

# MOVING UP

## ANNUAL REPORT 2019





# TABLE OF CONTENTS



1-2 About DOST-TAPI

4 Secretary's Message



5 Director's Message

6-7 Executive Summary

1-11 Pillar 1: **Institutions**

12-15 Pillar 2: **Human Capital & Research**

16-25 Pillar 4: **Market Sophistication**

26-38 Pillar 6: **Knowledge & Technology  
Outputs**

39-53 Pillar 7: **Creative Outputs**

54-61 Financial Resource Management &  
Human Resource Development

62 Future Directions

63 Organization Chart







# About DOST-TAPI

The Technology Application and Promotion Institute (DOST-TAPI), created by virtue of Executive Order No. 128 on 30 January 1987, is one of DOST's service agencies whose primary responsibility is to promote the commercialization of technologies and market the services of the other operating units of the Department.

On 28 April 1992, TAPI's function was expanded by virtue of Republic Act 7459 otherwise known as the "Inventors and Invention Incentives Act of the Philippines."

Among others, DOST-TAPI administers the Invention Development Assistance Fund for the initial experiment, development, and other invention-development related activities.

## VISION

A strategic partner in advancing national socio-economic growth by advocating a culture of innovation and promoting globally-competitive and useful technologies.

## MISSION

DOST-TAPI shall promote an effective and efficient innovation system towards the adoption and utilization of inventions, innovations, and services.

## IMPLEMENTATION

- 1 Encourage the use of the intellectual property (IP) system and provide IP and IP-related services;
- 2 Provide comprehensive assistance packages for inventions/innovations;
- 3 Actively support activities geared towards the promotion of creativity and capacity-building within the innovation system;
- 4 Facilitate business development of technologies; and
- 5 Promote and strengthen partnerships and linkages with and among stakeholders.
- 6 Assist technology generators, inventors, and researchers avail of the laboratories and other facilities of the Research and Development Institutes including DOST Regional Offices and other government agencies, offices, and instrumentalities
- 7 Accredite and recognize inventors' associations throughout their activities

## MANDATED FUNCTIONS

- 1 Serve as the implementing arm of the DOST in promoting the commercialization of technologies and in marketing the services of the other operating units of the Department;
- 2 Undertake contract research, particularly at pilot plant and semi-commercial stage;
- 3 Provide technical consultancy including engineering design services, patenting and licensing services;
- 4 Provide grants and venture financing for new and emerging projects;
- 5 Administer the IDAF for the initial experiments and prototype development and other invention development-related activities

## DIVISIONS

**Office of the Director (OD)** - responsible for the overall direction, supervision, and operations of all units of the Institute.

**Technology Information and Promotion Division (TIPD)**- responsible for the elevation of level of awareness and the promotion of the innovation system strategies.

**Investment & Business Operation Division (IBOD)**- responsible in providing financial support and business operations' improvement services.

**Invention Development Division (IDD)** - responsible in improving financial support for the use of the intellectual property system and business development of inventions and technologies.

**Finance and Administration Division (FAD)** - responsible for the financial and administration support services.



# Secretary's MESSAGE

I wish to commend the DOST-TAPI for another prolific year of bringing quality service and assistance in the transfer, commercialization, and promotion of technologies.

As the Philippines moved up from 73rd to 54th rank in the 2019 Global Innovation Index (GII) that covered 129 economies worldwide, the DOST salutes DOST-TAPI's commitment in continually providing a dynamic approach in keeping the science, technology and innovation (STI) culture alive in the country. This is congruent to the Department's pursuit in providing important contributions to economic and social progress.

The transfer of technologies is initiated in identifying discoveries that are protectable and marketable from a broad range of invention disclosures which are then directed in a commercial marketplace where it contributes in improving the lives of the people through economic growth.

This year, the Institute provided assistance to various individual inventors, institutions, and researchers with privately funded research and development (R&D) leading to the collaboration with various offices and law firms resulting in the filing of 641 intellectual property applications. In addition, DOST-TAPI has tapped its in-house patent agents who filed 863 applications and saved an estimated amount of 10 million pesos.

Moreover, the Institute in cooperation with the DOST Regional Offices conducted the 2019 Regional Invention Contest and Exhibits (RICE), a biennial event recognizing the Filipino inventors and researchers for their innovativeness in generating economically viable technologies. This year's RICE showcased 1,578 inventions and researches where 190 outstanding works were selected and awarded. These finalists vie for the National Invention Contest and Exhibit (NICE) in 2020.

Lastly, the Institute invested a total of 9.6 million pesos to accelerate the commercialization of new and emerging technologies of start-up and scale-up projects of local micro, small and medium entrepreneurs (MSME) through its commercialization programs.

It is with utmost privilege that the DOST-TAPI is further enriching and cultivating the STI system for local inventors, technology generators, and MSMEs. And it is with great confidence that the DOST-TAPI continues to uphold its mandate in providing unwavering support to STI through technology transfer and promotion.

Our collaborative efforts in creating an innovative ecosystem provides a conducive environment that enables our stakeholders in generating more knowledge, innovation, technology, and entrepreneurship - making them the true engines for a sustainable and progressive economy.

Mabuhay!



**PROF. FORTUNATO T.  
DE LA PEÑA**  
Secretary, DOST



# Director's MESSAGE

Congratulations! We have once again exceeded ourselves in hitting the targets we have set. Twenty-nineteen has been another fruitful year for the Institute in its pursuit for a better promotion of science and technology. I offer my heartfelt commendation to all DOST-TAPI staff and personnel for a job well done!

True to the Institute's mandate, we have upheld our duty of promoting DOST technologies for wider dissemination to and appreciation from the public, and achieved greater outcomes in technology transfer and commercialization.

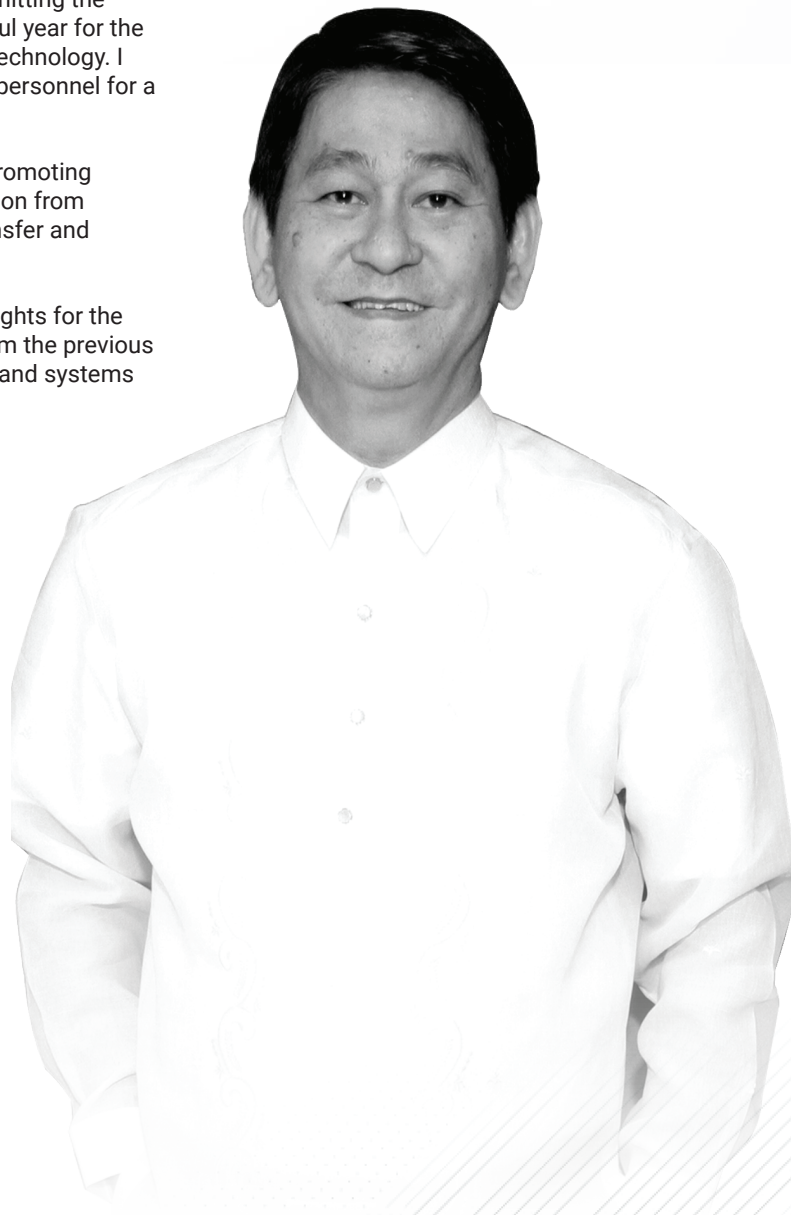
The turn of the year was marked by one of the greatest highlights for the country: ranking 54th on the Global Innovation Index (GII) from the previous year's 73rd place. The GI represents the health of industries and systems in a nation and has conferred prestige especially to economies that have surpassed expectations, including the Philippines. The nation has made leaps and bounds to make this feat possible, but I cannot discount the contributions of our Institute to this achievement.


As the World Intellectual Property Organization (WIPO) highlighted, the Philippines scored exceptionally well in the knowledge and outputs pillar - where our patent creation ranked well and utility model creation was stellar. Synchronous to this reverent achievement is DOST-TAPI's outstanding efforts in intellectual property (IP) filing and IP capacitation. In addition to that, we have, for the first time, become part of the country's International Search Authority (ISA) as the IP Office of the Philippines (IPOPHL) received its first international patent application through the Patent Cooperation Treaty (PCT).

Another key strength in the country's GI is our level of business sophistication. With this, I would like to spotlight our tremendous and unceasing efforts to provide the push for our micro, small and medium enterprises (MSMEs). Without a doubt, our efforts have helped our thriving local businesses to be fearless in innovating and as such has led us to an overall step forward.

Despite the parallels of the Institute's achievements and our country's innovation capabilities, there is plenty of room for growth. And growth is what we all strive for. As part of this developing society, we live to help each other take root, foster, and enrich. I hope that we continue this trajectory of excellent work to continuously support our community of scientists, innovators, and entrepreneurs.

We turn a new chapter with great expectations not only from within ourselves but from the Filipino society as one. We owe it to our people that we spearhead the promotion of science and technology, and effectively translate them to palpable impacts on their lives. May we aspire for greatness and see heights we have never before imagined.



  
**ENGR. EDGAR I. GARCIA**  
Director, DOST-TAPI



# EXECUTIVE SUMMARY

From an unchanged innovation ranking in 2017 and 2018, the Philippines' score jumped 19 places higher to 54 among 129 nations as revealed in the latest Global Innovation Index (GII): Creating Healthy Lives – The Future of Medical Innovation.

The GI 2019 is an annual publication by the INSEAD – the world's leading and largest business schools and the World Intellectual Property Office (WIPO), which rank countries by their capacity for, and success in, innovation.

Moreover, the ranking is composed of seven pillars including **institutions, human capital and research, infrastructure, market sophistication, business sophistication, knowledge and technology outputs, and creative outputs.**

It was noted that the Philippines has showed progress in almost all of the GI pillars except market sophistication which dropped 10 notches from 100 in 2018 to 110 in 2019.

The biggest improvements were seen in knowledge and technology outputs and creative outputs pillars with impressive movements from 49 in 2018 to 31 in 2019 and from 92 in 2018 to 63 in 2019, respectively.

Knowledge creation, impact, and diffusion comprised the knowledge and technology outputs pillar while intangible assets, creative goods and services, and online creativity comprised the creative outputs pillar.



## GLOBAL INNOVATION INDEX 2019



The Department has been taking deliberate steps in enhancing the country's standing in scientific and technical publications, intellectual property filings, and innovation for entrepreneurship through technology.

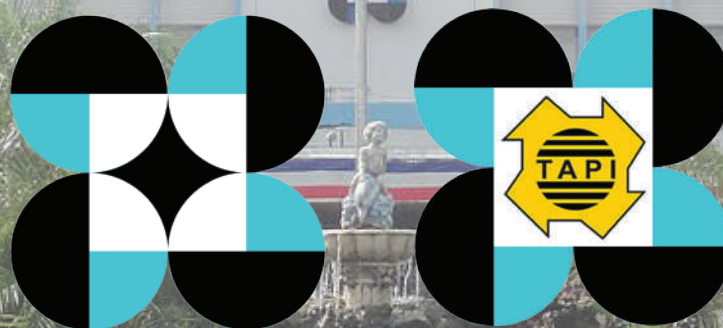
The DOST's efforts in science, technology, and innovation, including its attached agencies, may have contributed to the increase in ranking of the country to the GII.

