

Quarterly Physical Report of Operation
As of 31 December 2020

Department: Department of Science and Technology (DOST)


Agency: Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD)

Operating Unit:

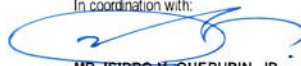
Organization Code (UACS): 19 013 0000000

Particulars	UACS Code	Physical Targets					Physical Accomplishments					Variance as of 4th Quarter	Remarks
		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total		
1	2	3	4	5	6	7=(3+4+5+6)	8	9	10	11	12=(8+9+10+11)	13	
Program: National Industry, Energy and	31 010 0000000000												
Organizational Outcome: Increased benefits to Filipinos from scientific knowledge and technological innovations for productivity and competitiveness													
Output Indicators													
Number of projects funded		30	30	30	10	100	38	27	16	63	144	-44	The total disbursed budget for the 144 projects amounts to P466.20M.
Number of projects monitored		50	50	50	50	200	191	42	16	30	279	-79	As of 4th quarter, the Council monitored 279 projects based on the progress and/or financial reports submitted by the Implementing Agency or through field evaluation visit/report conducted by PCIEERD Project Managers.
Percentage of projects completed which are published in peer-reviewed journals, presented in national and/or international conferences, or with IP filed or approved		10%	20%	15%	10%	55%		40%		13%	53%	2%	Out of the 380 completed projects assisted and monitored from 2017 - 2019, 202 projects were validated to have published their papers in peer-reviewed journals, presented in national and/or international conferences, or have filed IP or approved as of 4th quarter of 2020.
Outcome Indicators													
Percentage of priorities in the Harmonized National R&D agenda (HNRDA) addressed					90%	90%	100%	100%	100%	100%	100%	-10%	The Council has ongoing projects in relation to its seven (7) main priorities in the HNRDA, which are enumerated in the attached document.
Number of partnerships with public and private stakeholders and international organizations		10	20	10	10	50	70	5	3	8	86	-36	Please see attached list of Implementing Agencies (IAs). Please take note that DOST attached agencies with projects monitored/assisted by the Council are excluded in the report because based on the definition set by the Department, only (IAs) outside of DOST should be reported.

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DR. ENRICO C. PARINGIT
Executive Director

**Number of Projects Funded
(October - December 2020)**

	Program Title	Project Title	Implementing Agency
1	SEA-EU	Metal Oxide Hybrid Structured Barriers for Stable Energy Devices	De La Salle University
2		Development of a Smart Polymer Meta-Material for Wearable Biosensors	De La Salle University
3		Development of Food Reference Materials for Nutrition Labeling for Use of Local Testing Laboratories (Phase 3) Implementation of ISO 17034:2016 Quality Management System in the Development of Rice Flour	Food and Nutrition Research Institute
4		Development of Halal Compliant Dehydrated Food Products from Selected Food Materials (Fruits, Vegetables and Rootcrops)	Industrial Technology Development Institute
5		Establishment of Halal Assurance System for Selected Food Ingredients (Dried and Powdered Onion, Garlic, Black Pepper and	Industrial Technology Development Institute
6		Development of Draft Standards and Recommended Code of Practice for Processing of Peanut Butter	Industrial Technology Development Institute
7		SUGPo: Sustainable mine waste management Using modified hydrothermal carbon from prawn shells, and Geochemical modelling of Pathways of contaminants from	Mindanao State University-Iligan Institute of Technology
8		Valorization of Mining Wastes by Green Nano-hydrometallurgy: Application of Green-mediated Leaching Process and Innovative Magnetic Nano-separations for the Recovery of Rare Earth Elements	Caraga State University
9		Recovery of Rare Earth Elements and Strategic Elements from Coal Fly Ash by Hydrometallurgical Techniques	Mindanao State University-Iligan Institute of Technology

10		Chemical Synthesis and Characterization of Conducting Polymer/Metal Nanoparticles Composites, and Their Application as a Chemiresistive Gas Sensor Array for H2S and CO2	University of Santo Tomas
11	Higher Education Institution Readiness For Innovation & Technopreneurship (HEIRIT) Development Program	HEIRIT: Establishment of the DOST-TUPV HIVE (Hub for Innovation and Value Engineering)	Technological University of the Philippines Visayas
12	Higher Education Institution Readiness For Innovation & Technopreneurship (HEIRIT) Development Program	HEIRIT Establishment of the DOST technology Business Incubation in UP Mindanao	UP Mindanao
13		PREP: Preparing Researchers as Entrepreneurs Program	Ateneo de Manila University
14	IP Management Program for Academic Institutions Commercializing Technologies (IMPACT)	IMPACT: Establishment of Technology Management System at UP Mindanao	UP Mindanao
15	IP Management Program for Academic Institutions Commercializing Technologies (IMPACT)	IMPACT: Enhancing the Technology Transfer Processes of the TUPV Intellectual Property and Technology Transfer Office (TIPTTO)	Technological University of the Philippines-Visayas
16	IP Management Program for Academic Institutions Commercializing Technologies (IMPACT)	IMPACT: Establishment of Technology Transfer and Utilization Processes and Services in Bulacan State University	Bulacan State University
17	Higher Education Institution Readiness For Innovation & Technopreneurship (HEIRIT) Development Program	HEIRIT: ESTABLISHMENT OF DOST-ISAT U K'DRA 1905 TECHNOLOGY BUSINESS INCUBATOR (KTBI)	Iloilo Science and Technology University
18	IP Management Program for Academic Institutions Commercializing Technologies (IMPACT)	IMPACT: SPRINGBOARD - Supporting Potential and Relevant IP as Next Generation Business Opportunities towards Acceleration of Research and Development	Batangas State University
19	IP Management Program for Academic Institutions Commercializing Technologies (IMPACT)	IMPACT: The Enhancement of USTPs Intellectual Property Management and Establishment of Technology Commercialization Systems and Standards	University of Science and Technology of Southern Philippines

