Provide patent data to support decisions on the levels of future PCAARRD R&D funding c. Generate PLRs showing the patenting activities and areas of technology concerning the priority commodities identified by PCAARRD d. Integrate patent information as an essential part of technology evaluation and assessment for quality and non-duplicated output by providing seminars and training modules on prior art search	Year 1: 6 PLRs generated and 75 technologies assessed using prior art analysis. Year 2: 6 PLRs generated and 75 technologies assessed using prior art analysis.	IPO	PCAARRD and RDIs	1-Oct-16	30-Sep-18	NEW	4,977,210.00	2,613,695.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
	Impact Assessment of PCAARRD Funded Improvement of NAARRDN R&D Facilities	Transparent, accountable, and participatory governance	The general objective of this study is to assess the impacts of PCAARRD-improved NAARRDN R&D facilities funded from 2005 to 2014. Specifically, it aims to: a) analyze the impact pathways of the PCAARRD-funded improvement of NARRDN R&D facilities; b) determine the inputs provided for as well as the outputs, outcomes, and impacts generated in , improving the NAARRDN R&D facilities; and c) recommend policy directions for enhanced implementation of the program on improving NAARRDN R&D facilities.	a. Documentation of PCAARRD funding of R&D facilities improvement outcomes and impacts; b. Policy directions towards a more enhanced PCAARRD-funded NAARRDN improved R&D facilities	UPLB	a. PCAARRD-collaborating institutions and NAARRDN member-organizations b. Policy and decision makers, national R&D/S&T system, and funding agencies supporting R&D activities and initiatives	1-Dec-16	28-Feb-18	NEW	2,834,246.00	2,834,246.00
	Impact Assessment of the Filipinnovation Coral Rehabilitation Program in the Philippines	Transparent, accountable, and participatory governance	The general objective of the study is to assess the impacts of the coral transplantation technology using asexually reproduced corals on previously degraded coral reef ecosystem in selected sites in the Philippines. Specifically, the study aims to: 1. Validate the performance of the Filipinnovation Coral Restoration Program specifically the coral transplantation technology that utilized asexually reproduced coral fragments. 2. Assess the impacts of the transplantation technology on the biophysical, economic, and social aspects of the study sites particularly in terms of fish biomass and recreational value. 3. Develop a monitoring protocol in conducting impact assessment of coral restoration projects particularly using the asexual coral reproduction technology	Year 1 1. Report on the performance of the Filippinovation Program after a year of its implementaiton; 2. Impact assessment report of the coral transplantation technology on the biophysical, economic, and social aspects, along with valuation specifically in terms of increased fish biomass and recreational value Year 2 1. Synthesis Report of the prospects of coral transplantation technology as applied in the Philippines and a monitoring protocol on the process of conducting IA of rehabilitation projects. 2. At least 1 draft journal articles for publication in ISI journals	UPLB	Local fisher folks and local tourism Local Government Units of the study sites, NGOs and associations Government regulators such as Department of Tourism e (DOT) and the Department of Environment and Natural Resources (DENR)	1-Nov-16	31-Oct-18	NEW	4,944,507.00	2,682,859.00
	Intellectual Propery Rights (IPR) Protection of PCAARRD-Funded Research Projects	Rapid, inclusive and sustained economic growth	As a Government Funding Agency (GFA) mandated to fund projects to develop technologies in agriculture, aquatic and natural resources, there is a need for PCAARRD to ensure that appropriate ownership of research products are accorded to its projects through applicable IPR. This will also provide adequate leverage for it as a GFA and its R&D institutes (RDIs) as technology generators in technology transfer, which can also be appreciated when a proposed technology transfer agreement shall be evaluated by the Fairness Opinion Board pursuant to Republic Act No. 10055, otherwise known as the "Philippine Technology Transfer Act of 2009". To provide IPR protection for PCAARRD-funded research projects	Year 1: 20 patents/utility model applications and 5 industrial design applications Year 2: 5 patents/utility model applications and 5 industrial design applications	TAPI	Research Partners/Network of PCAARRD	1-Oct-16	30-Sep-18	NEW	5,773,373.50	849,768.70
	Management and Commercialization of Technologies Generated from PCAARRD-funded Research Projects in UPLB	Rapid, inclusive and sustained economic growth	The general objective of this study is to manage and to commercialize the technologies generated from PCAARRDfunded research projects from Year 2010 to Year 2015. Specifically, the study aims to: 1. To determine the status and level of development of the IP protection of PCAARRD-funded projects from Year 2010 to Year 2015 for prioritization for commercialization; 2. To evaluate the potential of each technologies based on prioritization for IP generation and protection; 3. To determine the different IP protection applications and value of the prioritized technologies generated from PCAARRD-funded projects and; 4. To commercialize the prioritized technologies generated from PCAARRD-funded projects	Stage 1. Audit and Prioritization Research with Technology Potential Assessment Report Priority list of technologies for protection and for commercialization Updated IP/Technology Profile Database Capacity building for researchers and staff through IP management and technology commercialization trainings Initial IP protection (copyright and/or trademarks) applications and filings Stage 2. IP Creation and Protection PAS report University fairness opinion report IP Protection Draft and Application (copyright, trademark, utility model, patent and plant variety) Invention Disclosures Assignment of Deed Royalty sharing agreement Technology Valuation Report IP application receiving documents Stage 3. Technology Commercialization Business plans DOST Fairness opinion report Licensing agreements or commercialization contracts Standard forms, contracts, and other templates Monitoring report of commercialized IPs Investment kits and other marketing collaterals Journal publications on technology commercialization	UPLB	University Researchers and Agriculture Sector	1-Aug-16	31-Jul-18	NEW	4,954,655.00	2,937,250.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
	Market Study of Selected Technologies for Commercialization under PCAARRD's Technology Commercialization Program	Transparent, accountable, and participatory governance	The study aims to assess the market potential of selected DPITC technologies. Specifically, it attempts to: a. Provide an overview of the commodity system; b. Determine how the technology is perceived in the market by potential users; c. Identify market related constraints to technology commercialization; and d. Estimate the potential market requirement of the technologies to serve as basis for technology commercialization.	a. Description of the different commodity systems b. Product perception of the potential market on the new technology-based products c. Market-related constraints to technology commercialization of the identified technologies d. Estimation of the potential market requirement and target markets	UPLB	a. Policy- and decision-makers for R&D and technology commercialization projects/activities b. Technology developers c. Potential investors and technology adopters d. Regulatory organizations and industry associations	1-Oct-16	30-Sep-17	NEW	4,846,735.00	4,846,735.00
	Practical Approaches In TBI Management and the Transfer And Commercialization of DOST Generated Technologies: A Capability Building Program	Rapid, inclusive and sustained economic growth	General: 1) Elevate the consciousness level of managers and staff of DOST-supported TBIs and technology transfer offices (TTO) and business development units (BDU) on technology transfer and commercialization mechanisms for the acceleration of commercialization of locally generated technologies; and 2) Instill expertise and knowledge on the technology transfer process in an approach that covers the technology process as a whole continuous chain.. Specific: 1. Perform a comprehensive assessment of the technology transfer and commercialization ecosystem in the Philippines â€“ identifying areas for improvement of local TTOs, BDUs and TBIs as basis for the capacity building program. 2. Build capacity in terms of: a. Skills and confidence in describing and communicating succinctly and effectively the key aspects of an innovation that are of interest to partners, customers or investors; b. Profound understanding of critical issues related to innovation/technology ownership and protection â€“ allowing the TTO of BDU staff to frame and execute disclosure management and IP protection strategies regarding their technologies; c. Ability to do a relatively quick and effective assessment of market potential of an innovation/technology; d. Expertise in administration of technology transfer processes â€“ enabling the participants to develop and execute commercialization strategies; and e. Skills and practice in formulating and delivering presentations and pitches	1. Enhanced capability of DOST TTO/BDU personnel on technology transfer and commercialization mechanisms for DOST-generated technologies; a. Training of 25 DOST-TLO/BDU staff and 10 TBI manages/staff b. Subsequent seminar to 100 staff by the participating agencies 2. Enhance skills necessary for technology commercialization and transfer such as : technology packaging, technology validation, market assessment, IP valuation, pitch preparation and presentation 3. Commercialization plan by using a DOST-generated technology as a platform; a. creation of 35 "platform" commercialization plans (that may be replicated to other DOST technologies) 4. A 3-year institutional action plan on how the TTU/BDU and TBI will commercialize and transfer technologies that are generated by their institution a. Creation of 18 institutional action plans (one per participating agency)	Philippine Council for Industry and Energy Research and Development	Tech Transfer Personnel, Business Development Officers/staff, and TBIs Managers	1-Feb-16	31-Dec-16	NEW	19,681,946.00	2,874,441.98
	S&T Based Projects for the Rehabilitation of Selected Typhoon Yolanda Affected Areas in Samar and Leyte / Coordination, Monitoring & Evaluation And Assessment Of S&T- Based Projects (Stbps) For The Rehabilitation Of Selected Typhoon Yolanda Affected Areas In Samar And Leyte	Rapid, inclusive and sustained economic growth	This project aims to coordinate and monitor all the S&T-based projects implemented for the rehabilitation of typhoon Yolanda affected areas in selected municipalities of Samar and Leyte.	Coordinate and monitor all the S&T-based Projects implemented for the rehabilitation of typhoon Yolanda affected areas in selected municipalities of Samar and Leyte.	VICARP	Farmers and other stakeholders	1-Dec-13	31-Oct-16	ONGOING	4,500,000.00	503,814.04
	S&T Based Social Enterprise Development and Piloting for the Marginalized Sectors of Los Baños	Transparent, accountable, and participatory governance	General Objective: Develop and pilot test S&T-based Social Enterprises for the drug related vulnerable populations Specific Objectives 1. Describe the socio-economic profile and specific circumstances of selected respondents fron the identified marginalized sectors of Los Baños 2. Determine their values, aspirations, skills and knowledge 3. Identify S&T based social enterprise that match their aspirations, skills and knowledge 4. Assess the social enterprise landscape in Los Baños; 5. Identify the existing S&T based social enterprises which match the values, attitude, skills, and knowledge of the selected respondents of the identified marginalized sectors, or establish new S&T based SE 6. Develop and pilot test S&T-based business models or enhance existing ones 7. Foster multi-stakeholder partnerships and linkages including policy makers for social enterprises in Los Baños 8. Ensure the sustainability of the project by fostering multi-stakeholder partnership and including linkages particularly with the LGU of Los Baños	1. Socio-economic profile and specific circumstances of those considered vulnerable to illegal drugs; 2. Assessment of needs and opportunities of economic productivity and social integration of those considered vulnerable to illegal drugs; 3. Documentation of the values and aspirations of those considered vulnerable to illegal drugs; 4. Profile of social enterprise landscape in Los Baños; 5. Identification of the needs and opportunities of the social enterprises in Los Baños; 6. Number of trainings and workshops conducted for capacity building of social enterprises; 7. Business models developed and pilot tested for enhancing existing or new social enterprises; 8. Establishment or enhancement of multi-stakeholder partnerships and linkages for social enterprises in Los Baños 9. At least one paper for journal publication	UPLB	1. People who surrendered due to illegal drug use and drug trading, including their family members 2. Municipal government of Los Baños, and especially the village study sites 3. Local NGO's People's or community-based organizations 4. Government agencies such as DSWD, PNP, DA, DOST	1-Sep-16	31-Aug-18	NEW	4,992,454.00	2,825,727.00
	Support to the Issuance of Fairness Opinion Report for Technology Transfer Activities of PCAARRD	Rapid, inclusive and sustained economic growth	To provide support to RDIs in their request for fairness opinion by the DOST Secretary as a legal requirement for technology transfer activities of government-funded research projects by covering the costs associated in the expert engagement of the Fairness Opinion Board	Year 1: Seven (7) proposed transactions granted with fairness opinion by the DOST Secretary Year 2: Seven (7) proposed transactions granted with fairness opinion by the DOST Secretary	TAPI	Research Partners/Network of PCAARRD	1-Oct-16	30-Sep-18	NEW	5,891,967.60	2,529,010.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
	Support to the Preparation of Freedom to Operate (FTO) in the Technology Transfer Activities of PCAARRD-funded Projects	Rapid, inclusive and sustained economic growth	General Objective: To implement the Freedom to Operate Analysis of PCAARRD-funded technologies. Specific Objectives: 1. Assist PCAARRD and the technology developer(s) understand the threat of patent litigation on a particular technology; 2. Assess the potential of a technology for commercial application; 3. Ensure that the commercial application of a technology, marketing, and use of the new product, process or service does not infringe on the intellectual property rights of other entities; 4. To train staff from TAPI, PCAARRD, DOST RDIs and SUCs with PCAARRD-funded projects on FTO; and 5. To establish an FTO Unit at TAPI-DOST.	1. At least 14 technologies are assessed for Freedom to Operate 2. Trained 25 DOST Personnel and SUC Researchers on FTO review 3. Established FTO Unit at TAPI-DOST	TAPI	PCAARRD Management and Secretariat / Research Partners/Network of PCAARRD	1-Oct-16	30-Sep-17	NEW	5,000,000.00	3,989,676.40
	Technology Assessment of PCAARRD-Funded Research Projects	Rapid, inclusive and sustained economic growth	In general, the project aims to assess the research outputs from projects that received funding support from PCAARRD on the stage or level of readiness for commercialization. Specifically, to determine if PCAARRD-funded research projects have potentials for: (1) intellectual property protection; (2) commercialization; and (3) further research.	Year 1: 20 projects and 30 technologies assessed as to the stage or level of readiness for commercialization potentials. Year 2: 20 projects and 30 technologies assessed as to the stage or level of readiness for commercialization potentials.	TAPI	PCAARRD Management and Secretariat / Research Partners/Network of PCAARRD	1-Oct-16	30-Sep-19	NEW	5,782,794.40	2,584,104.00
	Valuation of Technologies Generated from PCAARRD-Funded Research Projects	Rapid, inclusive and sustained economic growth	This project forms part of PCAARRD's Technology Transfer Pathway, wherein outputs of which would determine the fate of the subjected research projects and technologies whether they shall be commercialized or can only be disseminated, promoted, or rolled out for free to intended beneficiaries. If technologies would be commercialized, the value of the technologies which will be offered to potential adopters should be determined. Together with appropriate IP protection this would provide great leverage to PCAARRD and/or its R&D institutes (RDI) during licensing negotiations. Likewise, the Fairness Opinion Board (FOB), specifically requires technologies to be valuated prior to securing a Fairness Opinion Report (FOR). As such, this project will cater to valuation of IPs in partnership with the private firms conducting technology valuation. Objectives: To assess the value of the research outputs from projects that received funding support from PCAARRD.	16 technologies valued within 2 years	TAPI	PCAARRD Management and Secretariat / Research Partners/Network of PCAARRD	1-Oct-16	30-Sep-18	NEW	5,916,899.20	2,309,691.20
Application of Genomic Information in Dairy Buffalo Breeding Program	Genotyping the Philippine Water Buffaloes Using Medium Density 90K Buffalo SNP panel	Rapid, inclusive and sustained economic growth	The proposed R&D project aims to improve milk production efficiency and rate of genetic gain of the Philippine dairy buffaloes through the use of genomic information in breeding and selection.	900 buffaloes sampled; 900 buffaloes genotyped using 90K SNP panel; local riverine population is known; Eight (8) young bulls nominated/selected for breeding based on BLUP breeding values and genotype information on the significant SNP markers; model for estimating genomic breeding values of animals in the information nucleus is derived; 8 young bulls nominated/selected for breeding based on BLUP breeding values and genomic breeding values	PCC, CMU	PCC nucleus and multiplier farms Local dairy buffalo industry in general Researchers from the industry and academe	1-Feb-15	31-Jan-18	ONGOING	23,301,755.00	7,777,415.40

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
Enhancing Milk Production of Water Buffaloes through S&T Inverventions	Project 1. Development of Feeding Protocols and Practices to Support the Nutritional Requirements of Dairy Buffaloes	Rapid, inclusive and sustained economic growth	To assess the existing feed resources, current feeding practices, identify nutritional gaps and production performance of the dairy buffaloes raised by the farmers at the national impact zone (NIZ) in Nueva Ecija and in San Agustin, Isabela To establish village–scale sustainable production of grasses and legumes for dairy buffalo feeding To establish year-round practical feeding system using home-grown forages that is nutritionally complete to increase daily milk production of buffaloes from 4.5 to 7 kg To recruit at least 100 dairy farmers as initial adoptersof the feeding technologies and systems developed by the project To assess reproductive performance and milk production of dairy buffaloes and profitability achieved by participating dairy buffalo farmers	At the end of project implementation, the following expected outcomes would have been realized at the NIZ, Nueva Ecija and San Agustin, Isabela: The farmers produced sustainable of supply of quality forages, adopt complete nutrient diet or standard ration and practice consistent feeding of their dairy animals. With year-round supply of home-grown forages the farmers adopted intensive 13 system of management resulting to enhanced milk production and the problem of liverfluke infestation among the dairy animals is addressed Legume seeds and other forms of planting materials like seedlings, cuttings are commercially available to farmers at the PCC Dairy Box. Adoption of developed technologies by the dairy farmers achieved the goal of increasing the daily milk production of buffaloes from4.5 li/d to 7li/d. Additional income from dairy farming accounts forP33,750 per cow per lactation.	PCC	52 primary cooperatives in Nueva Ecija with more than 1,000 members mostly composed of smallholder dairy buffalo farmers One (1) cooperative in San Agustin, Isabela with at least 200 farmers raising crossbred buffaloes.	1-Jan-16	31-Dec-18	NEW	13,074,986.00	6,263,286.00
Enhancing Milk Production of Water Buffaloes through S&T Inverventions	Project 2. Development of Reproductive Management Program for Increased Efficiency of AI in Dairy Buffaloes	Rapid, inclusive and sustained economic growth	To gain a deeper understanding on the ovarian physiology of dairy buffaloes during estrous cycle To elucidate ovarian follicular activity and endocrine profile in relation to the manifestation of behavioral signs of estrus and timing ovulation as guide for technicians and farmers in determining proper time of AI in dairy buffaloes to improve conception rate and consequently calf drop, To evaluate a newprotocol of synchronizing ovulation and fixed time AI (FTAI), as an assisted reproductive tool to increase efficiency of AI in dairy buffaloes, To implement effective pregnancy diagnosis and rebreeding systems as part of the intensified reproductive management program for genetically superior dairy buffalo breeder animals, To develop and establish a practical and economically feasible AI protocol at the NIZ and San Agustin dairy community that is based on the reproductive physiology dynamics of dairy buffaloes raised in these areas.	Basic information on reproductive physiology/ovarian function in dairy buffaloes in the Philippines Information on ovarian follicular and hormonal response associated with behavioral estrus and ovulation for Timed AI program in dairy buffalo Applicable and efficient AI protocols with success rates of 30% to 35% and 15% to 20% in the NIZ and San Agustin, respectively Effective early pregnancy diagnosis and re-breeding program established particularly for pure bred dairy buffaloes Reduction of calving interval from 22 months to 18 months Sustainable milk production based on the season-based Timed AI program Research publications Potential Outcomes/Impact 40%-50% Increase in the number of calves produced 50% Increase in the number of dairy cows on the milking line 50% Increase in milk production (25% contribution of the Project) At least 50% Increase income for farmers	PCC	Animals science professionals, professors, students 18 Dairy farmers Dairy cooperatives Multiplier farms VBAIT technicians LGU technician	1-Jan-16	31-Dec-18	NEW	24,598,650.00	7,521,598.00
Enhancing Milk Production of Water Buffaloes through S&T Inverventions	Project 3. Development of Health Care Technologies and Practical Farm Practices in Support of Increasing Buffalo Milk Production	Rapid, inclusive and sustained economic growth	To establish epidemiological data (temporal and spatial data) for risk factor analysis including identification of predisposing causes affecting decreased milk production To develop technologies and effective farm management practices to reduce the incidence and economic impact of these diseases in dairy buffaloes 4 To disseminate information and encourage farmers to adopt new and improved disease prevention and control measures as part of their routine farm practices To develop quick and reliable diagnostic protocols for early detection of infectious pathogens affecting milk production in water buffaloes	Reduced incidence of fasciolosis, trypanosomiasis and mastitis in water buffaloes Increased milk production through practice of the recommended management programs for farmers Increased income of farmers from buffalo milk production Enhanced capability of local researchers, scientists and dairy technicians in the diagnosis and control of mastitis, fasciolosis and trypanosomiasis Developed protocols for the detection of infectious diseases	PCC	Animal Breeders of private and government farms Academe/Researchers 23 Field Veterinarians/Animal Extension Workers Farmers	1-Jan-16	31-Dec-18	NEW	10,695,839.00	3,577,821.00
Enhancing Milk Production of Water Buffaloes through S&T Inverventions	Project 4. Milk Quality and Safety Assurance from Farm to Milk Processing Plant	Rapid, inclusive and sustained economic growth	To assess currentcollection and handling practices in relation to quality and safety of milk produced by smallholder dairy farmers To establish milk quality information at the farm level that will serve as guide for farmers in making adjustments of their feeding and management practices to maintain consistent milk quality throughout the lactation period of 300 days. To develop a milk quality testing protocol that can be performed by farmers at the farm level To generate milk quality data that will be used as inputs in establishing buffalo milk quality standards and as inputs in developing policies on buffalo milk pricing, marketing and distribution. To evaluate the socio-economic impact of S&T interventions that promote buffalo milk quality and safety assurance.	Baseline information on existing milk handling practices and farm level milk quality Farm level milk quality testing protocol Milk quality information as input to milk quality standards for buffalo milk Improved milk quality (as revealed by milk test results) compared to that at the start of the project (e.g. number or % samples with reduced microbial count, reduced acidity, increased specific gravity, etc.)	PCC	All key actors in the value chain will benefit from the project. Direct beneficiaries include the smallhold milk producers, dairy cooperatives, federations, associations, milk collectors/transporters, milk quality control staff at the Milk Collection Center, milk processors and dairy plant managers. Extension workers, and those in the academe and researcher can be indirect beneficiaries of the project	1-Jan-16	31-Dec-18	NEW	17,222,390.00	5,913,776.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
Enhancing Milk Production of Water Buffaloes through S&T Inverventions	Project 5. Strengthening San Agustin Crossbred Carabao-based Enterprise Development (CBED) Model	Rapid, inclusive and sustained economic growth	To evaluate the effectiveness of science-based technology options in feeding, disease control, milk collection and handling and dairy farm management in strengthening the San Agustin Dairy Cooperative (SADACO) and in revitalizing the 13 organized groups of San Agustin who are engaged in enterprises based on milk production from crossbred and native carabaos. Develop a practical system of providing technical support services that would lead to the establishment of an 860 hd breedable female crossbreds (12% of which in the milk line) in the 13 organized groups by the end of 2018. Develop enabling strategies and mechanisms for SADACO and appropriate partnerinvestors to operate the existing processing facility at about 300 liters raw milk per day; Create opportunities for SADACO to promote its products to wider markets and to enter into marketing agreements with established milk marketing and distribution businesses or groups. Generate science based-information that would be used as inputs to a resolution seeking inclusion of a municipal dairy development program in the Executive Legislative Agenda (ELA) ofSan Agustin LGU-.	Information on the success drivers and innovation on the CBED model in San Agustin Novel technology transfer options for the adoption of breeding, feeding and management, health care and milk handling, transport, processing and pricing and marketing practices and systems by dairy buffalo farmers Four (4) clusters of functional production network covering the 13 dairy associations revitalized and actively engaged in the dairy supply chain – production, collection, processing and marketing with SADACO performing the pivotal role Inventory of breedable healthy female crossbreds reached a total of 868heads by the end of 2018 (an increase of 15% from project start up to completion period) and 12% of breedable females in the milking line by 2018 Gross milk production of 10,920 litters by the last quarter of 2016, 76,650 liters in 2017 and 109,500 liters raw milk by 2018. Total gross milk production of 197,070 liters which is valued at Php8,868,150.00 within the three year period, if the milk per litter cost is set at Php45.00 The processing facility is put into operation with at least 300 liters raw milk per run, which will be translated into a value adding intervention Market links with at least 2 Institutional buyers Institutionalize the local dairy development program with the support of LGU-San Agustin	PCC	500 carabao CB owners that own initially the 750 breedable female CBs	1-Jan-16	31-Dec-18	NEW	9,523,234.00	4,489,078.00
Pinoy S&T Services for Farmers and Entrepreneurs Program (PSF)	Commercialization of Grass/Forage Corn Silage for Dairy Buffaloes in Lupao, Nueva Ecija through Technomart	Rapid, inclusive and sustained economic growth	This project focused on a farmer-led TechnoMart enterprise commercially producing grass/forage corn silage for dairy buffaloes to address problems on nutrition and forage deficiencies. The project promotes technologies on forage preservation and preserved forage feeding (in the form of silage) for dairy buffaloes in Lupao, Nueva Ecija. Major project activities include: capacity building of farmer-cooperators; production and marketing of silage products; and product enhancement and promotion.	Established a farmer-led business opportunity for commercially producing silages; Increased supply of conserved forages during lean months to address forage requirement; Established linkage between producers of silage and the clients.	PCC	Dairy buffalo raisers from Nueva Ecija will benefit from the dairy technology of grass/ forage corn silage as an improved feeding management for dairy buffaloes and gain additional income from commercial silage production.	1-Apr-13	31-Mar-16	ONGOING	3,168,961.00	95,334.00
Pinoy S&T Services for Farmers and Entrepreneurs Program (PSF)	S&T Community Based Farm (STCBF) on Improving the Carabao-based Dairy Farms in Magdalena, Laguna	Rapid, inclusive and sustained economic growth	This project promotes wider adoption of dairy technologies such as flushing, use of milk replacer and Moringa supplementation to enhance the dairy-based farms in Magdalena, Laguna through the CBSTBF modality. Project Components: 1. S&T Community Based Farm on the Use of Flushing and Milk Replacer in Magdalena, Laguna; 2. On Farm Validation on the Use of Moringa as Feed Supplement to Improve Milk Production of Dairy Buffaloes.	Community adoption of flushing and milk replacer from none to 30 farmers; Creation of 4 dairy clusters within the municipality; Produced approximately 40 thousand liters of milk.	PCC	30 dairy buffalo raisers from Laguna will benefit from dairy buffalo technologies that demonstrate how flushing, use of milk replacer and Moringa supplementation increase volume of raw milk production, lengthen lactation period, shorten calving interval and increase survival rate of calves.	1-Mar-13	29-Feb-16	ONGOING	2,868,805.00	46,118.00
Pinoy S&T Services for Farmers and Entrepreneurs Program (PSF)	S&T Community Based Farm (STCBF) on the Preparation and Utilization of Urea-Treated Rice Straw (UTRS) as Fodder for Dairy Buffaloes in Llanera, Nueva Ecija	Rapid, inclusive and sustained economic growth	This project focused on the preparation and utilization of Urea-Treated Rice Straw (UTRS) as feed for dairy buffaloes in Llanera, Nueva Ecija through the STCBF modality. The project involved three primary cooperatives as cooperators/project sites: the Casile Dairy Producers Cooperative in Brgy. Casile; PUNLA Multipurpose Cooperative in Brgy. Bosque; and Kapitbahayan sa A. Mabini Producers Cooperative, in Brgy. A. Mabini.	Established a community-based preparation and production of UTRS in Llanera, Nueva Ecija; Thirty (30) dairy farmers trained and capacitated on the production and utilization of UTRS; Produced at least 216 tons of UTRS to address the forage requirement in the area; Increased average daily milk production by 25%; Prepared techno guides and techno modules;	PCC	Dairy Carabao farmers	1-Apr-13	31-Jul-16	ONGOING	2,306,199.00	20,129.00
Pinoy S&T Services for Farmers and Entrepreneurs Program (PSF)	S&T Community Based Farm (STCBF) on the Use of Flushing and Supplementation to Enhance the Carabao-based Dairy Farms in Baybay, Leyte	Rapid, inclusive and sustained economic growth	Enhance the carabao-based dairy farms in Baybay, Leyte by promoting wider adoption of flushing and supplementation through the CBSTBF modality.	Increased number of farmers collecting milk from dairy carabaos in Baybay City from 15 farmers to 30 farmers at the end of three (3) years; Increased averaged daily milk production from 3 to 5 liters per head; Increased lactation period from 260 to 280 days; Produced approximately 40 thousand liters of milk; and Formation of an active dairy carabao support unit at Baybay City LGU level.	VSU	Dairy Carabao farmers	16-Mar-13	15-Mar-16	ONGOING	2,034,211.00	32,142.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
	Enhancing the Buffalo Milk Production thru Philippine Carabao Center's NIZ Strategy	Rapid, inclusive and sustained economic growth	Generally, this TM Project aims to enhance the productivity and profitability of the carabao-based enterprise of the Catalanacan Multipurpose Cooperative in Science City of Muñoz, Nueva Ecija. Specific Objectives: 1. Increase milk production by 21.73% for year 1 and 28.07% for year 2 of implementation. 2. Improve the milk collection potential and quality of dairy buffaloes at the farmer level 3. Improve the shelf-life and quality of milk-based products' packaging and label which will include ingredients, nutrition facts and manufacture and expiry date; Page 4 of 83 Enhancing and Commercializing the Buffalo Milk-Based Products of Catalanacan Multi-Purpose Cooperative in Science City of Muñoz, NuevaEcija 4. Enhance the technical knowledge of CAMPC in terms of product development and innovation, business and market development and also managing and sustaining their dairy enterprise; 5. Improve the economic performance of CAMPC and its members through enhance market competiveness of milk based products; 6. Ensure food safety in the manufacturing of milk-based products 7. Development of appropriate IEC materials	1. Increased the volume of milk production of CAMPC through employment of twice-a-day milking and improved animal management by 20% by end of 2016 and another 20% by end of 2017. 2. Increased volume of milk utilized by 80% for 2016 and another 80% by 2017 through the production of milk based products to wit: Espasol, Macaroons, Macapuno, Rice Cakes and .(See Annex 1 under Financial Plan) 3. Improved production of quality of buffalo milk through the provision of cooling facility, improved milk collection equipment and milk quality testing paraphernalia 4. Lengthened shelf-life of their Milk-based products by at least 4 days with the assistance of DOST-FNRI. 5. Improved quality of their products' packaging and label which includes ingredients, nutrition facts and manufacture and expiry date. 6. Enhanced technical knowledge of CAMPC in terms of product development and innovation, business and market development and management of their carabao dairy enterprise. 7. The CAMPC milk processing plant is accredited by FDA during the first year of the project. 8. Established contract on a rental basis with MilkaKrem on the use of the Dairy Box as an outlet for CAMPC's milkbased products. 9. Improved ROI of CAMPC milk-based products by 6% for 2016 and 16% by 2017. (See Annex 2) 10. Development and distribution of appropriate IEC materials.	PCC	38 Dairy Farmers	1-Oct-16	30-Sep-17	NEW	400,000.00	400,000.00
	Establishment of Dairy Cattle Foundation Breeder Herd Thru ET Using Imported Pedigreed Frozen Embryos	Rapid, inclusive and sustained economic growth	The proposed R&D project that will be implemented thru a publicprivate partnership between and among the NDA, PCC and private dairy industry players is envisioned to: 1) Catalyze the establishment of local dairy cattle foundation breeder populations that will sustainably supply high milkproducing dairy heifers and cows needed by the Filipino dairy farmers. 2) Customize the ET technology using pedigreed frozen dairy cattle embryos to suit to local dairy farm conditions. 3) Determine the technical and economic feasibility of using imported genetically superior frozen embryos in beefing up the dairy cattle population inventory of the country. Encourage private dairy industry players to actively participate in R&D activities and promote the adoption of S&T-based methods of enhancing sustainability, productivity and production efficiency of the Philippine dairy industry.	1) Initial inventory of pedigreed dairy cattle to form the foundation breeder herd 2) Customized ET protocol using frozen embryos 3) More proficient technicians to service dairy farms 4) Functional private-public partnership in technology verification and application	NDA, PCC	1) Dairy farm owners 2) Dairy industry practitioners 3) Researchers 4) Professors 5) Students	1-Oct-16	30-Sep-18	NEW	4,881,566.90	3,408,851.10
	Packaging of DOST-Developed and Supported Technologies and Innovation for Broadcast and Digital Promotion through DOSTv: The Filipino Weather Channel	Transparent, accountable, and participatory governance	This project has the main objective of assisting PCAARRD in fulfilling its mandate to promote and disseminate as widely as possible the results of its R&D programs. This will be accomplished by providing some of the operational, manpower, and technical support to make DOSTv a vital, successful partner of PCAARRD in its information, education and communication activities. Specifically, the project will: 1. Package, promote and broadcast PCAARRD technologies and innovations; 2. Provide the management, technical, and operational requirements for DOSTv and its long-term programming; 3. Enhance broadcast and data storage facilities as well as back up peripherals for DOSTv; and 4. Provide training for DOSTv Personnel	1. PCAARRD technologies and innovations are packaged, broadcast and promoted to include the following: a. Impeller type rice mill b. Hand tractor attached transplanted and harvester c. Radiation modified carrageenan plant food supplement in rice d. Coral reef restoration e. Coconut somatic embryogenesis technology f. Swine genomics technology g. Other SIPAG technologies 2. Technical configuration of equipment and systems for broadcast completed 3. Broadcast and data storage facilities enhanced 4. DOSTv staff trained technically equipped	DOST STII		1-Jun-16	30-Jun-17	NEW	4,998,684.00	4,999,684.00