Particularly, DOST through DOST-TAPI has helped spiked patent filings since 2014.

In 2019, the Institute has filed a total of 1257 IP applications composed of patents, utility models, industrial designs, copyrights, and trademarks, including international filings under the Patent Cooperation Treaty (PTC).

Patents, utility models, PCT patents, trademarks, and industrial designs by origin are some of the sub-pillars of the GII under knowledge and technology outputs and creative outputs.

Moreover, DOST-TAPI's premiere programs in pre-commercialization and commercialization of technologies move towards the improvement of the operations of the local micro, small, and medium enterprises (MSME).







# INSTITUTIONS

Composed of the political, regulatory, and business environments, the Institutions Pillar evaluates how economies “nurture an institutional framework that attracts business and fosters growth by providing good governance and the correct levels of protection and incentives.” With DOST-TAPI’s programs that support inventors in creating an enterprise out of their inventions, the Tax and Duty Exemption Assistance Program and Accreditation of Inventors’ Organization may have contributed to the data scores collected in the GII, particularly under the ease of starting a business. The GII has ranked the economies under this category by determining the “distance to frontier scores for starting a business.”

# ISSUANCE OF SC FOR RA7459 CERTIFICATION FOR TAX & DUTY EXEMPTION APPLICATION



Interlocking Block for Soil Stabilization, one of the invention approved under Tax & Duty Exemption Assistance Program

Through Republic Act (RA) 7459 or the Inventors and Invention Incentives Act of the Philippines, the program provides support to inventors who seek tax and duty exemption privileges from the Bureau of Internal Revenue (BIR) of the Department of Finance (DOF). The Program is tasked to evaluate and process request from Filipino inventors for their tax and duty exemption application with the Bureau of Internal Revenue (BIR) and Department of Finance (DOF).

In 2019, various inventions, utility models (UM), and industrial designs (ID) were presented to the Screening Committee (SC) for RA 7459 through a series of evaluations and site validations. Six inventors were granted confirmation by the SC.

## Inventions granted confirmation by the SC for tax and duty exemption application to BIR in 2019

Invention	Patent	Inventor
Mangrove Stabilization Medium	UM-2-2013-000200	Dr. Justino R. Arboleda
Interlocking Block for Soil Stabilization	UM-2-2012-000583	Coco Technologies Corporation
Coconut Fiber Net for Soil Slope Protection and Erosion Control	UM-2-2013-000304	
Portable Capsule Filler	UM-2-2017-000457 ID-3-2017-000674	Dr. Richmond C. Santillana MaBuhay WELLness, Inc.
Process for Rapid Hygienic Curing of Shell Eggs	UM-2-2013-000009	Mr. Ambrocio Kerwin A. Perez Eggciting Products Manufacturing
Modular Formwork Panel	ID-3-2017-001235	Mr. Frederick V. Erum Forming Access and Support, Inc. (FASI)
A Method of Producing an Absorbent Material Used in Poultry and other Agricultural Industry	UM-2-2017-001062	Engr. Dexter D.J. De Castro Triodexpro Agro-Industrial Solutions

Moreover, the Program has conducted technical consultancy and advisory services to clients and responded to various inquiries and follow-ups.



# ACCREDITATION OF INVENTORS' ORGANIZATION

2019  
NEWLY ACCREDITED  
INVENTORS' ORGANIZATIONS  
ASSEMBLY

TAPI - AUDIOVISUAL ROOM  
17 DECEMBER 2019

Still pursuant to RA 7459, the Accreditation of Inventors' Organizations Program accredits and recognizes inventors' organizations throughout their activities.

After receiving 18 applications for accreditation in 2019, the following organizations completed the requirements for renewal and accreditation, permitting them for approval:

1. **Filipino Women Inventors and Innovators, Inc. (FILWIN)**
2. **Dok Alternatibo Brotherhood with Inventors Guild Consumers Cooperative (DABIGCCO)**
3. **Philippine 4.0 Inventors Society, Inc.**

Through the Program, the Filipino Women Inventors' Meeting and the 2019 Newly Accredited Inventors' Organizations Assembly were conducted and participated by the officers and members of FILWIN on 05 March 2019 and the three (3) accredited on 17 December 2019, respectively."



Photo highlights of the discussions during the "Newly Accredited Inventors' Organization Assembly" held last December 2019



Atty. Marion Ivy D. Decena, Division Head of the Invention Development Division, leads the discussion during the meeting with FILWIN





## TRAVEL ASSISTANCE TO INVENTORS

As a support program among inventors, the Travel Assistance to Inventors provides the traveling expenses of the winners of the Presidential Awards for Inventions to participate in recognized international events for the advancement of their winning inventions.

The Institute through the Program approved the recommendation of the SC for RA 7459 in relation to Engr. Rodrigo P. Duque's participation to the 47th International Exhibition of Invention on 10-14 April 2019 in Geneva, Switzerland. Engr. Duque bagged a bronze medal for his UM, "Portable Uni-housed Purification and Sterilization Apparatus," in the said exhibition which was attended by 800 exhibitors and around 30,000 visitors from 40 countries.

The winning UM was a recipient of the World Intellectual Property Organization (WIPO) gold medal for earning the 1st Prize of the Outstanding UM at the National Invention Contest and Exhibit (NICE) in 2018.



Engr. Rodrigo P. Duque with his invention "Portable Uni-housed Purification and Sterilization Apparatus"





# PILLAR 2 HUMAN CAPITAL & RESEARCH

As the “level and standard of education and research activity in a country are prime determinants of innovation capacity of a nation,” the Institute’s Invent School Program may have contributed to the Human Capital and Research Pillar. The Program supports the inventive potentials of young children in primary and secondary educations, and adolescents in tertiary education.



## INVENT SCHOOL PROGRAM

Serves as a platform for the youth to awaken their true ingenuity, the Invent School Program stimulates their interest for creativity and inventiveness. The Program involves a two-day seminar workshop designed to hone the minds of elementary, high school, and college students in developing creative skills that are vital in invention development. Moreover, it serves a crucial starting ground for young Filipino inventors.

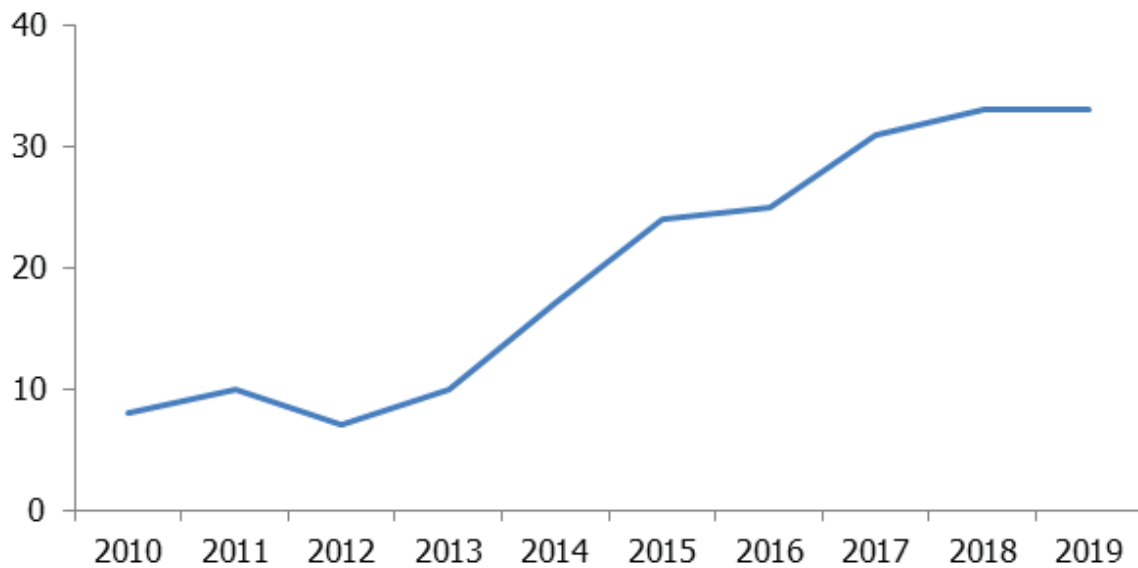
With the Program's early call for proposals to the DOST Regional Offices by giving them two training slots each has paid-off as the target number of proposals was already reached in July 2019. The Program received a total of 40 request proposals and out of these proposals, 34 requests with 33 trainings were conducted.



Trademark logo of the Invent School Program



### Trainings Conducted



New areas were also reached in 2019 through the expansion of the Invent School Program to borders unusually reached, specifically in Tabuk, Mountain Province, Bukidnon, and Jolo in Sulu. A total of 124 schools with 1,520 participants composed of the students and faculty in elementary, high school, and college benefitted from the trainings and workshops nationwide. Looking forward, the Program continues to reach the intended beneficiaries in the most efficient and effective means.



Ms. Analiza B. Saet, Program Manager of Invent School Program during the conduct of Invent School Program in Bukidnon



Trainors and participants during the conduct of Invent School Program in Jolo, Sulu





Subsequently, the Program partnered with the DOST Human Resource Development Program for the project, “Capacity Building for Philippine Science High School (PSHS) for the Invent School Implementation.” The partnership aimed to expand the pool of Invent School program experts in capacitating the Philippine Science High School (PSHS) in intellectual property. Started in 2018 with 47 faculty and 24 students, the project continued with the on-the-job training in six venues in 2019 and held a graduation as the culminating activity on 05 July 2019 at the Makati Diamond Residences, Makati City.

Before the year ended in 2019, an outreach activity was held at the Kids with Purpose International as a foretaste of a possible expansion of the Program to the out-of-school youth.

The creation of the new guidelines for the elementary and revision of the current guidelines for the high school and college signify the commitment to streamline the operations of the Program.



Atty. Marion Ivy D. Decena, Division Head of the Invention Development Division, delivering the Closing Remarks during the ISP Graduation.





# 4 PILLAR

## MARKET SOPHISTICATION

With credit, investment, and trade, competition and market scale as sub-pillars, the Market Sophistication pillar defines the “availability of credit and an environment that supports investment, access to the international market, competition, and market scale for businesses to prosper and innovation to occur.” A significant chunk of DOST-TAPI Programs have contributed to this pillar.

# INVENTION-BASED ENTERPRISE DEVELOPMENT PROGRAM



Ms. Mechelle Balboa, Program Manager of IBED I Program during the invention demo of the "Strategy: Game Board"

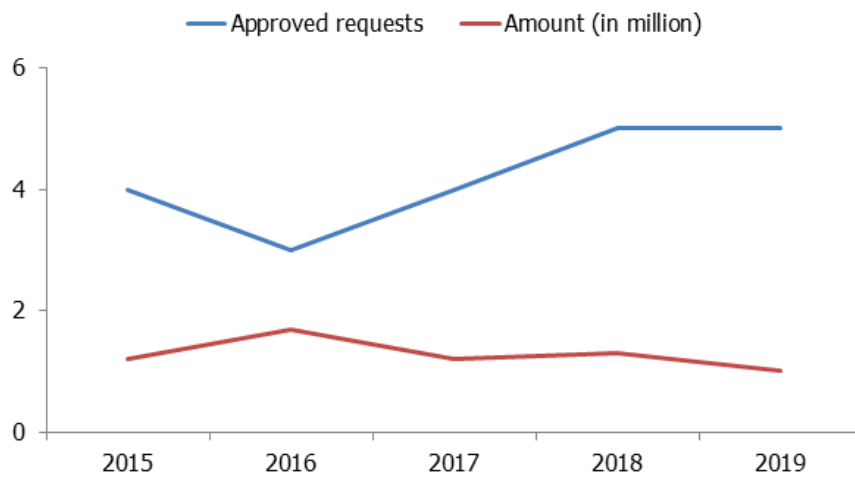
The first component of the Invention-Based Enterprise Development (IBED-I) Program is a follow-through activity to push and transform innovations into a technology enterprise. It covers pilot production, field or market testing, and formulation of systems and procedures in preparation for a larger scale production. It aims to build the capabilities of inventors to create businesses out of their inventions.

In 2019, the Program received 26 project requests. Five from those requests complied with the requirements and were given a cumulative Php 953,174.21 financial assistance.