20	IP Management Program for Academic Institutions Commercializing Technologies (IMPACT)	IMPACT: Strategic Enhancement of Technology Transfer and Business Development Operations and Programs of the Philippine Nuclear Research Institute	Philippine Nuclear Research Institute
21	IP Management Program for Academic Institutions Commercializing Technologies (IMPACT)	IMPACT: Enhancement of Intellectual Property and Technology Transfer Processes in MSU-IIT	Mindanao State University - Iligan Institute of Technology
22	Higher Education Institution Readiness For Innovation & Technopreneurship (HEIRIT) Development Program	HEIRIT: Adamson University Neo Science and Technology Incubation Center (AduNEST-INC)	Adamson University
23	IP Management Program for Academic Institutions Commercializing Technologies (IMPACT)	IMPACT: Establishment of Adamson University Technology Transfer Processes	Adamson University
24	IP Management Program for Academic Institutions Commercializing Technologies (IMPACT)	IMPACT: Fostering Innovation to Galvanize HEIs Tech Transfer (FIGHTT) - Saint Louis University	Saint Louis University
25	IP Management Program for Academic Institutions Commercializing Technologies (IMPACT)	IMPACT: Establishment of Knowledge and Technology Transfer Processes for University of the Cordilleras	University of the Cordilleras
26		Determination of the Mineral Processing Operating Parameters for Ores in Cabadbaran City and Business Model Development for the Sustainable Operation of Gold-Copper Pilot Plant in Caraga	DOST Region XIII
27		MR. Tour Guide: A Cultural Adaptive Mapping Platform using Mixed Reality	Batangas State University
28		Development and Field Testing of Retort Foods as Food Ration for Men in Uniform during Combat and High Risk Operations	Industrial Technology Development Institute
29		Polyhydroxyalkanoate (PHA) Production from Agricultural Wastes	UP Los Baños

30		Utilization of Expanded Perlite produced from Philippine mines as Partial Fine Aggregate Replacement for Concrete Hollow Blocks and Masonry Mortar for Non-Load Bearing Walls	UP Diliman
31		CAPPS: Development of an Alternative Ceramic Armor Plates from Philippine Silicates for Philippine Armed Personnel	Mindanao State University - Iligan Institute of Technology
32		Project BUHAWI (Automated Gun Mount for Browning 0.50 Caliber Machine Gun, M2, Heavy Barrel)	Metals Industry Research and Development Center
33		"Waste to Wealth": Value-Adding Approaches to Transform Cacao (<i>Theobroma cacao</i> L.) Pod Husk Towards Economic Development	Isabela State University
34		Developing the Capability of Micro- and Small-Scale Processors in the Manufacture of Quality Food Products from Philippine Cocoa	Industrial Technology Development Institute / UP Mindanao
35		Knowledge Transfer to DOST Technical Staff: Catalyst to MSMEs' Gaining PQA for	DOST Region IX
36	Upgrading the PNS for Virgin Coconut Oil (VCO) and the Philippine VCO Industry	Project 3. Investigation of Factors Affecting the Sensory Properties and Acceptability of VCO	UP Diliman
37	Upgrading the PNS for Virgin Coconut Oil (VCO) and the Philippine VCO Industry	Project 1. Physico-chemical factors which affect the quality of VCO	Ateneo de Manila University
38	Upgrading the PNS for Virgin Coconut Oil (VCO) and the Philippine VCO Industry	Project 4. Assessment of VCO Production: GMP and HACCP	Ateneo de Manila University
39	Upgrading the PNS for Virgin Coconut Oil (VCO) and the Philippine VCO Industry	Project 5. Water Activity and Percent Moisture: Effect on VCO Stability	Ateneo de Manila University
40		Port Capacity Analysis and Route Optimization for Local Maritime Administration	UP Diliman
41		Determination of Optimal Placement of Electric Vehicle Charging Stations in a Local	UP Diliman
42		Unmanned Aerial System (UAS) with Passively Rotating Spherical Shell for Close-proximity Inspection of Infrastructure	Mindanao State University-Iligan Institute of Technology