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Feeds and Feeding Systems for the Improved Mallard Ducks	Project 1. Establishment of the Nutrient Requirements of Improved Philippine Mallard Duck	Poverty reduction and empowerment of the poor and vulnerable	The goal of this project is to establish the nutrient requirements of Philippine mallard ducks (Anasplatyrhynchos L.). Specific objectives include: 1. To determine the apparent metabolizable energy content of corn, wheat, rice, soybean meal, cassava meal, wheat pollard, rice bran, and fish meal; 2. To determine the nutrient digestibility of corn, wheat, rice, soybean meal, cassava meal, wheat pollard, rice bran, and fish meal; 3. To determine the metabolizable energy requirement of growing and laying Philippine Mallard ducks; 4. To determine the optimum standardized ileal digestible (SID) lysine: calorie ratio for 9 maximum growth of Philippine Mallard ducks; 5. To determine the optimum SID lysine:calorie ratio for maximum egg production performance of Philippine Mallard ducks; 6. To determine the optimum SID met+cys:lysine ratio for maximum egg production performance of Philippine Mallard ducks; 7. To determine the effects of choline supplementation on egg production performance of PMD; and 8. To determine the calcium and phosphorus requirements of Philippine Mallard ducks at laying stage. (	1. Feeding value of conventional feed ingredients for Philippine mallard ducks. 2. Nutrient requirements of Philippine mallard ducks to be distributed to local duck raisers and other agencies to serve as their guide in buying or producing duck feeds. The established nutrient requirements can also serve as guide for Bureau of Animal Industry in regulating the quality of commercially available duck feeds. 3. Sample feed formulation of grower and layer diets to serve as guide for feed manufacturers. The sample feed formulations can encourage duck raisers to mix their own feed which could be cheaper than commercially available feeds due to absence of marketing cost. 4. Publishable journal articles and poster/paper presentation on nutrient requirements of Philippine mallard ducks	University of the Philippines Los Banos	1. Establishment of nutrient requirements of Philippine mallard ducks will help duck raisers to improve their productivity and profitability. Up to now, there are no established nutrient requirements of Philippine mallard ducks and commercial duck feeds are mostly formulated based on worldwide recommendations for ducks. Most duck raisers are also using chicken feeds for their ducks which may not be appropriate to the needs of Philippine mallard ducks. 2. Provision of nutrient requirements specific for Philippine mallard ducks can serve as guide for feed millers in formulating feeds specific for the improved breed of Philippine mallard ducks. This could lead to more feed manufacturers producing duck feeds, thus increasing	1-Jul-15	30-Jun-17	ONGOING	3,959,637.00	689,096.60
	Development of Sustainable Breeder Philippine Mallard Duck (PMD) Production System	Poverty reduction and empowerment of the poor and vulnerable	Offer sustainable solution to the problem of poor and inconsistent production performance of the Philippine mallard duck thru genetic improvement and development of signature Philippine duck breed	Development and production of 100,000 head grand parental, parental and commercial (hybrid) quality of 3 strains of true-to-type quality PMD breeder	BAI	Local duck raisers; balut and salted egg producers; day-old-ducklings and ready-to-lay pullet producers	1-Aug-12	31-Jul-16	ONGOING	10,767,654.00	1,245,359.02
Regional Durian R & D Program: Enhancing the Productivity and Sustainability of the Durian Industry in Southern Mindanao for Improved Market Access	Project 1. Durian Tree Management for Optimum Production	Poverty reduction and empowerment of the poor and vulnerable	To develop the appropriate canopy size, branching of durian and fruit retention techniques for optimum yield and quality of durian. Specifically, the project aims to: 1) determine the appropriate time of flower & fruit thinning; 2) detrmine the influence of height of inflorescence position & numbers of flowers per inflorecence in fruit setting; 3) determine the effect of pruning & detopping on the yield and quality; 4) identify the appropriate height and ideal fruiting branch; 5) determine the number of fruits relative to its plant mass (sink-source relationship); 6) extend harvesting season; and 7) determine the economic benefits of pruning, detopping, and flower-fruit thinning.	These two components will generate technology on the proper and appropriate cultural management on pruning, detopping, flower and fruit thinning of durian for optimum production of quality fruits for domestic and export market. the most appropriate height and fruiting branches will be determined. moreover, the technology once applied would led to extended harvesting season by two months, increased yield by 20% and improve quality of fruits.	USM, DA	Durian Growers, Processors, Researchers	1-Mar-13	29-Feb-16	ONGOING	4,793,475.00	105,048.83
Regional Durian R & D Program: Enhancing the Productivity and Sustainability of the Durian Industry in Southern Mindanao for Improved Market Access	Project 2. Optimum Fertilization to Enhance Yield and Quality of Fesh Duran in Southern Philippines	Poverty reduction and empowerment of the poor and vulnerable	To improve the yield and quality of fresh durian in Southern Mindanao through the development of optimum nutrient standards. Specifically, the Project aims to 1) establish optimum soil and leaf critical nutrient level as fertilizer guide; 2) validate on-station the stablished optimum nutrient requirements based on nutrient concentration standards; and 3) verify critical nutrient standards and fertilizer recommendation across locations.	Year 1 and 2 Determined the optimum concentration standards of N, P, K, Ca, Mg, S, Fe, Mn, Zn and Cu in the soil and in plant tissue. Established the relationship between yield of durian and nutrient concentrations in the soil and in leaf tissues. Developed a guide on optimum nutrient requirement of durian in Southern Philippines. Year 2 Validated on-station the established optimum nutrient requirement of durian in Southern Philippines. Year 3 Verified across locations the optimum nutrient requirements of durian.	USM, USeP, DA	Durian Growers, Processors, Researchers	1-Mar-13	29-Feb-16	ONGOING	8,021,421.00	390,217.00
	S&T Action Frontline for Emergencies and Hazards in the AANR Sector: Engaging the Enhanced Regional Consortia to the SAFE Program	Integrity of the environment and climate change adaptation and mitigation	General Objective: To build constituencies and capacities of regional consortia for better awareness and understanding of DRR/CCA for the AANR sector to ably implement the nationwide SAFE Program. Specific Objectives: 1) To ensure common understanding of the SAFE Program and the concepts and principles of DRR/CCA for AANR among regional consortia. 2) To create institutional commitments, constituencies and partners for the SAFE program. 3) To document and mainstream SAFE Principles and best practices of the regional consortia in the country.	a. Regional SAFE Teams established for each regional consortium; b. SAFE promotion through website development; c. National R and D Agenda for DRR/CCA for the AANR sector or the "National SAFE Roadmap" prepared; d. SAFE Capacity Building Program developed; e. Compilation of Emergency/Hazard- Related Best Practices from all over the nation; f. Regional SAFE Programs developed and documented as proceedings; and g. SAFE Initiative / Project Proposals packaged for implementation.	CBSUA	1. Emergency- and hazard-vulnerable areas in Luzon, Visayas and Mindanao; 2. Communities residing near or around these vulnerable localities; 3. SMEs affected by the same; 4. NAARRDN members	1-Aug-16	30-Apr-17	NEW	3,877,579.60	3,877,579.60

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Ex-Ante Evaluation of ISPs of the Forestry Sector	Project 1. Ex-Ante Analysis of the ISP for BAMBOO	Transparent, accountable, and participatory governance	The project aims to estimate, to the extent possible, the economic value of the bamboo ISP in the forestry sector using ex-ante assessments to rationalize the use of PCAARRD-DOST	1. Validation of the indicators relating to the objectives of the specific interventions and of the seaweeds ISP 2. Identification and analysis of pathways 3. Cost-benefit analysis 4. Technical report	UPLB	1. Decision makers at PCAARRD, DOST 2. Grantees of PCAARRD/DOST funding	1-Jun-15	31-Aug-16	ONGOING	965,217.00	70,000.00
Enhancing quality protein maize (QPM) production, storage and utilization as feed grain	Project 1. Yield stability of yellow QPM hybrids in major corn growing areas in the Philippines	Rapid, inclusive and sustained economic growth	Develop high-yielding QPM hybrids suited to various locations; and Produce seeds of released QPM varieties for certification by NSIC.	High-yielding and stable QPM hybrids with enhanced nutritional quality suited to various agroclimatic conditions; 2 NSIC certified hybrid QPM seeds; and Prototype info material on high-yielding QPM hybrids	USM	Farmers Animal growers Feed miller	1-Feb-13	30-Jun-16	ONGOING	4,386,289.00	93,811.00
Enhancing quality protein maize (QPM) production, storage and utilization as feed grain	Project 2. Optimizing the planting density and fertilizer requirements of QPM hybrid cultivars	Rapid, inclusive and sustained economic growth	To establish the best performing QPM hybrids in response to plant density and fertilization.	Established optimum planting density and fertilizer requirement for QPM hybrids; Cultural management protocol for QPM	USM	Farmers Animal growers Feed miller	1-May-14	30-Jan-17	ONGOING	2,609,122.00	244,270.99
Enhancing quality protein maize (QPM) production, storage and utilization as feed grain	Project 3. Improving the storage and shelf-life of QPM thru proper treatment and and packaging	Rapid, inclusive and sustained economic growth	To improve the shelf-life of QPM through appropriate treatments and packaging materials.	Appropriate treatment and packaging material for improved shelf-life of QPM; Storage system protocol for QPM	CMU	Farmers Animal growers Feed miller	1-May-14	30-Sep-16	ONGOING	2,553,507.00	262,298.95
Enhancing quality protein maize (QPM) production, storage and utilization as feed grain	Project 4. Nutritional evaluation of QPM hybrid cultivars for poultry and swine feeding	Rapid, inclusive and sustained economic growth	To assess the nutritional profile and feeding value of QPM cultivars.	Nutrient profile of new QPM hybrid cultivar Production performance and product quality data of swine, broiler, layer fed QPM-based diets Economic analysis of using QPM	CLSU	Farmers Animal growers Feed miller	1-Sep-13	31-Aug-17	ONGOING	3,286,436.00	734,987.45
PROGRAM: SMART FARMING-BASED NUTRIENT AND WATER MANAGEMENT FOR RICE AND CORN PRODUCTION	Prj. 2. Application of Nuclear Analytical Techniques for Efficient Nutrient & Irrigation for Corn Production	Integrity of the environment and climate change adaptation and mitigation	Assess the different irrigation management practices that can be feasibly and effectively implemented to improve efficient and increase nutrient use efficient in corn production through the use of nuclear analytical techniques.	Precise fertilizer & water use for corn production	PNRI, DA BSWN, CLSU	Farmers extension agents, Researchers	1-Sep-12	31-Aug-16	ONGOING	6,892,120.00	1,149,273.00
	Agronomic Performance and Feeding Value of Mulato II and Mombasa Grasses for Dairy Cattle	Rapid, inclusive and sustained economic growth	The main objective of this project is to evaluate the yeild performance and feeding values of Mulato II and Mombasa grasses in dairy calves and growing heifers, and their influence on milk production of milking cows and their profitability as feed for dairy cattle. B. Specific Objectives 1. To determine the herbage yield and quality of Mulato II and Mombasa in pure stand and as mixture with Pinto peanut or Centrosema at two cutting intervals during the wet season and dry season; 2. To measure the adaptability and persistence of Mulato II and Mombasa in pure stand and when mixed with Pinto peanut or Centrosema at two cutting intervals during the wet season and dry season; 3. To determine the effects of feeding either Mulato II or Mombasa in comparison with Napier on the ADG and body condition of heifer calves and growing heifers; 4. To determine the effects of feeding either Mulato II or Mombasa in comparison with Napier on feed consumption of milking dairy cattle; 5. To determine the effects of feeding either Mulato II or Mombasa in comparison with Napier on yield and quality of milk of dairy cattle; 6. To determine the yield and quality of Mulato II and Mombasa grasses as materials for silage production; 7. To determine the effects of feeding Mulato II or Mombasa silage on yield and quality of milk of dairy cattle; 8. To determine the cost of establishing and maintaining Mulato II and	Activity 1 • Information on agronomic properties and characteristics of Mulato II and Mombasa grasses • Information on herbage yield of Mulato II and Mombasa grasses • Information on in-vitro digestibility of Mulato II and Mombasa grasses Activity 2 • Growth performance of grower calves and heifers fed fresh Mulato II or Mombasa grasses Activity 3 • Milk quality and milk production performance of cows fed with fresh Mulato II and Mombasa grasses Activity 4 • Milk quality and milk production performance of cows fed with Mulato II and Mombasa grasses silage Activity 5 • Information on the cost of production of the 3 grass species based on DM basis • Information on the cost of production of the silage using Mulato II or Mombasa compared with silage using Napier grass. • Information on the cost of milk based on the actual	UPLB	The project beneficiaries are the dairy cattle farmers, SCUs, Researchers and Extension Workers. This will provide data and information on Mulato II and Mombasa for dairy cattle feeding.	1-Oct-16	30-Sep-18	NEW	4,934,996.30	3,480,904.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
Innovative Systems in Advancing Halal Goat Production in Region 12 and ARMM	Project 1. Development of LAMP Assay and Quick Test Kit for Haram	Rapid, inclusive and sustained economic growth	This project will address the need to promote the acceptability of the haram protocol by developing a LAMP-based test kit that can detect pork, dog and horse meat contaminants in cooked and processed food.	Year 1 Optimized LAMP assays for swine, horse and dog meat (Q3) 50 Regional FLS facilitators trained on FLS-Halal GEM implementation (Q3) 100 farmers trained via FLS -Halal GEM (Q4) SKSU Agro-Mechanic Building as Halal Small Ruminants Slaughterhouse and Processing Center (Q4) Local ordinance on the use of the slaughterhouse (Q4) Year 2 PNS on halal goat husbandry & quality assurance (Q1) Philippines recommends for halal goat production, processing and marketing (Q2) Ordinance on the establishment of the halal gateway in GenSan (Q2) Marketing strategy for halal goat (Q2) Positive control or reference template for swine, horse and dog meat (Q2) Rapid test kit for haram detection (Q3) 1 Field day - Techno clinic (Q2) Media and stakeholders' forum (Q2) Data on Sensitivity and specificity of LAMP with PCR (Q3) Data on adulterated meat products using the LAMP assay (Q3) 150 farmer-graduates from FLS - Halal GEM (Q4)	USM	Goat raisers; Processors Halal certifying bodies, NCMF and local laboratories Livestock policy-making bodies (DA-PCAF, BAI, NMIS)	1-Jul-16	30-Jun-18	NEW	3,933,961.00	2,733,934.00
Innovative Systems in Advancing Halal Goat Production in Region 12 and ARMM	Project 2. Establishment of Halal Goat Enterprises thru the FLS-Halal GEM in Region XII	Rapid, inclusive and sustained economic growth	This project will promote the halal assurance protocols to farmers, certifying bodies, LGU counterparts as well as DA, ATI and NCMF representatives from Region 12 and ARMM using the FLS-Halal GEM. This is to ensure the "halalness" or halal integrity of products from production to processing.	Year 1 Optimized LAMP assays for swine, horse and dog meat (Q3) 50 Regional FLS facilitators trained on FLS-Halal GEM implementation (Q3) 100 farmers trained via FLS -Halal GEM (Q4) SKSU Agro-Mechanic Building as Halal Small Ruminants Slaughterhouse and Processing Center (Q4) Local ordinance on the use of the slaughterhouse (Q4) Year 2 PNS on halal goat husbandry & quality assurance (Q1) Philippines recommends for halal goat production, processing and marketing (Q2) Ordinance on the establishment of the halal gateway in GenSan (Q2) Marketing strategy for halal goat (Q2) Positive control or reference template for swine, horse and dog meat (Q2) Rapid test kit for haram detection (Q3) 1 Field day - Techno clinic (Q2) Media and stakeholders' forum (Q2) Data on Sensitivity and specificity of LAMP with PCR (Q3) Data on adulterated meat products using the LAMP assay (Q3) 150 farmer-graduates from FLS - Halal GEM (Q4)	SKSU	Goat raisers; Processors, Halal certifying bodies, NCMF, Livestock policy-making bodies (DA-PCAF, BAI, NMIS)	1-Jul-16	30-Jun-18	NEW	1,803,884.00	1,803,884.00
Innovative Systems in Advancing Halal Goat Production in Region 12 and ARMM	Project 3. Institutionalizing Innovations on Halal Goat Production, QA and Processing thru Policy and Marketing Schemes	Rapid, inclusive and sustained economic growth	Project 3 will address the need to institutionalize policies to push halal goat enterprise development in Region 12 and ARMM.	Year 1 Optimized LAMP assays for swine, horse and dog meat (Q3) 50 Regional FLS facilitators trained on FLS-Halal GEM implementation (Q3) 100 farmers trained via FLS -Halal GEM (Q4) SKSU Agro-Mechanic Building as Halal Small Ruminants Slaughterhouse and Processing Center (Q4) Local ordinance on the use of the slaughterhouse (Q4) Year 2 PNS on halal goat husbandry & quality assurance (Q1) Philippines recommends for halal goat production, processing and marketing (Q2) Ordinance on the establishment of the halal gateway in GenSan (Q2) Marketing strategy for halal goat (Q2) Positive control or reference template for swine, horse and dog meat (Q2) Rapid test kit for haram detection (Q3) 1 Field day - Techno clinic (Q2) Media and stakeholders' forum (Q2) Data on Sensitivity and specificity of LAMP with PCR (Q3) Data on adulterated meat products using the LAMP assay (Q3) 150 farmer-graduates from FLS - Halal GEM (Q4)	SKSU	Goat raisers; Processors Halal certifying bodies, NCMF and local laboratories Livestock policy-making bodies (DA-PCAF, BAI, NMIS)	1-Jul-16	30-Jun-18	NEW	1,574,008.00	1,574,008.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
National Dairy Goat S&T Program	Project 1.3. DG performance analysis and identification of managements options for improved productivity	Rapid, inclusive and sustained economic growth	This project aims to (1) evaluate the performance of the different dairy goat genotypes in the country; (2) develop a selection criteria for local dairy goats; and (3) identify existing and promote management options on goat dairying to improve productivity.	10 info generated; 4 protocols established; 1 product developed; 78 people trained;	CLSU	Dairy goat industry	1-Jul-14	30-Jun-17	ONGOING	8,615,383.23	2,310,439.88
National Dairy Goat S&T Program	Project 2. Application of breeding methods for DG herd build-up in the countryside	Rapid, inclusive and sustained economic growth	This Project hopes to: enhance the laboratory facilities of ISU and DA-RFO 8 for efficient processing of goat semen for AI; conduct capability building activities for researchers, farmer-cooperators and AI technicians; establish farm-level semen processing laboratories for community-based upgrading of stocks and enterprise building; and roll-out the AI technology for dairy goat production.	3 facilities enhanced; 3 protocols established; 2 enterprises established; 128 people trained	ISU	Dairy goat industry	1-Jul-14	30-Jun-17	ONGOING	18,065,714.20	2,706,676.18
National Dairy Goat S&T Program	Project 3. Enhancing milk production thru Indigofera supplementation	Rapid, inclusive and sustained economic growth	This study therefore aims to validate the feeding value of Indigofera to dairy goats and other dual purpose breeds.	3 info generated; 1 protocol established; 2 products developed	CLSU	Dairy goat industry	1-Jul-14	30-Jun-17	ONGOING	5,376,845.84	1,137,949.39
National Dairy Goat S&T Program	Project 4. Development of diagnostic and management protocols for intramammary infections in goats	Rapid, inclusive and sustained economic growth	This project aims to develop diagnostic and management protocols for intramammary infections in dairy goats. Specifically, it hopes to (1) Develop a local field diagnostic kit and protocol for IMI in goats; (2) Establish the epidemiological profile and risk factors of IMI in dairy goats; (3) Develop and test interventions in the management of IMI in dairy goats; and (4) Promote to dairy goat farms and raisers the use of the developed field diagnostic kit and the protocols in the management of IMI in goats	1 info generated; 1 protocol established; 2 products developed; 14 people trained	CLSU	Dairy goat industry	1-Jul-14	30-Jun-17	ONGOING	5,887,713.02	1,143,584.27
National S&T Program on Slaughter Goat	Program Management and Coordination	Rapid, inclusive and sustained economic growth	Program coordination and M&E		PCAARRD		1-Jan-13	30-Sep-16	ONGOING	-	178,501.53
National S&T Program on Slaughter Goat	Project 1.1. Farm-based promotion of alternative management options and farm recording in Reg 1,2,3,8,10 and 12	Rapid, inclusive and sustained economic growth	The ultimate goal of this project is to enhance goat farm production performance in the six participating sites in Regions 1, 2, 3, 8, 10, and 12 by accelerating the delivery of quality genetic materials and alternative technology options to a bigger number of stakeholders.	Empowered at least 2,445 farmers, entrepreneurs, and LGU personnel by Project's end in 2015 and have improved farm performance in the participating farms through the technologies and services promoted.	DMMMSU	30 national and 150 regional facilitators 300 AI service providers & farmers 105 AI-based new entrepreneurs	1-Jan-13	30-Sep-16	ONGOING	3,847,747.80	213,160.77
National S&T Program on Slaughter Goat	Project 2.1. Stabilizing feed resources for sustained nutrition of does in Reg 1,2,3,8,10 and 12	Rapid, inclusive and sustained economic growth	To address the problem on preweaning survival of kids, this project will initially address the nutritional plane of does by developing innovative feed products to prime them for breeding and lactation. Nutritional supplements for the newborn and transition feeds for preweaners will also be developed to increase their survival rates. To make these eventual products accessible to raisers and entrepreneurs, an investment portfolio will be developed and offered to potential investors. These will also be incorporated into the basket of technology options to be promoted by Project 1. All these will eventually be rolled out as new enterprises. More quality kids are expected to be produced that will translate to more supply of marketable goat and higher income for raisers.	Produce 12 incubatees across the 6 regions, who will eventually invest in one or a combination of the above business ventures.	DA 8	2 new investors on forage-based products	1-Jan-13	30-Sep-16	ONGOING	1,066,485.56	271,653.33
National S&T Program on Slaughter Goat	Project 4.1. Packaging of the MCM dewormer towards commercialization	Rapid, inclusive and sustained economic growth	This project will put forward better herd health protocols that will hopefully ease out the mortality issues brought about by parasitism and other diseases. Project 4 will initially profile the causes of PWM across regions to establish a complete set of recommendations to address bacterial, viral, parasitic and nutritional causes of PWM. Incidence of hypobiosis across regions will also be studied to develop better control and treatment regimen for goat worms. And the right form of the herbal dewormer from the extracts of makahiya-caimito-makabuhay will be finalized and a manufacturing protocol developed for promotion to investors. The final product will be promoted to farmers in Project 1.	Produced a better deworming regimen and from the profiling of PWM causes, control strategies against factors associated with PWM will be outlined. These will be included in the curriculum of the Farmer Livestock School on Goat Enterprise Management (FLS-GEM) and disseminated to goat raisers, who have either completed the 1st FLS-GEM or will be participating in the 2nd FLS-GEM. Manufacturing protocol of the MCM dewormer will be promoted among prospective investors.	VSU	Goat raisers, FGASPAPI, DOH processing plants, and private entrepreneurs	1-Jan-13	30-Jun-16	ONGOING	-	120,335.14