## Approved inventions under IBED-I in 2019

Project	Beneficiary	Amount (Php)
Pilot Production of "Composite Concrete and Expanded Polystyrene Block and Panel" (Patent-Pending Application: 1-2018-050136)	Mr. Roy C. Nacua	199,388.00
Pilot Production of "Coconut-water-treatment Bottled Mackerel" (2-2017-000618)	Dr. Rosein A. Ancheta, Jr.	200,000.00
Pilot Production of "Strategy: Game Board" (2-2018-001639)	Mr. Ulysses A. Imbang	186,604.41
Pilot Production of "A Process of Producing a Moisturizing Hand and Body Lotion using Jute Mallow (Corchorus olitorius) Leaves and Lady's Finger (Abelmoschus esculentus) Pods"	Mindanao State University – General Santos City	199,926.00
Pilot Production of "Multi-purpose Vertical Food Smoker and Cooker"	Mr. Noel L. Nacisvalencia	167,255.80
		<b>Total 953,174.21</b>





**Assisted inventions and corresponding amounts under IBED-I from 2015 to 2019**

Also, the Program conducted assessment and monitoring of ongoing projects, and technical advisory services to 126 interested clients.

Pilot Production of "A Process of Producing a Moisturizing Hand and Body Lotion using Jute Mallow (*Corchorus olitorius*) Leaves and Lady's Finger (*Abelmoschus esculentus*) Pods"



# INVENTION-BASED ENTERPRISE DEVELOPMENT PROGRAM PHASE II

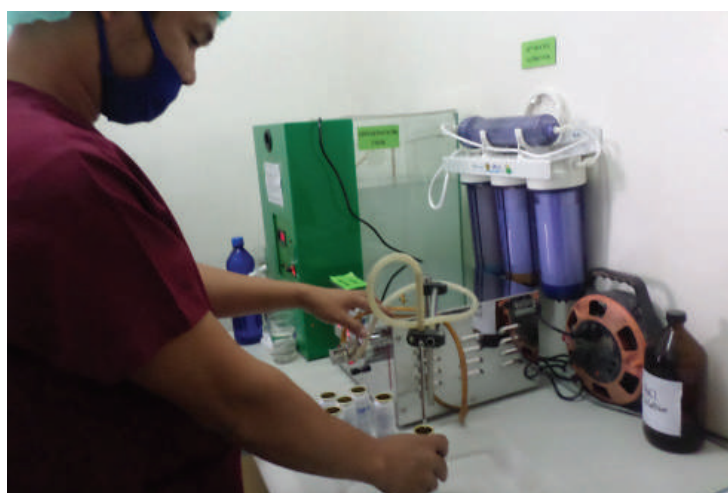


Meanwhile, the second component of Invention-Based Enterprise Development (IBED-II) provides assistance to cover the production costs of the additional requirement of the market to satisfy the unmet demand. The inventor or requester must have completed the previous assistance for pilot production given in IBED-I and be able to grow as an enterprise.

The Program received and facilitated the evaluation of three project proposals from inventors in 2019. One proposal was endorsed to the Industry-Based Invention Development Program and the remaining two proposals need further documentary requirements to be considered under the Program.

As a result of constant follow-ups, a total of Php 804,040.00 was recovered from the financial assistance provided from the previous beneficiaries.

Moreover, the Program has monitored seven on-going and completed projects, and catered 39 technical advisory services to clients.



Ms. Rosemarie O. Olaer, Program Manager of IBED II during the various monitoring activities under the program.



# INDUSTRY-BASED INVENTION DEVELOPMENT PROGRAM

The Industry-Based Invention Development (IBID) Program supports the development of viable inventions for their application and adaption to the existing industry practices. Further, it supports the production of the first commercial model or prototype of the invention to be installed in the actual operations of a firm. The collaborative undertaking among the Institute, the inventor, and the industrial enterprise involves testing, debugging, and other refinements of the invention when placed in a real working environment.

The Program accommodated 120 requests and evaluated 37 proposals. Out of 37 proposals evaluated, six were approved for financial assistance in the form of grants amounting to a total of Php 965,025.05.

Ms. Janeth Cruzada, Program Leader of IBID with Mr. Roberto Versoza, Sr. SRS, DOST-TAPI and Inv. Christopher Coballes during the Technical Evaluation Committee (TEC) visit of the project, "Fabrication of a Commercial Prototype of "An Educational Mobile Robotics Platform"

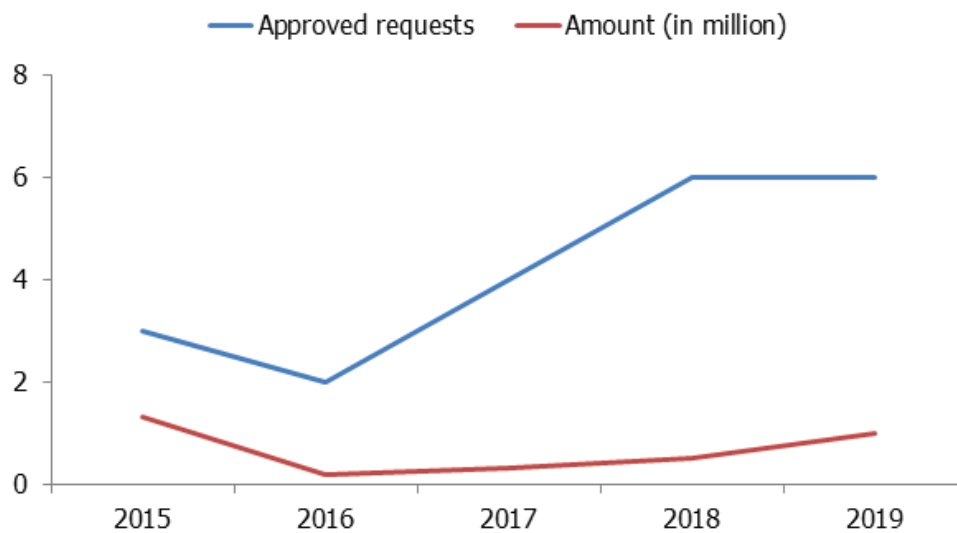
## Approved projects under IBID in 2019

Project	Beneficiary	Amount (Php)
Unsinkable Sea Cutter Coconut Fiber Boat Made of Bamboo Frame, Polycarbonate and Fiber Glass with Solar Back-up Power	Mr. Dennis Y. Mercader	149,860.00
Electromagnetic Pulse Device (2-2019-050001)	Mr. Kenn Benid Marciano	146,362.00
Fabrication of a Commercial Prototype of "An Educational Mobile Robotics Platform" (2-2019-001101)	Mr. Christopher M. Coballes	199,300.00
Fabrication of a Commercial Prototype of "A Server for an Audio-Visual Emergency Warning or Other Related Purposes" (2-2019-001099)	Engr. Wilnar Q. Luna-an	182,454.00 13,684.05
Fabrication of a Commercial Prototype of "Power Generating Machine with Air Decontamination System" (1-2017-000354)	Mr. Ruben R. Pesebre	200,000.00
Fabrication of a Commercial Prototype of "Stove Using Agricultural Waste" (2-2014-000023)	Tarlac Agricultural University	73,365.00
		<b>Total Php 965,025.05</b>





Various activities conducted under the implementation of IBID Program



Assisted projects and corresponding amounts under IBID from 2015 to 2019

Lastly, the Program monitored the project implementation and repayment of the financial assistance of on-going projects which resulted to the compliance of submitting the project status and financial reports.



# VENTURE FINANCING PROGRAM

Created to provide the necessary funding support to micro, small, and medium enterprises (MSME) for capacity building of start-up and scale up projects, the Venture Financing Program accelerates the initial commercialization of innovative technologies/ inventions.

In 2019, the Program evaluated 34 project proposals from various clients. Out of these proposals, eight requests were approved for a total of Php 9,631,189.92 funding assistance, as follows:



The Manila HealthTek, Inc., beneficiary of the Venture Financing Program for the project

Project	Beneficiary	Amount (Php)
Sustainability of Apple Cider Vinegar Production of Double M Merchandise	Ms. Teresa A. Abaya Owner	366,000.00
PO Financing Program Support for C and H Cosmetics Industry	Mr. Henry V. Raca Owner & Manager	1,434,349.20
Purchase Order Financing for Tropical Citrus Fresh Beverages, Inc.	Mr. Alfredo T. Briones, Jr. President, TCFBI	1,273,694.00
Purchase Order Financing Program Support to Eggciting Products Manufacturing	Mr. Ambrocio Kerwin A. Perez Owner/Manager	495,000.00
Application for Local and International Certifications of Manila HealthTek, Inc. as a Manufacturing Company for Molecular-Based Diagnostics Kits	Dr. Raul V. Desture President/ CEO	3,792,164.92
Adoption of Charcoal Briquetting Technology to Utilize Filo Handicrafts Wood Waste into Another Product	Mr. Victor B. Li Owner/Manager	819,000.00
PO Financing Program Support for Kapfer and Rivera United, Inc. (KRUI)	Atty. Maria Lourdes E. Rivera Corporate Secretary & Treasurer	950,981.80
PO Financing Program Support to AIJUN Enterprises	Ms. Ailyn Magallanes Corporate Secretary Aijun Enterprises	500,000.00
		<b>Total Php 9,631,189.92</b>

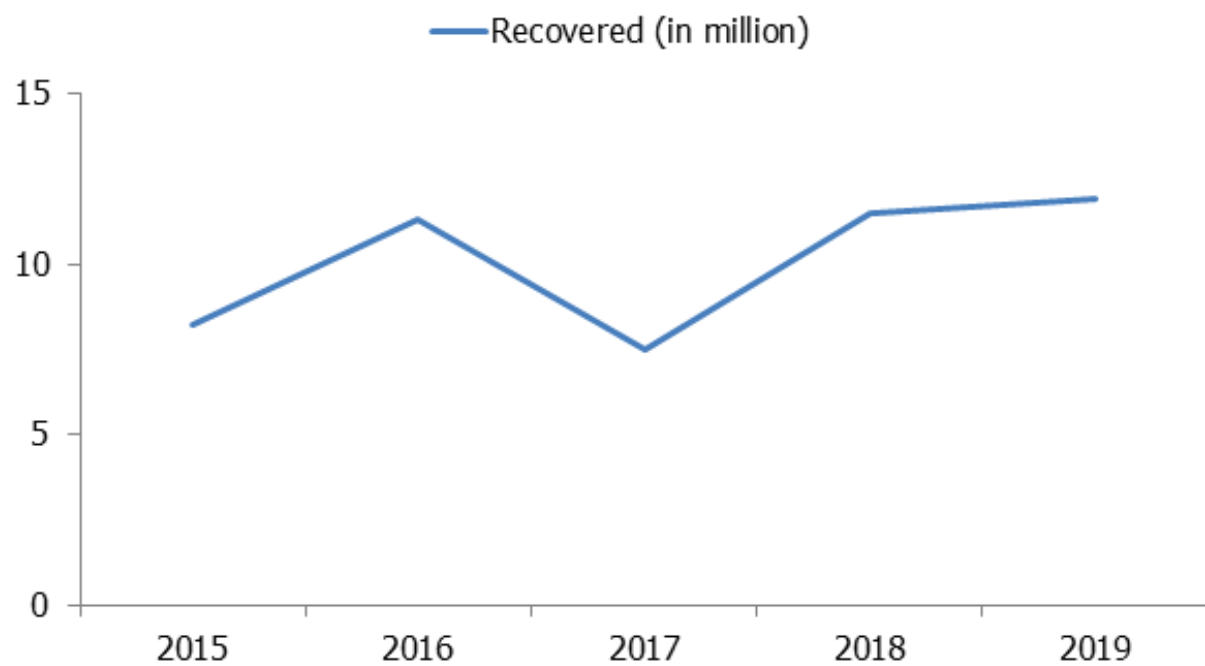
Meanwhile, a total of Php 11,890,191.18 was recovered from previous 22 beneficiaries with outstanding obligations to DOST-TAPI and Php 14,266,449.06 was refunded from the 10 previously completed-assisted projects, as follows:

Project	Beneficiary	Amount (Php)
Upgrading of Technology through a Laser Marking Machine	Millenium Toolings and Fabrication Services	1,850,000.00
Upgrading of Technology through Automated Cutting Machine	Penta Technological Product, Inc.	2,500,000.00
Purchase Order Financing for Endurance Technology Corporation	Endurance Technology Corporation	710,458.07
Enhancement of the Cutting and Bending Capability of AIJUN Enterprises, Inc.	AIJUN Enterprises, Inc.	1,930,000.00
Upgrading of the "Sortidos" Production Line Facility of Panaderia Pantoja	Panaderia Pantoja	410,000.00
Productivity Improvement through Material Purchase	Guaranfoods Manufacturing Corporation	1,328,975.12
Inventory Financing for VCO Production of Green Life Coco Products – Phase II	Green Life Coco Products	1,431,166.67
Technology Improvement and Cleaner Production through Upgrade of Manual Scrubber to Automatic and Rehabilitation of Existing Plating Line	Raigo Metal Finishing, Inc.	1,956,500.00
B and C Extruder and Cutting Machine	B and C Healthy Snack Foods, Inc.	715,000.00
PO Financing Program Support for C and H Cosmetics Industry	C and H Cosmetics Industry	1,434,349.20
<b>Total Php 14,266,449.06</b>		

Tropical Citrus Fresh Beverages, Inc., one of the beneficiary under the PO Financing Program







Approved projects with corresponding amounts under Venture Financing from 2015 to 2019

Moreover, the Program has monitored on-going and completed projects, and catered 127 technical consultancy services to different sectors.