43		Progressive Advancement of Transportation networks through the Integration of vehicular Onboard Technologies with online platforms (PATRIOT)	UP Diliman
44		Safe, Efficient, and Sustainable Solar-Assisted Plug-In Electric Boat (Sessy E-	Mapua University
45		AQUADRONE: UAV Assisted Deployment System for Water Quality Monitoring	University of Santo Tomas
46	Materials for Sustainable Construction and Recyclables Applied to Projects (M-SCRAP)	Project 2. Green Fiber-reinforced Polymer (FRP) Composites as an Innovative Repair System for Earthquake-prone Historical	De La Salle University
47	Securing Water Resources in Tourist Destinations in the Philippines: Pilot Study in Boracay Island (Comprehensive Water Resources Assessment and Management Plan for Nabaoy River Watershed and Boracay Island)	Project 1. Water for Tourism: A Science-Based Water Resource Monitoring and Management Planning Guide for Tourist Destinations in the Philippines	Ateneo de Manila University
48	Materials for Sustainable Construction and Recyclables Applied to Projects (M-SCRAP)	Project 1. Development of Fiber-Reinforced Self-Compacting Concrete (SFRSCC) for corrosion reduction	Far Eastern University - Institute of Technology
49		Customer Focused DARIUS II	DOST Region IV-A
50	Natural Fibers as Nanostructured Scaffolds for Biomedical Applications	Project 2. Nanostructured Scaffolds from Natural Fibers as Platforms for Stem Cell Growth and Differentiation	UP Diliman
51		Photoluminescent Metal Nanocluster to Detect, Disinfect, and Suppress the Spread of Coronavirus and other Microorganisms	De La Salle University - Laguna Campus
52		A Link-Up of Geomatics and Social Science Research for the Development of Smart Cities (LUNGSOD) Project	UP Diliman
53		Design and Development of Intelligent Traffic Control and Management System	Caraga State University
54	Artificial Intelligence Program	Development of Multi-lingual Chatbot for Health Monitoring of Public School Children`	De La Salle University

55		Development of Error Resilient Joint Source-Channel Video Transmission System for High Efficiency Video Coding (HEVC) Standards over Wireless Channel	University of Santo Tomas
56	Artificial Intelligence Program	Intelligent Structural Health Monitoring via Mesh of Tremor Sensors (meSHM)	De La Salle University
57		Pilot Implementation of ITDI's Pre-Commercialization Tools/ Strategies for Effective Transfer and Commercialization of Generated Technologies and Intellectual	Industrial Technology Development Institute
58	Infrastructure Development Program	Center for Green Nanotechnology Innovations for Environmental Solutions (CGNIES)	University of Mindanao
59	Infrastructure Development Program	Establishment Of A Solid Freeform Fabrication Research Laboratory (SoFFRel)	Pangasinan State University
60	Good Governance through Data Science and Decision Support System (GODDESS) Program	Development of Iloilo Province Employment Portal and Services (IPEPS) with Data Analytics	Iloilo Science and Technology University
61	Good Governance through Data Science and Decision Support System (GODDESS) Program	PhilRice Data Analytics Initiative - RiceLytics	Philippine Rice Research Institute (PhilRice)
62	Good Governance through Data Science and Decision Support System (GODDESS) Program	Optimization of Decision Support System for Effective e-Governance (ODeSSEE) on Preemptive Evacuation for Flood Disaster amidst Covid-19 in Cagayan Valley	Isabela State University - Cauayan City
63	Good Governance Through Data Science And Decision Support System (GODDESS) Program	Development of Data Analytics and Information System: Support on Social Welfare Services for Senior Citizens of Butuan City	Father Saturnino Urios University

**Number of Projects Monitored
(October - December 2020)**

	Program Title	Project Title	Implementing Agency
1		Formulation of a Settlements Development Model in New Growth Areas in the Philippines	UP Diliman
2	MECO-TECO	MCWQM: Multi-platform and Cross-Sensor Water Quality Monitoring	UP Diliman

3	Synergistic Capacity Advancement for the Management of Laguna Lake: SCALE	Project 3. TRACe Fish – Trace oRganics and metAls in Commodity Fish: Method optimization, extent of contamination and health risk due to fish intake	UP Diliman
4		Extraction of Radionuclides Rare Earths, and other Valuable Industrial Elements from Phosphogypsum Tailings	Philippine Nuclear Research Institute (PNRI)
5	Higher Education Institution Readiness For Innovation & Technopreneurship (HEIRIT) Development Program for Starting TBIs	HEIRIT: Establishment of DOST-BuISU BARAS TBI (Business Assistance for Research Acceleration and Sustainability Technology Business Incubator)	Bulacan State University
6	Integrated Mapping, Modelling and Management System for Manila Bay and Linked Systems (IM4ManilaBay)	Project 2. Development of Integrated Mapping, Monitoring and Analytical Network System for Manila Bay and Linked Environments (MapABLE)	UP Diliman
7		Development of a Passive Neutron Spectrometry System (PNSS)	Philippine Nuclear Research Institute (PNRI)
8	DOST - JSPS	Preparation of Crown Ethers and Alpha-aminophosphonates Decorated Natural Fibers-based Hybrids Metal Ion Adsorbents by Fusing Multicomponent-reaction and Radiation-grafting of Polymers	Philippine Nuclear Research Institute (PNRI)
9		Mass Production and Distribution of Face Shields	Metals Industry Research and Development Center (MIRDC)
10	CRADLE	Development of Wastewater Treatment Equipment for Wet-Type Finishing Spray Booth	Forest Products Research and Development Institute (FPRDI)
11	CRADLE 2019	Reworking of Processed Meat Using a Combined Acidification-Heat Treatment Process	Eastern Visayas State University
12		Development of Nanosilica-based Anti-Corrosion Coating Formulations for Carbon Steel Reinforcement Used in Farm Structures	UP Los Baños
13	8th e-Asia Joint Research Program	eAsia: Developing Green Degradable Polymers from Plant Based Oils and Investigation on Its Subsequent Functionalization and Utility as Heavy Metal Sequestrants	Ateneo De Manila University