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
	Pre-Commercialization of Forage-based Pellet Feeds for Goats: Feasibility Analysis	Rapid, inclusive and sustained economic growth	General: This project aims to increase technology readiness of forage-based pellets for goat in preparation to commercialization. Specific: 1. To produce 3,000 kg each of two variants of forage-based pellets for growing goats and 4,000kg each for lactating goats in pilot scale; 2. To conduct field testing and evaluation of the different variants of forage-based pellets feeds; 3. To determine potential demand for forage-based pellets; and 4. To scale-up promotional activities for forage-based pellet feeds.	The following are the expected outputs of the project: a) Production of 3,000kg each of the two variants for growing goats and 4,000kg each for lactating does b) Feeding value of forage-based pellets to growing and lactating goats c) Shelf life characteristics of the pellets d) Design and packaging and application for copyright and trademark e) Acceptability study f) Feasibility analysis g) Business plan h) IEC materials and a website to showcase the product and the technology through the social media. i) Established linkage between CLSU and goat raisers and potential investors j) Process documentation	CLSU	3 goat raisers operating at 3 different production levels 90 goat raisers from 3 sites 30 members of association 18 agricultural suppliers	1-Nov-16	30-Apr-18	NEW	2,175,910.00	1,664,608.00
	Culture of Ciguatera Causative Organisms for Ciguatoxin Standard Production and Ciguamonitoring	Rapid, inclusive and sustained economic growth	The project aims to: Study the distribution, abundance and population structure of Gambierdiscus and other ciguateric causative organisms in the waters of Palawan and Panay Islands; Establish mass cultures of Gambierdiscus and other ciguateric causative organisms for the crude extraction of substances possibly containing ciguatoxin derivatives; and Identify areas in the Philippines with Ciguatera Fish Poisoning cases and help in the establishment of management action plan for this poisoning.	• Spatial distribution, seasonality and population structure of Gambierdiscus and other ciguateric causative organisms is determined with insights on it bloom dynamics and ecophysiology. • Crude extracts containing ciguatoxin derivatives • Areas in the Philippines with Ciguatera Fish Poisoning cases or potential CFP cases	UPD	1. Local Government Units and local communities 2. Bureau of Fisheries and Aquatic Resources 3. Department of Health 4. Academe 5. General Public	1-Mar-15	28-Feb-17	ONGOING	4,947,682.00	2,188,962.47
	Development of Scaled-up Depuration Technologies for HAB Contaminated Shellfish Species	Integrity of the environment and climate change adaptation and mitigation	The project aims to develop efficient depuration technologies for HAB contaminated shellfish. The specific objectives of the project are: Determine the depuration efficiency of green mussel (Perna viridis) under different ozone- and UV-treated seawater conditions after exposure to Alexandrium spp. and Pyrodinium bahamense var. compressum cells; Assess the palatability of shellfish after exposure to toxic dinoflagellate and depuration treatments; and Devise decontamination system for HAB contaminated shellfish.	Paralytic shellfish toxin and Alexandrium spp. and Pyrodinium bahamense var. compressum depuration rates of green mussel using untreated seawater, ozone- and UV-treated seawater Effective decontamination treatment/system for HAB contaminated shellfish Assessment of the palatability of shellfish after exposure to toxic dinoflagellate and different treatments	UPCS-Marine Science Institute	1. Local Government Units and local communities 2. Bureau of Fisheries and Aquatic Resources 3. Department of Health 4. Academe 5. General Public	1-Mar-15	29-Feb-16	ONGOING	4,946,104.00	2,154,129.12
	Potentially Invasive Marine Organisms Tranferrable by Ships in Selected Areas in the Philippines	Rapid, inclusive and sustained economic growth	Assess the status of transfer of organisms through shipping in the Philippines to develop understanding of the pathways of invasion by : 1. Assessing the community abundance of potentially invasive and associated marine organisms that utilize ships as vector in key international ports of the country. 2. Assisting various agencies of Government in the compliance with IMO-Ballast Water Convention/Ballast Water Management.	Plankton and bacteria profiles from different ports/ballast water	UPD	Shipping Industry in the Philippines. By qualifying the relationship between shipping and introductions of invasive organisms, mitigation strategies can be formulated, thereby reducing the risks associated to Philippine sea ports. b. Philippine Ports Authority will be in the better position to address the IMO Ballast water Convention, or drive it in the way that benefits the country. c. General public will have a broader knowledge regarding potentially invasive organisms that us ships/vessels as vectors.	1-Jan-14	1-Dec-16	ONGOING	4,930,981.00	1,391,520.16

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
	Impact Assessment of the Program on Enhancing the Demand for Agriculture, Forestry and Natural Resources (AFNR) Graduates Through Science and Technology - Components 2 and 3	Transparent, accountable, and participatory governance	The study aims to assess the economic and social impacts of Component 3 of the "Program on Enhancing the Demand for Agriculture, Forestry and Natural Resources (AFNR) Graduates through Science and Technology". Specifically, it aims to: 1. Describe the process and dynamics involved in the conceptualization, formulation, evaluation and implementation of the program through retrospective process documentation; 2. Determines the inputs, outputs, and outcomes from the project; 3. Assess the economic and social impacts of the program; 4. Estimate the rate of return to the investment of PCAARRD; and 5. Draw policy implications and recommendations for the improvement and replication of the program	The impact assessment study aims to deliver the following outputs: 1. Description of the program and the activities involved from conceptualization to implementatoin 2. Discussion of the input, output and outcomes of the program 3. Assessment of the economic and social impacts of the program 4. Estimate of the return on the investment of the donor agencies 5. Recommendations on the improvement and replication of the program	UPLB	The study would provide valuable information for the following stakeholders: 1. Policy and decision makers for R&D projects/activities and higher education programs 2. Administrators, faculty and students of State Universities and Colleges 3. Technology developers	1-Oct-16	30-Sep-17	NEW	4,951,263.00	5,000,000.00
	Advancement of Science for the Sustainable Utilization and Comservation of Forest Genetic Resources of falcata and yemane	Rapid, inclusive and sustained economic growth	The project aims to build the level of understanding and techniques on the best use of available genetic base of key plantations species, Paraserianthes falcataria (L.) Nielsen, and Gmelina arborea Roxb., in order to achieve a 30% increase in yield from plantations from the current 2013 yield level which is approximately 60 cu m ha-1.	A. Plantation trials of various genetic materials/provenances (origins) of falcata and yemane (5-10 ha). B. Information on genetic diversity and structure of various provenances (or origins) of falcata and yemane C. Teams of trained tree improvement technicians (240) to accomplish the long-term goal/objectives to support the country"s wood industry	CMU, ISU, UPLB	A. Tree Breeders B. State Universities and Colleges; students (graduate students in particular) C. Recipients of CBFMAs.	16-Oct-14	15-Oct-17	ONGOING	27,245,120.00	9,586,208.30
	Germplasm Conservation of Select Indigenous Forest Tree Species in Mt. Makiling Forest Reserve	Rapid, inclusive and sustained economic growth	In order to conserve germplasm of indigenous (endangered and threatened) forest trees found in Mt. Makiling Forest Reserve, the project specifically aims: 1. To identify and select quality mother trees of indigenous forest tree species as potential sources of superior quality seeds for germplasm collection; 2. To produce quality planting materials of selected 25 indigenous forest tree species in Mt. Makiling Forest Reserve; and 3. To establish seedling seed orchards (SSO) for the selected 25 indigenous forest tree species at the UP Land Grant (Laguna-Quezon), including monitoring and evaluation.	Year 1 250 mother trees geo-tagged from the 25 selected species and seeds collected from 15 species based on phenology schedule (please refer to Table 3) MOA between UPLB CFNR and NPGRL for germplasm conservation of indigenous forest tree species Year 2 Seeds collected from additional 10 species Spatial distribution maps of mother trees per species, with their phenology schedule, generated Protocols for germplasm conservation of the initial 15 species collected (e.g. Seed viability and germination in relation to MC and storage time, Seed anatomy) Year 3 Protocols for germplasm conservation for the remaining 10 species collected (e.g. Seed viability and germination in relation to MC and storage time, Seed anatomy) (Collection for next batch of selected species as commitment of CFNR) 15 000 quality seedlings propagated from the 15 species 10 000 additional seedlings propagated from 10 species Distribution of 14400 quality seedlings to be planted in 36 hectares Commitment of UPLB CFNR to institutionalize a germplasm conservation program for indigenous forest	UPLB	This project is expected to benefit the College of Forestry and Natural Resources through provision of scientific basis for conservation of select indigenous species in the MMFR. To a larger extent, the vision to establish a viable seedling seed orchard threatened indigenous forest tree species will help the conservation of these genetic resources and later will be the source improved quality seeds for tree breeding programs for these species. The proposed project specifically targets various stakeholders of the Mt. Makiling Forest Reserve and the UP Land Grants. Other than UPLB as a whole, approximately 50 researchers, including faculty, of the CFNR-UPLB, 4 local government units (Sto.	1-Mar-16	28-Feb-19	NEW	4,990,000.00	2,300,163.00
	Spore Bank Establishment, Propagation and Conservation of Selected Economically Important Ferns	Rapid, inclusive and sustained economic growth	General Objectives: To conserve the threatened, indigenous and economically important species of ferns and lycophytes, the project aims to: a. Establish spore bank for long term conservation; b. Develop the propagation protocols for spore germination, gametophyte and sporophyte development; and c. Determine the percentage of spore viability and survival of plantlets under laboratory and greenhouse conditions.	Spore Bank Propagation Protocols Garden of Economically Important Ferns Information, Education and Communication (IEC) materials (field guides, flyers and Posters)	CMU	Plant Collectors/hobbyists Cottage industries Botanists/researchers Farmers/Housewives Local communities and NGO's Local Government Units (LGUs) Biodiversity Management Bureau of Department of Environment and Natural Resources (DENR)	1-Aug-16	31-Jul-17	NEW	1,999,954.00	1,999,954.00
	Screening Indigenous Plants as Biopesticides and Product Development for Vegetable and Sugarcane Pests and Diseases (SIPBIO)	Rapid, inclusive and sustained economic growth	a. Document indigenous plant species with pesticidal properties and propagate them for ex situ conservation; b. Evaluate the efficacy of crude extracts and biopesticide products against major pests and diseases of selected economically important crops in Bukidnon; c. Determine qualitatively and quantitatively the phytochemicals of the crude extracts with pesticidal activity; d. Characterize the active components of the extracts and biopesticide products. e. Develop prototype biopesticide products.	Developed prototype biopesticide product; Prepared a database of biopesticidal plants; Prepared IEC materials	CMU	Farmers, Researchers, Local Government Units, National Government Agencies	1-Jan-15	31-Dec-16	ONGOING	5,000,000.00	1,515,543.62

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
	National Research & Development Project for Watershed Management in the Philippines (Phase 2)	Rapid, inclusive and sustained economic growth	The project generally aims to develop a network of learning watersheds and watershed management decision support system. Specifically, it aims to: a) establish wireless sensor networks that will provide real-time information on water quantity and quality, local climate and soil conditions of selected watersheds;b) establish networks of permanent biodiversity monitoring plots; c) assess the interrelations of watershed and ecosystem services with human and natural factors;d) develop and/or validate models and tools on hydrology, biodiversity and land allocation; e) develop a data-integration and information-management system that synthesizes data from the watershed networks into real-time spatial estimates of water balance, sediment yield, flood and landslide risks; g) develop culture of research among graduate and undergraduate students in watershed management and allied fields; h) build up capacity of local government units, schools and other local stakeholders for watershed monitoring and for the use of watershed databases in planning and decision making; and i) generate data and information that will feed into the SARAI project and other related projects, and that will be useful in local and national policy development.	Year 1 New Watersheds Stakeholders mobilized, organized and agreements forged Established wireless sensor networks that provide real-time information on surface hydrologic and local meteorological conditions of the watersheds Established permanent biodiversity monitoring plots in all Learning Watersheds Watershed profiles Old and New Watersheds Validated water balance models Water-use efficiency characteristics of the key tree species Prototype of WDSS	UPLB. MMSU, ISU, ERDB, CMU, BUCAF	LGUs, farmers	1-Mar-15	28-Feb-17	ONGOING	14,873,800.00	10,103,985.38
R&D Program towards the control and management of the invasive knifefish in Laguna de Bay	Project 1. Population dynamics, movement and control strategies of knifefish (Chitala ornata) in Laguna de bay	Integrity of the environment and climate change adaptation and mitigation	The main goal of the project is to gain better understanding of invasive knifefish populations which is necessary for the development of effective population management strategies of knifefish in Laguna de Bay.	map showing distribution and spawning sites of knifefish, artificial spawning contraptions, knifefish spawning habitat model knowledge on the biology of knifefish	UPLB	Aquaculture industry of Laguna Lake	1-Jan-15	30-Jun-16	ONGOING	4,039,827.00	473,295.58
R&D Program towards the control and management of the invasive knifefish in Laguna de Bay	Project 2. Assessing the vulnerability of aquaculture species to knifefish predation	Integrity of the environment and climate change adaptation and mitigation	This project will provide qualitative and quantititative data on the feeding preference of C. ornata occuring in Laguna de Bay with emphasis on spatial. seasonal and size variation in food items	Measures of prey quantity	UPLB	Aquaculture industry of Laguna Lake	1-Jan-15	30-Jun-16	ONGOING	2,578,822.00	337,327.03
	PCAARRD Knowledge Management System for Agriculture, Aquatic and Natural Resources Technologies and Innovations	Transparent, accountable, and participatory governance	To develop a knowledge management system to streamline knowledge sharing on research outputs of the AANR sectors, and to provide an online platform for DPITC.	1. Audit report of PCAARRD ICT resources (human, hardware, software, network) 2. KM Portal to support the operations of the DPITC 3. ICT platform to use for KM 4. Knowledge bases 5. Knowledge products 6. System Documentation and User's Manual	UPLB	Improved knowledge sharing and collaboration among stakeholders Improved delivery of services and dissemination of technologies to customers	1-May-16	30-Apr-17	NEW	1,270,569.00	1,270,569.00
Improving Productivity and Local Utilization of Mungbean	PMC	Poverty reduction and empowerment of the poor and vulnerable	To effectively manage, monitor and coordinate the four (4) project components of the mungbean program being implemented by eight (8) implementing/ cooperating agencies covering at least 6 Regions (Regions 2, 3, 4-A, 6, 11 and CAR).		UPLB	Mungbean growers	1-Aug-15	31-Jul-18	ONGOING	1,664,840.00	281,695.00
Improving Productivity and Local Utilization of Mungbean	Project 1. Development of Varieties for Drought and Shade Tolerance	Poverty reduction and empowerment of the poor and vulnerable	To develop varieties of mungbean for drought and partial shade conditions. Specific Objectives: 1. To develop populations of mungbean with potential for drought tolerance; 2. To develop populations and lines of mungbean for partial shade tolerance; 3. To evaluate the lines under drought and partial shade conditions; and 4. To conduct genetic diversity analysis of selected mungbean genotypes	Year 1 1. Varieties selected for drought and shade tolerance. 2. Tolerant populations developed. Year 2 1. Population/ lines screened for drought and shade (on-station and onfarm) Year 3 1. F4 to F6 populations tolerant to shade and drought 2. Secondary (20) traits identified	UPLB	Rice farmers with potential to grow mungbean after the rice crop, upland farmers, coconut farmers, cassava farmers	1-Aug-15	31-Jul-18	ONGOING	13,101,161.00	1,546,480.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
Improving Productivity and Local Utilization of Mungbean	Project 2. Improvement of Mungbean Seed Production and Management System in Region 2, 3, 6 & 11	Poverty reduction and empowerment of the poor and vulnerable	This study generally aims to sustain availability of high quality seeds of improved mungbean varieties in major growing areas in Regions 2, 3, 6 and 11 coupled with improved seed storage technologies. Specific Objectives: 1. To evaluate and determine the most effective and economical hermetic seed storage technology for certified and farm-saved mungbean seeds; 2. To pilot test the improved hermetic seed storage technology; 3. To promote seed saving technology to 100-200 farmers per region; 4. To ensure local availability of 6,050 kg Foundation Seeds (FS) and 61,250 kg Registered Seeds (RS)/ Certified Seeds (CS) of improved mungbean varieties in Regions 2,3,6 and 11 (or a total of 67,300 kg of quality seeds); and 5. To support commercial production of improved varieties in expansion areas of at least 6,800 hectares in Regions 2,3,6 and 11.	Year 1 1. Established seed storage facilities in participating DA-RIARCs (DACVRC, DA-CLIARC, DA-WESVIARC and DA-SMIARC) 2. Produced 67.30 tons of high quality and improved seeds varieties 3. Trained, organized and accredited seed growers Year 2 1. Improved hermetic seed storage technology for certified and farmsaved seeds 2. Assisted 50-100 farmers per region on seed production Year 3 1. Established one rural seed center/ region (Regions 2, 3, 6 and 11) 2. 100-200 farmers-adopters per region on seed storage technologies 3. A total of 6,800 ha seed production expansion area 4. Production and distribution of IEC materials on seed production	DA-CVRC, DA-RFO 3, DA RFU 11, DA-WVIARC	Low-income farmers in corn, rice, cassava, sugarcane, & coconut-based farming communities Agri-entrepreneurs (SMES)	1-Aug-15	31-Jul-18	ONGOING	9,841,488.00	1,935,956.00
Improving Productivity and Local Utilization of Mungbean	Project 3. Improvement of Integrated Crop Management System for Mungbean	Poverty reduction and empowerment of the poor and vulnerable	The project generally aims to reduce pest damages of mungbean by 20% through adoption of improved Integrated Crop Management (ICM) systems in order to increase crop yield. Specific Objectives: 1. To increase mungbean yield through reduced infestation/ damage of pod borer and use of available BCAs and botanical extracts; 2. To reduce Cercospora leaf spot disease of mungbean through application of organic extracts, Trichoderma, 3 Vermitea and Radiation-Modified Carrageenan (RMC) in rice and corn-based cropping systems; 3. To evaluate the efficacy of different fertilizers in maize, rice, sugarcane cropping systems in increasing crop yield ; and 4. To promote and transfer the improved ICM systems for farmers' adoption.	Year 1 1. Screened BCAs (for pod borer and Cercospora leaf spot) 2. Fertilizer management and Rhizobium inoculation for mungbean Year 2 1. Tested (on-farm) BCAs and nutrient management systems 2. 30 farmers assisted per region (total of 120 farmers-adopters) Year 3 1. Produced and distributed IEC materials on BCAs and ICM 2. Trained at least 30 farmers/ region (a total of 120 farmers-adopters) 3. Developed and promoted ICM (BCAS, BEs, Organic Fertilizers, 10 Carageenan) for mungbean for different cropping systems	PAC, DA-CVRC, DA-RFO 3, DA RFU 11, DA-WVIARC	Mungbean farmers; rice, corn and sugarcane farmers; researchers, students and other stakeholders	1-Aug-15	31-Jul-18	ONGOING	6,724,411.00	1,456,952.00
Enhancing Value Chain for Peanut (Arachis hypogaea L.) Production and Processing	Project 1. Enhancement of peanut seed production management system (Improvement of Peanut Seed Production Management System)	Rapid, inclusive and sustained economic growth	Sustain availability of high quality seeds of improved peanut varieties in major peanut growing areas in Regions 1, 2, 3, 7, 10 and CAR	Organized 5 groups of trained/ accredited seed growers; enhanced 5 RIARCs cold seed storage facilities; improved seed packaging of stored certified seeds (CS); made available 123.5 tons of 5 improved peanut varieties; improved village-level seed storage technology; at least 1,500 farmers adopting the technologies; developed 3 small rural seed outlets	DA CVIARC, DA NOMIARC, DA RFO-1	Peanut growers, processors, farmers, policymakers, LGUs, Project implementers	20-May-13	19-May-16	ONGOING	9,020,325.00	446,326.05
Enhancing Value Chain for Peanut (Arachis hypogaea L.) Production and Processing	Project 2. Improvement of Peanut Integrated Pest Management and Boron Management	Rapid, inclusive and sustained economic growth	Reduce pest incidence and severity by 10% through improved integrated pest and nutrient management thereby resulting to an increase in yield	Reduced pest incidence and infestation by 10%; produced BCAs against insect pest; developed methods of Boron application for increased yield; strengthened capabilities of farmers on IPM; established 6 techno demo farms; conducted field days and produced IEC materials	PAC, TCA, MMSU, DA	Peanut growers, processors, farmers, policymakers, LGUs, Project implementers	23-May-13	22-May-16	ONGOING	5,644,443.00	338,468.35
Enhancing Value Chain for Peanut (Arachis hypogaea L.) Production and Processing	Project 5. Improvement of Packaging and Participatory Marketing of OTP-developed Products	Poverty reduction and empowerment of the poor and vulnerable	The project aims to produce safe and quality peanut products and add value in the marketing chain through the application and development of appropriate packaging syste,, post harvest handling system and creation on participatory martketing strategies and opportunities for small scale farmers and micro-processors/ entrepreneurs.	Improved packaging systems and branding of 5 regional OTOP peanut products (Regions 1,2,3,7 and CAR)	BSU, MMSU, TCA, BISU, QSU	Peanut farmers, local processors, agri-entrepreneurs (SMEs), researchers, scientists, consumers, other stakeholders and LGUs	1-Aug-14	31-Jan-17	ONGOING	5,706,132.00	1,273,026.90
ACIAR-PCAARRD Horticultural Program on Fruits and Vegetables (Phase 2)	Program Monitoring and Coordination	Rapid, inclusive and sustained economic growth	To ensure an effective monitoring and evaluation (M&E) for the smooth implementation of the ACIAR–PCAARRD Horticulture Program on Fruits and Vegetables Phase 2.	Effective monitoring and evaluation (M&E) for the smooth implementation of the ACIAR-PCAARRD Horticulture Program Annual program review and field monitoring reports Consolidated annual progress (technical and financial) reports Identified R&D breakthroughs/ technologies/ information for dissemination and technology transfer	PCAARRD		1-Jan-15	31-Dec-17	ONGOING	4,134,310.00	1,278,096.44