Mr. Rodel Oracion, program staff of the VFP, during the tagging of equipment



# INNOVATION AND TECHNOLOGY LENDING PROGRAM

The Innovation and Technology (i-TECH) Lending Program provides a special lending window through the Land Bank of the Philippines (LBP) to complement the use of the Invention Guarantee Fund (IGF) as provided for in RA 7459. It aims to extend financial support to credit-worthy and duly-certified Filipino inventors in the commercialization of patented inventions in the Philippines.

The Program has evaluated six requests submitted by various inventors in 2019. Out of these, three requests were endorsed to the SC for RA 7459 and then endorsed to the LBP.



Mabuhay Wellnes, Inc., beneficiary of the I-Tech Lending Program during the Technical Evaluation Committee (TEC) visit.



Validation visit in Mabuhay Wellness Inc., Bulacan with Technical Evaluation Committee (TEC) and Screening Committee (SC)

## Project

## Beneficiary

Arnichem Corporation

Re-launching Vital N® Ameliorant Bio-fertilizer for a Sustainable and Profitable Agriculture (1-2001-002162)

Oral Educational Distributor

Portasol Clean and Fast Multi-Purpose Thermal Drying Trays (2-2012-000172)

Mabuhay Wellness, Inc.

Portable Capsule Filler (2-2017-000457 and 3-2017-000674)





# PILLAR 6 KNOWLEDGE AND TECHNOLOGY OUTPUTS

The Knowledge and Technology Outputs pillar “covers all those variables that are traditionally thought to be fruits of inventions and/or innovations,” such as knowledge creation, knowledge impact, and knowledge diffusion. The Institute’s Intellectual Property Rights Assistance Program, DOST-Academe Technology-Based Enterprise Development Program, and Technology Innovation for Commercialization Program may have contributed to this pillar as enabling programs for inventive and innovative activities.

# INTELLECTUAL PROPERTY RIGHTS ASSISTANCE PROGRAM

The protection of intellectual property is a crucial preliminary step in technology transfer and commercialization. Through the Intellectual Property Rights Assistance Program (IPRAP), the Institute provides assistance in patent consultation and grants for the payment of patent agents and necessary intellectual property (IP) fees.

To facilitate the filing of more applications in 2019, IPRAP has continuously collaborated with various law firms in handling patent services from different technology generators and project leaders for IP protection. And as a strategic partner in advancing national socio-economic growth by advocating a culture of innovation and promoting globally-competitive and useful technologies, DOST-TAPI

reinforces the mandate of promoting an effective and efficient innovation system for the utilization of inventions and technologies.

These are being attained through the adequate provision of IP and IP-related assistance packages for worthy inventions and innovations. The Institute, as one of the Innovation and Technology Support Offices (ITSO) in the country, was expected to enable mechanism to demystify and democratize the patent system and turn it into an effective tool in propelling technological development. It has also reinforced the support capabilities in enhancing IP creation, facilitating IP protection, and promoting IP utilization, that complements DOST-TAPI's implementation of the IPRAP.

Capacity Building for DOST Employees on Intellectual Property Rights held at DOST-TAPI Audio Visual Room







In 2019, the Program evaluated a total of 672 request proposals from inventors, institutions, and researchers with privately-funded research and development projects. Together with the ITSO network and various law firms, the IP filings reached 641 applications composed of patents, UM, ID, and copyright at the Intellectual Property Office of the Philippines (IPOPHL).

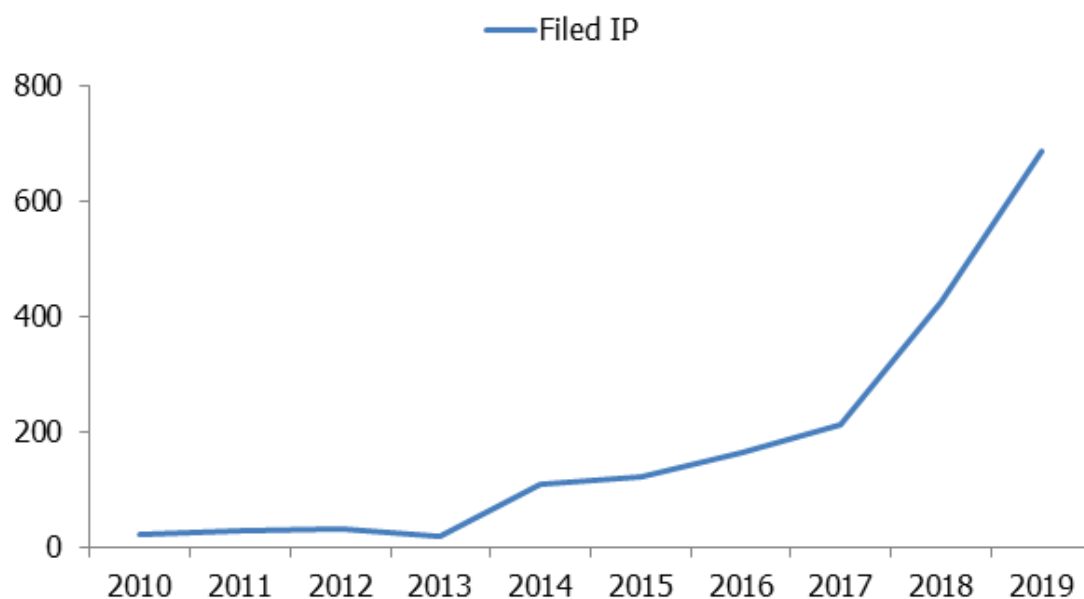
Successively, to facilitate the filing of another 616 applications covering Patent Cooperation Treaties (PCT), patents, UM, ID, trademarks, copyrights and Non-Practicing Entities (NPEs), DOST-TAPI through its ITSO continued collaborating with the

DOST Central Office for the project, “Support to the Commercialization of 500 DOST-Generated Technologies and Strengthening the Country’s Intellectual Property and Technology Portfolios.”

The Institute’s in-house patent agents were also tapped for the IP protection by drafting, prosecuting, preparing, and filing of responses to the official actions of the IPOPHL, which have resulted to a total of 863 IP applications. With these efforts, DOST-TAPI has saved an estimated amount of Php 10,035,000.00.

IP Type	IPRAP	ITSO	Unit Cost (Php)	Total Cost (Php)
PCT		5	20,000.00	100,000.00
Patent		3	50,000.00	150,000.00
UM	23	27	30,000.00	1,500,000.00
ID	92	18	30,000.00	3,300,000.00
Copyright	432	263	5,000.00	3,475,000.00
Prosecution	141	10	10,000.00	1,510,000.00
			<b>Total Amount Saved (Php)</b>	<b>10,035,000.00</b>

Prior art searches were also conducted to verify the novelty of 172 technologies received from public and private research institutions, and inventors prior to IP filing. More so, the Program provided consultancy services to 300 clients.



IPs filed under IPRAP from 2010 to 2019

Further, the Program has conducted an extensive three-day capacity building on IP Right among DOST employees in 2019. The training capacitated the participants especially on patent drafting, patent information search, and graphic designs.

Through the Program, the Institute is now part of the country's historic feat as an International Search Authority when the IPOPHL received the very first international patent application through the PCT. The DOST-funded technology assisted by the Program and represented by DOST-TAPI's in-house patent agent in both local and PCT applications received an International Search Report.

**Title: Alpha-Defensins as Markers for the Diagnosis and Prognosis of Leptospirosis**

Inventors: Dr. Jose B. Nevado, Jr., Dr. Nina G. Gloriani, Dr. Maridel P. Borja, Dr. Evalyn A. Roxas, Dr. Regina P. Berba and Dr. Catherine Lynn T. Silao

Philippine Patent Application No.: 1/2019/000187

International Patent Application No.: PCT/PH2019/000007

Patent Agent: Mr. Caesar Angelito E. Arceo



Subsequently, the IPRAP introduced IPWare to provide assistance in securing file managing databases, and developing sub-systems. The system aids to improve the file service through online accessibility, convenience, ease in handling files, and online monitoring among internal and external clients.

Under IPWare, the System for IP Applications and Grants (SIPAG) and Inventors' System for IP Applications and Grants (iSIPAG) were developed.

SIPAG is an offline tool used to manage, monitor, and evaluate thousands of IPs granted or filed while iSIPAG is the online version of SIPAG, which enables online monitoring for easier access of clients on their IP applications under IPRAP. A paperless routing of all incoming documents as well as online filing under the systems promotes efficiency in monitoring to guarantee timely actions in accordance to DOST-TAPI's citizens's charter.

Lastly, the Program revised and published its guidelines to streamline its operation.



# DOST-ACADEME TECHNOLOGY-BASED ENTERPRISE DEVELOPMENT PROGRAM

The DOST-Academe Technology-Based Enterprise Development (DATBED) Program supports entrepreneurial competencies among the youth. DATBED provides financial assistance to income-generating projects with technological innovation that are not yet tested in the market but poses market potential and technical viability when commercialized.

In 2019, a total of 11 project proposals were evaluated and seven of the project proposals were approved under the Stage I of DATBED which amounted to Php 567,689.74. The financial assistance benefited 32 students in the implementation of the technology-based enterprises.



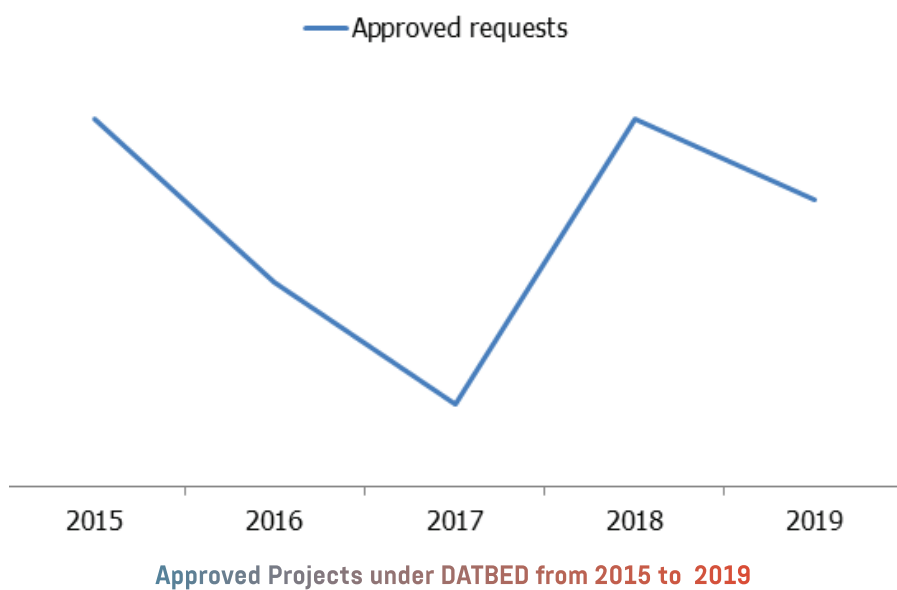
## Approved Projects under DATBED in 2019

Project	Beneficiary	Students Involved	Amount (Php)
Organic Chicken Production	Isabela State University (ISU) – Cabagan	10	96,071.35
Upgrading of Goat Production Thru Artificial Insemination	ISU – Cabagan	5	126,407.57
Mr. and Mrs. Verde	University of St. Louis	4	92,275.68
Formulation and Utilization of Rations with Mungbean By-Products	ISU – San Mateo	3	15,875.67
Duck Fattening Using Mungbean By-Products	ISU – San Mateo	3	67,567.57
Processing of Duck Meat into Longganiza	ISU – San Mateo	3	111,945.95
Automated Multifunction Supply and Tester	Digos College	4	57,545.95
		<b>32</b>	<b>Php 567,689.74</b>





The DATBED Program conducts an assessment of the approved projects after one and a half years of project implementation as midterm assessment and three years after as an end-of-program assessment to monitor the status of the projects including the administration of the schools.