14		Coastal Sea Level Rise in the Philippines (CSLR)	UP Diliman
15	BATTERY: Broadening Accumulator Tenable Time Extends Rechargeability Years	TUNER: Transmissometry Using Nonlinear Electrode Response	Technological Institute of the Philippines
16	BATTERY: Broadening Accumulator Tenable Time Extends Rechargeability Years	Project SOUNDER: Sonic Oscillations Unleashing Nonconductive Deposits on Electrode Reactors	Technological Institute of the Philippines
17		Recycling and Recyclability Index for Tricycles	University of Asia and the Pacific
18		Fabrication and Characterization of Hydrophobic Nanocomposite Plated Abaca Fabric for Enhanced Electromagnetic Interference Shielding (EMI-SE) and Thermal Resistance (TR) for Spacesuits Application	De La Salle University
19	FASTRAC	X-LIPAD: Light Intelligent Platform for Autonomous Drones	De La Salle University
20		Sustainable Technology - Assisted Route Planning for Region VI (STARPLAN VI)	De La Salle University
21		Development of a 23-seater Electric Jeepney (E-Jeepney)	Electric Vehicle Association of the Philippines
22		Scoping Study and Survey to Identify Key Environmental Problems of Industries in Valenzuela City	Polytechnic University of the Philippines
23		Bayan Ko-Ops	UP Diliman
24		Optimal Locations and Allocation of Personnel (OLAP) at Checkpoints during the Coronavirus Lockdown in Metro Manila and other Regions	De La Salle University
25		A COVID-19 Initiative: Development of Sixty-six (66) units of Specimen Collection Booth and Conduct of Testing and Data Gathering in Selected Areas	Futuristic Aviation and Maritime Enterprise, Inc.
26		USHER Go-Clean Disinfecting Chamber System Deployment	USHER Technologies Inc.
27		Project Dwarm: Autonomous Search and Rescue Using Swarm Technology	DWARMTech Inc.
28		Project Ramdam System Development and Deployment	Geographic Innovations for Development Solutions, Inc.

29		Plant Protein Products from Local Sources	Industrial Technology Development Institute
30		DOST - FNRI Technology Marketing Package for Juan and Juana	Food and Nutrition Research Institute

2017 - 2019 Completed Projects with Publications/Conference Presentations/IP Filed or Approved

(January - December 2020)

202 out of 380 completed projects from 2017-2019: 53%

	Project Title
1	Development and Improvement of a Novel Rain Acoustic Sensor
2	Sustainability of ADMATEL for the Semiconductor and Electronics and Other Related Industries — Phase 6 (OPERATION OF ADMATEL)
3	Upgrading the Operation, Logistics, Payment Solutions and Marketing of oneSTore (An E-commerce Web Platform for Micro, Small and Medium Enterprises)
4	Project 5. Empirical Modeling of Rubber Compounds using Active Design of
5	Large Scale Production of Laccase from <i>Trametes</i> sp. for Food and Beverage Applications
6	Development of a Cost Effective Fish Freshness Sensor using Food Compatible Materials
7	Market Validation Of Visser In First District Of Zamboanga Del Sur
8	Characterization of Mercury Fractionation and Distribution on Artisanal Gold Mine Tailings in Key Areas of Mindanao and its Implication for Mercury Detoxification
9	Integrated Scenario-based Assessments of Impacts and Hazards (ISIAH)

10	Project 2.B.1 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Northern
11	Project 1.B.2 LIDAR Data Processing and Validation in Luzon: Northeastern Luzon
12	Project 1.B.9 LIDAR Data Processing and Validation in Visayas: Eastern Visayas (Region 8)
13	Project 2.B.9 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Eastern
14	Project 2.B.5 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Luzon: CABARZON (Region 4A except Laguna)
15	Project 1.B.5 LIDAR Data Processing and Validation in Luzon: CABARZON (Region 4A except Laguna)
16	Project 2.B.7 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Western
17	Project 1.B.7 LIDAR Data Processing and Validation in Visayas: Western Visayas (Region 6)
18	Project 2.B.4 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Luzon: MIMAROPA and Laguna (Region 4)
19	Project 1.B.10 LIDAR Data Processing and Validation in Mindanao: Zamboanga Peninsula (Region 9)
20	Project 2.B.2 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Luzon: Region 2 and Abulog River Basin in Region