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
	Science and Technology Model Farm (STMF) on Mango Production in Pampanga	Rapid, inclusive and sustained economic growth	General Objective: To showcase the economic advantages of applying the package of technology (POT) into a commercial scale of mango farm. Specifically, the project aims: 1) to promote wider adoption of the POT on mango through the STMF modality; 2) to capacitate the farmer cooperator and adopters on improved crop management and practices on mango production; 3) to establish collaboration and convergence of various stakeholders, LGUs, NGAs and local organizations on extensive technology transfer initiatives and commercialization of the S&T interventions.	1. Established STMF adopting the POT for mango consisting of 200 fruit bearing trees (10 years old) 2. Practiced improved crop management practices for mango 3. The farmer cooperator acquainted with major insect pests and diseases of mango and management interventions relative to crop phenology 4. Established collaboration and convergence of various stakeholders, LGUUs, NGAs and local organizations on extensive technology transfer initiatives on mango production 5. Formation of mango grower association or farmer cluster composed of 15 members 6. Trained at least 20 farmers on ICM, PQM and IPM 7. Packaged IEC and Technology Guide on Mango Production based on STMF experience and protocol	BPSU	15 Mango growers	1-Mar-15	28-Feb-17	ONGOING	1,357,440.00	613,601.00
	Development and application of synbiotic-enriched fish feeds for imprved production performance of milkfish (Chanos chanos) towards sustainable aquaculture and food security	Rapid, inclusive and sustained economic growth	The proposed project aims to produce synbiotic products and assess their potential to improve the general health, immune status, and growth performance of milkfish when supplemented in feeds. Specifically, this study aims to: 1. Obtain and characterize pure culture isolates of endogenous gut bacteria in milkfish; 2. Produce sufficient amounts of probiotics (in liquid/ cell mass form) for use in feeding trials; 3. Screen the potential of locally-available aquatic plants (i.e., azolla and duckweed) for high-quality prebiotics through in vitro evaluation of biochemical activity and properties; 4. Produce sufficient amounts of prebiotic materials for in vivo experiments/ feeding trials; 5. Conduct in vivo assessment of synbiotic products that could best improve growth, survival, immune status, and disease tolerance of milkfish; and 6. Reassess gut microbiota, enzyme activity in fish digestive tract, and digestability parameter tests to elucidate the biological activity of the synbiotic products in vivo.	Proto-type synbiotic products will be made available for further evaluation and scientific reports on growth and health response of milkfish fed with synbiotic-enriched feeds.	LSPU	Beneficiaries would include the aquaculture industry in general, and specifically, thesmall-scale milkfish cage operators	1-Jul-16	30-Jun-18	NEW	4,000,000.00	3,050,876.00
Disease Management for Improved Mud Crab Production	Prevention and Mitigation of Diseases in Mud crab Culture	Rapid, inclusive and sustained economic growth	1) To develop and optimize quantitative PCR techniques to detect WSSV; 2) To develop and optimize PCR protocol to detect WSSV in water and soil; 3) To determine other predisposing environmental factors for vibriosis and WSSV infection aside from those identified in previous project i.e. low temperature and presence of WSSV infected shrimp; 4) To recommend effective intervention strategies against vibriosis and WSSV.	1. Optimized quantitative PCR techniques to detect WSSV ; 2. PCR protocol to detect WSSV in the water and soil; 3. Threshold level (bacteria/WSSV) in the water/soil that may result in infection and mortality/outbreak; 4. Environmental factors that affects disease occurrence/outbreak; 5. Management scheme to prevent infection and mitigate the effect of infection in hatcheries and grow-out ponds in addition to those identified in a previous study;	SEAFDEC	⍰ Mud crab hatchery owners and growers in the implementation of proper management strategies for higher survival and production; ⍰ Diagnostic laboratories for the PCR protocol on the detection of WSSV in the water and soil	1-Sep-15	31-Aug-17	ONGOING	4,440,281.00	2,173,867.00
Genomic applications in Mud Crab Aquaculture and Resource Management	Project 1. Developing Genomic Resources for Stock Delineation and Sustainable Development of mud crabs	Rapid, inclusive and sustained economic growth	The general objective of the project is employ genomic resources to generate information and technologies towards the sustainable development of capture- and culture-based production of mudcrabs, S.serrata,S olivacea, and S. tranquebarica. Specific objectives: 1. Develop genomic resources based on SNP markers for S.serrata, S olivacea, and S. tranquebaricato facilitate studies of genetic stock delineation of natural populations across the Philippine archipelago; 2. Identify management units for S.serrata, S olivacea, and S. tranquebaricain selected marine biogeographic regions, with a focus on areas with existing and emerging mudcrab hatcheries.	1. Genomic resources for genetic stock delineation (SNP markers) for three Scylla species: S. serrata, S olivacea, and S. tranquebarica. 2. Identification of management units for natural populations of Scylla serrata and S. olivacea. 3. Developing SNP markers for traceability of S. serratato biogeographic region or hatchery of origin. 4. Technical inputs for development of policies for culture and capture mudcrab fisheries towards international certification/recognition of the Philippine mudcrab fisheries as compliant and a model for best practices.	UPD	1. Stakeholders in the mudcrab industry (government and private sector) may benefit from the development of markers for molecular selection for phenotype and certification of best aquaculture and fishery practices. 2. Resource managers, e.g. LGUs and other government agencies may benefit for policy recommendations potentially resulting from stock delineation studies. 3. Fishers, traders, and other direct users of natural (wild) mudcrab stocks, as increased hatchery production may in the long-term contribute to reducing fishing pressure on, and for stock enhancement of natural mudcrabpopulations. 4. Local researchers particularly graduate students research provided opportunities to develop	1-Oct-15	30-Sep-18	ONGOING	13,304,828.00	3,718,580.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
National Mudcrab S&T Program: Program A. Refinement of Mudcrab Hatchery Technology	Proj 5. Sustainable production of mudcrab through selective breeding	Rapid, inclusive and sustained economic growth	To develop selective breeding techniques for the genetic improvement of Mudcrab S. serrata	Selection process for disease resistant and/or fast growing crabs established Response of crabs to selection on good traits (disease resistant and/or good growth to disease (WSSV) evaluated Reproductive performance of crabs subjected to selection evaluated Genetic changes and inbreeding in succeeding generations of selectively-bred stocks determined and minimized, respectively	SEAFDEC-Tigbauan	Target beneficiaries are the hatchery and pond operators. Researchers/scientists can also benefit from the results as basis for further studies.	1-Jul-15	30-Jun-18	ONGOING	9,052,102.00	1,409,843.00
Prog. C: Improvement of feeds and management practices for mud crab grow-out culture:	Project 5. Pilot-scale Production of Pellets Suitable for Mud Crab	Rapid, inclusive and sustained economic growth	Find suitable attractants for mud crab and their appropriate dosages; develop efficient methods of mass producing and storing suitable prototype diets for mud crab; and collaborate with a feed company for commercial production of mud crab diets	Diets with suitable physical characteristics (size, shape, hardness, flexibility) for different size groups of mud crabs; Attractants that can enhance detection and consumption of mud crab diets; Efficient methods and techniques for commercial production of suitable mud crab diets; Production of commercial diets for mud crabs.	SEAFDEC, UPV	Feed millers and mud crab farmers	1-Jul-13	30-Sep-16	ONGOING	8,269,954.00	210,507.00
Program C. Improvement of feeds and stock management practices for mud crab grow-out culture	Project 6. Improvement in the handling, storage and transport of mud crabs	Rapid, inclusive and sustained economic growth	The project will assess the current supply chain operating procedures in the major trading centers in the country and adopt methods to minimize the development of crab defects like muscle emaciation, weight loss, ammoniacal odor and other undesirable state of the crabs that can lower the market value.	Mud crab handling, storage and transport conditions in trading centers/consignacion in various areas in the country documented and appropriate handling and transport methods recommended; Methods for the detection and prevention of muscle emaciation or 'hagas' including the time until significant weight loss occurs identified; Causes and methods to prevent ammoniacal odor and change in flavor developed; Prototype boxes for bulk handling and retail developed; and Code of practice for the handling, storage and transport of crabs prepared	UPV	Target beneficiaries are the Mud crab farmers, traders, and exporters. Researchers/scientists can also benefit from the results as basis for further studies.	1-Jul-15	30-Jun-17	ONGOING	2,770,412.00	617,853.00
	Multi-location Trials of Oligo-carrageenan for Improved Productivity of Mungbean and Peanut in Regions II, III, VII, and X	Rapid, inclusive and sustained economic growth	In general, the project aims to increase crop yield, reduce damages due to insect pests and diseases, and sustain the availability of quality seeds of mungbean and peanut in major growing areas in Regions 2,3,7 and 10 through foliar application of oligo-carrageenan as plant bio-stimulant. Specifically, the project aims to: 1. To determine the effects of oligo-carrageenan on insect pest infestation (pod borer and cutworm) and disease infection (Cercospora leaf spot and rust) on mungbean and peanut; 2. To determine the effects of inoculant; fertilizer and oligocarrageenan on the production time or cropping cycle of mungbean and peanut 3. To evaluate the stability and efficacy of oligo-carrageenan on mungbean and peanut as plant bio-stimulant after storage (3 months to 1 year) under ambiaent room conditions; 4. To promote the use and application of oligo-carrageenan as plant bio-stimulant for mungbean and peanut and a new Package of Technology (POT) for farmers' adoption in Regions 2,3,7 and 10; and 5. To register the carrageenan as plant bio-stimulant for mungbean and peanut with FPA.	1. New POT on the use and application of carrageenan as plant biostimulant in Regions II, III, VII and X for mungbean and peanut to increase seed yield by 25-30%, and shorten the production period by 7-14 days; 2. Reduced insect pest and disease damages by at least 25% and improved crop protection systems for management of insect pests (pod borer and cutworm) and diseases (Cercospora leaf spot and rust); 3. Technical Bulletins (i.e., cultural and management practices on 3 mungbean and peanut production incorporating foliar application of carrageenan --- rates and modes of application); 4. Articles published in scientific journals; 5. Cost-Benefit Analyses on the use of Oligo-carrageenan on mungbean and peanut as Plant Bio-stimulant; and 6. Carrageenan product registration as plant bio-stimulant for mungbean and peanut.	PNRI, PSAU, DA II, DA III, DA VII, DA X	1. Rice and corn farmers (legumes as sequential crops) 2. Mungbean and peanut growers 3. Seed producers 4. Researchers and scientists	16-Nov-16	15-Nov-18	NEW	4,995,497.00	805,325.00
	Establishment of S&T Model Farm on Free Range Darag Native Chicken in Dumarao, Capiz	Rapid, inclusive and sustained economic growth	General: To develop and showcase the package of technologies on free range Native chicken production. Specifically, the project aims: 1. To promote wider adoption of the full application of package of technologies to attain technology convergence of free range native chickens for the existing poultry raisers in the Province of Capiz; 2 2. To achieve increase farm production and profitability of free range native chicken-raisers respectively through the full adoption of POT on free range Native Chicken production; 3. To strengthen linkages/partnerships with farmer cooperators (from production to marketing); 4. To develop and produce IEC materials and video presentation of STMF on free range Native Chicken production POT. 5. To train poultry raisers in the 33 barangays of Dumarao, Capiz.	1. Established STMF on free range Native chicken production; 2. Information on the productive and reproductive performance of free range Chicken. 3. Adopted the full POT and attained technology convergence; 4. Obtained increase farm production and profitability of free range Native chicken-raisers respectively in the STMF; 5. Established linkages of the farmer cooperators developed and expanded (from production to marketing); 6. Granted Organic and Good Animal Husbandry Practices Certification; 7. Developed, produced and distributed IEC materials including video production on STMF modality. 8. Trainings of poultry raisers in the 33 barangays of Dumarao, Capiz.	CapSu	Poultry Raisers	1-Mar-16	28-Feb-18	NEW	3,765,472.00	1,882,736.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
	Piloting a Profitable and Sustainable Commercial Scale Zampen Native Chicken Breeding Operation	Rapid, inclusive and sustained economic growth	The proposed project aims to evaluate the economic potentials and sustainability of commercial scale production of breeder Zampen native chickens. Specificifically, the project aims to: validate the breeding efficiency and production performance of breeder quality Zampen native chickens in larger scale at SRPPF and JHCSC. establish and evaluate the economic viability of Zampen native chicken in commercial scale operations. enhance the capability of native chicken farmercooperators, SRPPF employees and inmates and JHCSC animal science faculty in establishing a sustainable native chicken production units.	30,000 quality day-old Zampen native chicks 3,000 quality breeder Zampen native chickens 30 soon-to-be released inmates trained in sciencebased native chicken breeding and selection	WMSU	The project beneficiaries are: SRPPF soon to be released prisoners Student, staff and researchers of WMSU Student, staff and researchers of JHCSC Native chicken raisers in Zamboanga peninsula	1-Oct-16	30-Sep-18	NEW	4,499,811.88	1,499,911.72
Exploration, Mapping, and Assessment of Deep Water Areas	Project 4. Exploration of the Benham Bank Seamount (BBS)	Integrity of the environment and climate change adaptation and mitigation	The project will try to investigate the role of mesoscale cyclonic eddies in mixing and entraining nutrients from below the nutricline found just west of the Benham Bank, in order to provide a better understanding on the role of mesoscale eddies in the productivity of the western part of the Philippine Sea.	1. Cruise Report, which includes physical, chemical and optics data; and, 2. Publication containing collection of information on the flora and fauna on the summit of the Benham Bank Seamount, e.g., still images/ descriptions of bottom environments/ habitats, circulation patterns/ocean currents and topography.	UPLB	Scientific/ marine science/ academic community; national line agencies – DA-BFAR and DENR-BMB; fishing community	1-Jun-16	31-Oct-16	NEW	2,722,203.00	2,722,203.00
ENHANCING THE PRODUCTIVITY AND MARKETABILITY OF QUEEN PINEAPPLE	Program Management and Coordination (PMC)	Poverty reduction and empowerment of the poor and vulnerable	To coordinate the conduct of M&E actvities such as mid-year and annual program reviews, field visits; financial report and serves as repository of documents about the program		Camarines Norte State College		1-Apr-16	31-Mar-19	NEW	2,575,996.00	815,332.00
ENHANCING THE PRODUCTIVITY AND MARKETABILITY OF QUEEN PINEAPPLE	Project 1. Comparative Field Performance of Tissue Culture Derived Plantlets and Suckers of Queen Pineapple	Poverty reduction and empowerment of the poor and vulnerable	General: To improve the productivity and quality of Queen pineapple under coconut intercropping scheme. Specific: 1. To optimize a micropropagation technique via direct multiple shoot induction 2. for Queen pineapple. 3. To evaluate two somatic embryogenesis protocol for queen pineapple. 4. To assess somaclonal variation in important traits of queen pineapple. 5. To evaluate the field performance of tissue culture-derived planting 6. materials in comparison with suckers under coconut intercropping scheme in 7. Leyte and Camarines Norte conditions	Optimized micro-propagation technique for Queen pineapple via direct multiple shoot induction Efficient somatic embryogenesis protocol for Queen pineaaple identified/developed Adaptive, productive and high yielding Queen pineapple populations suitable for coconut intercropping	Visayas State University (formerly VISCA & Leyte State University)	1. Pineapple growers in 2. Pineapple traders (local and export) 3. Pineapple processors 4. Research institutions 5. LGUs/SUCs	1-Apr-16	31-Mar-19	NEW	3,944,511.00	2,120,873.00
ENHANCING THE PRODUCTIVITY AND MARKETABILITY OF QUEEN PINEAPPLE	Project 2. Assessment and Variability in Growth, Yield and Biochemical Characteristics of Queen Pineapple (Ananas comosus var. comosus) Populations in Camarines Norte and Leyte	Poverty reduction and empowerment of the poor and vulnerable	General: To characterize existing Queen pineapple populations and do selection among individuals within populations where considerable variability exists Specific: 1. To identify important characteristics of Queen pineapple that are related to yield, fruit quality, market acceptability and processing potential 2. To determine the range of phenotypic variability and possible correlations among important growth, yield and biochemical characteristics of 'Queen' pineapple populations in Camarines Norte and Leyte 3. To select good plants that can be used as (a) sources of planting materials to develop an improved population in terms of yield, market acceptability and suitability to processing and (b) parents for genetic improvement 4. To establish two reproduction/conservation sites for selected 'Queen' pineapple plants in Camarines Norte State College (CNSC) and Visayas State University (VSU) 4 5. To determine the effect of fruit maturity and growing conditions on the biochemical characteristics of 'Queen' pineapple 6. To identify possible processed products that may be developed based on biochemical characteristics of 'Queen' pineapple	1. Established ranges of values of important growth and yield parameters of 'Queen' pineapple in Camarines Norte and Leyte 2. 'Queen' pineapple plants with fruit size of at least 15 centimeters long and 10 centimeters diameter, fruit weight between 0.8 to 1.2 kg and with normal fruit shape identified 3. Plants with the highest fiber yield identified and leaf characteristics associated with high fiber yield determined 4. Growing conditions (soil moisture, fertilized, grown in open field or under coconut) affecting yield (fiber and fruit) and market acceptability determined 5. Baseline information on the physico-chemical, biochemical and sensory qualities of 'Queen' pineapple fruit planted in Camarines Norte and Leyte. 6. Established relationship between coconut fruit maturity and its biochemical characteristics. 7. Established relationship between the varying degrees of light exposure condition of the pineapple plant and the biochemical characteristics of its fruit. 8. Two reproduction/conservation sites (one in Camarines Norte and one in Leyte) for selected 'Queen' pineapple plants established.	VSU, CNSC	1. Commercial 'Queen' pineapple growers/farmers in Camarines Norte and Leyte 2. Research and Educational institutions (CNSC and VSU) 3. Pineapple fiber industry stakeholders 4. Pineapple breeders 5. Coconut- and 'Queen' pineapple-based product processors and consumers 6. LGUs	1-Apr-16	31-Mar-18	NEW	4,148,335.00	3,824,652.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
ENHANCING THE PRODUCTIVITY AND MARKETABILITY OF QUEEN PINEAPPLE	Project 3. Optimization of Planting Density Regulation for Queen Pineapple in Intercropped System	Poverty reduction and empowerment of the poor and vulnerable	General: To determine the optimum plant population of queen pineapple under intercropped systems in Regions 5 and 8. Specific: Component 1: 1. Determine optimum plant population of Queen pineapple under pili-based cropping system 2. Assess performance and effect of fertilizer management on the yield of pili. Components 1 and 2: 3. Determine optimum plant population of Queen pineapple on open upland area, coconutbased at 10m x 10m density and coconut-based with irregular spacing. 4. Verify the response of queen pineapple planted under coconut-based cropping system with different planting densities in terms of a) Agronomic performance; b) Fruit yield quality; c) Leaf harvest and d); Economic performance. 5. Assess performance and effect of fertilizer management on the yield of coconut.	A technology recommendation or protocol on the optimum population density of queen pineapple under different intercropping systems in Region 5 and Region 8	DA Regional Field Unit V, VSU	Queen pineapple farmers, Agricultural technicians, LGU's, Farmers associations and cooperatives and other institutions involved in queen pineapple, coconut or pili production or industry.	1-Apr-16	31-Mar-19	NEW	7,371,852.00	2,989,795.00
ENHANCING THE PRODUCTIVITY AND MARKETABILITY OF QUEEN PINEAPPLE	Project 4. Development of Site-specific Integrated Pest Management of Queen Pineapple under different cropping schemes in Region 8 and Region 5	Poverty reduction and empowerment of the poor and vulnerable	General: To develop a site specific sustainable pest management strategy of Queen pineapple under different cropping systems in Leyte and Camarines Norte Specific: 1. To survey, assess and identify the major arthropod pests and diseases of queen pineapple planted under different cropping schemes in selected localities in Leyte and Camarines Norte; 2. To monitor the abundance and dynamics of the major pests and prevalence of disease; 3. To conduct biological studies of major insect pests collected and isolation and characterization of diseases that will be observed 4. To identify and assess potential naturally occurring biocontrol agents that can be utilized to develop control/ and management strategies of major pests of queen pineapple under different cropping schemes selected project sites; and 5. To produce IEC materials for pests and diseases associated with pineapple as field guide for their sustainable management	1. Identification of major pests and diseases of queen pineapple under different cropping schemes 2. Identify potential naturally occurring biocon agents against major pests and diseases of pineapple under different cropping schemes 3. Establish the population dynamics of major insect pests of pineapple 4. Data base on diseases severity, incidence and prevalence of pineapple in order to develop effective management strategies 5. IEC materials for pests and diseases associated with pineapple as field guide for identification, diagnosis and surveillance and their sustainable management. 1. List and documentations of indigenous, conventional and traditional pests and diseases control strategies; 2. Identification of potential biological control agents and antagonists to be used in the development of effective pest control strategies; 3. Effective mass production techniques for insect arthropod biocon agents and antagonists; 4. Field delivery techniques/system of potential biocon agents, including entomopathogens and antagonists; and 5. Site-specific sustainable strategy/package for pineapple planted under various cropping schemes in Leyte and Camarines Norte	Visayas State University (formerly VISCA & Leyte State University)	Local farmers and stakeholders, academe, researchers, policymakers; development planners of the pineapple industry	1-Apr-16	31-Mar-19	NEW	3,672,708.00	1,984,201.00
ENHANCING THE PRODUCTIVITY AND MARKETABILITY OF QUEEN PINEAPPLE	Project 5. Development of Various Products from Queen Pineapple Wastes	Poverty reduction and empowerment of the poor and vulnerable	The project aims to: 1. Gather information on production and postharvest practices on Queen Pineapple in Camarines Norte 2. Assess the production and postharvest losses on Queen pineapple 3. Promote appropriate production and postharvest technology for Queen Pineapple.	1. Compact, convenient and low-cost feedstock coal that is all-natural and environment friendly with high quality burning efficiency and longer length of consumption 2. Economically feasible feed supplement for best health and performance of native chicken 3. Perfect blend of multi-use marinade mix which is safe for quick and easy way of perking up and tenderizing meat for savory dishes minus preservatives and coloring 4. Cost and return analysis of the developed products 5. Reduction of postharvest wastes up to 80% thru value-adding	Camarines Norte State College	Farmers, LGUs, Biofuel Manufacturer, QP growers, entrepreneurs, students, extension workers, researchers	1-Apr-16	31-Mar-18	NEW	10,228,016.00	2,910,607.00
ENHANCING THE PRODUCTIVITY AND MARKETABILITY OF QUEEN PINEAPPLE	Project 6. Evaluation of Queen Pineapple Grade Standards and Assessment of Implementation and Compliance in Camarines Norte as Basis for Policy Reforms and Formulations	Transparent, accountable, and participatory governance	General: The project will evaluate the Queen pineapple (QP) grade standards and assess the implementation of and compliance in Camarines Norte as basis for policy reforms and formulations. Specific: 1. Determine the QP grade standards implementation in terms of technical assistance, capability building, monitoring and supervision, policy support and organization of farm groups and compliance; 2. Identify the factors affecting the QP grade standards implementation and compliance; 3. Determine the farmer's advantages and disadvantages of utilizing the ladder type pricing (with grading system) vis-à-vis the straight pricing scheme through cost and return analysis. 4. Identify marketability index for QP as benchmark of the pineapple farmers 5. Evaluate the QP grade standards, propose policy-reforms and formulate policies on QP grade standards and trading; and 6. Validate the level of acceptability of the provisional policies in pineapple grading and trading.	1. Database on implementation of and compliance on Queen Pineapple (QP) Grade Standards in Camarines Norte. 2. Cost and Return Analysis in utilizing QP Grading System 3. Marketability index for QP 4. Proposed policy interventions on pineapple grading and trading	Camarines Norte State College	Queen Pineapple Farmers, LGUs, QP Program implementers	1-Apr-16	31-Mar-18	NEW	7,439,527.00	908,612.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
Program A. Development of Broodstock and Hatchery Technologies for the Tropical Oyster Crassosrea inedalei (Faustino, 1932) in the Philippines	Project 1. Broodstock Management and Conditioning for the Oyster Crassostrea iredalei	Rapid, inclusive and sustained economic growth	To establish management techniques for Crassostrea iredalei broodstock that can produce larvae of high viability and high meat quality	1. Best conditioning site/method for broodstock management 2. Optimum environmental conditions and best diet for broodstock 3. Improved egg production to > 1.5M eggs per spawning per pait	SEAFDEC	LGU, NGO and aquaculturists interested to culture mollusc Academic institutions benefit from data collection and publications from this study	1-Apr-14	31-Mar-17	ONGOING	3,693,458.00	1,014,810.80
Program A. Development of Broodstock and Hatchery Technologies for the Tropical Oyster Crassosrea inedalei (Faustino, 1932) in the Philippines	Project 2. Refinement of the Larval, Post-Larval and Nursery Rearing Techniques for Crassostrea iredalei to Produce Quality Seeds	Rapid, inclusive and sustained economic growth	To verify and refine the oyster hatchery technologies of other Southeast Asian countries in Philippines setting to produce a stable, sufficient, and good quality seed stocks of C. iredalei	1. Most efficient spawning technique 2. Suitable microalgal diet and optimum stocking density 3. Suitable settlement inducers and substrates	SEAFDEC	LGU, NGO and State Universities hatcheries Oysters growers Academic institution from data/publication generated from studies and observations	1-Apr-14	31-Mar-17	ONGOING	5,625,038.00	1,500,195.97
Program A. Development of Broodstock and Hatchery Technologies for the Tropical Oyster Crassosrea inedalei (Faustino, 1932) in the Philippines	Project 3. Genetic Characterization and Selective Breeeding of Slipper-Shaped Oyster, Crassostrea iredalei	Rapid, inclusive and sustained economic growth	The project will characterize the genetic structure of these populations at different localities nationwide and generate specific molecular markers for selective breeding	1. Optimization of DNA extraction protocol 2. Genomic DNA extraction (mantle, gills and gonads) 3. Purity estimation through spectrophotometry 4. PCR protocol optimization for gene-nuclear DNA and microsatellite markers	UPV	Bivalve researchers, aquaculture sector	1-Apr-14	31-Mar-17	ONGOING	4,059,834.00	1,095,558.56
Program B. Increasing Production and Improving Quality of Oyster Produced in the Philippines	Project 1. Establishment of Sanitary Quality of Oysters and their Culture Environment	Rapid, inclusive and sustained economic growth	This project generally aims to establish the sanitary quality of oysters and their culture environments Specifically, this study aims to 1) quantify the bacterial densities especially coliform, Escherichia coli, and pathogenic vibio spp. in oysters (flesh) and their culture environments (water and sediments); 2) identify the taxonomic position (genus/ species level) of isolated bacteria; 3) quanlly the levels of heavy metals (Zn, Pb, Cd, Cu, and Cr) and pesticide residues (organochlorines)in oysters' flesh; 4) examine the physicochemical state of the oysters' culture environments (water and sediments); 5). Classify sanitary quality of all culture sites examined in accordance with EU shellfish harvesting area classification criteria;" and 6)establish effective and practical depuration procedures in conjunction with the clearance rates of pathogenic bacteria, heavy metals and pesticide residues from oysters' tissues	1. Sanitary quality of oysters and their culture 2. Bacterial load in rearing water & oyster's meat 3. Quantity of heavy metals in oyster's meat 4. Oyster culture sites examined categorized based on EU standards	SEAFDEC	Aquaculture industry and stakeholders - increased production after refining existing culture techniques will benefit oyster famers and help the country's aquaculture industry Government agencies and NGOs - refined culture techniques may be promoted by government agencies and NGOs to stakeholders seeking budget for growout culture of oyste	1-Apr-14	31-Mar-17	ONGOING	6,048,533.00	1,711,046.49
Program B. Increasing Production and Improving Quality of Oyster Produced in the Philippines	Project 2. Refinement of Existing Oyster Grow-out Techniques	Rapid, inclusive and sustained economic growth	This project aims to increase slipper oyster production through refinement of grow-out culture technologies Specifically, this study will: 1) determine the most efficient culture system for slipper oyster 2) determine the most suitable site for growing oyster 3) compare growth and survival of wild and hatchery-produced spats (will be obtained from the hatchery under another Program) reared in the natural environment	1. Most efficient culture system established 2. Site requirements for oyster farming established 3. Growth and survival of wild and hatchery produced spats 4. Best practices for oyster farming established	SEAFDEC	Oyster farmers, fisherfolks, fisherfolk organizations, coastal communities, processors, traders and LGUs.	1-Apr-14	31-Mar-17	ONGOING	4,014,098.00	1,161,817.24
Program B. Increasing Production and Improving Quality of Oyster Produced in the Philippines	Project 3. Grow-out Culture of Slipper Shaped Oyster Using the Raft Long-line Method	Rapid, inclusive and sustained economic growth	Determine the effectiveness of raft and longline method and different spat collectors forgrowing of oysters; Determine the density of spat settlement on oyster shells as collection materials at spawning seasons; Determine the effectiveness of raft and longline method as grow-out culture technique; growing transplanted oyster spats from oyster shells as collection materials; Conduct cost-benefit analysis for raft and longline method of oyster farming using shells as collection materials at different study sites; and Develop an effective protocol in transporting and transplanting oyster broodstocks and spats to grow-out culture.	1. Effectiveness of raft and long line method protocol 2. Most efficient substrate materials for spat collection	SSU	Aquaculture industry and stakeholders - identification of suitable sites and classification of all oyster grow-out culture sites, and establishment of depuration procedures thereby producing oysters safe for human consumption will not only benefit oyster famers but importantly help the country's aquaculture industry Government agencies and NGOs - selection of suitable sites for growing oysters and effective post-harvest treatments may be promoted by government agencies and NGOs to stakeholders - generated data will serve as springboard in the formulation of updated sanitation standards and	1-Apr-14	31-Mar-17	ONGOING	3,394,747.00	907,908.52