Validation visit in Mabuhay Wellness Inc., Bulacan with Technical Evaluation Committee (TEC) and Screening Committee (SC)



The end-of-program assessments were conducted in Negros Oriental State University, Batangas State University (BatSU) – Rosario, Polytechnic University of the Philippines (PUP) – Mulanay, and PUP – Lopez in 2019.

Meanwhile, Php 30,000.00 was recovered from the previously approved project under the Stage II of DATBED and a total of Php 390,644.67 was fully liquidated from the financial assistance of two assisted projects.

Project	Beneficiary	Amount (Php)
Manufacturing of Toge (Vigna radiate) Fresh Pancit	BatSU – Rosario	53,759.67
Cattle Fattening	Mr. Ireneo Pascual	336,885.00
<b>Total</b>		<b>Php 390,644.67</b>



# TECHNOLOGY INNOVATION FOR COMMERCIALIZATION PROGRAM

Innovators and researchers experience challenges in the later stages of research and development (R&D) which hampers the successful transfer of innovative solutions to the market. The Technology Innovation for Commercialization (TECHNICOM) Program is created as an intervention to address the pre-commercialization gaps through the provision of financial grant and technical assistance.

The Program's implementation, which was turned over to the Institute since 2013, stimulates technological innovation, strengthens capacity in pursuing pre-commercialization activities, increases private sector adoption and commercialization of government-initiated R&D outputs, and maximizes the benefits from government investments in R&D activities. Through the Program's assistance, technologies were prepared for commercialization.

In 2019, the allocated budget of Php 44,660,000.00 was fully utilized and covered 10 home-grown technologies with three continuing projects charged to the 2020 budget.

Field Monitoring & Market testing  
activities for Technicom beneficiaries



In 2019, the allocated budget of Php 44,660,000.00 was fully utilized and covered 10 home-grown technologies with three continuing projects charged to the 2020 budget.

Project	Proponent	Amount (Php)	
		2019	2020
		3,097,418.49	
Product Design, Manufacturing and Field Scale Testing of StillFresh: Spoilage Monitoring Strip	Chromewell Innovative Solutions, Inc.	1,636,971.00	
Integration of Data Science and Scaling Up of Payruler, a comprehensive Human Resource Management System (HRMS)	Genii Hut Technologies	3,258,768.00	
Optimization of Virtual Reality Kit (VR Kit) for New Media Technology and Commercial Competitiveness	Mataverse, Inc.	4,019,382.00	
Enhancement of the Micab Cab Hailing Engine thru Big Data Analytics	Micab Systems Corporation	3,135,851.20	
Pre-commercialization of Microwave Processed Pectin from Waste Calamansi Peels	UP Visayas	4,260,449.94	
Automated System to Monitor and Control the Ph and Electrical Conductivity of a Closed-Hydroponics Lettuce	St. Louis University	4,651,882.20	162,906.40
Prime Composite Prosthesis	UP Diliman	205,901.40	4,988,623.34
Scale-up Manufacturing of Biotech-M Diagnostic Kits and Post Marketing for Third Party Evaluation	UP Manila	16,109,275.77	817,318.43
Technology Enhancement and Commercialization of Exora Intellex as an Energy Analytics Machine Learning Platform for Industrial Smart Energy Management and Electricity Cost Reduction	Exora Technologies, Inc.	4,284,100.00	110,700.00
Piloting of the FPRDI Wine Barrel Technology	DOST-FPRDI		1418,292.80
Product Improvement, Validation of Hypoglycemic Effect, Pilot Testing and Assessment of Business Potentials of the Developed Guava-based Probiotic Drink	UP Los Baños		969,073.42
Pre-commercialization of Microwave Processed Pectin from Waste Calamansi Peels	UP Visayas		738,588.90
TOTAL		44,660,000.00	9,205,503.29





Spark Plug: A TECHNICOM Master Class (Fundamentals of Evolving Techno-Based Commercialization)

The Program acknowledges the vital role of the proponents and project leaders in the successful conversion of research outputs to products and services attractive to the industry and end-users. Hence, one of the strategies identified by the Program is to equip its proponents and project teams with necessary skills, knowledge, and tools in technology-based commercialization through the conduct of “Spark Plug: A TECHNICOM Master Class (Fundamentals of Evolving Techno-Based Commercialization)” in 2019. It was attended by 84 participants from the research and development institutes, academe, startup companies, and government agencies.

Subsequently, a one-day technology demonstration event dubbed as “Tek Launch: Innovations, Our Future” was conducted on November 13, 2019. This served as a platform for the technology developers to showcase their innovations with a three-fold goal of linking with potential investors, forging collaborations/ networking with potential partners, and informing relevant stakeholders of the outputs of government investment in R&D.



Moreover, with the continuous support by the Program to its stakeholders through promotional activities, three assisted technologies were nominated to prestigious awards.

Technology	Award
BioGroe	National Academy of Science and Technology's (DOST-NAST) Technology Commercialization Awards
Vigormin	ASEAN-US Science Prize Awards for Women
Biotek-M	Filipino Faces of Biotechnology Awards

Technicom's first set of awards for project leaders who have successfully contributed to the fields of agriculture, health, and industry.

Award	Technology Generator
Gawad Dagta (Agriculture)	Dr. Ronilo P. Violanta for Biogroe
Gawad Dagisik (Health)	Dr. Raul V. Destura for Biotek-M
Gawad Dagitab (Industry)	Dr. Merlinda A. Palencia for Vigormin







Lastly, the program also highlighted the conduct of Talk&Techs: A Technicom Program Roadshow, an intensive proposal-generation activities conducted nationwide to extend the funding opportunity to eligible technology generators.





## CREATIVE OUTPUTS

It is often regarded that creativity stands in a gray area in terms of measuring innovation as its role in the subject matter is unrewarded. Intangible assets, creative goods and services, and online creativity are the sub-pillars which comprise the creative outputs. Bulk of the Institute's Programs may have contributed in the improvement of ranking. Such Programs that unwaveringly support the needs of the stakeholders in creative endeavors are the Testing and Analysis Assistance Program, Concept Prototyping Program, Technology Transfer Day Project, Institutional Support for Technology Expositions, Applied Communications, and Enhancing the Promotion of Agriculture, Aquatic and Natural Resources Technologies through Complementary Platforms Project.



# TESTING AND ANALYSIS ASSISTANCE PROGRAM

The Testing and Analysis Assistance Program was conceived to assist technologists, inventors, and researchers avail of laboratories and the facilities of research and development institute including regional offices and other government agencies. Through the Program, clients are able to test, verify, and evaluate the functionality of the invention, the suitability of its materials, components and design, and the safety and conduciveness of the product for public use.

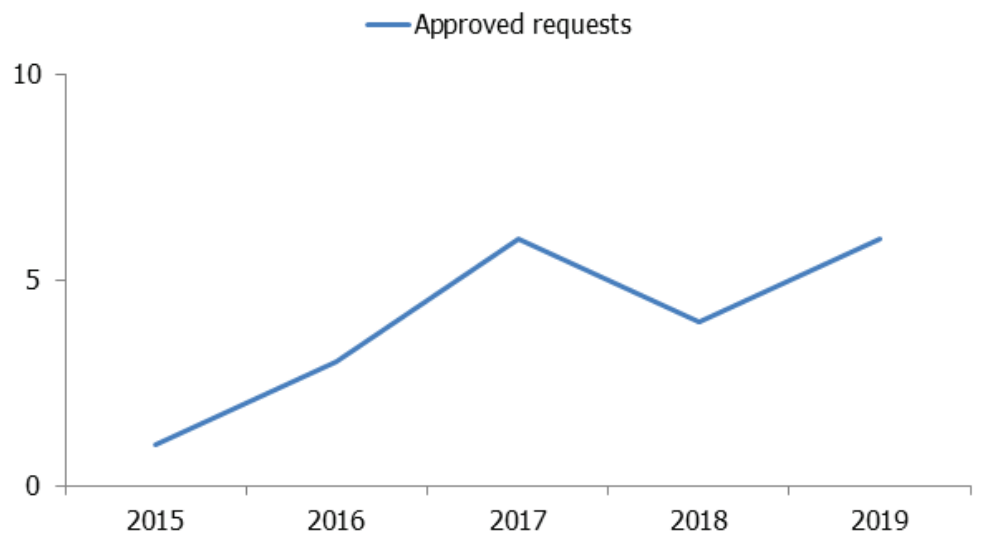
In 2019, 26 requests underwent a series of evaluations for possible funding and testing assistance. Nine of those requests passed the series of evaluation and were approved under the Program.



Invention	Beneficiary
A Mobile Phone Multiple Charger Device	Mr. Alphy C. Ferraren
A Herbal Tea Composition	Ms. Ruth O. Yanga
Pain Relief Ointment Composition	Ms. Mary Ann Santos
Extracted Herbal Oil from Ingredients Plants (Salvare Healing Oil)	Mr. Ernesto A. Labuntog
Portable Water Treatment Device	Mr. Reynaldo P. Cruz
A Roof Tile	

The Program has also conducted monitoring of previously approved projects and rendered 83 technical consultancy and advisory services to clients interested in availing the benefits of the Program.

Approved requests under the Program from 2015 to 2019





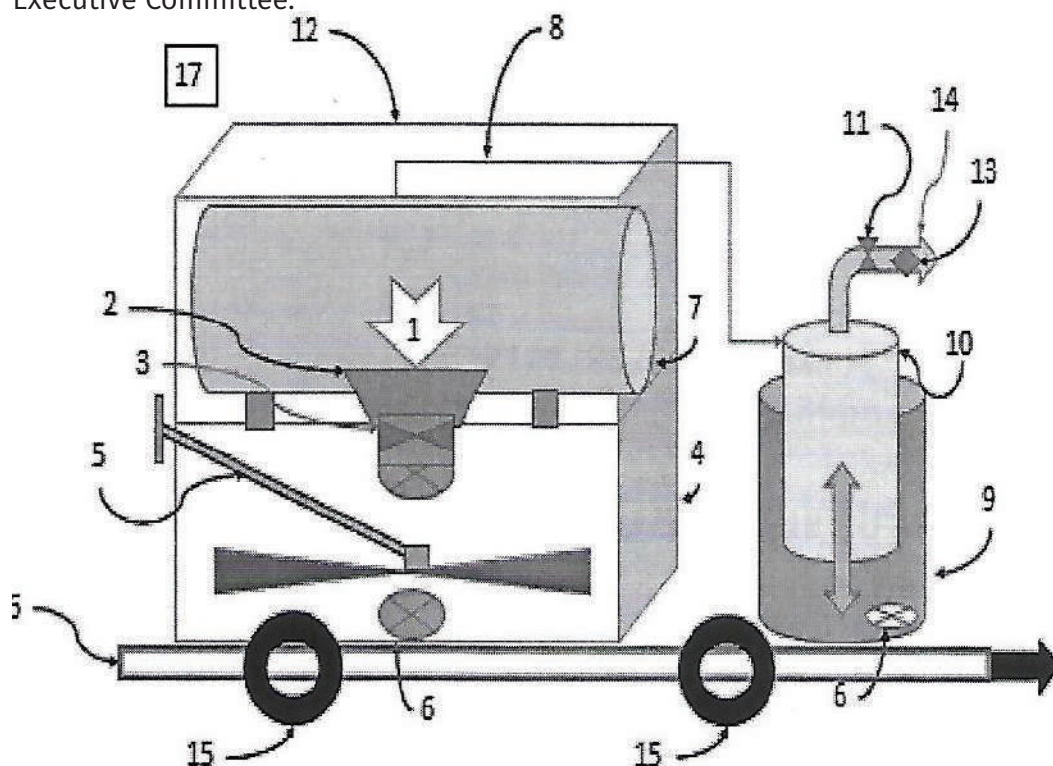
# CONCEPT PROTOTYPING PROGRAM

The Concept Prototyping Program provides support for the development of a potential invention's initial working prototype. The Program's mechanism involves the provision of technical assistance in collaboration with experts from the industry, DOST Research and Development Institutes and the academe as well as financial assistance to develop an initial working prototype of the invention, which covers raw materials, labor expenses, and testing fees.