21	Project 2.B.6 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Luzon: Bicol (Region 5)
22	Project 1.B.6 LIDAR Data Processing and Validation in Luzon: Bicol (Region 5)
23	Project 2.B.10 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resources Assessment in Zamboanga Peninsula (Region 9)
24	Project 2.B.11 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resources Assessment in Northern Mindanao (Region 10)
25	Project 1.B.4 LIDAR Data Processing and Validation in Luzon: MIMAROPA and Laguna (Region 4)
26	Project 1.B.13 LIDAR Data Processing and Validation in Mindanao: Davao Region / Southern Mindanao (Region 11)
27	Computing and Archiving Research Environment (CoARE)
28	Project 1.B.3. LIDAR Data Processing and Validation in Luzon: Region 3 and Pangasinan (Region 1)
29	Project 1.B.14. LIDAR Data Processing and Validation in Mindanao: CARAGA Region (Region 13)
30	Project 2.B.8 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Central
31	Project 2.B.14. LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resources Assessment in Mindanao: CARAGA Region (Region 13)
32	Project 1.B.11 LIDAR Data Processing and Validation in Mindanao: Regions 10, 12, and ARMM

33	Temporpatial Distribution and Transboundary Transport of Atmospheric Fine Particles across Bashi Channel, Taiwan Strait, and South China Sea
34	Synthesis and Characterization of Novel Metal Nanoparticle-doped Electroactive Polymer Materials and Their Possible Application for Gas Sensing
35	Piloting and Market Validation of the UP Technologies on Rapid Electric Vehicle Charging or CharM (Charging in Minutes) in Cauayan City, Isabela for Progressive SMARTER City
36	Nanostructured Electrocatalyst Composites for Direct Ethanol Fuel Cell: Preparation, Characterization and Performance Evaluation
37	Development of a Compact Wastewater Treatment System Enhanced with Bioaugmentation Technology for Quick Service Restaurant
38	Radiation-induced Grafting of Nonwoven Fabrics for Tanning Industry Waste Water Treatment to Meet Class C Effluent Heavy
39	Contactless Apprehension of Traffic Violators on 24-Hour Basis and All-Vehicle Detection System (CATCH-ALL)
40	Fabrication of Supercapacitors Using Indigenous Textiles as Electrode Materials
41	Project 2. Application Framework for Robust Communications transport over Community Networks
42	Project 3. Development of Routing Metrics for High Throughput and Congestion Free Routing over Wireless Community Mesh Networks
43	Investing in the Future Through Basic Researches Today

44	Project 1. Development of a Microgear Actuator Powered by Physarum
45	Project 2. Development of a Hybrid Physarum Polycephalum Controlled Micro-
46	Field Testing of Eco-Friendly Septic System (Eco-Sep) for the Tourism Sector in Siargao Island, Surigao del Norte (Project FRESH)
47	Development of Wireless Sensory Network System for Structural Integrity Monitoring of Bridges
48	Project 1. Development of Portable Surface Plasmon Resonance MIP-based Sensor for Detection of Histamine in Shrimps
49	Project 2. Development of Sensitive Prototype Sensor for Monitoring Insecticide Residues in Fruits and Vegetables to
50	Project 3. Development of Potentiometric-MIP Test Kit for the Detection of Clenbuterol
51	Project 5. The Development of Portable Detection Systems for Nitroimidazoles in Hog Urine and Piggery Run-off Water
52	Project 6. Molecularly Imprinted Polymer Modified-Carbon Paste Electrodes (MIP-CPEs) as Multi-analyte Sensor for the Detection of Organophosphorus Pesticides Chlorpyrifos and Fenitrothion and Triazine
53	Deployment of Early Warning Systems in Disaster-prone Areas
54	Project 1.A.5 Data Archiving and Distribution
55	Project 2.A.1 Agricultural Resources Extraction from LIDAR Surveys
56	Project 2.A.2 Aquatic Resources Extraction from LIDAR Surveys
57	Project 2.A.3 Forest Resource Extraction from LIDAR Surveys (FRExLS)

58	Project 2.A.4 Development of the Philippine Hydrologic Dataset (PHD) for Watersheds from LIDAR Surveys
59	Project 2.A.5 Philippine Renewable Energy Resources Mapping from LIDAR Surveys
60	Project 2.B.13 LIDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Davao Region / Southern Mindanao (Region 11), South Cotabato and Sarangani
61	Project 1.A.2. LIDAR Data Calibration, and Bathymetry Component (DVBC)
62	Project 1.A.3. LIDAR Calibration, Point Cloud Classification, and Image Orthorectification (DPPC)
63	Project 1.A.4. Integrating High Resolution Digital Elevation Models (DEMs) into GIS-based Flood Modeling
65	Project 1.B.12 LIDAR Data Processing and Validation in Mindanao: Selected Sites in Northern Mindanao (Region 10) and 11
66	Project 1.B.1 LIDAR Data Processing and Validation in Luzon: CAR and Selected Sites in Region 1
67	Project 2.B.12 LiDAR Data Processing, Modeling and Validation by HEIs for the Detailed Resource Assessment in Selected Sites in Region 10 and ARMM
68	Support to the Commercialization of 500 DOST-Generated Technologies (CYs 2015-2017): Creation of an IP Database Management System and Provision of Initial Support to the Fairness Opinion Board for 12 DOST-Generated Technologies - Phase 1
69	Technology Commercialization of Nipa Sweeteners Developed by ITDI