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
Plant Bio-stimulants and Elicitors from Radiation-modified Polymers	Proj. 2. Elucidation of Growth Promotion mechanisms of Radiation-modified Carrageenan and Chitosan on Rice.	Rapid, inclusive and sustained economic growth	Elucidate the mechanism of growth promotion effects of radiation-modified-carrageenan and chitosan on rice.	Patent on the growth promotion of rice through application of radiation-modified carrageenan and chitosan; Improved crop management of rice by applying radiation-modified carrageenan and chitosan; and Technology on the use of radiation-modified carrageenan and chitosan on rice published in Journal or Technology Bulletin	PNRI	Farmers; Researchers/ Scientists	16-May-13	15-May-17	ONGOING	5,132,404.00	423,904.00
Plant Bio-stimulants and Elicitors from Radiation-modified Polymers	Proj. 3. Biological Efficacy Evaluation of Radiation-modified Kappa-Carrageenan and Chitosan as Inducers of Resistance Against Major Pests and Diseases in Rice	Rapid, inclusive and sustained economic growth	Evaluate the efficacy of radiation-modified kappa carrageenan and chitosan as inducers of resistance against pests and diseases in rice under greenhouse and field conditions.	a) Patentable product & process on the application of radiation-modified carrageenan b) Improved crop mgt practices on rice by using radiation-modified carrageenan c) Identified varieties with induced resistance against tungro d) Identified varieties with induced resitance against bacterial leafblight e) Identified varieties with induced resitance against leafhopper, brown planthopper, stemborer, cutworm, army worm	UPLB	Farmers; Researchers/ Scientists	16-May-13	15-May-17	ONGOING	4,721,057.00	595,544.00
Plant Bio-stimulants and Elicitors from Radiation-modified Polymers	Project Title: Proj. 1. Evaluation of the Effects of Radiation-modified Carageenan on the Growth and Yield of Mungbean (Vigna radiata (l.) R. Wilczek) and Peanut (Arachis hypogaea L.)	Rapid, inclusive and sustained economic growth	Evaluate the effects of radiation-modified carrageenan and chitosan on the growth and yield of mungbean and peanut.	Patentable plant growth promoter product/s; Improved agricultural management practices with a packaged technology using radiation-modified chitosan and carrageenan for growth promotion of mungbean and peanuts; and Cost benefit analyses data	PNRI	Farmers; Researchers/ Scientists	16-May-13	15-May-17	ONGOING	7,267,638.00	772,249.26
PROGRAM: SMART FARMING-BASED NUTRIENT AND WATER MANAGEMENT FOR RICE AND CORN PRODUCTION	Project 1. Application of Nuclear Analytical Techniques for Efficient Nutrient & Water Management in Rice Production	Integrity of the environment and climate change adaptation and mitigation	Increase uptake and reduce loss of soil nutrient and water resources in rice production systems as well as to identify smart-farming technologies with high soil nutrient- and water-use efficiency through nuclear analytical techniques.	Precise fertilizer recommendations and water management approaches for rice based on nuclear analytical techniques and other precision monitoring and control systems	DA, Philrice	Farmers extension agents, Researchers	1-Sep-12	31-Aug-16	ONGOING	7,901,188.00	2,337,635.58
	Development of Multiple Strains of Plant Growth Promoting Rhizobacteria-based Biofertilizer for Sustainable Lowland Rice Production	Rapid, inclusive and sustained economic growth	The project will utilize biochemical and molecular biology techniques for profiling the soil microbial community diversity and for selecting the most competent PGPR strains that may be combined with organic and inorganic fertilizers. To develop multiple strains of PGPR-based biofertilizer for sustainable rice production and soil fertility in line with integrated plant nutrition management strategies in lowland ecosystem,	1. Developed multi-strain biofertilizer for lowland rice in Central Luzon 2. Decreased fertilizer usage by 25-35% 3. Recommended method and rate of application of developed biofertilizer 4. Quantified economic benefits of using the multi-strain biofertilizer technology 5. Trained 15 farmers on the developed biofertilizer technology 6. 1 publishable technical paper	PhilRice	Irrigated lowland rice farmers; biofertilizer producers; researchers and student; government agencies and academic institutions	1-Oct-16	30-Jun-19	NEW	4,999,706.00	2,256,400.00
	Field Promotion of Radiation-modified Carrageenan Technology for Enhanced Growth and Induced Pests and Disease Resistance in Rice	Poverty reduction and empowerment of the poor and vulnerable	The project aimed to demonstrate/showcase evaluating the usefulness of radiation-modified kappa Carrageenan as gowth promoter and inducers of resistances against major pests and diseases in rice. Specifically, the project aims to demonstrate the effect of radiation-modified Carrageenan application ion terms of its : a. Efficacy as inducers of resistance against tungro in inbred rice; b. Efficacy of the product as inducers of resistance in hybrid rice against bacterial leaf blight (BLB); c. Efficacy of the product as inducers of resistance in rice insect pests such as green leaf hopper (GLH), brown plant hopper (BPH), rice stemborer, climate change pests (cutworm and armyworm) and its influence on the population density of beneficial arthropods. d. To conduct carrageenan multi-location demonstration trials at farmers' field in Laguna, Bulacan, Iloilo and Pagadian City for dry and wet cropping seasons. e. To facilitate product registration at the Fertilizer and Pesticide Authority (FPA) of carrageenan based on established best nutrient management practices for dry and wet cropping seasons in selected demo-farm trials in the Philippines. f. To conduct technology promotion/commercialization of carrageenan among selected areas in the Philippines.	a. Established demo-farms in identified sites b. Conducted five (5) farmers field days c. Carrageenan product registered as PGP with the PFA d. Scientific papers and technology bulletins	UPLB	Rice farmers, researchers, millers, traders, processors and other rice industry stakeholders.	1-Nov-15	31-Oct-16	ONGOING	1,000,000.00	1,000,000.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
	Field Verification Testing of Carrageenan Plant Food Supplement Technology for Enhanced Growth and Induced Pest and Disease Resistance in Rice in Regions 2 and 3	Poverty reduction and empowerment of the poor and vulnerable	a. Efficacy of the product as inducers of resistance against tungro in inbred rice under location-specific field conditions. 3 b. Efficacy of the product as inducers of resistance in hybrid rice against bacterial leaf blight (BLB); c. Efficacy of the product as inducers of resistance in rice insect pests such as green leaf hopper (GLH), brown plant hopper (BPH), rice stemborer, climate change pests (cutworm and armyworm) and its influence on the population density of beneficial arthropods. d. To conduct carrageenan multi-location demonstration trials at farmers' field in Cagayan, N. Vizcaya, Quirino, Isabela, Bulacan, and Nueva Ecija for two rice cropping seasons. e. To facilitate product registration at the Fertilizer and Pesticide Authority (FPA) of carrageenan based on established best nutrient management practices for dry and wet cropping seasons. f. To conduct technology promotion/commercialization of carrageenan.	a. Patentable plant growth promoter b. Suitable crop management practices for rice through application of radiation-modified carrageenan c. Patentable process on application of radiation-modified carrageenan d. Induced resistance against tungro, cutworm, and armyworm of selected rice varieties due to growth promoting potentials of radiation-modified carrageenan. e. Scientific papers and technology bulletins	UPLB, PNRI, DOST II, DOST III	Rice farmers, researchers, millers, traders, processors and other rice industry stakeholders.	1-Oct-16	31-Mar-18	NEW	1,918,602.40	898,173.60
	Improved Resource-use Efficient (IRUE) Rice Varieties for the Philippines	Poverty reduction and empowerment of the poor and vulnerable	The project aimed to achieve the development of improved resource use efficient (IRUE) rice varieties that will require less N P K fertilizers and irrigation water for resource-poor farmers. This requires screening of already developed RUE 220 introgression lines (ILs)in the background of newly released high yielding RUE weed-tolerant rice cultivar. The project will also identify the most suitable ILs and have them nominated into national trials in the Philippines. Specifically, the project aims to: a. Develop improved resource use efficient (IRUE) rice varieties b. Identify the genes/QTLs responsible for improved RUE. c. Understand the underlying molecular and physiological mechanism for RUE related traits. d. Conduct adaptive trials to validate and release the RUE materials in the target sites e. Develop crop management practices suitable for RUE released varieties. f. Disseminate the RUE rice varieties along with crop management practices To conduct technology promotion/commercialization of carrageenan among selected areas in the Philippines.	Most suitable ILs nominated into national trials for access by resource-poor farmers.	UPLB	Rice farmers, researchers, millers, traders, processors and other rice industry stakeholders.	16-Sep-16	15-Sep-19	NEW	15,674,496.00	6,500,000.00
	Increasing Farmers Access to High-Quality Rice Seeds Through Efficient Seed Production Systems	Poverty reduction and empowerment of the poor and vulnerable	Enhance the capabilities of SeedNet members from SUCs and DA, and accredited seed growers in sustaining a viable seed supply system; Enhance farmers' capability to produce and use high-quality seeds; Increase farmer's yield by at least 10%; Contribute in increasing rice production; and contribute in reducing rice importation.	Three (3) SUC-SeedNet members retooled; · 275 tons certified seeds (CS) produced; · 1% or 6,857 ha of target areas supplied with CS; · 2% increase in adoption of quality seeds; · 90 farmers trained to produce high quality seeds · 10% increase in farmers' yield from use of certified seeds · 1 training module on quality seed production developed · IEC materials (technical bulletin, flyers, video CDs) produced	Philrice	Accredited rice seed growers; SUC-SeedNet members; Rice farmers	1-Jul-12	31-Aug-16	ONGOING	33,756,345.00	2,455,091.63
	Multi-location Field Trials of Radiation-modified Carrageenan as Growth Promoter and Inducers of Resistance against Major Pests and Diseases of Rice	Poverty reduction and empowerment of the poor and vulnerable	The project aimed at evaluating the usefulness of radiation-modified kappa Carrageenan as organic plant growth promoters and play important role to induce resistance against major pests and diseases of rice. Understanding the underlying effects of why organic fertilization appears to improve plant health and induce resistance may lead us to new and better integrated pest management and integrated plant nutrition management designs.	a. Patentable plant growth promoter b. Improved crop management practices for rice through application of radiationmodified carrageenan and chitosan c. Patentable process on application of radiation-modified carrageenan (RMC). d. Induced resistance against tungro, cutworm, and armyworm of selected rice varieties due to growth promoting potentials of radiation-modified carrageenan. e. Scientific papers and technology bulletins	UPLB	Rice farmers, researchers, millers, traders, processors and other rice industry stakeholders.	1-Jun-15	31-May-17	ONGOING	4,994,000.00	975,332.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
	Pilot Testing of a Local Riding-Type Transplanter	Rapid, inclusive and sustained economic growth	General: To conduct pilot testing and assess the acceptability of the local riding-type rice transplanter performance in rice farmer"s fields. Specifically the project aims to: To assess the actual field performance of the local ridingtype rice transplanter allowing the farmers to operate the commercial prototype. Fine tune the commercial prototype based on the actual field performance, durability test results, and the preference of the farmers" in terms of operation. Determine the appropriate materials needed for reliable and quality unit. To determine technical viability (machine performance), economic viability (benefit-cost) and social acceptability (machine operation and cost) of the prototype; and To identify and accredit manufacturers for mass production.	A technically efficient, economically viable, and socially acceptable riding-type rice transplanter that is being manufactured by accredited manufacturers. Drafted IPR claims ready for submission to IPO Philippines prior to deployment to pilot areas Deployed at least 3 (three) prototype units in the pilot areas (Luzon, Visayas, Mindanao) Determined the readiness of cooperators to operate and maintain the transplanter Determined the technical performance and cost of operation of the technology Improved initial design of the developed technology Detailed engineering drawing of the different parts and components of the transplanter Trained at least 3 cooperators	PhilRice	Farmers/Seed Growers Seed Centers/Cooperatives Irrigators Association NGO"s Private Company (Local Manufacturers)	1-Nov-16	31-Oct-18	NEW	4,527,613.00	1,643,405.00
	Pilot Testing of Impeller-Type Compact Rice Mill in Selected Rice Growing Regions	Rapid, inclusive and sustained economic growth	General The project aims to evaluate the socio-economic and technical viability and acceptability of the pilot-commercial unit to prospect end-users. . Specific (1) To determine the specific operational and management requirements to safely and profitably utilize the developed rice mill technology; (2) To identify various socio-economic factors that enhance/hinder the utilization of the developed rice mill technology; and, (3) To determine the economic implications in the use and adoption of the technology.	Drafted IPR claims ready for submission to IPO 3 Philippines prior to deployment to pilot areas Deployed at least 6 (six) prototype units in the pilot areas (Luzon, Visayas, Mindanao) Determined the readiness of cooperators to operate and maintain the rice mill Gathered socio-economic data in the field Determined the technical performance and cost of milling of the technology Established the physical characteristics of the output of the rice mill Improved initial design of the developed technology 54 sheets of detailed engineering drawing of the different parts and components of the rice mill Established possible market price of the developed technology Developed and updated user"s manual of operations Trained at least 6 cooperators	PhilMech	Farmers /Farmers-cooperatives – for the processing of their household requirements; Custom rice mill operators – given an alternative type of rice mill with less operating and maintenance costs; and Local manufacturers	1-Jan-16	30-Jun-17	NEW	3,667,983.00	2,713,772.00
	Piloting of the Hand Tractor-Attached Transplanter and the Hand Tractor-Attached Harvester in Selected Rice Growing Regions	Rapid, inclusive and sustained economic growth	The project will field test the developed rice transplanting and harvesting implements that can be readily mounted and dismounted from the hand tractor unit. This project will also promote these prototypes in regions 2, 3, and 4. During the piloting stage, the prototypes would be subjected to different field conditions and modified accordingly. Technical, economic and social data generated from this activity will be gathered and evaluated.	Hand Tractor-attached Translanter and the Hand Tractor-attached Harvester in Selected Rice Growing Regions	MIRDC, PhilMech	Farmers, rice field owners and planters, agri-cooperatives and local fabricator shops.	1-Feb-15	31-Jul-16	ONGOING	4,962,558.00	1,108,583.00
Functional Genomics Assisted Development of Gene Markers for Economically Important Traits in Cacao and Rubber Production Varietal Improvement	Project 2 . Genomics Assisted Development of Gene Marker for Important Traits in Rubber Production and Clone Improvement	Rapid, inclusive and sustained economic growth	The project aims to establish genetic data rubber and develop gene marker/ expressed sequence tag (EST) database for rubber. This is fastrack development of high-yielding variety of clones compared to the development of new varieties of rubber through the long-gestating traditional breeding technique.	Established genetic data for rubber; Developed gene marker/ expressed sequence tag (EST) database for rubber	USM	• About 305 rubber-farmer cooperators • Other potential beneficiaries include farmers involve in rubber production in other areas/regions/provinces	16-Feb-15	15-Feb-18	ONGOING	12,918,708.00	2,378,370.00
Nationwide Clonal Adaptation Trial and Innovation of Propagation Techniques of Newly Introduced High-Yielding and Promising Rubber Clones	Project 1. Technology Adaptation and Perfomance Trial of Recommended Rubber and Other Promising Rubber Clones in the Philippines	Poverty reduction and empowerment of the poor and vulnerable	The general objective is to enhance production of rubber through adoption of suitable rubber clones in the Philippines. Specific Objectives: To determine the performance of different rubber clones under different locations; to showcase rubber production technology for the adoption of rubber stakeholders in the Philippines; to know and determine the profitability and other potentials of planting rubber in non-traditional rubber growing areas; to evaluate the yield and growth including its resistance to major pests and diseases performance of different rubber; and to identify problems and constraints (if any) and provide recommendations for rubber production in six (6) project locations.	1. Conducted adaptability trial of high yielding clones for specific locations across the country; 2. Recommended high yielding clones suitable for various environmental conditions of the country;	USM, WPU, ISU, SLSU, CMU, DA	Farmers, farmer leaders, rubber stakeholders, nursery operators, researchers, students, policy makers, and the whole rubber industry in the Philippines.	1-Mar-15	28-Feb-18	ONGOING	20,525,431	5,298,710.57
Nationwide Clonal Adaptation Trial and Innovation of Propagation Techniques of Newly Introduced High-Yielding and Promising Rubber Clones	Project 2. Innovation of Root Trainer Technique and Precision Grafting Technology for Rapid Propagation of Quality Planting Materials of Rubber	Poverty reduction and empowerment of the poor and vulnerable	The general objective of this research is to develop and/or evaluate the applicability of new and innovative techniques in the production of quality and low cost planting materials of rubber. Specific Objectives are:To evaluate under Mindanao condition the growth and graftability of rubber seedling grown in root trainer containers; to determine the possible modification of the root trainer, if needed for local condition; to identify conditions/factors for inducing the budstick to activate and produce shoots appropriate for grafting;to develop techniques in a well-defined condition that would allow high grafting success of rootstocks of various stages of seedling development from one to six months or older; and to identify techniques/conditions of incubation of the newly grafted plants for high grafting success.	3. Developed protocol for precision grafting technology and rapid propagation in rubber through innovative techniques – tissue culture, somatic embryogenesis and in-vivo; 4. Innovated root trainer technique in producing rubber plants for wind fastness, and adverse climatic conditions;	USM, DA	Farmers, farmer leaders, rubber stakeholders, nursery operators, researchers, students, policy makers, and the whole rubber industry in the Philippines.	1-Mar-15	28-Feb-17	ONGOING	6,667,868	2,799,266.26

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
Nationwide Clonal Adaptation Trial and Innovation of Propagation Techniques of Newly Introduced High-Yielding and Promising Rubber Clones	Project 3. Development of Efficient Techniques on Tissue Culture, Somatic Embryogenesis and In-Vivo for Rapid Propagation in Rubber	Poverty reduction and empowerment of the poor and vulnerable	The use of rubber plants derived from somatic embryogenesis and other tissue culture techniques offer good promise because plants developed from this method will eliminate the problem of stock and scion incompatibility. Budding, which is the most tedious work in the nursery, will also be eliminated and the supply of rubber seedlings could be programmed if not available at all times. Specific Objectives: To develop an efficient tissue culture for rapid propagation in rubber through micro cutting, somatic embryogenesis and in vivo; to test the performance of tissue cultured rubber in terms of root development and anchorage, resistance to lodging, growth and branching habit and yield potential; to identify high yielding rubber that could be propagated by tissue culture without changing the genetic potential and field performance of such clones; and to produce appropriate publication materials for dissemination to concerned industry stakeholders.	Developed techniques on mini-seedling budding, hypocotyl grafting, and early green, grafting of rubber; Trained propagators in using these innovative techniques for commercial innovative techniques for commercial production of rubber QPM	WMSU, USM, DA	Farmers, farmer leaders, rubber stakeholders, nursery operators, researchers, students, policy makers, and the whole rubber industry in the Philippines.	1-Mar-15	28-Feb-18	ONGOING	7,514,797.00	1,649,584.00
	Establishment of Rubber Nursery, Budwood Garden and Demonstration Farm in Cavinti, Laguna: An STCBF Approach	Rapid, inclusive and sustained economic growth	General Objective: The project aims to increase the productivity of rubber farms owned by farmer-members of the Southern Tagalog Rubber Producers' Cooperative (STRPC) in Cavinti, Laguna and the independent rubber farmers in the neighboring municipalities of the area within the provinces of CALABARZON (especially Laguna, Rizal, and Quezon) by promoting Science and Technology interventions through the Science and Technology Community-Based Farms Approach . Specific Objectives: 1. To establish one (1) hectare nursery from seeds of existing rubber stand for seedling production to serve as root stocks; 2. To establish one (1) hectare budwood garden to ensure the availability and promote the use of superior and high yielding rubber clones (PB 217, PB 235, PB 260, PB 211, PB 330, RRIM 600 and USM 1) in the region; 3. To establish one (1) hectare of pure rubber plantation for demonstration, training ground and showcasing the NSICrecommended HYRC's; and 4. To empower local members of STRPC, LGUs and other stakeholders in promoting the recommended technologies by providing them training and source of livelihood.	a. Established one accredited rubber nursery (1ha) and budwood garden (1ha) as an IncomeGenerating Program under the management of STRPC; b. Organized five clusters (one in every province of CALABARZON) of rubber farmers who are interested to pursue rubber clonal plantation and processing; c. Established and maintained linkages with various rubber stakeholders, namely: BatSU, CavSU, URS, SLSU, LGU Laguna, DOST-IVA, DENR-IVA, DTI-IVA, PCAARRD; d. Developed, translated and/or distributed 200 copies of IEC materials on rubber nursery and f. Capacitated 50 nursery operators, rubber farmers and LGU technicians on various skills related to nursery and budwood garden management and establishment; g. Established one (1) hectare demonstration farms for rubber plantation in Cavinti, Laguna; h. Promoted various rubber nursery, budwood garden and plantation technologies through Technology Field Day and cross visits to established farms; i. Developed, translated and/or distributed 200 budwood garden establishment; and e. Collaborated with stakeholders regarding the expansion of rubber plantations, establishing a shared service facility much later for rubber processing, and developing other support mechanisms for the rubber industry in CALABARZON.	UPLB	1. Southern Tagalog Rubber Producers' Cooperative (STRPC) members; 2. Residents of communities within Laguna and neighboring provinces o CALABARZON; 3. DTI, DENR, and the LGUs of Laguna and Cavinti; 4. Private institutions and individuals who will venture on rubber production and marketing;	1-Sep-16	30-Aug-17	NEW	5,000,000.00	3,076,108.68
	Etiology and Management Strategies for Tapping Panel Dryness and Stem Bleeding of Rubber	Rapid, inclusive and sustained economic growth	This project aims to investigate the etiology of tapping panel dryness and stem breeding conditions in rubber. It seeks to establish the causes of these two conditions as it relates to nutrition, weather patterns and genetics (types of clones deployed in the field). The project in the end shall formulate amangement reommendations to avoid tapping panel dryness and stem bleeding in plantation.	1. Generation of knowledge on the cause of TPD and stem bleeding development of rubber. 2. A comprehensive documentation on the practices of local farmers in managing the TPD and stem bleeding syndrome. 3. Establishment of comprehensive strategies to manage TPD and stem bleeding of rubber. 4. Better collaboration among private rubber growers and concerned government agencies on developing strategies against TPD and stem bleeding of rubber.	JRMSU - Tampilisan	This study may benefit the farmers by letting them understand and avoid the factors concomitant to the development of TPD and stem bleeding diseases. Furthermore, the results of this study will boost the theoretical knowledge of students on disease management of rubber. In addition, concerned government offices, such as DA, and other research institutions will be provided with correct information to enable them to devise scheme to manage TPD and stem bleeding diseases of rubber	1-Jul-16	31-Dec-18	NEW	4,845,400.00	2,132,800.00
	GIS-based Inventory and Sustainability Assessment of Rubber and Cacao in Major Production Areas of the Philippines (Old Title: GIS-Based Inventory and Sustainability Assessment of Philippine Rubber and Cacao in Selected parts of the Philippines)	Rapid, inclusive and sustained economic growth	The project focuses on the development of GIS-based data management framework for Philippine plantations of rubber and cacao. Specific objectives: a) Generate a nationwide geo-information on the production areas for rubber and cacao through GIS-based inventory; b) develop a national database on the locations of major plantations and production areas of rubber and cacao in the Philippines; and c) Identify potential expansion areas for rubber and cacao.	1. Created a national geo-information and database on rubber and cacao 2. Developed a field methodology framework to monitor plantations using practical and simple tools. 3. Maps of site suitability location options for plantation expansion; 4. Produced at least 2 publications in a refereed journal.	UPLB	Rubber and cacao industries - policy makers; farmers; LGU (regional to national) rubber resource planners; plantation owners of rubber and cacao.	1-Apr-15	30-Mar-17	ONGOING	4,986,627.00	1,610,574.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
	Nanosensor for Rubber Quality Assessment	Rapid, inclusive and sustained economic growth	General The general objective of the project is to develop a method which can potentially discriminate a cuplump formed by using formic acid or acetic acid as opposed to a cuplump formed using a battery solution. It is expected that through the development of such analytical method, the quality of Philippine-produced rubber will improve. Specific 1. Identify and characterize chemical and physical differences existing among cuplumps formed by using formic acid, acetic acid, and sulfuric acid. 2. Fabricate carbon nanotubes-based portable nanosensors and explore their potential ability in identifying a cuplump formed by using formic acid, acetic acid, sulfuric acid based on electrochemical sensing. 3. Conduct field tests in order to assess the usefulness of the fabricated nanosensors as a tool to help ordinance enforcement and on-site rubber quality assessment. 4. Produce twenty (20) units of the nanosensors.	Physical and chemical differences existing among cuplumps coagulated using formic acid, acetic acid, and sulfuric acid will be determined. Carbon nanotubes-based portable nanosensors will be developed and will be tested as a potential tool in cuplump discrimination. Fabrication of twenty (20) nanosensor units.	DLSU	The development of the proposed nanosensors is expected to help law enforcement personnel in properly implementing ordinances that prohibit the use of sulfuric acid in cuplump preparation. Moreover, Local and foreign rubber traders can properly appraise the quality of cuplumps through the nanosensors. Thus, the price of the cuplumps will be properly determined based on the cuplump quality.	1-Jun-16	28-Feb-17	NEW	1,844,139.79	1,844,139.79
	Policy Analysis and Advocacy on the Use of the Various Latex Coagulants and Nano-Sensor for Imprved Quality of Raw Rubber Products	Transparent, accountable, and participatory governance	a. document the postharvest practices of rubber farmers in producing coagulum, cuplumps and crumb rubber b. document the practices and norms, including the standards used and pricing system, in marketing/trading rubber products c. determine and assess the factors affecting the use different latex coagulants (i.e. battery solution and formic acid) d. assess the factors that would affect the adoption of nano-sensor equipment in detecting presence of battery solution in rubber products e. examine the role of local government units and other concern government agency in implementing appropriate intervention for quality rubber products in the farms level f. develop sustainable mechanisms for rubber latex processors not to use sulfuric acid in rubber latex coagulation g. advocate for the policy opinions to improve the quality of rubber products	1. Documentation on the postharvest practices of rubber farmers in producing coagulum and crumb rubber 2. Documentation on the standards used in determining quality and mechanisms in pricing of rubber products 3. Cost & return analysis of using different latex coagulants (i.e. battery solution and formic acid) 4. Factors affecting the adoption of nano-sensor 5. Compilations of LGU ordinances related to rubber production, processing and trading 6. Recommendations for institutional policies/strategies and other agency intervention programs for improving quality rubber products 7. Strategy/mechanism adopted by processors in producing rubber latex coagulum free from sulfuric acid 8. Policy instruments (i.e. Resolutions, Administrative Orders, Ordinances) supporting reforms on the existing policies that address the specific needs of smallhold production 9. Linkages with the relevant branches of the government, as well as coalitions/networks with organizations of similar thrusts; and 10. Advocacy communication materials such as Policy Briefs, primers, position papers and multi-media campaigns to promote recommended policy options	WMSU	Policy-makers and R&D managers	1-Oct-16	31-Dec-17	NEW	2,088,742.00	2,088,742.00
	Rubber, Coffee and Cacao: Building Site Matching Functions for Improved Upland Development	Poverty reduction and empowerment of the poor and vulnerable	The project aims to develop site matching functions for four economically important tree crops to aid farmers in selecting the best sites in planting these crops. Specific objectives include a) Assessment of the performance of rubber, cacao and coffee in different parts of the country; b) Identify and determine the site condition favorable for the growth, survival and good yield of these species; c) Develop site matching functions of each of the species/varieties and to use these functions in developing a site-matching software.	1. Assessment of the performance (growth, survival and yield) of selected species in different areas in the Philippines; 2. Environmental information of site favorable for the plantation establishment of selected tree species; 3. Computer software for species-site matching of selected species; and 4. Set of policy recommendations regarding species-site compatibility.	DENR Ecosystems Research and Development Bureau (formerly FORI)	Rubber, cacao and coffee farmers, processors and traders	16-Nov-16	15-Nov-18	NEW	3,473,853.00	1,803,359.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
	S&T Community-based Farms (STCBF) on Promoting Rubber Plantations in the Province of Basilan, ARMM	Rapid, inclusive and sustained economic growth	General Objectives: To upscale the application of S&T interventions and expand the area for rubber through massive production of high quality planting materials, thereby, increasing productivity of rubber in Basilan Province. Specific objectives: 1. To promote wider adoption of the recommended technologies through the community-based STBF modality of at least 100 rubber farmers, including members of 3 ARB cooperatives; 2. Establish a central nursery and budwood gardens that will cater and sustain small rubber growers and would-be growers by 2015 onwards; 3. Assist the agrarian reform beneficiaries (ARBs) cooperative for sourcing out new clones that could be used in the expansion and rehabilitation of rubber farms in Basilan; 4. Assure rubber growers with highly productive and certified clones; 5. Encourage small farmers through the cooperatives to engage integrated rubber farming in support to environmental protection and conservation and help relieve the pressure on the natural resources; 6. Contribute to the demand gap of natural rubber; 7. Support the rubber industry under the National Rubber Development Program (NRDP), the One Town One Product (OTOP) Program, High Value Commercial Crop Program (HVCC), and the Provincial/Municipal Comprehensive Development Plan; and 8. To enhance active participation and empower the community, particularly, the LGUs and local organizations in promoting the application of the recommended technologies.	a. Established one accredited rubber nursery (0.5 ha) and budwood garden (0.5 ha) as an IncomeGenerating Program under the management of Basilan State College, Sta. Clara Campus; b. Organized four clusters of rubber farmers who are interested to pursue rubber clonal plantation and processing in those four barangays of Lamitan City; c. Capacitated 30 BSC IGP staff, existing nursery operators, LGU technicians and interested nursery operators on various skills related to nursery and budwood garden establishment and management; d. Capacitated around 65 farmers, LGU technicians and interested smallholders on various skills related to rubber plantation establishment and management; e. Established and maintained at least nine linkages with various h. Established four demonstration farms (1.0 hectare each) for rubber plantation, production and processing in four barangays of Lamitan City; namely, Lumuton, Boheyawas, Sta. Clara and Limo-ok; i. Promoted various rubber plantation/production technologies through Technology or Farmer's Field Day and/or cross visit sponsorship at least once during year two; j. Developed, translated and/or distributed 250 copies of IEC materials on rubber plantation/production; k. Developed a gendersensitive business and sustainability plan to ensure the continuity of the project; and iii Project Executive Brief As of January 12, 2016	Basilan State College, DOST ARMM	Rubber tree growers/ farmers	1-Apr-15	30-Mar-17	ONGOING	2,000,000.00	2,214,910.00
	S&T-Based Intensification on the Use and Production of Effective Microorganisms (EMS) as Biofungicide Against Phytophthora Disease and as Biofertilizer for Rubber (Old Title: S&T Based Intensification on the Use and Production of Effective Microorganisms as Biofungicide Against Phytopthora Disease and a Biofertilizer for Rubber)	Rapid, inclusive and sustained economic growth	The project focuses on intensifying the use and production of effective microorganisms (EMs)as biofungicide against Phytophthora disease/and as growth enhancer or biofertilizer for rubber. Specific Objectives are 1) Determine the incidence and severity of Phytophthora disease in rubber nurseries and plantations; b) isolate/identify and screen potential EMs for its control as growth enhancer for rubber; c) determine the bio-efficacy of EMs against Phytophthora disease of rubber under laboratory conditions and evaluate the same under screen house/field trial conditions; d) evaluate the effects of EMs as organic enhancer of biofertilizer to growth of rubber and its effect on the incidence of Phytopthora disease; e) develop low cost organic indigenous substrates for the suitable production and multiplication of EMs; and f) publish a brochure/technoguide on EMs.	1. Culture collection of isolates; identified EMs with bioefficacy (biofungicides) against Phytopthora disease of rubber. 2. Culture collection of isolates/identified EMs with bioefficacy as growth enhancers (biofertilizers) for improved growth and development of rubber. 3. Organic substrates for indigenous agricultural wastes as carrier for EM production. 4. Printed copies of brochure or technoguides of Effective Microorganisms as Biofungicide and Biofertilizer for Rubber.	SKSU	Rubber farmers (smallhold and corporate)	1-Mar-15	28-Feb-17	ONGOING	4,398,072.40	1,107,726.16
	Plantation Management Strategies for Natural Stands and Newly Established Stands of Sago Palm in Visayas and Mindanao	Rapid, inclusive and sustained economic growth	The project aims to conserve and sustain the productivity of existing natural sago stands in Mindanao through appropriate management practices and evelop pilot scale sago plantation in selected areas in Visayas and Mindanao for sustained productivity and support dwindling supply of sago starch from natural stands	Established 6 hectares of new sago plantation. - Rehabilitated 9 hectares of natural sago stands - Trained at least 40 sago growers/LGU technicians - Develop 1 type of IEC material (print) on protocol for managing natural sago stand and developing new sago plantations - Policy recommendation on the management of natural and established sago stands/plantations	VSU, ASU, CSU	sago palm farmers	1-Mar-16	28-Feb-19	NEW	4,996,810.00	1,922,886.00
Development of Robust Tools for Managing Sardine Fisheries in the Philippines: Zamboanga Upwelling-Bohol Sea System	Project 5. Molecular technology-based assessment of the sustainability of sardine fisheries	Rapid, inclusive and sustained economic growth	Sardines are important food fish for the Filipinos and its fisheries a significant source of employment to thousands of fishers and factory workers. However, sardines fishery and Philippine fisheries in general are beset with critical issues such as overfishing and excessive fishing pressure, deficient management strategies and habitat degradation among others. The detection of population distinction in commercially valuable fish stocks such as sardines is important. This knowledge would provide valuable information for developing strategies for effective management of this resource. The major sardine fishery areas in the country are associated with high phytoplankton productivity and thus necessitate the need to determine exactly what sardines consume. The decline of phytoplankton growth due to climate change would certainly have serious effect on the diet of sardines and consequently to sardines fishery.	1. Collection of fish specimens from the targeted sites 2. Digitize images of fish collected from targeted site 3. DNA sequence 4. Morphological identification of stomach content	UPD	Commercial Fisheries Sector, Coastal Communities, Philippine Researchers	16-Jun-14	15-Jun-17	ONGOING	12,483,628.60	4,983,083.90
ENHANCING SEA CUCUMBER PRODUCTION: UNCOVERING AND UTILIZING GENETIC RESOURCES FOR SUSTAINABLE DEVELOPMENT	Project 1. Developing Genomic Resources for Holothuria scabra in Support of Broodstock Selection and Stock Delineation	Rapid, inclusive and sustained economic growth	The development of genomic resources for the sandfish is required to further efforts towards increasing hatchery production by broodstock improvement,and genetic stock delineation for management and conservation of iwld populations and stock enhancement initiatives. The general objective of the project is to develop genemic resources for Holothuria scabra which will be useful towards enhancement of hatchery production and stock delineation for management of capture fisheries.	1. Draft linkage map for Holothuria scabra based on SNP markers. 2. Genomic resource for phenotype selection based on growth: SNP markers associated with variability in growth rate. 3. Genomic resource for genetic stock delineation: SNP loci for screening and validation.	UPCS-Marine Science Institute	Government and private sectors engaged in sandfish industry; fishers, traders and orther direct users of sea cucumber stocks; researchers	1-Aug-15	31-Jul-18	ONGOING	12,900,000.00	1,722,638.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
ENHANCING SEA CUCUMBER PRODUCTION: UNCOVERING AND UTILIZING GENETIC RESOURCES FOR SUSTAINABLE DEVELOPMENT	Project 2: Identifying management units for high value sea cucumber species, Holothuria scabra and Stichopus horrens	Rapid, inclusive and sustained economic growth	The general objective of the project is to identify ecologically meaningful management units for two high-valued sea cucumber species, Holothuria scabra and Stichopus horrens, by integrating information on species biology with biophysical connectivity studies, and focusing on selected areas across the Philippine archipelago where sea cucumber hatcheries are being developed. The specific objectives are: (1) Examine cryptic genetic diversity in Stichopus horrens, integrating information on ecology, genetics, and chemistry to accelerate the development of culture technologies for this high-value genera; and (2) Infer management units for Holothuria scabra and Stichopus horrens in selected marine biogeographic regions anchored on focal hatcheries.	1. Characterization of cryptic diversity in Stichopus horrens based on reproductive behavior, genetic differentiation, and chemical profiles, and its implications to identifying management units in the species. 2. Novel molecular markers for stock delineation in Holothuria scabra and Stichopus horrens. 3. Identify ecologically-meaningful management units in H. scabra and S. horrens based on genetic and biophysical connectivity information. 4. Technical inputs for development of policies for culture and capture sea cucumber fisheries towards international certification/recognition of the Philippine sea cucumber fisheries as compliant and a model for best practices.	UPCS-Marine Science Institute	Stakeholders in sandfish industry (government and private sector); LGUs, fishers, traders and other direct users of natural (wild) sea cucumber; local researchers from academe	1-May-15	30-Apr-18	ONGOING	18,300,000.00	3,494,373.00
Pinoy S&T Services for Farmers and Entrepreneurs (PSF) Program	Community Based Farm on Sea Cucumber Production in La Union	Rapid, inclusive and sustained economic growth	To rehabilitate and increase the production of Holothuria scabra in La Union through the adoption of sea ranching technology for sea cucumber. Specific: 1. To adopt sea ranching technology for Holothuria scabra through the STCBF program; 2. To develop farmer's skills in sea ranching of sea cucumber; 3. To enhance active participation of the community, LGUs, and other cooperating agencies in promoting the application of H. scabra sea ranching technology; 4. To adopt sea ranching technology of sea cucumber as alternative source of livelihood for the community; and 5. To facilitate policy and legal support from LGU for the production of sea cucumber through sea ranching.	1. Produced sea cucumber (H. scabra) using sea ranching technology under Sto. Tomas, La Union condition of about 2,600 pcs/ha; 2. Provided alternative livelihood to 20 households in growing of sea cucumber through sea ranching technology; 3. Produced good quality dried H. scabra 4. Established community and legal support from the LGU for sustainable sea cucumber production through sea ranching technology; 5. Trained 20 sea cucumber growers and producers in Sto. Tomas, La Union; 6. Sea cucumber dryer tested by AMTEC; and 7. Enforcement of BFAR Administrative Circular No. 248, series of 2013 re: size regulation for sea cucumber collection and trade.	DMMMSU	Sea cucumber growers and producers in Sto. Tomas, La Union	1-Jun-15	30-May-18	ONGOING	3,895,370.00	677,341.00
	Development of captive breeding and hatchery technology for White Teatfish Holothuria fuscogilva (Cherbonnier 1980) from Lopez Jaena, Misamis Occidental	Rapid, inclusive and sustained economic growth	The present knowledge on captive breeding of holothurians in the Philippines is limited to Holothuria scabra (Gamboa et al. 2004, 2012; Gamboa and Juinio-Meñez 2007; Nievales 2007; Juinio- Meñez et al. 2011, Juinio- Meñez et al. 2011, 2012). The mariculture potential of the commercially valuable H. fuscogilva which can attain higher biomass should be explored. The abundance of H. fuscogilva in Capayas Island provides an excellent opportunity and a ready source of parental stock to study its aquaculture potential. Successful initiatives in captive breeding and hatchery production of H. fuscogilva will provide opportunities for stock enhancement. Restocking of hatchery reared juveniles appears to be the only viable option to increase population in natural habitats (Friedman et al. 2010) as the low dispersal ability of many sea cucumber limits natural recovery from heavy overfishing. Since sea cucumbers are also broadcast spawners mates need to be close to each other to ensure successful reproduction. Restocking also presents a promising potential for well-organised communities to create sustainable, supplemental livelihoods through stock enhancement initiatives (Mills et al. 2012) that would help alleviation poverty among coastal communities.	Established information on gonadal development and feeding habits of Holothuria fuscogilva in natural environment; Captive breeding and hatchery rearing protocol for Holothuria fuscogilva; Production of H. fuscogilva juveniles for release in the wild or sea ranching initiatives; Paper for presentation in scientific fora and publication in peer-reviewed international journal; Cost estimates of H. fuscogilva hatchery production; Proposed management measures to sustain H. fuscogilva stocks (e.g. hatchery production, stock enhancement and sea ranching).	MSU	Fisherfolk and people's organizations; Local government units (esp. Lopez Jaena, Misamis Or.); Academic and research institutions; Entrepreneurs and hatchery managers; Researchers, undergraduate and graduate students	15-Oct-14	14-Oct-16	ONGOING	5,281,007.00	1,630,008.88
	Improving Processing of Sea Cucumber through Mechanization and Packaging	Rapid, inclusive and sustained economic growth	1. To develop an improved mechanical cleaner for sandfish; 2. To develop a multi-vat boiling system with water circulator for sandfish; and, 3. To develop processing and handling methods for ready-to-cook sandfish products.	? Improved mechanical cleaner for sandfish ? Pedal-driven/hand-cranked mechanical cleaner for small operations ? Motor-driven mechanical cleaner ? Multi-vat boiling system with water circulator ? Multi-vat boiling system with water circulation ? Documented performance of prototype boiling system ? Processing and handling methods for ready-to-cook sandfish products ? Package design for Class A specimens in gift packs ? Package design for Class B specimens destined for retail markets ? Recommended processing and storage methods compliant with GMP and HACCP practices	UPLB	This project contributes to the attainment of the ISP on Sea Cucumber	1-Mar-15	28-Feb-17	ONGOING	4,466,188.95	1,342,954.91