In 2019, the Program received 25 requests and conducted six inventor's forum, as follows:

Invention	Beneficiary
Method of Coal Bed Methane Power Generation	Engr. Ronald O. Talion
Waste Plastic Material to Fuel Production	
Used Rubber Tire Material to Fuel Production	
Waste Styrofoam Material to Fuel Production	
Biochamber Expandable Anaerobic Digester	
Wearable Keyboard and Mouse	Mr. Armien Samson

Among the concepts presented, the Wearable Keyboard and Mouse and the Biochamber Expandable Anaerobic Digester were presented to the DOST-TAPI Executive Committee.



Biochamber Expandable Anaerobic Digester, invented by Engr. Ronald Talion, one of the inventions assisted under Concept Prototyping Program.





## TECHNOLOGY TRANSFER DAY PROJECT

The Institute continues to support the generation of income and employment among entrepreneurs through the Technology Transfer Day Project's conduct of training programs for awareness, capacity-building in performing technology transfer and commercialization, including IP protection, negotiation and licensing, and development of appropriate mechanisms and infrastructures.

This year, the National Technology Transfer Day was successfully conducted and attended by 660 participants from different sectors, which garnered a total of 698 inquiries from visitors.

Also, a total of 10 Technology Transfer Day activities were conducted resulting to the generation of 21 Direct Licensing Term Sheets for evaluation of the Fairness Opinion Board.



Various activities conducted by the Technology Transfer Day Project

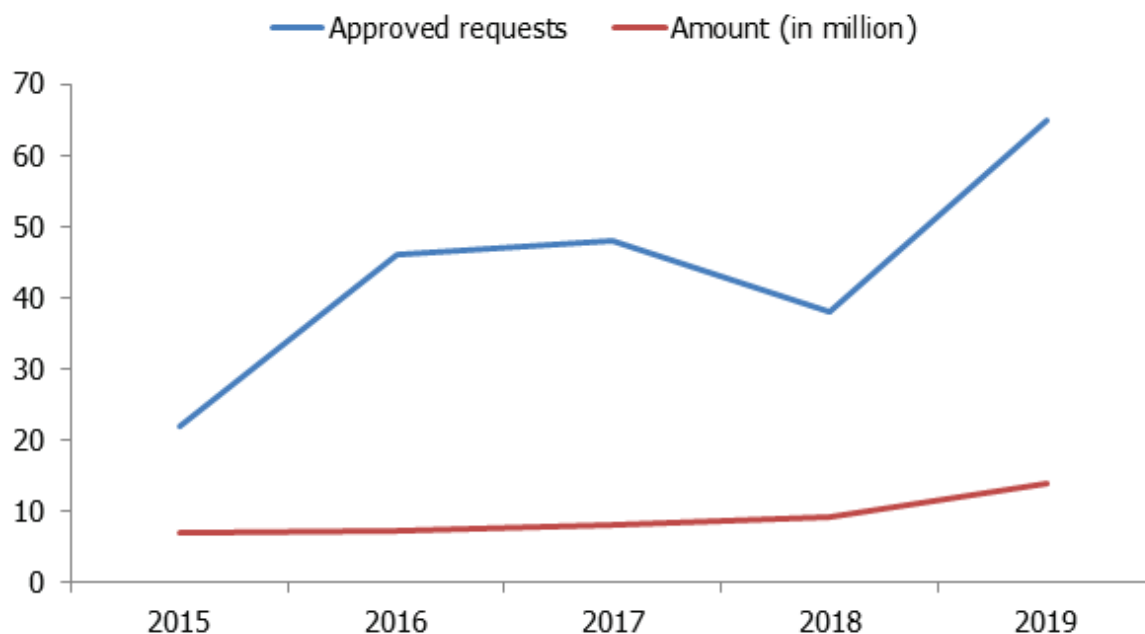






## INSTITUTIONAL SUPPORT FOR TECHNOLOGY EXPOSITIONS

An effective promotion strategy to showcase DOST-generated technologies as well as the latest advances in science and technology (S&T) in the country, the Institutional Support for Technology Expositions (ISTE) serves as a platform to disseminate, share, and exchange information and ideas on S&T development among various sectors. The Program supports DOST and non-DOST S&T fairs including the academe, public and private RDIs and companies, and inventors.





For 2019, ISTE received and evaluated 82 proposals in which 65 were approved. A total of 14-million-peso financial assistance was released for the various national and regional S&T fairs, as follows:

Technology	Date and Venue	Beneficiary
FEATI S&T Expo	06-07 March 2019 FEATI University, Manila	FEATI University
6th National Technology Festival 2019: Convention on Information Technology and Engineering	10-12 April 2019 Far Eastern University (FEU) Institute of Technology, Manila	FEU Institute of Technology
ViScience 2019	17 June 2019 Iloilo Convention Center, Iloilo City	University of the Philippines Visayas
MAP General Membership Meeting	24 June 2019 Dusit Thani, Makati City	Management Association of the Philippines (MAP)
2019 Regional Science and Technology Week (RSTW) in Region II	27-30 August 2019 Cagayan State University, Tuguegarao City, Cagayan	DOST-Region II
National Science and Technology (NST) Fair 2019	16-25 August 2019 Impact Exhibition Center, Nonthaburi, Thailand	Ministry of Higher Education, Science, Research and Innovation – Thailand
Agrilink/Aqualink/Foodlink	03-05 October 2019 World Trade Center, Pasay City	Foundation for Resource Linkage and Development, Inc.



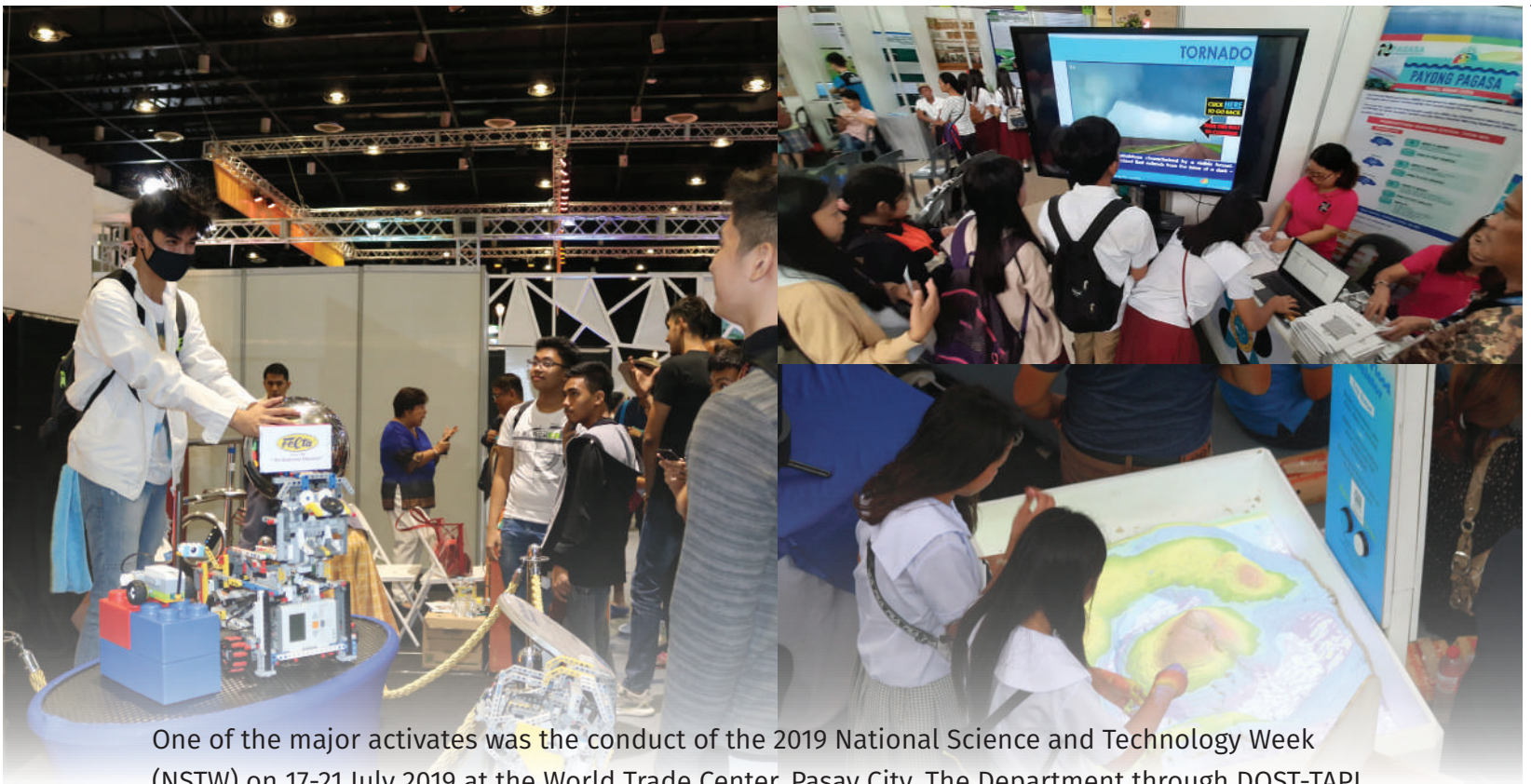
Technology	Date and Venue	Beneficiary
Philippine Business Conference and Expo (PBC&E)	16-17 October 2019 Manila Hotel	Philippine Chamber of Commerce and Industry
2019 RSTW in Cordillera Administrative Region (CAR)	19-20 November 2019 Bontoc, Mountain Province	DOST-CAR
2nd ASEAN-India Innotech Summit	20-22 November 2019 SMX Convention Center, Davao City	Department of Science and Technology – India
15th National Biotechnology Week	27-30 November 2019 National Kidney and Transplant Institute, Quezon City	Department of Health (DOH)
44th IEEE Annual National Convention and Expo 2019	25-29 November 2019 SMX Convention Center, Pasay City	Institute of Integrated Electrical Engineers of the Philippines, Inc.



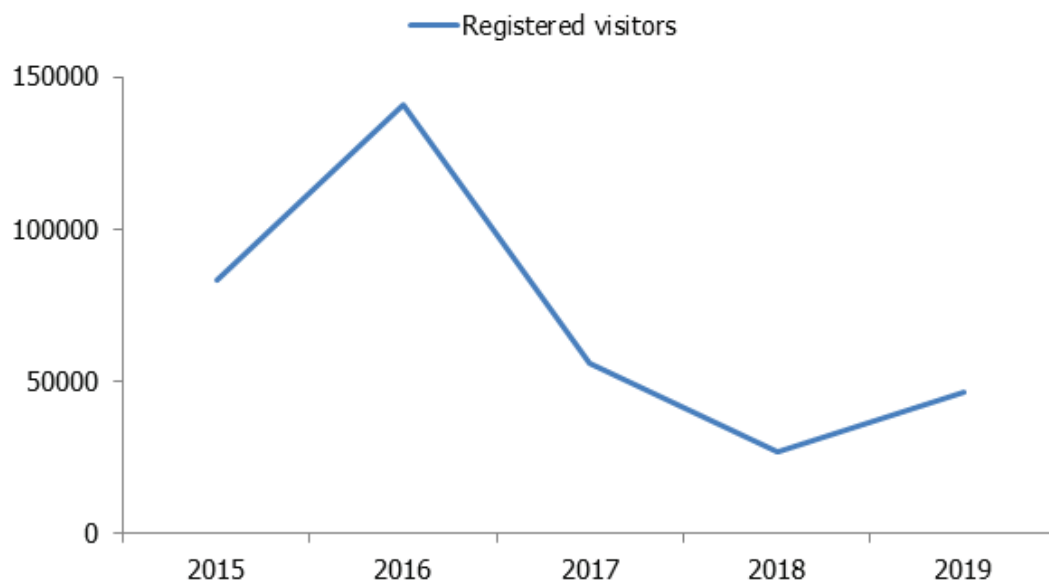
ISTE's participation during the National Science and Technology Fair held at the Impact Exhibition Center, Nonthaburi, Thailand on 16-25 August 2019