70	Pilot Scale Production of Nanoencapsulated Plant Growth Regulators for the Production of High Value Crops
71	Project 2. Prototyping of a Diesel-Electric Parallel-Series Hybrid Vehicle for Public Transportation
72	Pilot Plant for the Production of Organo Mineral Products for Effective Waste Water Treatment and Septic System Management
73	ITS 3. An Integrated and Optimal Scheduling of a Public Transport System in Metro Manila (PUBFix)
74	Human Hands as Input Device for an Immersive Virtual Reality Experience (VREX)
75	Deployment of a Low-Cost Modular Type Rainwater Collection System Using Locally Available Materials
76	Roll-out of DOST-Developed Food Processing Equipment to the Regions
77	Project 12. Development of 12 hp Single Cylinder Diesel Engine
78	Project 3. Enhancing and Increasing Local Content in Rubber for Motorcycle Tire Application
79	Project 1. Genomics-Assisted Discovery of Genes and Molecular Markers for Important Targeted Traits in Sugarcane
80	Establishment of the Mindanao University of Science and Technology Digital Incubation Unit
81	Establishment of BatStateU Center for Technopreneurship and Innovation (Technology Business Incubation)
82	A Vision-Based Vehicle Counter for Traffic Monitoring (VEMON)
83	PNRI Graduate Student Research Grant Program (GSRGP)

84	Strategic Communication Approaches to Boost the Philippine Textile Research Institute Promotions
85	Development of a Material Science and Polymer Chemistry Laboratory
86	Forward Osmosis System using locally-made membrane from Nata-de-coco for the production of rehydration water and application for desalination
87	Regional scales of variability in precipitation (RSVP)
88	Embedding of Functional Materials Onto Paper for Antimicrobial and Electromagnetic Shielding Applications
89	Pulp-To-Print: Development of Print-Ready Cellulose Composites from Underutilized
90	Green Synthesis and Functionalization of Carbon Quantum Dots from Biowaste for Biomedical and Industrial Applications
91	Discover Diwata 1 (A Joint Project between PCIEERD & Museo Pambata)
92	Coal Ash as a Resource of Rare Earth and Strategic Elements in the Philippines: Amenability to Metallurgical Processing
93	Characterization of Tailings and Monitoring of the Integrated Gold-Copper Mineral Processing Pilot Plant in Benguet
94	Synergistic effect of Forward Osmosis and Capacitive De-Ionization for Water Purification and Recovery
95	Project 1. Molecular characterization of bacterial community from Manleluag alkaline spring through next-generation sequencing
96	Project 2. Isolation and screening of alkaliphilic bacteria from Manleluag alkaline spring producing an industrially important

97	Development of a Commercial Prototype Automated Guide-way Transit System in UP Diliman
98	Performance Testing and Evaluation of Prototype Trainset (Year 2)
99	Development of a Customized Local Traffic Simulator (LocalSim Phase 2)
100	Production of Nanocellulose from Indigenous Natural Fibers and Agricultural Wastes
101	Antibacterial Effects of Polypyrrole Hybrid Composites Against Foodborne Bacteria
102	Fabrication of Copper Oxide Electrode for Supercapacitor Application
103	Potentiodynamic Polarization Study to Determine the Corrosion Susceptibility of 316L Stainless Steel Pins in Simulated Body
104	A Bacteriophage-based Electrochemical Impedance Biosensor for Salmonella Detection in Milk Samples
105	Layer-by-layer polycation-CYP27B1 biosensor for the Electrochemical Detection of 25-hydroxyvitamin D3
106	Development of a Low-energy Ion Source System for the Synthesis of Diamond-like Carbon Films
107	Development of Functional Nanocarbon-Based Catalysts for Biomass Conversion
108	ANEEME: Synthesizing And Sharing Animation Building Blocks For Rapid Creation of 3D Motion Scenes
109	Development of Interactive Software and Teaching Guides for Grades 7-10
110	Innovation Hub: Diliman
111	Design, Fabrication and Performance Evaluation of Black Sand Collectors
112	Cartography of Old Informs the New (COIN)

113	Development, Characterization and Performance Evaluation of Polymeric Separation Membrane for Industrial
114	Sonochemical Synthesis of Cobalt Oxide and Copper Oxide Nanostructures as Electrodes in Photoelectrochemical Water-Splitting Applications
115	InteliSENSE: A Progress Monitoring Tool for Children with Special Needs
116	Technical and Economic Feasibility Study to Determine the Most Suitable Ironmaking Technology for the Value Adding of Philippine Magnetite Resources
117	Optimization Of Ready-To-Drink Sweet Potato Leaf Extract (SPLE) Beverages Through The UP- DOST Food Innovation
118	Automated Real-Time Monitoring System (ARMS) for Ambuklao, Binga, and San Roque Dams
119	Setting up a Concrete Petrography Laboratory for Quality Control of Construction
120	Development of a Functional and Durable Pervious Concrete Pavement for Local Roads and Parking Lots
121	Modification of Road Train Energy Storage System using Lithium Ion Batteries
122	Utilization of Industrial By-Product Currimao Steel Slag for Green Concrete Products
123	Harmonization of Food Safety Training Module for Food Manufacturing
124	Project 2: LiDAR, Hyperspectral and Sonar Remote Sensing of Seagrass Meadows (SEARS)
125	Project 3: Geosimulation of Mangroves and Seagrass Vegetation Dynamics (GEOSIMAS)