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
	Development of a Drying system for Seaweeds	Rapid, inclusive and sustained economic growth	The general objective of the project is to assist seaweed farmers whose livelihood were greatly affected by the recent typhoons by developing an appropriate drying system for a more efficient and fast drying of seaweeds. The said technology that will be developed will be suitable for village-level scale.	Prototype dryer design for seaweeds Demonstration facility for drying seaweeds Scientific publication and other IEC materials	UPLB	The main beneficiaries of the project will be the small to medium-scale farmers and farmers' groups that lack the technology to properly process and dry seaweeds. The project is expected to raise the quality of raw dried seaweeds to a level that can command better price, as well as reducing production losses and will improve income of seaweed farmers.	1-Sep-15	31-Aug-17	ONGOING	3,462,090.00	1,206,924.80
	Sea Out-Planting and Seed Stock Production of Laboratory Generated Carrageenophyte Cultivars	Rapid, inclusive and sustained economic growth	1) To assess the assess the growth performance and susceptibility to diseases and epiphytes of the carrageenophyte cultivars generated from seaweed nurseries relative to farming site and season; 2) To mass produce the above cultivars that have manifested "high quality" potential (this will be done with cooperator farmers) for propagation; 3) To assess growth performances and carrageenan quality and yield of seedstocks from carpospores in comparison with seed stocks from tetraspores; and 4) To conserve strains/varieties of farmed carrageenophytes through maintenance of the indoor, outdoor and sea-based seaweed nurseries.	• Field growth profiles in chosen farming sites of high quality strains/varieties of carrageenophyte propagules generated from seaweed nurseries (from branches and spores) • 'Good/high quality' seaweed seedstocks for propagation • Indoor, outdoor land-based, and sea-based seaweed nurseries to service needs of farmers • Gene bank for Kappaphycus and Eucheuma seaweed cultivars	UPMSI, MSU	• Seaweed industry • Seaweed farmers • Bureau of Fisheries and Aquatic Resources (BFAR)	1-Mar-16	28-Feb-17	NEW	4,999,120.00	4,999,120.00
	Seaweed Area GIS-based Mapping as Production Support System for Sustainable Seaweeds Farming in the Philippines	Rapid, inclusive and sustained economic growth	Determine the extent of seaweed farming in Mindanao; determine culture techniques, system and other relevant information of the different farming sites in the region; and map out all these information in GIS-generated thematic maps.	Trained personnel in GIS for seaweed farms mapping and responsible for the update and maintenance of database created; Database of all data and information gathered from field survey and other sources relevant to seaweed farming; Atlas of maps showing summary of all data & information of seaweed farms & statistics in Northern Mindanao.	XAVIER University, MSU, SPAMAST	Seaweed farmers, Policy makers and Research Institutions	1-Oct-14	31-Mar-16	ONGOING	19,000,000.00	3,536,571.07
National R&D of Haliotis asinina Linne (Abalone)	Project 1. Improvement of Reproductive Performance of Abalone Through Refinement of Broodstock Management and Selective Breeding	Rapid, inclusive and sustained economic growth	Generate database on possible local sources of donkey's ear abalone in the wild, use markers specifically mtDNA markers and microsatellite markers to idenify highly geneticaly variable stocks; produce abalone stock through hybridization; and produce tropical abalone hybrids as alternative species for commercial production.	Primers for both mtDNA and microsatellite loci amplification in abalone; genetic markers for abalone; hybrids with better market potentials; fast growing triploids; and scientific publication manual	SEAFDEC	Abalone researchers, farmers, consumers	2-Jan-14	30-Jun-17	ONGOING	10,325,968.00	2,844,616.93
National R&D of Haliotis asinina Linne (Abalone)	Project 2. Improvement of Trocophore Production and Settlement Rate	Rapid, inclusive and sustained economic growth	Presently, abalone is one of the most highly priced seafood in the world. The very high demand for abalone has exerted a lot of pressure to the natural stock reducing wild catch by 30%. Aquaculture is trying to fill the gap and the Philippines is blessed to be home to the fastest growing abalone species, Haliotis asinina. However, among the three components of the culture phases, i.e., broodstock, hatchery and grow-out, the hatchery aspect is the most technology-challenged. Survival of trocophore to veliger stage is 30% and settlement rate is 1%. The general objective therefore, is how to increase these numbers to more profitable levels to excite the interest of the private sector to come in and invest and thus develop a strong abalone industry in the country. In order to achieve this objective, studies will be conducted to understand the biology of the free-swimming trocophore larvae up to the time they metamorphose to benthic post-larvae. Studies will also include the dynamics of the algal community viz a viz, the bacterial diversity in the biofilms which serve as settlement inducers and food of the young abalone. At the end of the three-year program, the survival from trocophore to veliger stage will be increased from 30% to 50%.	Increased survival rate of veliger larvae from 30 to 50% Increase settlement rate from 1 to 5o/o Refined hatchery rearing protocol; Mortality during harvest reduced by half	SEAFDEC, MSU	Abalone researchers, farmers, consumers	1-Jan-14	30-Jun-17	ONGOING	8,886,680.00	1,800,651.10
National R&D of Haliotis asinina Linne (Abalone)	Project 3. Grow-out of Abalone in Small Island and/or Community	Rapid, inclusive and sustained economic growth	This project aims to increase culture production through refinement of nursery and grow-out culture methods and through Techno Demo in small island communities in Iloilo.	• most appropriate culture container for nursery and grow out identified • optimum density for nursery and grow out determined • growth and survival improved using appropriate containers, density and feed • growth and survival data for pond, land-based tanks and open sea (reef areas) systems available • best nursery and grow out culture system developed	SEAFDEC	The LGUs, due to reduced harvest of wild abalone stocks, fisherfolks, abalone fishers, government agencies and NGOs	2-Jan-14	30-Jun-17	ONGOING	6,168,032.00	2,064,866.70