2nd ASEAN-India Innotech Summit held in SMX Convention Center, Davao City last 20-22 November 2019



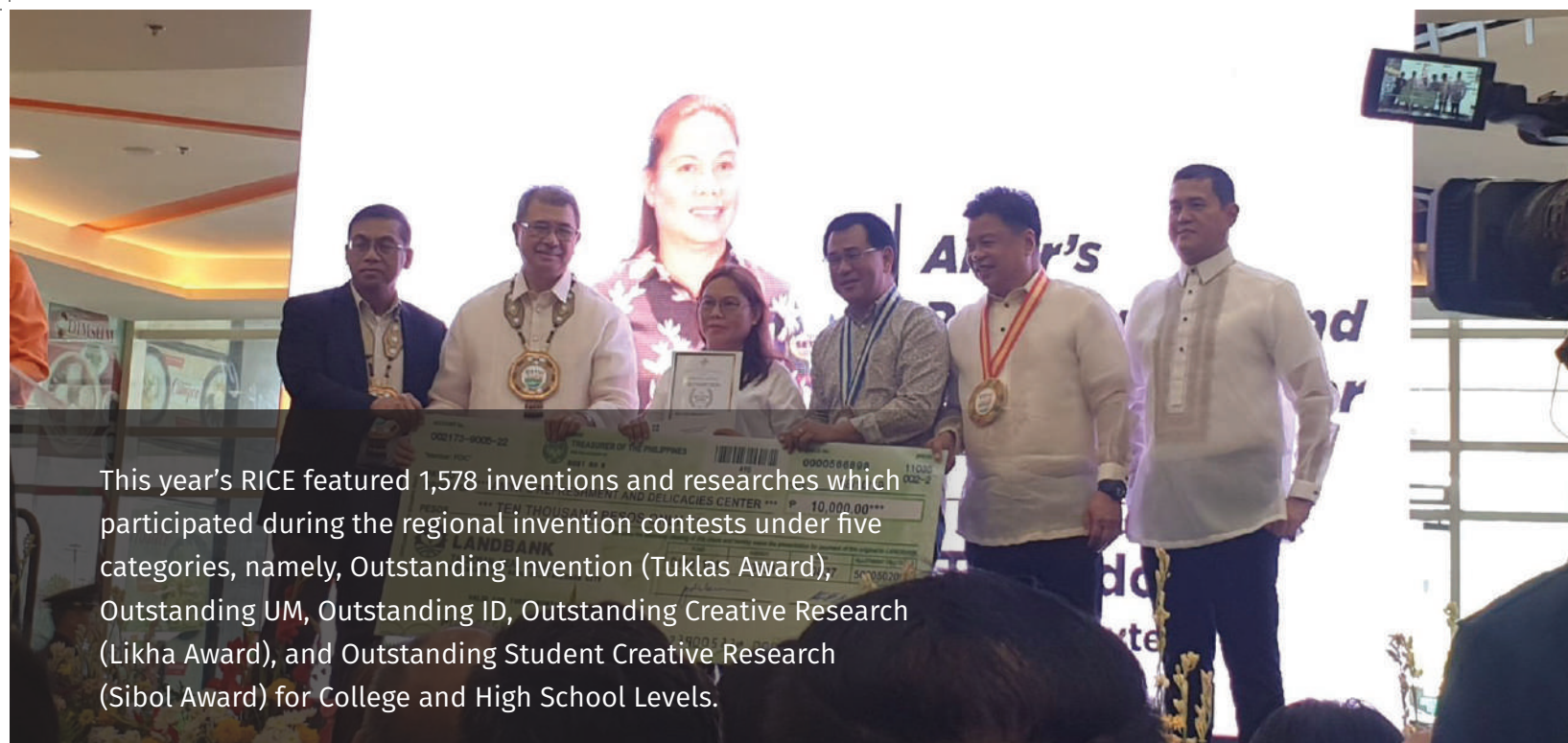


One of the major activities was the conduct of the 2019 National Science and Technology Week (NSTW) on 17-21 July 2019 at the World Trade Center, Pasay City. The Department through DOST-TAPI featured the breakthrough programs, services, and technologies where 46,421 registered visitors participated in the event.



Also, the Program organized the conduct of the 2019 Regional Science and Technology Week (RSTW) with the 2019 Regional Invention Contests and Exhibits (RICE), a biennial activity in cooperation with the DOST Regional Offices, which recognizes the Filipino inventors and researchers for their inventiveness and creativity. RICE provides a venue to sustain the generation of economically viable researches and inventions as it exposes these for the public to appreciate.





This year's RICE featured 1,578 inventions and researches which participated during the regional invention contests under five categories, namely, Outstanding Invention (Tuklas Award), Outstanding UM, Outstanding ID, Outstanding Creative Research (Likha Award), and Outstanding Student Creative Research (Sibol Award) for College and High School Levels.

Technology	Date and Venue
Region I	15-17 October 2019 Civic Center, Candon City, Ilocos Sur
Region V	8-10 October 2019 Bicol State College of Applied Science and Technology
Region VI	21-25 October 2019 Iloilo Convention Center, Iloilo City
NCR	6-8 November 2019 Technological Institute of the Philippines, Manila
Region II	27-30 August 2019 Robinsons Place, Tuguegarao City
Region XI	28-30 October 2019 SMX Davao Convention Center, Davao City
CALABARZON	Sta. Rosa Multi-Purpose Complex 25-27 September 2019
CAR	20-21 November 2019 Mountain Province General Comprehensive High School, Bontoc
Region VIII	10-11 August 2019 Robinsons Place, Tacloban City
CARAGA	03-05 September 2019 Bayugan City, Agusan Del Sur
Region XII	3-5 December 2019 SM General Santos City



Various activities during the conduct of 2019 RICE



After an extensive regional search, 190 regional winners were selected as finalists to the 2020 National Invention Contest and Exhibits (NICE).

Further, ISTE has provided financial assistance in the form of grant for the conduct of 17 technology-based capability building activities relating to topics on IP rights, IP management, technology transfer and commercialization, technology licensing, technology matching, technology valuation, STI, and other related disciplines.

Through the Program, three (3) technology-based seminar-workshops were conducted:

- 1. Orientation on the Publication Intangible Capital in Global Value Chains**
- 2. Orientation on the Global Innovation Index 2018 Energizing the World in Innovation**
- 3. Lakbioteknolohiya Biotech Boot Camp**

Lastly, ISTE has extended support to Filipino inventors for the conduct of the National Inventors Week (NIW) where it showcased the Filipino's ingenuity and commitment to come up with new ideas for national advancement. The NIW also provided a venue for invention development in terms of capability building of inventors through a comprehensive government support. Likewise, it has encouraged exchanges of new products, markets, processes, and services that may entice prospective businessmen, investors, and budding entrepreneurs to support and partner in developing and commercializing local inventions.





# APPLIED COMMUNICATIONS

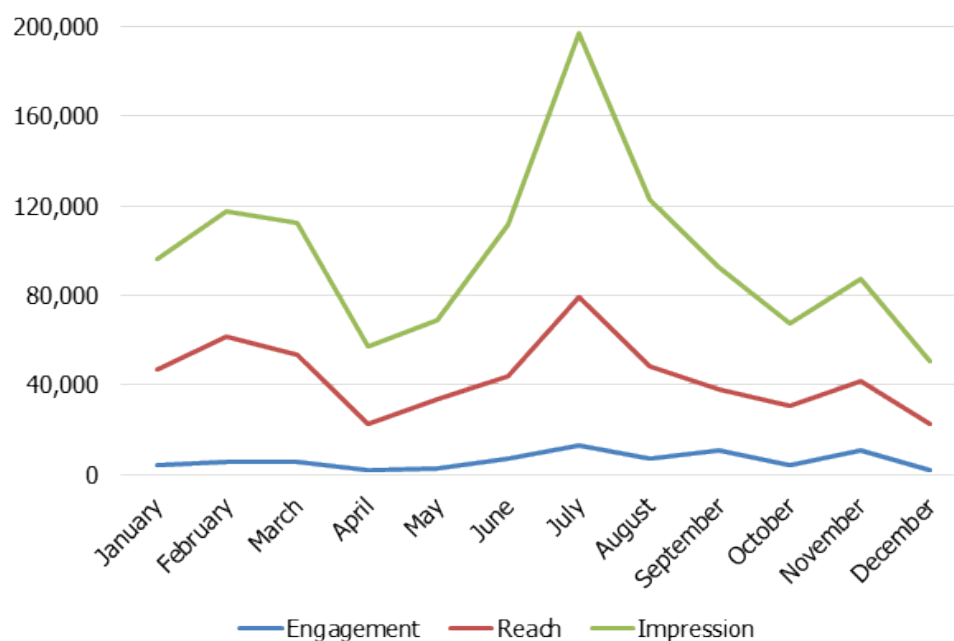
In 2019, the Applied Communications Unit (ACU) has sustained the promotional activities of the Institute through communication, particularly in the publication and management of press releases, conferences, and activities among stakeholders.

DOST-TAPI earned an almost 52.3-million-peso-worth of media mileage in print, broadcast, and digital (online) publications in 2019.

Media	Exposure	Value (Php)
<b>Broadcast</b>		
Television	12	17437,769.00
Radio	19	21460,237.00
<b>Print</b>		
Newspaper	13	324,096.19
Online	261	13,050,000.00
<b>Total</b>	<b>305</b>	<b>52,272,102.19</b>

Moreover, DOST-TAPI's official Facebook page had an increase in followers over time. The shares, comments, and reactions for content posts likewise increased with an engagement rate at an average of 13.9 percent, a 72.26-percent increase from 2018.

## DOST-TAPI Facebook page engagement, reach, and impression in 2019





DOST-TAPI Facebook page engagement, reach, and impression in 2019

With the assistance of the Science and Technology Information Institute (DOST-STII), events and activities were also promoted in at least 17 radio and television interviews, which bannered the DOST-TAPI premier Programs.



## Enhancing the Promotion of Agriculture, Aquatic and Natural Resources Technologies through Complementary Platforms Project

The Institute has continued providing strategic promotional services to the Philippine Council for Agriculture, Aquatic, and Natural Resources Research and Development (DOST-PCAARRD) on agriculture, aquatic, and natural resources through technology bazaars and exhibitions, and online marketing. The Project aims to uphold the adoption and commercialization of DOST-PCAARRD-funded technologies.

In 2019, the LED Promotional Board situated at the grounds of the DOST Compound started its operation by displaying various DOST technologies on the LED wall. Also, four technology forums were conducted and four interactive apps were completed including the augmented reality at the DOST-TAPI Technology Hub



Ceremonial unveiling of the DOST LED Promotional Board

As summary, the Institute was able to achieve an Overall Weighted Physical Performance (OWPP) of 144 percent.

Performance Indicator	Annual Target	Accomplishment	Performance (%)
<b>Outcomes</b>			
Percentage increase in IP protection filing for local technologies in IPOPHL	163	211	129
Percentage increase in the commercialization and adoption by industry or community of technologies diffused or supported	10	10	100
<b>Average OWPP</b>			<b>115</b>
<b>Outputs</b>			
No. of pre-commercialization support provided for inventions, innovations, and technologies	54	74	137
No. of inventions, innovations, and technologies promoted and commercialized	50	82	164
Percentage of requests that are acted upon within three days of request	95	95	100
Number of technical advisory services rendered	1,500	1,978	132
<b>Average OWPP</b>			<b>133</b>

With the Institute's combined financial and technical assistance to inventors, startups, MSME, and technology incubates, the potentials of innovation linkages and knowledge workers and absorption is indicative of strength and source of income to Philippine innovation.

DOST-TAPI has provided relevant contributions not only in bringing economic stability and global innovation but also in addressing societal issues in almost every life stage of the Filipino population.