126	Development of HFDR Ship Tracking Algorithm Software for Maritime Surveillance, Search and Rescue
127	Project 5. Remote Sensing Product Development
128	Project 1. Advanced Traffic Pollution Monitoring and Analysis System Based on Data Collected from Air Quality Sensors, Engine Status Sensors and GPS Trackers Installed on Selected PUVs in Metro Manila (ATMAS)
129	Project 1. Preparation of Imprinted poly(phenylenediamine) /poly(thiophene)-TiO ₂ Nanoparticle Functionalized Electrodes for the photoelectrochemical sensing of organophosphorus pesticides
130	Project 2. Synthesis of TiO ₂ -Conducting polymer Nanospheres for the photocatalytic and photoelectrocatalytic degradation of organic pollutants
131	Project 3. Preparation and Properties of Transition Metal- and Nitrogen-Doped Titania photocatalysts by Hydrothermal Methods
132	Testing for Standardization and Optimization of five Coach Hybrid Road Train Phase III
133	System Expansion of the 120-Passenger per Coach Capacity Automated Guide-way Transit System
134	Dried Cassava Grates Processing and System Optimization
135	Establishment of Shelf-Life of Vacuum Fried Okra developed by ITDI Main FIC
136	Development of a Shelf-Stable Fermented Heirloom Rice "Binubudan"

137	Enhancing the Natural Science Research Center Laboratories of Central Mindanao University
138	Establishment of a Pampanga State Agricultural University (PSAU) Bio-energy Laboratory
139	Establishment of Renewable Energy Laboratory and Demonstration Park
140	Project 3. Extraction, Characterization, and Application of Natural Colorants in Nutritional Food Products
141	Water - Energy - Nutrient Nexus in the Cities of the Future
142	Regional Disaster Science and Management S&T Capacity Development (Phase III)
143	Specific Earthquake Ground-Motion to help Enhance the Seismic Resiliency of Residential and Medium-to-High Rise Buildings in Metro Cebu and Metro Davao
144	Metro Manila Transportation Network: Big Data Analytics and Applications (MMTN:BDAA)
145	Binary Gels-Rheology of Two-Component Biopolymer Hydrogels Investigated Using Optical Tweezers and Non-Linear Rheometry
146	Optical Trap-Mediated Interaction Between Cancer Cells and Elucidated Compounds from Vegetable Extracts in PEMF (Pulsed Electromagnetic Field) Background Energy
147	Ultrafast MBE-Grown Terahertz Photoconductive Antenna Devices
148	Innovation And Technopreneurship Hub (ITech) (Caraga TBI)

149	Enhancement of Prototype and Assessment of Product Marketability of Machibox (A Robotics Kit for Stem-Based Learning)
150	Rurok Bikes: Variable Geometry And Efficient Suspension Pedalling Platform
151	Development of Geographic Information System (GIS) Innovation Laboratory
152	Project 1: Geo-SAFER Zamboanga Peninsula: Systematic Assessment of Flood Effects and Risks in the Zamboanga Peninsula, Mindanao, Philippines
153	Project 2: Geo-SAFER Northern Mindanao/ Cotabato: Systematic Assessment of Flood Effects and Risks in Northern Mindanao And Cotabato, Philippines
154	Project 3: Geo-SAFER Agusan: Systematic Assessment of Flood Effects and Risks in the Agusan River Basin, Caraga Region, Mindanao, Philippines
155	Project 5: Geo-SAFER Southeastern Mindanao: Systematic Assessment of Flood Effects and Risks in Southeastern Mindanao
156	One Click: Android/Web-based Student Response and Understanding Visualizer
157	Fringe-area Data Access by Transient Altitude Provision
158	Techno - Economic Feasibility Study of Micro-Grid in A Remote Community
159	Development, Standardization, and Characterization Studies of Tupig, Bukayo, and Bibingka-Region 1 Native Delicacies
160	Project 1. Monitoring and Assessment of Planting Activities and other Applications (MAPA2)
161	Project 2. Remote Assessment for Irrigation Networks (RAIN)