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
National Mussel S&T Program - PROGRAM B. IMPROVED GROW-OUT TECHNOLOGY FOR SUSTAINABLE MUSSEL INDUSTRY	Project 3 Causes and management of mass mortality in the culture of green mussel, Perna viridis. old. (Mussel Die-off Syndrome in Aklan: Cause, Effect and Management)	Rapid, inclusive and sustained economic growth	The project aims to investigate the possible causes of the die-off syndrome of green mussel in Batan Bay, Aklan. specificaly, it aims to characterize water quality of Batan Bay, determine the nature of spats sourced from the bay and relate the culture methods used in the bay and identify the pathogenic organisms	Map of die-off occurrence in the mussel culture areas in the country Identification of the possible causes of the die-off syndrome in Maqueda Bay and Batan Bay Remedial measures to address the cause(s) of the die-off syndrome Maqueda Bay and Batan Bay GIS maps where die-off/mass mortalities have occurred Management strategy to reduce/minimize mortalities of cultured mussels	UPV	1. Private investors who plan to culture mussels 2. Fisherfolk who will be culturing mussel for supplemental livelihood 3. BFAR Extension Personnel	1-Jul-15	30-Jun-17	ONGOING	2,535,000.00	1,334,496.00
National Mussel S&T Program - PROGRAM B. IMPROVED GROW-OUT TECHNOLOGY FOR SUSTAINABLE MUSSEL INDUSTRY	Project 4. Modeling for site selection for expansion to new culture area (old title: Project 4. Towards Mussel-Based Economic Development Support Program (Mussel)	Rapid, inclusive and sustained economic growth	1. Develop an economical and effective method for induction of triploidy in the green mussel, Perna viridis 2. Evaluate the performance of triploid green mussels based on growth rate, survival, condition index and organoleptic qualities	Map out of potential transplantation and grow-out sites in Cagayan River Estuary Total Area of potential transplantation and grow-out sites in Cagayan River Estuary (Has.) Growth and survival rate of mussels at different locations in Cagayan River Estuary Production potential of Cagayan River Estuary (Metric Tons) Protocol in transplanting mussels in new culture areas Computer model on the dynamics of Cagayan River Estuary in support to site selection	UPV College of Fisheries and Ocean Sciences	Mussel industry, private financial institutions, entrepreneurs, mussel farmers, researchers, extension workers	1-Jul-16	30-Jun-18	NEW	2,745,000.00	815,598.60
National Mussel S&T Program - PROGRAM B. IMPROVED GROW-OUT TECHNOLOGY FOR SUSTAINABLE MUSSEL INDUSTRY	Project 5. Production of safe mussels using environment-friendly culture methods in sites near urban areas old(Pilot-testing of Mussel Grow-out Technology)	Rapid, inclusive and sustained economic growth	To pilot test the raft and longline technology refined from Project 2.	Comparative analysis of stake and long-line method for mussel culture in Bacoor Bay Environmental Profile of Bacoor Bay Seasonality, and spat density Maps Protocol for Local Government based depuration facility Model Policies and institutional arrangement recommendations	UPV College of Fisheries and Ocean Sciences	Beneficiaries include mussel farmers, entrepreneurs, vendors, middleman, processors, researchers, technicians/extensionists, Local Government Units, policy makers and consumers.	1-Jul-16	30-Jun-18	NEW	4,000,000.00	896,408.40
National Mussel S&T Program - PROGRAM C. POST HARVEST PROGRAM FOR SUSTAINABLE, HIGH QUALITY AND SAFE MUSSEL PRODUCTS	Project 2. Primary Processing Techniques for Philippine Green Mussels	Rapid, inclusive and sustained economic growth	To test the effects of different pre-treatments, temperature and packaging on improving sensorial quality of depurated/relayed mussels; to develop primary processed products from mussels using chilling and freezing technologies; and to optimize storage conditions to preserve the quality of chilled and frozen mussel (primary processed)	Improved quality and increased shelf life of locally produced mussel Three primary processed products (e.g., whole/live, blanched /chilled, and frozen shucked or half shell) Packaging for bulk transport Cost and return analyses Protocols for primary processing of mussels including post harvest handling, bulk transport and storage of depurated/relayed mussels Good Manufacturing Manual (GMP) manual for primary processing of mussel	UPV College of Fisheries and Ocean Sciences	Mussel industry, entrepreneurs, mussel farmers, food processors	1-Jul-15	13-Mar-17	ONGOING	3,900,000.00	1,083,502.00
Program A. Enhancement of Hatchery and Nursery Practices for a Reliable Supply of Quality Seeds for the Green-lipped Mussel (Perna viridis) Farming.	Project 1. Refinement of Broodstock Maintenance, Spawning, Larval and Spat Rearing Technologies for Sustained Seed Production of the Green Mussel (Perna viridis)	Rapid, inclusive and sustained economic growth	Refine existing hatchery technology of green mussels by focusing on (a) broodstock maintenance and spawning, (b) larval rearing, and (c) seed production; Improve growth and survival of hatchery-produced seeds; Mass produce seeds for improvement of mussel population, and for possible expansion of culture areas.	A refined technology for broodstock maintenance and spawning, larval and spat rearing and mass production of seeds of the green mussel Perna viridis with: 60 to 80% survival of fertilized eggs to D-shaped larvae; 50 to 60% survival from hatching to eyed stage/pediveliger stage; > 5% survival from hatching to early spat stage or setting stage; Reliable source of good quality and year round availability of seeds for stocking to improve production; Spat production of > 5 M per year; Hatchery facilities that will be used by the Institute for further research or for facilities for hatchery training.	UPV	The mussel industry will benefit from this study as supply of seed stocks will be continuously be available and help increase production.	1-Jul-14	30-Jun-17	ONGOING	9,012,912.00	2,154,586.00
Program A. Enhancement of Hatchery and Nursery Practices for a Reliable Supply of Quality Seeds for the Green-lipped Mussel (Perna viridis) Farming.	Project 2. Development of Remote Setting and Nursery Technologies for the Green Mussel (Perna viridis)	Rapid, inclusive and sustained economic growth	The long-term goal of the project is to secure a reliable supply of hatchery-produced seeds to augment mussel production. Specifically it aims to determine suitable size and technique of transport of the green mussel to remote setting area; to develop techniques for holding larvae to 'seed' size (up to 3 months old) in the nursery prior to deploying to seeding area; to evaluate efficiency and effectiveness of different spat collectors in the remote setting area and to develop techniques for rearing larvae in the remote setting area.	1. Technology/ procedure for shipment of green mussel larvae to the remote setting areas with 85-95% survival. 2. Technique for setting mature larvae in the remote setting area with 50-70% survival rate 3. Identified effective spat collector that can yield a survival rate of 70-90% spats from set size prior to seeding to grow out farm 4. Technology of holding spat in the nursery prior to seeding them to grow-out farms with 60 to 80% survival up to <10mm.. 5. One or two nursery stations will established in selected areas either in Negros (Hinigaran), or Capiz (Ivisan or Roxas City) or Samar (Jiabong) for spats produced by the project for seed dispersal.	UPV	Beneficiaries include mussel farmers, entrepreneurs, vendors, middleman, processors, researchers, technicians/extensionists, policy makers and consumers.	1-Jul-14	30-Jun-17	ONGOING	6,486,093.00	1,743,475.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
Program A. Enhancement of Hatchery and Nursery Practices for a Reliable Supply of Quality Seeds for the Green-lipped Mussel (Perna viridis) Farming.	Project 3. Genetic characterization and selective breeding of green mussel, Perna viridis	Rapid, inclusive and sustained economic growth	This project aims to develop molecular markers to identify and characterize mussel population at different sites; identify a range of performance traits in different mussel population at different sites associated markers and to utilize these markers for broodstock selection; establishment of broodstock population to be used in selective breeding program and to track outcomes of the selective breeding program using molecular markers.	1. Specific nucleotide sequences as markers associated with specific mussel populations 2. Genetic profile and performance traits of mussel population at different sites. 3. Criteria for selection of broodstock and molecular markers for parentage analysis and tracking of families in breeding program. 4. Offsprings of cross-bred organisms with specific molecular markers 5. Parentage and offspring analysis	UPV	Beneficiaries include mussel farmers, entrepreneurs, vendors, middleman, processors, researchers, technicians/extensionists, policy makers and consumers.	1-Jul-14	30-Jun-17	ONGOING	6,038,526.00	1,401,076.00
Program B. Improved Grow Out Technology for a Sustainable Mussel Industry .	Project 1. Transplantation and Spatfall Determination of Green Mussel, Perna viridis	Rapid, inclusive and sustained economic growth	Determine water quality parameters of existing and potential mussel growing sites; Establish the stocking density for broodstocks and spats that will be viable for transplanting; Document growth and survival of transplanted broodstock and spats; Improve existing method for spatfall prediction; and Develop more efficient spat collectors	Detailed characterization of suitable sites for mussel culture; Protocol for transporting and transplanting mussel broodstock and spats; More efficient spat collectors (From 0.5 – 1.0 spat/10 cm2 to 2 – 5 spats/10 cm2); Spatfall prediction model; Manual for site selection, transport and transplantation of mussel broodstock and spats	UPV	Private investors who plan to culture mussels 2. Fisherfolk who will be culturing mussel for supplemental livelihood 3. BFAR Extension Personnel	1-Jul-14	30-Jun-17	ONGOING	7,151,096.00	1,782,000.00
Program B. Improved Grow Out Technology for a Sustainable Mussel Industry .	Project 2. Raft and Longline Culture of the Green Mussel, Perna viridis	Rapid, inclusive and sustained economic growth	This project aims to determine growth and survival of mussel spats using raft and long line culture methods in existing and potential culture sites. Furthermore, establish the suitability and productivity of the raft and long line methods for green mussels in existing and potential sites.	a. Comparative analysis of raft and long-line method for mussel culture b. Optimum spacing and spat density for raft and long-line culture methods c. Higher meat yield (from 30 – 50% of shell volume to 70 – 90% of shell volume) d. Performance data of hatchery-produced and wild spats in raft and longline methods e. Raft and long-line culture methods suitable for Philippine conditions f. Faster growth rate, from 0.5 cm shell length/month to 1.0 cm shell length/month g. Characterization of the spatfall in the three bays (time, location, duration and amount of spats that settled	UPV, Samar State University, CSU	Beneficiaries include mussel farmers, entrepreneurs, vendors, middleman, processors, researchers, technicians/extensionists, policy makers and consumers.	1-Jul-14	30-Sep-16	ONGOING	10,778,711.00	1,350,459.05
Program C. Post Harvest Program for Sustainable, High Quality and Safe Mussel Products	Evaluation of depuration and relaying technologies for Philippine green mussel at higher loading capacity	Rapid, inclusive and sustained economic growth	This project aims to pilot test the protocols in relaying and depuration of mussels in other culture areas in the country and at various conditions. It intends to improve the developed protocols for the elimination of microbial content for safe and high quality Philippine green mussels (Perna viridis) Specifically, it intends to do the following: 1. Evaluate the performance of relaying protocols at different conditions of mussel growing areas 2. Evaluate the performance of depuration facility at pilot scale (80, 100 and 120 kg input per tank) 3. Determine the economic viability (including social acceptability) of using refined relaying and depuration technologies 4. Develop a generic HACCP-based mussel depuration quality assurance program	Year 1 1. Refined relaying protocols Year 2 2. Table on relaying time based on bacterial load in mussel meat 3. Refined depuration protocols using recirculating system/flow-through system with 80, 100 and 120 kg mussel input per tank) 4. Table on depuration time based on bacterial load in mussel meat 5. Business Plan (based on the technical and financial feasibility) including social acceptability of the technologies 6. Generic HACCP Manual for mussel depuration	UPV	Beneficiaries include mussel farmers, entrepreneurs, vendors, middleman, processors, researchers, technicians/extensionists, policy makers, shellfish processors-exporters, and the consuming public	1-Jul-16	30-Jun-17	NEW	4,225,344.00	2,538,672.00
Program C. Post Harvest Program for Sustainable, High Quality and Safe Mussel Products.	Project 1. Development of Depuration and Relaying Techniques for Philippine Green Mussels	Rapid, inclusive and sustained economic growth	This project aims to determine the safety and quality levels of mussel meat with the use of depuration and relaying techniques. Specifically, it intends to verify existing techniques in bivalve depuration or bacterial contamination in mussels. It will look into the viability of integrating depuration process as pre-processing steps. Specifically, it intends to verify the applicability of the technique in mussel depuration or bacterial reduction/purification of Philippine green mussel and determine the feasibility (technique and financial aspects) of the mussel depuration process in the Philippines.	1. Sites appropriate for relaying mussels 2. A depuration facility model 3. Depuration protocol for microbiological reduction of mussels relaying protocol for microbiological reduction of mussels 4. Development of Protocols for Mussel Depuration and Relaying Techniques	CSU	Beneficiaries include mussel farmers, entrepreneurs, vendors, middleman, processors, researchers, technicians/extensionists, policy makers and consumers.	1-Jul-14	30-Jun-16	ONGOING	4,221,147.00	728,839.84
	Evaluation of mussel longline culture technology in non-traditional areas	Rapid, inclusive and sustained economic growth	This project will generally refine the longline technology applicable to different water conditions. Specifically it aims to: 1. Determine yield performance of mussels cultured in longline at varying water productivity and depth. 2. Determine the economic viability and social acceptability of using the refined technology. 3. Develop IEC materials	Refined longline technology applicable to different water conditions Cost and return analysis of the longline technology at different productivity Trained 20 collaborators IEC materials – training manual and pamphlets	SSU	Multi-takers beneficiaries of the research are, shellfish industry players/fisherfolks/shellfish farmers; planners/policy makers/regulators/researchers (DENR/BFAR/DOST/ LGUs/SUCs, etc.). But basically all Filipinos are potential beneficiaries of a greater supply of affordable animal protein.	1-Jul-16	30-Jun-18	NEW	3,997,336.00	2,384,468.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
	Improving Meat Quality and Acceptability of Mussels and Other Shellfishes at Prolonged Depuration Period	Rapid, inclusive and sustained economic growth	This project aims to determine the effects of prolonging the depuration period on the meat quality, as well as acceptability of shellfish such as mussel and other commercially-available shellfish from Iloilo, Capiz and Aklan. It also attempts to use allowable food additives in improving its quality and acceptability. Specifically, it intends to do the following: 1. Evaluate the effects of some allowable food additives and/or enrichment agents in improving the meat quality and acceptability of mussels and other shellfishes depurated for 72 hours and more; and 2. Analyze cost and return on investment of shellfish which were subjected to prolonged depuration.	1. Improved meat quality and acceptability of shellfish depurated for longer period 2. Shellfish enrichment protocols 3. Cost and return analyses of shellfish depurated for 72 hours and more	UPV	Beneficiaries include mussel farmers, entrepreneurs, vendors, middleman, processors, researchers, technicians/extensionists, policy makers, and consumers.	1-Jul-16	31-Mar-17	NEW	1,889,602.00	1,594,752.00
	Suitability assessment and database development for enhanced mussel culture management using geospatial technologies	Rapid, inclusive and sustained economic growth	The project will assess and analyze suitable areas for mussel culture in the Philippines using available geospatial technologies. Specifically, 1. Identify potential sites (including non-traditional areas) for mussel culture based on established criteria; and 2. Develop of database to identify suitable areas for mussel culture	Year 1 Identified/Surveyed potential sites for mussel culture. Maps of monthly chlorophyll-a, sea surface, temperature and salinity in the Philippine area Year 2 GIS-based maps of suitable areas for mussel culture in the Philippines based on physico-chemical and biological parameters Database for suitable areas for mussel cultur	UPD	The present research initiative is foreseen to augment the program in providing the basic information and management decision to planners/ policy makers/researchers/regulators and stakeholders. Other stakeholders that would benefit from the results of the projects includes: Private investors in suitable area, fisherfolk who will be culturing mussel for supplemental livelihood, BFAR Extension Personnel, and Local Government Unit and educators/Researchers	1-Jul-16	30-Jun-17	NEW	2,282,572.00	3,832,684.00
Integrated and Sustainable Development Program for the Shrimp Industry.	Project 5. Improvement of the reproductive performance of captive Penaeus monodon	Rapid, inclusive and sustained economic growth	a) To improve performance of domesticated males by nutritional manipulation , b) To improve formulated diets for domesticated female shrimp broodstock , and c) To identify environmental factors that may affect percentage maturation, fertilization rate, and hatching rate of domesticated broodstock	Suitable broodstock diet with essentail vitamins;growth pattern and survival of captive spawner; suitable holding system; improved performance of captive broodstock at least 100,000 nauplii/spawner	SEAFDEC	Shrimp growers and industry stakeholders	1-Oct-14	30-Sep-17	ONGOING	10,682,468.00	3,098,840.71
Integrated and Sustainable Development Program for the Shrimp Industry.	Project 7. Pathobiology and development of molecular detection kits for EMS/AHPND	Rapid, inclusive and sustained economic growth	The research study will fill the gap of information about the disease in the Philippine setting while also validating the data of other international researches conducted in Thailand, China etc. It will also help raise awareness of the disease using the data collected in the country to educate the farmers on possible solutions and prevention practices.	Outputs of this proposed study include: 1. Identified bacterial isolate that causes EMS in the Philippines. 2. Genome sequence of the bacteria and the toxic gene. 3. Established pathobiology and mechanism of virulence. 4. Developed protocol/kits for the molecular detection of EMS.	UST	Target beneficiaries include: 1. Shrimp hatchery operators – early detection of AHPND in pond water or shrimp samples will improve the productivity of the different hatcheries and prevent possible cross contamination of the causative agent. 2. Shrimp farmers – molecular detection at the farm level provides a reliable surveillance protocol for the farmers to detect early signs of the disease; giving ample time to mitigate the problem. 3. Diagnostic laboratories – these protocols particularly the publication of how-to-manuals will be of significant use to these laboratories since these have been tested under Philippine conditions. In addition, these how-to-do manuals on disease detection in shrimp will facilitate the	1-May-15	30-Apr-17	ONGOING	9,028,784.00	2,346,696.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
Integrated and Sustainable Development Program for the Shrimp Industry.	Project 8. Biocontrol against EMS/AHPND causing agent using saline tilapia greenwater, immunostimulants and microbial floc	Rapid, inclusive and sustained economic growth	The present proposal involves developing holistic approaches including ecosystem management biocontrol strategies involving the use of tilapia green water, biofloc culture systems and manipulation of larval shrimp immune responses with the use of immunostimulants to manage the outbreak of EMS in the country. This proposed research is envisioned to provide solution in a preventive and ecological suppression approach in managing the problem associated with EMS/AHPND in cultured shrimp.	a.)Mechanism on how the pathogen is inhibited by Tilapia, elucidated. b.)Microbial species and bioactive metabolites with pathogen inhibitory activities, identified and characterized c.) Density of Tilapia in green water reservoir tanks that inhibits the pathogen growth in water, identified d.)Microbial species (Bacteria, Fungi) associated with floc with Vibrio inhibitory activity, characterized and identified. e.)The mechanism of vibrio inhibition by floc microbial isolate, elucidated. Conditions to elicit maximum Vibrio inhibitory activity, optimized. f.)Stage and density of microbial floc in culture that would result to maximum inhibitory activity against the pathogenic V. parahaemolyticus, established. g.)Fertilization techniques, optimum nutrient composition establishment and application rates that could result to rapid microbial floc formation in culture systems, established. h.)Bacterial and brown algae based immunostimulants for shrimp postlarvae, developed. i.)Effective dose and application frequency of these immunostimulant for shrimp post larvae, optimized. j.) Shrimp activated immune responses in response to immunostimulation that could result to resistance against V. parahaemolyticus infection, elucidated. k) Influence of immunostimulation on growth and	UPV	Target beneficiaries include: 1. Shrimp hatchery operators – early detection of AHPND in pond water or shrimp samples will improve the productivity of the different hatcheries and prevent possible cross contamination of the causative agent. 2. Shrimp farmers – molecular detection at the farm level provides a reliable surveillance protocol for the farmers to detect early signs of the disease; giving ample time to mitigate the problem. 3. Diagnostic laboratories – these protocols particularly the publication of how-to-manuals will be of significant use to these laboratories since these have been tested under Philippine conditions. In addition, these how-to-do manuals on disease detection in shrimp will facilitate the	1-May-15	30-Apr-18	ONGOING	16,762,492.00	2,697,070.40
Development of Diagnostic Tools through Genomics and Establishment of the Philippine Shrimp Pathogen Biobank and On-line Biosurveillance and Information Resource.	Project 2. Establishment of a Philippine shrimp pathogen bio-bank and on-line biosurveillance information resource	Rapid, inclusive and sustained economic growth	This project will establish an on-line database of pathogens affecting the Philippine aquaculture industry and maintain a biobank, which is a collection of biological samples which may be host (shrimp) cells/tissues or isolated microorganisms and/or their DNA or RNA stored and archived in biosecure ultralow freezers.	Online Philippine aquatic pathogen database resource established b) epidemiological information including genetic, phenotypic, ecological, spatial, and temporal characteristics of aquatic pathogens compiled c) Philippine aquatic pathogen bio-bank established	SEAFDEC	Shrimp growers and industry stakeholders	1-Jan-14	31-Mar-16	ONGOING	11,786,152.00	26,400.00
Development of Diagnostic Tools through Genomics and Establishment of the Philippine Shrimp Pathogen Biobank and On-line Biosurveillance and Information Resource.	Project 3. Development of shrimp pathogen diagnostic tools using nested PCR and lateral flow strip biosensors with mobile app and cloud-based information management	Rapid, inclusive and sustained economic growth	The goal of the project is to develop an inexpensive, field-deloyable, easy to use, rapid, point-of-use, and ICT-integrated diagnostic kit. The diagnostic platform chosen is the lateral flow strip biosensor (LFSB) using gold nanoparticle-DNA conjugate and DNA-hybridization as key sensing mechanism.	Potentially patentable process and product designs for AuNP-DNA-based sensor for aquaculture monitoring and disease risk management b) Prototype sensing elements fitted to a mobile diagnostic system linked to cloud computing c) Mobile and cloud interface software and interface d) Mobile diagnostics and monitoring systems development with partner institutions (NIMBB, SEAFDEC) e) Optimized and validated Nested-PCR Protocol as diagnostic tool for the detection of shrimp pathogens WSSV, IHHNV, MBV and Vibrio DNA based lateral flow strip biosensor (LFSB) prototype as diagnostic kit for shrimp pathogens	AdMU	Shrimp growers and industry stakeholders	1-Jan-14	31-Mar-16	ONGOING	15,937,753.00	26,400.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
Integrated and Sustainable Development Program for the Shrimp Industry	Project 6. Technology Transfer and Adoption of Developed LAMP-WSSV Assay to Shrimp Farmers	Rapid, inclusive and sustained economic growth	Produce and test the prototype kit and heatblock machines Identify the hatcheries and farms that can use the technology in broodstock and culture screening Introduce the LAMP kit and heatblock to shrimp hatcheries and farms Conduct the application of LAMP and heatblock on the shrimp hatcheries and farms	Production of the kit and heatblock apparatus Eighteen adoptors of the LAMP kit and heatblock apparatus Field testing and a technology manual with cost and returns analysis A low cost diagnostic technology mature for commercialization	UST	Target beneficiaries include: 1. Shrimp hatchery operators – the optimized PCR and LAMP protocols can be used for screening of wild broodstock for the presence of the pathogens prior to their use for spawning; thus, asymptomatic carriers can be easily identified and discarded. 2. Shrimp farmers – these molecular diagnostics protocols can be used for routine screening of the culture stock to detect early signs of disease; thus, immediate management procedures can be undertaken to mitigate heavy losses due to heavy infection. 3. Diagnostic laboratories – these protocols particularly the publication of how-to-manuals will be of significant use to these laboratories since these have been tested	1-Oct-15	31-Dec-16	ONGOING	2,577,474.00	1,538,601.17
Tiger Shrimp (Penaeus monodon) Genomics Program.	Genomic Markers for Assessment of Inbreeding and Morphophenotype-genotype Association Mapping in Penaeus monodon	Rapid, inclusive and sustained economic growth	The general goal of this project is to expand the genetic resources necessary for sustaining a genetic improvement program for P. monodon in the country. The specific objectives are the following: assess the variation of key morphometric and morphological traits in local stocks of P. monodon generate genotypes from the same samples used in phenotyping (Objective 1) using next generation sequencing, and search for SNP markers that are correlated with selected traits use the data generated (Objective 2) to improve the quality of the reference genome of P. monodon	results of statistical analysis of morphological/morphometric data from P. monodon samples preliminary list of correlated SNP markers improved reference genome for P. monodon	UPD	shrimp farming industry, shrimp export industry	1-Jul-15	30-Jun-17	ONGOING	7,514,648.00	1,721,162.00
Tiger Shrimp (Penaeus monodon) Genomics Program.	Project 2. Application of Genomics in the Development of Genome-Wide Markers Linked to Production traits in Penaeus monodon	Rapid, inclusive and sustained economic growth	This project will use NGS and bioinformatics to conduct what is called "association studies" to identify a gene or a group of genes in tiger shrimp that is related to beneficial traits such as high growth, high health, disease tolerance etc.	a) reference genome sequence for P. monodon b) genome-wide SNP map for P. monodon c) potential SNP markers for WSSV resistance and growth rate d) data on prevalence of viral infection in P. mpnodon seedstock	UPD	shrimp growers and industry stakeholders	1-Jul-14	31-Dec-16	ONGOING	7,579,063.00	1,986,188.00
Tiger Shrimp (Penaeus monodon) Genomics Program.	Project 1. Mass production of dsRNA to mitigate WSSV infection in shrimp	Rapid, inclusive and sustained economic growth	The project will utilize available database , and reports and utilize these to innovate existing methodologies, develop local applications to control and neutralize WSSV	a) incorporation of plasmid bacteria for mass produciton of dsRNA; b) genesilencing resulting to high survival of WSSV infected shrimp on high health fry c0 utilization of RNA tech towards recommendatoin for dsRNA vaccines	UST	local and internaitonal shrimp industry and molecular laboratories embarking on gene fucntional studies	1-Jul-14	31-Dec-16	ONGOING	8,991,068.00	1,781,528.90
BOOSTING THE SUGARCANE INDUSTRY THROUGH SMART FARMING TECHNIQUES	Proj 2. - Smart Farming-Based Efficient Nutrient Management to Increase Sugarcane Productivity through Elemental Tracer and Related Techniques	Rapid, inclusive and sustained economic growth	Increase nutrient-use efficiency, reduce loss of soil nutrients and reduce fertilizer application in sugarcane production as well as to identify smart-farming technologies with high soil nutrient-use efficiency through elemental tracer and related techniques.	Nutrient use efficiency (NUE) under different fertilization schemes; 2. Established nutrient utilization dynamics (NUD) of sugarcane under varying level of soil nutrients; 3. Appropriate fertilizer rates for low, medium, and high levels of soil Nitrogen; 4. Best time of NPK fertilizer application; 5. established soil test calibration and cane yield response to refine fertilizer recommendation based on NUE and NUD of sugarcane; 6. Amount of nitrogen from BNF that could supplement the Nitrogen requirement of sugarcane; 7. Identified best varieties with high nitrogen fixation ability; 8. Nutrient and water technology promotion for sugarcane production 9. Potential technology/information for intellectual property (IP)	PNRI	Sugarcane growers; irrigation facilities administrators/ agencies;agricultural technicians; manufacturers; entrepreneurs; local fabricators; planning agencies and officers; NGOs; agri-cooperatives	1-Oct-14	31-Mar-17	ONGOING	9,669,085.00	3,363,650.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
BOOSTING THE SUGARCANE INDUSTRY THROUGH SMART FARMING TECHNIQUES	Proj. 1. Smart Water Management Strategies for Sugarcane	Rapid, inclusive and sustained economic growth	Developing smart water management strategies for sugarcane is crucial in increasing production and addressing the increasing irregularity of rainfall patterns. So, this project aims to: Develop optimum irrigation scheduling schemes for sugarcane using soil moisture and weather monitoring systems; Increase sugarcane water-use efficiency under drip and furrow irrigation method; Develop locally fabricated multilevel soil moisture monitoring device for sugarcane; Develop a cost-effective drip irrigation system for sugarcane; Demonstrate the effectiveness of the best irrigation technology management for sugarcane under farmer's field condition.	1. Information on current irrigation status and practices in the sugar industry 2. A smart water management technology that will increase yield and quality of sugarcane by at least 30% with furrow and drip irrigation methods 3. Demonstrated the use of soil moisture and weather data in irrigation scheduling for sugarcane 4. A locally fabricated subsurface drip lateral installer	CLSU	Sugarcane farmers, researchers, students, entrepreneurs	1-Jul-14	30-Apr-17	ONGOING	6,195,603.00	1,573,780.42
BOOSTING THE SUGARCANE INDUSTRY THROUGH SMART FARMING TECHNIQUES	Proj. 3 - Development of Nanofertilizers for Sugarcane Production	Rapid, inclusive and sustained economic growth	Make sugarcane production more profitable as nanofertilizers could enhance the efficiency of nutrient absorption and resistance to pests and diseases.	Nanofertilizer formulations containing N, P, K, and a combination of N, P, and K (complete) Optimized procedure in the formulation of nanofertilizers for sugarcane Appropriate method and rate of application of the developed nanofertilizers Quantified economic benefits of using the nanofertilizers technology An intellectual property (IP) from the results of the project A scientific publication on the results of the research project	UPLB	Sugarcane farmers, researchers, students, entrepreneurs	1-Jul-14	30-Jun-17	ONGOING	7,694,428.00	946,181.00
BOOSTING THE SUGARCANE INDUSTRY THROUGH SMART FARMING TECHNIQUES	Project 4. Design and Development of Sugarcane Harvesting Equipment for Small Sugarcane Farms	Rapid, inclusive and sustained economic growth	The project aims to promote the development of locally fabricated sugarcane harvesting equipment for small-scale farm. Objectives: 1. To review the existing design and features of commercially available sugarcane harvesting equipment; 2. To design and fabricate three (3) sugarcane harvesting equipment prototypes for small-scale farm; 3. To monitor actual operating performance of the three (3) sugarcane harvesting equipment prototypes through field testing in cooperation with prospective adopters	1. Prototypes of cutter, stripper and loader 2. Technology manuals for the three equipment	Sugar Regulatory Administration, MIRDC	Farmers, sugarcane farm owners and planters, agri-cooperatives and local fabricator shops	1-Jan-15	31-Dec-16	ONGOING	8,258,212.00	1,267,053.00
BOOSTING THE SUGARCANE INDUSTRY THROUGH SMART FARMING TECHNIQUES	Project 5. Design and Development of Harvester for Medium-Scale Sugarcane Farms	Rapid, inclusive and sustained economic growth	The general objective of this project is to increase efficiency of harvesting operation in medium-scale farm by 30% through mechanization. Objectives: 1. Design a prototype medium-scale sugarcane mechanical harvester; 2.Ã‚Â Fabricate the prototype medium-scale mechanical harvester; 3. Test and evaluate the prototype medium-scale mechanical harvester; and 4. Finalize the design and testing of the developed medium-scale sugarcane mechanical harvester.	1. Prototype sugarcane harvester 2. Manual of operations and maintenance	PhilMech, SRA	• 20% lower cost of harvester • Increased efficiency of harvesting operation in medium-scale farm by 30% through mechanization • 93% less labor inputs in harvesting0	1-Feb-15	31-Jan-17	ONGOING	9,031,904.00	3,887,845.94
Conservation, Improvement and Profitable Utilization of the Philippine Native Pigs	PMC	Rapid, inclusive and sustained economic growth			MSC		1-Jul-15	30-Jun-20	ONGOING	2,150,000.00	424,625.60
Conservation, Improvement and Profitable Utilization of the Philippine Native Pigs	Project 1. Organized breeding and selection for the establishment of breeding true to type native pig populations in the Cordillera Administrative Region, Cagayan Valley, Calabarzon and Mimaropa regions	Poverty reduction and empowerment of the poor and vulnerable	Establish phenotypic and genetic characteristics of native pigs in Reg. CAR, 2 4a & 4b; Establish variations and heritability of economically important traits.; and Test selection and breeding methods for breed development. Develop community-based breeding and production model.	4 breeding true to type genetic groups of Philippine native pigs.	MSC, KASC, NVSU, BAI, BSU, MPSPC, ISU, UPLB	native pig raisers	1-Jul-14	30-Jun-19	ONGOING	39,336,853.00	6,803,546.97
Conservation, Improvement and Profitable Utilization of the Philippine Native Pigs	Project 2. Local resource-based free range production management protocols and systems for breeder and slaughter native pigs	Poverty reduction and empowerment of the poor and vulnerable	Develop a practical and profitable native pig range management protocols Develop sustainable free-range production models for small rural farmers. Establish free range pig healthcare management procedures to ensure biosecurity and public health.	800 slaughter native pigs in each of the 4 target regions	MSC, KASC, NVSU, BAI, BSU, MPSPC, ISU, UPLB	native pig raisers	1-Jul-14	30-Jun-18	ONGOING	10,648,662.00	2,138,980.43
Conservation, Improvement and Profitable Utilization of the Philippine Native Pigs	Project 3. Value chain and policy studies in support of native pig production in Regions CAR, Cagayan Valley, Calabarzon and Mimaropa	Poverty reduction and empowerment of the poor and vulnerable	Determine capacities and capabilities of native pig raisers and preferences consumers Generate information on marketing methods and channels and pricing systems Evaluate the supply, demand, and flow of native pigs and products Generate S&T-based information as input to policies on advocacy, improvement and profitable utilization of native pigs	Value chain and policy studies in support of native pig production	MSC, NVSU, BAI, BSU, UPLB	native pig raisers	1-Jul-14	30-Jun-16	ONGOING	2,319,222.00	281,703.22

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
Conservation, Improvement and Profitable Utilization of the Philippine Native Pigs in Eastern Visayas	Project 1. Native Pig Breeding And Production As Sustainable Livelihood Option In Calamity Prone Areas	Poverty reduction and empowerment of the poor and vulnerable	Document and analyze the phenotypic (morphological and production performance) and genetic characteristics of native pigs in Eastern Visayas. · Determine the extent of variability and heritability of production traits affecting growth, reproduction and carcass quality of native pigs in Samar and neighboring provinces.· Develop selection methods and breeding strategies that are suited to native pigs in the area and lead towards attaining the breeding goals. · Analyze the effects of environment on growth and reproduction of native pigs in region 8.· Develop a model for a profitable community-based breeder and slaughter native pig production system.	1. Breeding true to type genetic group of native pigs in region 8. 2. At least 3 scientific papers on phenotypic/genetic characteristics and unique high value traits, correlation between genetic characteristics and desirable phenotypic traits, utility of molecular markers on growth, reproduction, resistance to disease, adaptation to environment and meat quality attributes. 3. Native pig populations (50 sows and 10 boars) with improved growth and reproductive performance and meat quality. 4. Breeding and selection technology on native pig breed development and production performance improvement	ESSU	1. Researchers, professors, students and swine breeding practitioners 2. Native pig farmers 3. Native pig Consumers 4. Institutional markets	1-Jul-15	30-Jun-20	ONGOING	8,127,124.00	825,842.00
Conservation, Improvement and Profitable Utilization of the Philippine Native Pigs in Eastern Visayas	Project 2: Developing A Weather Resilient Local Resource-Based Free Range Production Management Systems For Natve Pigs	Rapid, inclusive and sustained economic growth	Develop a practical and cost efficient native pig range management, feeding and health care protocols and systems suited to the resources available in rural farming communities and to the capacity and capability of rural farmers in Eastern Visayas. · Develop a range area enhancement protocols for free range native pigs that are anchored on: – indigenous technologies in the region, – optimum stocking rate for free range native pigs in the target regions, and – seasonal variations of the availability of naturally occurring feed materials for native pigs in the target regions. · Develop free-range native pig production modules suited to farm conditions in the target regions. · Establish healthcare management procedures (i.e. vaccination, deworming) that promote health and welfare of native pigs on range.	1. 800 slaughter native pigs 2. At least 3 scientific documents on free range native pig production and management, native pig range enhancement protocol, inventory of roughages and other natural feeds for free-ranged native pigs, growth performance and carcass quality of native pigs raised on range. 3. Ration formulation technology for free range native pigs 4. Free range native pig production technology	ESSU	1. Native pig products processors 2. Native pig raisers 3. Native pig Consumers 4. Students, professors and other stakeholders of Philippine native pigs	1-Jul-15	30-Jun-20	ONGOING	2,723,141.00	420,583.00
Conservation, Improvement and Profitable Utilization of the Philippine Native Pigs in Eastern Visayas	Project 3: Native Pig Value Chain And Policy Studies In Eastern Visayas	Rapid, inclusive and sustained economic growth	Establish the demographic profile of native pig raisers, traders, processors and 5 consumers of native pig products in Samar and neighboring provinces.. Generate information on marketing channels and pricing systems of native pigs in the area that would be useful in improving the marketing efficiency of native pig products. Evaluate the supply, demand, and marketing flow of native pig production in Eastern Visayas Review and assess current local government policies relevant to native pig production. Formulate policy briefs and advocacy strategies that are supportive of native pig improvement and profitable utilization initiatives in Eastern Visayas. Determine the socio-economic contribution of native pig production in Eastern Visayas	1. Profitability analysis of breeder and slaughter native pig production in Eastern Visayas. 2. Information on channels and intermediaries involved in the marketing of native pigs and their products in Eastern Visayas. 3. Information on socio-economic profile of the native pig raisers, traders and consumers. 4. Implications of current policies on the future developments of native pig production and marketing. 5. Policy briefs as inputs to the development of enabling legislations to promote native pig conservation, improvement, production and profitable utilization	ESSU	1. R&D planners, researchers, professors and students 2. Entrepreneurs engaged in native pig production 3. Native pig traders 4. Native pig product processors	1-Jul-15	30-Jun-20	ONGOING	1,444,800.00	81,700.00
Development of a National Pork Traceability System	Project 1. Ensuring Food Safety and Quality Along the Supply Chain Through Product Traceability: An ICT-Based Pork Traceability System Model	Rapid, inclusive and sustained economic growth	To ensure safety and quality of pork, a system for tracking meat products using Information and Communication Technologies (ICT) will be developed utlilizing the RFID technology and QR code, and interlinked network of computer and database.	Traceability and identification system established from farm to market - Use-case diagram and ERD of a computer system for tracking animals at the farm - A computer and RFID system for automatically tracking animals at the farm, with online, remote and wireless timely reporting system - A computer and RFID system for automated inventory of animals while in transit - A computer system for transferring animal-and farm-specific information to meat parts via a QR-code tagging system and tracking of meat products for the marketers - A protocol for a QR-code-based quality stamping system for the NMIS - National Database for tagging and tracking swine and meat products.	UPLB	Direct beneficiary of the Program: at least 2 organized swine farm (as model farm for export); 2 government regulatory agencies Indirect beneficiary: at least 2 meat processor and traders	1-Apr-14	31-Mar-17	ONGOING	9,908,420.00	1,168,429.39
Development of a National Pork Traceability System	Project 2. Molecular Traceability: DNA-Based Verification of Meat Product Information	Rapid, inclusive and sustained economic growth	The project aims to address issues in false labelling by developing a technology for species identification in meat and meat products. Two methods of species identification will be developed, one utilizing the technology of Polymerase Chain Reaction (PCR) and a Loop-mediated Isothermal Amplification (LAMP) method.	Molecular based (PCR and LAMP) technology/protocols for verification of meat and meat products Primer sets and barcode region sequences for at least 4 species. A baseline data on false labeling of meat products in Los Baños, Laguna which may serve as an input for legislation of policy related to food safety in the Philippines.	UPLB	NMIS Various stakeholders of newly slaughtered pork like 15 slaughterhouse owners and 12 meat dealers	1-Apr-14	31-Mar-17	ONGOING	13,533,711.00	1,491,795.77