162	Project 1. Investigating the Tectonic Evolution of Northern and Central Philippine Arcs through Geochemistry and Geophysics
163	Project 2. Coastal Tectonics of Central Philippine Islands and Its Implications for Seismic Hazards
164	Project 3. Geophysical Characterization of the Western Philippine Subduction Zones
165	Upgrading and Enhancing the Capacity of the Packaging Technology Division in Packaging Research and Innovation
166	Project 1. Typhoon Formation, Structure and Intensity Change in Western NP and Wave Observation and Modeling
167	Project 2. Heavy Rain Monitoring and Forecasting in the Mountainous Area and Early Warning Landslides
168	Project 3. Observations and Dynamical Downscaling of Seasonal and Sub-seasonal Forecasts
169	Production of NanoCellulose Crystals: Powder, Advanced and Derivative Products for Various Industry Applications
170	PUP College of Engineering Sensors and Mechatronics Laboratory
171	Project 1. Commercial Scale Verification Of Natural Dyes For Textiles
172	Standards And Testing Automated Modular Platform (STAMP)
173	Development of a Raman Microscopy and Spectroscopy (RMS) Setup
174	Establishment of a Plasma Physics Laboratory for Materials Processing Applications
175	Cyber-physical Transportation System
176	Recycling and Recyclability Index for End-of-Life Jeepneys

177	Development of Food and Non-Food Products from Abalone
178	Development of Freeze-Dried Local Alternative Flavors for Ice Cream
179	Product Development and Commercialization of Iqube Home Kit
180	Establishment of the Technology Management System and Structure of the Ateneo De Manila University
181	Development of Gourmet Salt Products and Micro-sized Salt in Laboratory Scale
182	Project 6: Suitability Models for Guiding Mangrove Replanting Efforts (SUITMAPS)
183	Project 8: Multi Agent Systems for Simulating Policy Scenarios on Blue Carbon Ecosystems (BLUEMASSPOLIS)
184	Project 1: Design and Fabrication of an Airframe for Medium-Range, Short Take Off and Landing UAV
185	Project 2: Development of a Flight Controller for a Modular UAV
186	Project 3: Cooperative UAV Missions and Applications with Custom Communications and Imaging Capabilities
187	Design and Improvement of Gong Fabrication Processes Through S&T Intervention
188	Design and Development of a PLC-Based High Capacity Tissue Culture Growth Chamber
189	Development and Social Media Reading Tool for Filipinos
190	Beta Testing of Biotechnology Kits for Stem Education
191	Development of Data Analytics, Big Data, and Artificial Intelligence to Build A Smart Restaurant Management Platform

192	Development of Earthquake Intensity Monitoring System
193	Project 1. Microsatellite BUS Development for Philippine Microsat
194	Monitoring and Evaluation of Batch II Complementary Food Technology Adoptors
195	Project 1. Production of Nutritional Food Products for Conflict Stricken Areas
196	Project 2. Implementation of GarNESupp (Gardening, Nutrition Education, Supplementary Feeding) Model in Conflict-stricken area (Marawi)
197	Portable Potable Water Equipment for Disasters and Emergencies (PWEDE)
198	Field Testing and Technology Validation of the E-Procurement System (ePS) for Government Agencies
199	Summer Training Camp for High School Students on Genomics and Bioinformatics at the Philippine Genome Center
200	Fabrication and Performance Evaluation of Abaca Fiber-Reinforced Composites for Boat Application
201	Establishment of a Plasma Laboratory for Materials Processing Applications
202	Universal Sensing Meter for Instruction & Laboratory Experiments (U-SMiLE)

**Priorities in the Harmonized National R&D Agenda (HNRDA)
(October - December 2020)**

Topics/Areas	With Ongoing Projects
1. Food and Nutrition Security	X
2. Countryside Development	X
3. Competitive Industries	X
4. Delivery of Social Services	X

5. Intelligent Transportation Solutions	X
6. Renewable Energy and Energy Storage Solutions	X
7. Human Security	X

**List of Partners/Implementing Agencies
(October - December 2020) - Actual**

**List of Partners/Implementing Agencies
(October - December 2020) - No Duplication**

1	Adamson University	De La Salle University - Laguna Campus
2	Ateneo De Manila University	Far Eastern University - Institute of Technology
3	Batangas State University	Father Saturnino Urios University
4	Bulacan State University	Iloilo Science and Technology University
5	Caraga State University	Isabela State University
6	De La Salle University	Isabela State University - Cauayan City
7	De La Salle University - Laguna Campus	Pangasinan State University
8	DWARMTech Inc.	Philippine Rice Research Institute (PhilRice)
9	Eastern Visayas State University	
10	Electric Vehicle Association of the Philippines	
11	Far Eastern University - Institute of Technology	
12	Father Saturnino Urios University	
13	Futuristic Aviation and Maritime Enterprise, Inc.	
14	Geographic Innovations for Development Solutions, Inc.	
15	Iloilo Science and Technology University	
16	Isabela State University	
17	Isabela State University - Cauayan City	
18	Mapua University	
19	Mindanao State University - Iligan Institute of Technology	
20	Pangasinan State University	
21	Philippine Rice Research Institute (PhilRice)	
22	Polytechnic University of the Philippines	
23	Saint Louis University	
24	Technological Institute of the Philippines	

25	Technological University of the Philippines Visayas
26	University of Asia and the Pacific
27	University of Mindanao
28	University of Santo Tomas
29	University of Science and Technology of Southern Philippines
30	University of the Cordilleras
31	UP Diliman
32	UP Los Baños
33	UP Mindanao
34	USHER Technologies Inc.