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
Institutionalization and technology transfer commercialization of loop mediated isothermal amplification (LAMP) based rapid diagnostic test of swine respiratory and gastrointestinal infections	Project 1. Institutionalization of LAMP-based assays on respiratory and gastro-intestinal swine infections thru capacity building of state-owned animal disease diagnostic laboratories	Rapid, inclusive and sustained economic growth	Develop effective knowledge and technology transfer and adoption strategies of the LAMP based diagnostic technology by the industry	100% of RADDLs and SUC animal disease diagnostic laboratories and 60% of PVOs in major swine producing regions such as III, IV, VI, VII, XI and XII in the country that are trained in the LAMP-based assay on respiratory and gastrointestinal swine infections 2. Developed training materials on LAMP assays. 3. Fabricated portable heat block for LAMP-based assays. 4. Policy instrument in support to the institutionalization of LAMP adoption by state-based animal disease diagnostic laboratories. 5. Passing of an Administrative Order (AO) in support to the institutionalization of LAMP-based assays among state-based animal disease diagnostic laboratories.	CLSU	RADDLs, SUCs and PVOs selected private animal disease diagnostic laboratories	1-Jul-14	30-Dec-16	ONGOING	4,887,755.00	787,286.00
Institutionalization and technology transfer commercialization of loop mediated isothermal amplification (LAMP) based rapid diagnostic test of swine respiratory and gastrointestinal infections	Project 2. Technology Commercialization of Porcine Epidemic Diarrhea (PED) LAMP-based quick diagnostic test kits	Rapid, inclusive and sustained economic growth	This study aims to commercialize the technology on the the LAMP-based assay on Porcine Epidemic Diarrhea (PED), specifically; 1. Reproduce 600 PED LAMP test kits per year on a pilot scale. 2. Promote the PED LAMP test kits to hog raiser associations and private animal disease diagnostic laboratories to increase awareness and acceptance. 3. Analyze the market potential of the PED LAMP test kit. 4. Develop appropriate packaging of PED LAMP based test kits for commercial production. 5. Develop and present a business plan to potential investors. 6. Enterprise monitoring.	• Established pilot manufacturing facility in CLSU. • Promoted the PED LAMP test kits to 80% of hog raiser/breeder associations in major swine producing regions. • Identified the potential market size • Developed appropriate packaging of PED LAMP based test kits for commercial production. • Developed and presented a business plan to potential investors. • Monitored enterprise backed up by disease prevalence, presence of competitors, etc. and financial performance.	CLSU	• All interested stakeholders. • All commercial hog raisers and breeders	1-Jul-14	30-Dec-16	ONGOING	1,697,709.00	370,833.57
	Development of an e-Commerce System for Breeder Swine and Semen	Rapid, inclusive and sustained economic growth	The project hopes to develop an ecommerce website that would facilitate secured business transactions between producers and users of breeder swine and semen.	a. User manual for end-users (breeder, customer, and administrator) b. Complete documentation of the system for the personnel who will maintain the E-Commerce System c. Completely working E-Commerce System d. Training modules on the use and maintenance of the software and hardware system.	UPD	Swine breeders, backyard and commercial hog raisers, potential hog raisers	1-Jan-15	30-Jun-16	ONGOING	2,802,618.00	571,286.00
	Development of Computer-Aided Remote Expert System Model for Enhancing the productivity and efficiency in swine farms	Rapid, inclusive and sustained economic growth	Develop a computer-aided remote expert (CARE) system model that would allow early detection of heat stress-related behavioral responses for commercial piggery farms with and without evaporative cooling systems	Information on critical stress behaviors of swine validated	UPLB	Local swine industry in general	1-Jul-13	30-Jun-16	ONGOING	5,267,725.00	764,867.00
	Establishment of breed registry system for purebred swine	Rapid, inclusive and sustained economic growth	General Objective: To established breed registry system for purebred swine in the Philippines that will ensure the supply and quality of breeder pigs for the local pig industry. Specific Objectives: 1. To develop a national database for pedigree and performance information of breeder pigs 2. To establish a national breed performance registry system for local purebreds that would allow ranking of individual breeder pigs within a breed. 3. To develop breed verification system and parentage testing protocols for purebred swine 4. To promote the breed registry system to swine breeders and pork producers to enhance accessibility for superior breeder animals.	Breed Registry System and database for Purebred Landrace, Largewhite and Duroc Pedigree certificates Breeder identification (ID) and verification system Training module for farm data recorders Protocol for system operations Selection indices Identification and ranking of genetically superior pigs within a breed	UPLB	ASBAP members (Breeder Farms) Academe Researchers Students Pork producers Consumers	1-Jun-16	31-May-18	NEW	10,000,000.00	7,234,562.00
	Pilot testing of protein enriched copra meal (PECM): A valuable protein feed ingredient for swine and poultry	Rapid, inclusive and sustained economic growth	Establish pilot scale bioconversion systems for the production of Protein enriched copra meal (PECM) for use as feed ingredient in Swine and Poultry.	Established upstream and downstream processes of the pilot scale production of PECM; Carried out storage studies and established storage and shelf life of PECM; Performance and product quality data of PECM in swine and poultry; IP for the technology on the pilot scale production of protein enriched copra meal; Data for business analysis; Business models for producing protein enriched copra meal.	UPLB	Livestock and poultry farmers and feed millers/processors	1-Jul-14	30-Jun-17	ONGOING	22,356,267.00	1,771,656.00
	Prevalence and Identification of antimicrobial resistance genes in bacterial pathogens in swine and poultry	Rapid, inclusive and sustained economic growth	The study will determine the prevalence and identity of antibiotic resistance genes in bacterial pathogens from swine and poultry	1) Knowledge and information (data) on prevalence and identity of antimicrobial resistance genes from swine 2) Knowledge and information (data) on prevalence and identity of antimicrobial resistance genes from poultry 3) Risk assessment associated with antimicrobial use and presence of AMR in swine and poultry 4) Policy advocacy and recommendations that will promote the responsible use of antimicrobials. 5) At least one (1) publication of result outputs	CLSU	1) Feed producers/millers 2) Animal health workers 3) Government regulatory agencies 4) Gov't and private researchers and the academe 5) Swine and poultry industries 6) Policy makers	1-Aug-15	31-Jul-17	ONGOING	4,412,311.00	1,601,437.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
	Utilization of DNA Marker Selection in Breeder and Commercial Swine Farm Units	Rapid, inclusive and sustained economic growth	The proposed R&D project that will be implemented thru privatepublic partnership aspires to promote the utilization of the newly developed gene marker technology in breeding and selection in local swine population to increase productivity and improve production efficiency of the Philippine swine industry. 1) Promote the utilization and adoption of molecular methods of selection by local swine raisers to improve prolificacy and production efficiency thru the use of a private-sector operated swine genomics service laboratory. 2) Validate and estimate the effect of favorable genotype on different traits both at the level of nucleus (purebred GGP, GP) and commercial herds. 3) Provide assistance in the use of genomic information in the breeding program for individual herds.	1) Adoption of the gene marker technology by the swine industry 2) Fully operational swine genetic analytical service laboratory for the identification of positive genes and screening genetic defects of swine 3) Laboratory to screen swine genetic diseases 4) Science based data for the formulation of enabling policies for the swine industry to improve its productivity and efficiency	PCC	1) Swine Breeder Farms 2) Pork producers (Commercial Farms) 3) Academe and Researchers 4) Students	1-Oct-16	30-Sep-18	NEW	4,998,389.00	1,386,875.00
	Fish Kill Mitigation Measures for Cage Aquaculture Systems in Buhi Lake and Magat Reservoir	Integrity of the environment and climate change adaptation and mitigation	To develop a practical and low cost mitigation measures for cage aquaculture systems in lake and reservoir.	? Early warning system ? Fishkill mitigation protocols ? Manual of operation for fishkill mitigation and good aquaculture practices ? Trainings conducted for Local Government Units and fish cage operators/fishfarmers in Albay and Isabela	BU, ISU	Aquaculturist, researchers, academe, policy makersand fisherfolks in target sites: Buhi lakeandMagat reservoir, etc.	1-Oct-16	30-Sep-18	NEW	10,000,000.00	4,093,101.12
	Gender Responsive Sustainable S&T Based Livelihood on Tilapia Cage Culture and Fish Processing for Low-Income Households in Coastal Barangays of Los Baños, Laguna (Phase 2)	Poverty reduction and empowerment of the poor and vulnerable	1. To determine gender norms, roles and gender issues that limit participation and economic empowerment of women and men in coastal lake barangays. 2. To capacitate men and women of LGU-LB and tilapia fish farmers on gender responsive S&T based livelihood on tilapia cage culture and fish processing 3. To empower tilapia cage farmers/cooperators with entrepreneurial and marketing skills 4. To facilitate the establishment of fish farmers or fish processors' organization of cooperative 5. To enhance collaborative efforts and networking among various stakeholders for technical, financial support and market linkage	1. 10 trainings on Good Aquaculture Practices and Entrepreneurship (Product Development, Packaging and Labeling, Managing a Healthy Cash Flow (Financial Management), and Sales and Marketing) 2. 50 fishers and 100 women who received hand outs and other IEC materials regarding production, marketing and product design of tilapia cage culture and fish processing from PCAARRD, and BFAR among others 3. Enhanced knowledge and skills among 150 community stakeholders on tilapia production through cage culture and fish processing as a livelihood enterprise 4. Enhanced knowledge and skills among 150 community stakeholders on fish processing 5. Adoption of science-based fish processing techniques and enterprise engagement of at least 50% of the targeted training participants after a year 1 of project implementation 6. Participation in the weekend market cum trading post along the national highway beside the municipal building of Los Baños, Laguna 7. Increased income through the technology adoption and enterprise development by 80% 8. Organized and strengthened one self-help group of women 9. Identified marketing arrangement between local producers and prospective buyers 10. One cooperative organized and registered	LGU-LB	Tilapia Fish Cage Culture: Direct beneficiaries of this project would be 50 families of fish farmers: father, mother, grand parent, children above 18, senior citizens within the family Fish Processing: Members of 50 families of the tilapia cage farmers and 25 women of each six coastal barangays including Barangay Baybayin, totaled to 150 beneficiaries	1-Nov-16	31-Oct-18	NEW	3,000,000.00	2,310,601.00
	Utilization of plant-based natural anti and pro-oxidants for farmed tilapia	Rapid, inclusive and sustained economic growth	The project will produce plant-based products a anti and pro-oxidants for farmed	Protocols for improved health management of Tilapia. Products for better performing tilapia.	Isabela State University	(a) 4 hatchery operators in Nueva Ecija and Isabela; and 10 Tilapia growers in Isabela; 10 fishfarmers in Cagayan Valley Region	1-Oct-16	30-Sep-18	NEW	4,702,008.32	2,928,129.16
National R&D Program for Vegetables	Project 1. Vegetable Varieties for Sustainable Yields, Quality and Seed Supply	Poverty reduction and empowerment of the poor and vulnerable	Develop genetically broad-base varieties of ampalaya with disease resistance; and improve pole sitao production through participatory varietal improvement.	1 OPV of ampalaya with resistance to NMK and/or bacterial wilt;10 kg foundation seeds of the new improved variety' 25 farmers trained for sustainable seed supply of the new variety; and At least 2 farmer-developed stable lines/cultivars of pole sitao; 10 kg seeds per line/cultivar.	UPLB	Vegetable producers, handlers, consumers, researchers	1-Apr-13	30-Sep-16	ONGOING	6,431,235.00	334,808.07
Restoring Crop Diversity at the National Germplasm Repository (Phase II)	Project 1. Regeneration and Conservation, Characterization and Evaluation, Assessment of Genetic Diversity and Sustainable Utilization of Vegetables Genetic Resources	Poverty reduction and empowerment of the poor and vulnerable	General: To increase the utilization of the conserved germplasm of important vegetable crops at NPGRL, through repatriation, regeneration and conservation, characterization and evaluation. Specific: 1. To continue the repatriation of vegetable germplasm from other national genebanks; 2. To regenerate and multiply accessions of vegetables; 3. To characterize, evaluate and identify the accessions being regenerated with special traits and nutraceutical properties for utilization; 4. To assess the diversity of the vegetable germplasm collection; and 5. To conserve the regenerated germplasm using suitable storage containers in the cold storage facility of the NPGRL.	At the end of the project it is expected that vegetable accessions will be characterized, evaluated for agronomic traits and reaction to diseases, selected as promising materials for direct utilization and as parents in crop improvement programs. This will contribute to increasing their consumption and thereby improving the nutrition of Filipinos.	UPLB	Plant breeders, genebank managers, researchers, farmers, and consumers	1-Jul-16	30-Jun-17	NEW	714,286.00	714,286.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
Restoring Crop Diversity at the National Germplasm Repository (Phase II)	Project 2. Regeneration and Conservation, Characterization, Evaluation, and Assessment Diversity and Sustainable Utilization of Food Legumes Genetic Resources	Poverty reduction and empowerment of the poor and vulnerable	General: To increase the national germplasm collection and increase utilization of the conserved germplasm of food legumes at NPGRL, through regeneration and conservation, characterization and evaluation. Specific: 1. To conduct viability testing of threatened accessions of food legumes 2. To regenerate and multiply threatened accessions of food legumes; 3. To characterize, evaluate and identify germplasm accessions of food legumes with special traits and nutraceutical properties; 4. To assess diversity in the collection of food legumes at NPGRL; and 5. To identify, multiply and distribute promising accessions of food legumes.	At the end of the project it is expected that available diversity in mungbean, pigeon pea, cowpea, lima bean, pole sitao, winged bean, soybean, and peanut had been characterized, and evaluated for agronomic traits and reaction to field diseases. As well, accessions of food legume species will be conserved at NPGRL. All accessions at NPGRL will be of good quality and with sufficient quantity for distribution to all users. Promising accessions will be identified and channeled to crop improvement programs. The project will increase the utilization of accessions of food legumes conserved in the genebank.	UPLB	Plant breeders, genebank managers, researchers, farmers, and consumers	1-Jul-16	30-Jun-17	NEW	714,286.00	714,286.00
Restoring Crop Diversity at the National Germplasm Repository (Phase II)	Project 3. Regeneration and Conservation, Characterization, Evaluation, Assessment of Genetic Diversity and Sustainable Utilization of Cereals Genetic Resources	Poverty reduction and empowerment of the poor and vulnerable	General: To rescue, re-establish, characterize, evaluate and conserve effectively critically endangered accessions of the national cereals germplasm Specific: a. To determine seed viability and stock quantity status of cereals germplasm collection at national repository. b. To rescue, rejuvenate and re-establish critically endangered cereals germplasm accessions at the national repository c. To characterize cereals germplasm entries with sufficient plot population for field and post-harvest morpho-agronomic characteristics and score reaction for natural field damage of pest and diseases. d. To identity cereals germplasm accessions based on morpho-agrnomic characteristics for direct and/or indirect germplasm use	At the end of the project it is expected the following targets are met: 1. Rehabilitation and re-commissioning of 1 unit walk-in storage for short-term-active conservation of cereals germplasm. 2. Acquisition and installation of additional upright no-frost freezers for base conservation of cereals germplasm collection 3. Assessment of the longevity and stock inventory status of the cereals germplasm collection 4. Completion of characterization gaps and/or baseline characterization of cereals germplasm collection. 5. Rescue and re-establishment of critically endangered cereals germplasm accessions	UPLB	Plant breeders, genebank managers, researchers/students, farmers, consumers	1-Jul-16	30-Jun-17	NEW	714,286.00	714,286.00
Restoring Crop Diversity at the National Germplasm Repository (Phase II)	Project 4. Regeneration and Conservation, Characterization, Evaluation, Assessment of Genetic Diversity and Sustainable Utilization of Rootcrops and Medicinal Plant Genetic Resources	Poverty reduction and empowerment of the poor and vulnerable	General: To increase the national germplasm collection and increase utilization of the conserved germplasm of rootcrops, medicinal and herbal crops at NPGRL, through regeneration and conservation, characterization and evaluation. The project will also identify phytotoactive compounds in medicinal plants. Specific: 1. To regenerate and conserve the germplasm of yam, taro, cassava, medicinal and herbal plants; 2. To morphologically characterize the germplasm collection of cassava, yam and taro, medicinal and herbal plants conserved at the NPGRL; 3. To assess the diversity of germplasm collection of rootcrops and selected medicinal plants; 4. To identify promising genotypes with useful traits and utilize them as sources of genes for crop improvement; and 5. To identify and select accessions of rootcrops and selected medicinal plants with phytoactive compounds	At the end of the project it is expected that the germplasm collection of cassava, yam and taro, medicinal plants, herbal crops have been regenerated and conserved, morphologically characterized and evaluated and assessed for their diversity; phytoactive compounds of selected medicinal plants identified. It is also expected that promising accessions with special traits will be identified	UPLB	Plant breeders, Researchers, Genebank managers and curators, Farmers, Consumers	1-Jul-16	30-Jun-17	NEW	714,277.00	714,277.00
Restoring Crop Diversity at the National Germplasm Repository (Phase II)	Project 5. Genetic Diversity Assessment, Characterization, and Conservation of Fruits and Nuts Genetic Resources	Poverty reduction and empowerment of the poor and vulnerable	General: To assess the diversity, maintain and multiply, evaluate, and assess the potential of fruits and nuts as food and industrial products Specific: 1. To characterize germplasm of fruits and tree nuts species using morphological traits, 2. To conserve and regenerate genetic resources of fruits and nuts species, and 3. To identify promising fruits and nut germplasm materials	1. Re-establishment of the field genebank 2. Generation of promising accessions for potential registration 3. Assembly of the available variability in the fruit and nuts in the Philippines 4. Produce food and industrial products from the fruit and nut genetic resources	UPLB	Plant breeders, genebank managers, researchers, farmers, and consumers	1-Jul-16	30-Jun-17	NEW	714,161.00	714,161.00
Restoring Crop Diversity at the National Germplasm Repository (Phase II)	Project 6. Development of Sustainable In-vitro Conservation Strategies for Rootcrops and Musa Genetic Resources	Poverty reduction and empowerment of the poor and vulnerable	General: To develop sustainable in vitro conservation strategies for root crops and banana genetic resources. Specific: 1. To evaluate the genotypic response of root crops and banana accessions to developed medium term conservation protocols; 2. To evaluate the use of storage organ as materials for medium term conservation; 3. To initiate studies on cryopreservation for long term conservation asexually propagated crops and fruit crops with recalcitrant seed; 4. To conserve the existing in vitro collections of roots crops and banana.	1. At least two protocols for sustainable medium term in vitro conservation based on minimal-growth modified culture medium, appropriate culture vessels and optimized environmental conditions 2. At least one cryopreservation protocols for long term conservation 3. In vitro collections of root crops and banana 4. At least two publications	UPLB	1. Farmers 2. Researchers 3. Gene bank curators 4. Agricultural workers 5. Students	1-Jul-16	30-Jun-17	NEW	714,118.00	714,118.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
Restoring Crop Diversity at the National Germplasm Repository (Phase II)	Project 7. Documentation and Data Management, and Web-based Publication of the National Plant Genetic Resources Repository Non-confidential Data and On-line Access to the Genetic Resource	Poverty reduction and empowerment of the poor and vulnerable	General: To sustain the multi-crop database and information management system and enhance utilization of various PGR and increase the germplasm users through connection of useful data and information to the internet. Specific: 1. To populate the data and information in the created multi-crop relational database and information management system, 2. To produce documentation of the created system of NPGRL, 3. To train the crop curators of NPGRL and select users (e.g. breeders) on the use of the created system, 4. To publish gerplasm non-confidential passport and characterization data for enhancement of germplasm utilization, 5. To develop and create data and information web pages of the different germplasm acccessions held at NPGRL for publication in the internet as an additional tool for the public awareness on plant genetic resources , and 6. To make public the results of the activities and outputs.	1. Populated documentation system 2. Manual/users' guide on the use of the documentation system 3. Published non-confidential germplasm data and information in the internet 4. NPGRL staff and other users trained on the use of the database management system 5. Access to NPGRL documentation system, PHLGRIMS, provided 6. Protected IPs associated with the system and document	UPLB	NPGRL personnel, Genebank staff, Breeders, Researchers, Farmers, Public	1-Jul-16	30-Jun-17	NEW	714,286.00	714,286.00
	Utilization of Modified Drip Irrigation for Production of High Quality Onion and Garlic	Rapid, inclusive and sustained economic growth	Increase yield in vegetable production by 30% through the use of low pressure drip irrigation technologies	Y1:Low-cost, modified drip irrigation system for onion and garlic for both off-season and on-season production Water/irrigation management system Y2: Increased yield of good quality onion and garlic by 30%. Increased water use efficiency in garlic and onion production by 30% 200 farmers trained Training module and technoguides for onion and garlic production	Central Luzon State University	Onion and garlic farmers Researchers, agricultural technicians, students Government agencies, research & academic institutions	1-Jul-16	30-Jun-18	NEW	4,832,152.00	2,997,076.00
	Identification and Transmission Studies on Major Diseases of Vegetables in Eastern Visayas	Poverty reduction and empowerment of the poor and vulnerable	General: To characterize and identify the common diseases affecting vegetable crops in Eastern Visayas, determine their prevalence, incidence and severity and to study the mode of transmission of virus and phytoplasma diseases and identify insect vectors. Specific (Component 1): 1. To determine the prevalence, incidence and severity of important diseases (diseases due to fungi, bacteria, virus and phytoplasma) affecting selected vegetables commonly grown (with emphasis on â€œPinakbet-type vegetables) in Eastern Visayas; 2. To isolate fungal and bacterial pathogens and conduct pathogenicity tests on uncommon and unreported fungal and bacterial diseases, to characterize and identify these pathogens; 3. To characterize diseases which are suspected to be due to viruses and mollicutes (specifically phytoplasma) through symptoms, detect and identify pathogens through molecular methods, diagnostic kits and if necessary submit specimens for gene sequencing and electron microscopy especially for unreported diseases; 4. To generate a database of different vegetable diseases in Region 8, produce IEC materials and publishable papers in peer-reviewed journals. Specific (Component 2): 1. To collect virus and phytoplasma diseases and associated insects which are potential vectors; 2. To study the mode of transmission and identify the insect vectors of viruses and phytoplasmas commonly affecting â€œPinakbet-typeâ€•vegetables crops; 3. To identify the insect vectors of each virus and phytoplasma disease; and 4. To produce a database of different vegetable diseases in Region 8, IEC materials, and publishable papers in peer-reviewed journals.	Year 1: Completed data on prevalence, incidence and severity of the different diseases; Collected insect vectors of phytoplasma and/or viruses Isolated and initially characterized fungi, bacteria, viruses, and phytoplasma causing diseases in vegetables; and Initial molecular detection of viruses and phytoplasmas from suspected insect vectors. Year 2: Identified and characterized specific cause of at least 6 diseases of the priority vegetables; Determined mode of transmission of viruses; and Identified specific insect disease-vectors. Year 3: Identified and characterized specific cause of all the observed and sampled diseases; Developed database of vegetable diseases in Region 8; Developed 12 IEC materials on the different vegetable diseases in Eastern Visayas; and Articles for publications will be ready for submission to peerreviewed journals	VSU	Researchers, Extension Workers, Academicians and indirectly the Vegetable farmers	1-Jul-14	31-Dec-16	ONGOING	4,989,785.33	904,850.09
	Pilot Testing and Utilization of Rapid Bioassay for Pesticide Residues (RBPR) System in the Philippines	Poverty reduction and empowerment of the poor and vulnerable	1.) Adopt the RBPR technology for acetylcholinesterase and pyrethroid tests for pesticide residues; 2.) Set up production areas of RBPR test kits for utilization and training of core analysts to be based on identified major trading posts; 3.) Develop protocol for pesticide residue monitoring of vegetables for pre and post harvest monitoring for vegetables using RBPR; 4.) Pilot test RBPR stations in strategic areas of vegetable trade in Metro Manila, Benguet, Laguna, and Quezon; 5.) Establish the utilization of RBPR technology in monitoring the pesticide residue of vegetables in the Philippines for farmer growers; and 6.) Promote the RBPR technology to appropriate regulatory bodies.	10 agricultural technicians and 6 market inspectors trained for monitoring vegetables in farms and markets; 10 vegetable researchers and chemists trained for monitoring pesticide residues as pre and postharvest test; Proposed system for pesticide residue monitoring of vegetables in the Philippines for policy adoption; Guidelines on the implementation of RPBR in the Philippines; Pilot tested RBPR kits for use in trading posts in Benguet, Quezon, and Laguna markets and for Government Regulatory Agencies and organic certifying bodies; Data on pesticide residues in vegetables in Benguet, Laguna, and Quezon farms using the different farming practices; Data on pesticide residues in major trading posts in Benguet, Laguna and Quezon; and Scientific publication and IEC material on RBPR	BSU, UPLB	Target beneficiaries are vegetable consumers in general, researchers and extension workers who work closely with vegetable farmers. If RBPR will be adopted by BAFS and require organic certifying bodies to use RBPR to monitor the accredited organic farms and farmer groups for self-regulation. The data generated can also be a basis for policy or regulation by government agencies dealing with food safety	1-Sep-15	31-Aug-17	ONGOING	8,000,000.00	622,579.60

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
	Potato Seed Production through Aeroponics (Phase I: Technology Development)	Poverty reduction and empowerment of the poor and vulnerable	General To develop a low-cost technology aeroponics system for clean white potato seed production. Specific Objectives 1. To design an aeroponics facility (greenhouse and mist system) specific for potato seed production; 2. To formulate a nutrient solution most suitable for highland potato seed production; 3. To determine the best planting material for aeroponics potato seed production system; and 4. To compare aeroponics potato seed with conventionally-produced potato seed in farm trials.	Year 1: Started re-designing of existing greenhouse at DA-NMACLRC and mini-greenhouse at IPB-UPLB Collected micro- environment data at UPLB Collected data on the growth of potato Evaluated different nozzle/mist system in aeroponics Started evaluation, optimization, and improvement of the CIP nutrient solution Year 2: A prototype of a greenhouse and an aeroponics system specific for potato seed production Nutrient formulation for aeroponics system for potato seed production under Philippine conditions Year 3: Compared aeroponically and conventionally produced seed potato in farm trials for two seasons A cost and return analysis between aeroponically-produced planting materials and conventional method A production manual on technology for the production of diseasefree potato mini-tubers as potato seed and a protocol on aeroponics system.	UPLB, DA-NMACLRC	Highland vegetable farmers and commercial seed growers in Regions 10, 11 and CAR	1-Nov-14	31-Oct-17	ONGOING	4,999,382.00	1,480,123.20
	Productivity of Selected Vegetables in a Controlled-Environment Greenhouse	Rapid, inclusive and sustained economic growth	General: To establish an environmental sensing system in simple structure(s) for improved productivity of selected vegetables in a controlled environment greenhouse. Specific: • To establish automated control systems for sustaining optimum growing environmental parameters • To evaluate the performance of such systems on the productivity of selected vegetables • To establish parameters to build a controlled environment for a tropical protected cultivation • To assess the performance of tropical protected structure for vegetable production	• One locally-developed simple protected structure with environmental sensing systems and micro-climate measurements suitable for the production of selected crops • Efficient water and nutrient management systems from 40% to 95% • Improved/refined nutrient solution for each test crop • Increase harvest by 5% that of the conventional system • Identified pertinent design parameters for controlled environment greenhouse • Produced promotional materials about environmental sensing and micro-climate measurement • Two IEC materials on POTs for melon, tomato & bell pepper • One techno-demo farm on environmental sensing and micro-climate measurement • One technology seminars/training sessions and one field day • One web page for simple protected structure created & maintained	CLSU	(internal greenhouse temperature and nutrient solution temperature) Efficient water and nutrient management systems; and improved/refined nutrient solution for each test crop; Pertinent design parameters for controlled environment greenhouse The development of locally fabricated automatic sensors used in a locally designed greenhouse has technical and financial impact to replace the very expensive imported automated greenhouses. This will enhance the adoption of greenhouses for vegetable production. Vegetable production can be protected from the adverse effects of weather and climate, hence vegetables can be grown all year-round.	16-Dec-14	15-Jun-16	ONGOING	4,209,254.00	1,028,168.00
	Technology Demonstration and Capacity Building for Lowland Vegetable Production	Poverty reduction and empowerment of the poor and vulnerable	General: The project aims to demonstrate matured technologies on vegetable production through modalities in a year-round basis taking into consideration the principles of productivity, creativity, and profitability. Specific: 1. To establish demonstration areas for matured and packaged crop production technologies on tomato, eggplant, pole sitao, and bitter gourd; 2. To showcase NSIC-approved lowland and open-pollinated varieties of vegetables, use of biological control agents, botanicals, microbial inoculants, and other matured production technologies; and 3. To promote economically-viable vegetable production through trainings, field days, and distribution of IEC materials.	1st year – established a technology demonstration area for POTs and serve as a learning venue for actual viewing of the public 2nd year- Increased number of POTs implemented in Technology demonstration area. Catered visitors from various sectors. Techno-trainings with on-farm immersion activities in the technology demonstration area 3rd year- Increased number of POTs implemented in Technology demonstration area. Catered visitors from various sectors. Techno-trainings with on-farm immersion activities in the technology demonstration area. Profitability analysis of an organic and a conventional vegetable production. Developed IEC materials for distribution to clienteles.	UPLB	Local and international organizations, students from state colleges and universities, local government technicians, farmers, and individuals who frequently visit Los Baños to acquire information and technologies on vegetable production.	5-Jan-15	4-Jan-18	ONGOING	4,999,365.00	1,214,239.00

Program Title	Project Title	Key Result Areas (KRA)	Description of Program/Project/Objectives	Expected Output/Target	Implementing Agency	Beneficiaries	Start	End	Status	Total Project Cost	2016 PCAARRD GIA
	Use of Carrageenan Plant Food Supplement (PFS) for Selected Cool-Season Crops (lettuce, broccoli, cabbage, and strawberry) in Protected Production System	Rapid, inclusive and sustained economic growth	General: To determine the effect of foliar carrageenan PFS and synthetic fertilizer combinations on the growth, quality, and yield of selected cool-season crops (lettuce, broccoli cabbage, and strawberry) under greenhouse conditions. Specific: 1. To evaluate the effects of various levels and frequency of carrageenan PFS applications on the growth and yield of selected cool-season crops; 2. To identify the optimum levels and frequency of carrageenan supplement application to maximize yields of the test crops; 3. To evaluate the effects of carrageenan PFS on the incidence of major insect pests and diseases of selected crops; 4. To determine the effect of carrageenan PFS on the quality of produce; 5. To validate preliminary test results in selected farmers' fields; and 6. To conduct a benefit-cost analysis on the use of carrageenan PFS in the production of the selected crops	a. Increased yields of the test crops by at least 20% per cropping b. Reduced quantity of chemical fertilizer use by as much as 25% c. Reduced requirement and use of insecticides by as much as 25% d. Improved quality of produce in terms of sugar and nutrient contents without any contamination e. Benefit-cost analysis of the proposed intervention f. IEC materials and scientific paper on the use of carrageenan PFS in production of selected crops g. Conducted training of farmers on the use of carrageenan PFS	BSU	local farmers engaged in the production of cool-season crops seaweed farmers and processors who could benefit from the increased demand for their products consumers who would gain access to safer and better quality fruits and vegetables	1-Oct-16	30-Sep-18	NEW	5,000,000.00	1,715,396.00