# FINANCIAL RESOURCE MANAGEMENT & HUMAN RESOURCE DEVELOPMENT

**STATEMENT OF FINANCIAL PERFORMANCE (Comparative)**  
**All Funds**  
**as of December 31, 2019**

<b>Assets</b>	<b>2019</b>	<b>2018 (Restated)</b>
<b>Current Assets</b>		
Cash and Cash Equivalents	100,447,930.18	113,388,789.50
Receivables	545,770,561.12	459,593,236.11
Inventories	4,003,817.22	3,650,315.49
Other Current Assets	2,020,128.37	1,570,820.51
<b>Total Current Assets</b>	<b>652,242,436.89</b>	<b>578,203,161.61</b>
<b>Total Current Assets</b>		
<b>Investments</b>	<b>215,602,777.59</b>	<b>201,684,736.44</b>
<b>Property, Plant and Equipment</b>		
Property, Plant and Equipment	50,057,236.17	41,357,495.57
Less : Accumulated Depreciation	(30,027,929.69)	(26,828,058.19)
<b>TOTAL</b>	<b>20,029,306.48</b>	<b>14,529,437.38</b>
<b>Other Assets</b>	<b>6,028.32</b>	<b>6,028.32</b>
<b>Total Non-Current Assets</b>	<b>235,638,112.39</b>	<b>216,220,202.14</b>
<b>TOTAL ASSETS</b>	<b>,880,549.28</b>	<b>794,423,363.75</b>
<b>LIABILITIES</b>		
<b>Current Liabilities</b>		
Financial Liabilities	30,552.89	141,377.40
Inter-Agency Payables	285,737,503.97	222,645,305.27
Deferred Credits/Unearned Income	218,447,980.17	201,274,814.45
Other Payables	2,708,056.46	2,078,012.58
<b>Total Current Liabilities</b>	<b>506,924,093.49</b>	<b>426,139,509.70</b>
<b>TOTAL LIABILITIES</b>	<b>506,924,093.49</b>	<b>426,139,509.70</b>
<b>TOTAL ASSETS LESS TOTAL LIABILITIES</b>	<b>380,956,455.79</b>	<b>368,283,854.05</b>
<b>NET ASSETS/EQUITY</b>		
Accumulated Surplus/(Deficit)/Unrealized Gain/(Loss)	380,956,455.79	368,283,854.05
<b>Total Net Assets/Equity</b>	<b>380,956,455.79</b>	<b>368,283,854.05</b>



**STATEMENT OF FINANCIAL POSITION (Comparative)**  
**All Funds**  
**as of December 31, 2019**

<b>Assets</b>	<b>2019</b>	<b>2018 (Restated)</b>
<b>Revenue</b>		
Service and Business Income	62,781.08	111,229.02
<b>Total Current Assets</b>	<b>62,781.08</b>	<b>111,229.02</b>
<b>Less: Current Operating Expenses</b>		
Personnel Services	55,510,313.46	49,637,196.93
Maintenance and Other Operating Expenses	44,967,763.47	38,232,883.59
Non-Cash Expenses	1,596,763.14	1,679,907.07
<b>Total Current Operating Expenses</b>	<b>102,074,840.07</b>	<b>89,549,987.59</b>
<b>Surplus/(Deficit) from Current Operations</b>	<b>(102,012,058.99)</b>	<b>(89,438,758.57)</b>
Subsidy from National Government	136,044,534.07	129,478,901.94
Less : Financial Assistance to NGAs	53,984.04	101,381.68
Financial Assistance to NGOs/POs	-	-
Net Financial Assistance/Subsidy	135,990,550.03	129,377,520.26
<b>Surplus (Deficit) for the period</b>	<b>33,978,491.04</b>	<b>426,139,509.70</b>
<b>TOTAL ASSETS LESS TOTAL LIABILITIES</b>	<b>380,956,455.79</b>	<b>39,938,761.69</b>

## TRAININGS AND SEMINARS ATTENDED

No.	Trainings/Seminars Attended	Date / Place	Participants
1	Forum on Procurement	24 January 2019 PICC	Nora P. Gumia Connie M. Roa Esteve Ronnel H. Lopez
2	Budget Forum	25 January 2019 PICC	Josephine Q. Reyes Florescia P. Pangilinan Elena P. Obledo
3	DOST-Wide Strategic Communication Planning Workshop	08 February 2019 DAP Conference and Hotel, Tagaytay	Emilie S. Capellan
4	Training on "Advanced Monitoring and Evaluation (M&E): Statistics for Project M&E"	11-15 February 2019, Philippine Statistical Research and Training Institute	Janice W. Cornel Lara Jean P. Belgira
5	39th Session of the Integrated Salamin-Diwa (SALDIWA) ng Paglilingkod	11-26 February 2019 Villa Caceres Hotel In Naga, Camarines Sur	Marion Ivy D. Decena
6	Public Consultation on the IRR of R.A. 11032 or the Ease of Doing Business and Efficient Government Service Delivery Act of	13 February 2019 PICC	Edgar I. Garcia Atty. Israel Jacob R. Zaragoza
7	Philippine Institute of Certified Public Accountants' Sectoral Summit - Spotlight on Government	27 February 2019 Century Ballroom, Century Park Hotel, Manila	Lilia B. Ferrer Florescia P. Pangilinan Ma. Aurora Fe L. Dayangco
8	125th Mandatory Continuing Legal Education (MCLE)	27 February to 01 March 2019 De La Salle University	Marion Ivy D. Decena
9	Seminar-Workshop on "MS Access for Records Management"	04-06 March 2019 L'Fisher Hotel, Bacolod City	Mary Ann S. Nicdao Jei A. Solis
10	Seminar-Workshop on "RM101: Records Management for Newbies"	04-06 March 2019 L'Fisher Hotel, Bacolod City	Archie Y. Mabulay
11	PhilGEPS Buyers Training	07-08 March 2019 Pasig City	Atty. Israel Jacob R. Zaragoza Roberto R. Verzosa Lara Jean P. Belgira
12	Records Officer's Forum Capacity Building to Enhance the Competency on Records Management in the DOST System (DOST SO No. 0227)	13-15 March 2019 MIRDC	Marissa A. Melosantos
13	Adobe Illustrator Workshop: Basics and Tricks	26-27 March 2019 STII	Jackson C. Lu Ramon D. Navarrete Jr.
14	Seminars on Internal Quality Audit and Awareness on Risk Management under ISO 9001:2015 Standards	27-28 March 2019 TAPI AVR	Please see SO
15	17th National Convention of Lawyers	27-31 March 2018 Iloilo Convention Center, Iloilo City	Atty. Israel Jacob R. Zaragoza
16	Formal Launch and Workshop for DOST InfoSerbilis	28-29 March 2019 Bayview Park Hotel Manila	Emilie S. Capellan Christopher C. Gealan
17	Philippine Quality Award (PQA) Assessors Preparatory Course	01-05 April 2019 PTTC	Nora P. Gumia
18	4th National R&D Conference (NRDC)	3 April 2019 PICC	Marion Ivy D. Decena Glenda C. Rima Rosemarie L. Olaer
19	System Access Matrix(SAM) Workshop on the Adoption of Budget and Treasury Management System (BTMS)	3 April 2019 NRCP Auditorium	Esteve Ronnel H. Lopez Ma. Aurora Fe L. Dayangco Alona D. Iguiz Schatzly Kai B. Dolorfo Ermae L. Ramos
20	Workshop for Stakeholders on Alternative Dispute Resolution (ADR) in IP Disputes	3-4 April, 2019 IPOPhil Multi-Purpose Hall, Fort Bonifacio, Taguig City	Israel Jacob R. Zaragoza



## TRAININGS AND SEMINARS ATTENDED

No.	Trainings/Seminars Attended	Date / Place	Participants
21	Celebration of the 30th Philippine Agricultural Engineering Week	21-27 April 2019 Bacolod City	Theda Mae S. Dumali Rhoalyn D. Gacho
22	Workshop on Communicating Research	25 April 2019 DOST-PHIVOLCS	Pierre Sonia S. Dela Corte
23	2nd PAGBA Quarterly Seminar and Meeting	01-04 May 2019 Crown Legacy Hotel, Baguio City	Connie M. Roa Janice W. Cornel Grace L. Lacia
24	Consultative Workshop on Latest Content and Developments in STARBOOKS	9-10 May 2019 Cebu City	Judith R. Fabros
25	Effective Approach in Receiving and Releasing of Documents and Organizing Files for Quick Retrieval: Standards and Best Practices	15-17 May 2019 Baguio City	Nora N. De Guzman Aiko N. Verzosa Gabriel M. Sarayno Mylex A. Buendia
26	User's Training on Basic Regulatory Impact Assessment (RIA)	21-24 May 2019 TBA	Israel Jacob R. Zaragoza Marissa A. Melosantos
27	Seminar on Government Procurement Reform Act (RA 9184) and its Revised IRR and Updates	22-24 May 2019 Hotel Kimberly, Malate, Manila	Caezar Angelito E. Arceo Eilleen S. Fernando Teresita R. Alarcon
28	The Government Association of Certified Public Accountants, Inc. (GACPA, Inc.)'s 41st Annual National Convention and Seminar	22-25 May 2019 Limketkai Center, Cagayan de Oro City	Florencia P. Pangilinan Ma. Aurora Fe L. Dayangco
29	HR Conversations	24 May 2019 CSC	Lourdes C. Palileo Mary Ann S. Nicdao
30	The Philippine Bidding Documents	29-31 May 2019 Hotel Kimberly, Malate, Manila	Roberto R. Verzosa Lara Jean P. Belgira
31	Meeting on "Workers by Self-Design: Digital Literacies and Women's Changing Roles in Unstable Environments (WSD)" and the Public Forum entitled "Crafting Futures in the Digital World: Women's Journeys into the Workplace"	29-31 May 2019 Bayleaf Hotel Manila	Marion Ivy D. Decena
32	1st Public Leaders' Summit	29-30 May 2019	Edgar I. Garcia
33	Training/Seminar Course on "Marketing Research"	30-31 May 2019 Ateneo de Manila	Ezekiel R.H. Nicomedes
34	Budget and Treasury Management System (BTMS) Power Users Training	30-31 May 2019 DBM	Esteve Ronnel H. Lopez Ma. Aurora Fe L. Dayangco
35	Photo Editing and Web Design Using Adobe Photoshop CS6	03-04 June 2019 PTTC, Pasay	Anna Liza B. Saet Jomari J. Lasay Mark Angelo B. Lasala Maricon R. Avila
36	Managing Records with the Law in Mind	5-7 June 2019 Hotel H20, Luneta	Rizalnio L. Noble Elli Joshua G. Rey
37	Training/Seminar Course on "Cinematography 101"	26-27 June 2019 PCCI	Raul Roma Jr. Mary Anichie Itoh
38	DOST Planning Officers Mid-Year Conference	26-27 June 2019 DAP Tagaytay	Janice W. Cornel
39	Excel for Accountants Part 1 & 2	27 June 2019 PICPA	April Rose G. Pallado
40	Training/Seminar Course on "Procurement Planning, Technical Specifications and Project Costing"	27-28 June 2019 TAPI AVR	TAPI Staff

## TRAININGS AND SEMINARS ATTENDED

No.	Trainings/Seminars Attended	Date / Place	Participants
41	MS Excel Advance	02 July 2019 Makati City	Elizabeth I. Garcia Roberto R. Verzosa Clifford Glenn D. Malaay Dana Marie D. Miguel
42	45th Seminar Series on Food and Nutrition Researches and S&T Activities	2-3 July 2019 PICC	Rizalño L. Noble
43	MS PowerPoint Advance	08 July 2019 Makati City	Rose Marthy B. Bongon Marion Ivy D. Decena Caezar Angelito E. Arceo
44	Cash Management and its Internal Control System	10-12 July 2019 Hotel Kimberly, Malate	Elizabeth I. Garcia Clifford Glenn D. Malaay Glenda C. Rima Anna Liza B. Saet Richelle C. Malaay
45	35th Session of the Integrated Gabay ng Paglilingkod (I-Gabay) Training Course	22 July to 02 Aug. 2019 Tagbilaran City	Marion Ivy D. Decena
46	Public Financial Management Program (PFMCP) Foundation Track	24-26 July 2019 29-31 July 2019	Lelanie O. Casacop Ma. Aurora Fe L. Dayangco Josephine Q. Reyes
47	MS Excel Intermediate	26 July 2019 Makati City	Elizabeth I. Garcia Roberto R. Verzosa Clifford Glenn D. Malaay Dana Marie D. Miguel
48	Orientation on the GAD Agenda	26 July 2019 NRCP	Lourdes C. Palileo Janice W. Cornel
49	Training/Seminar Course on Corporate Video Production	26-28 July 2019 PCCI	Mary Anichie Itoh
50	Training/Seminar on Basic Contracts	26 July 2019 BusinessCoach, Inc. San Juan City	Razoland B. Navarro Florisa mae A. Ilagan
51	Technopreneurship Sessions with Mr. Stan Shih	02-03 August 2019 Asian Institute of Management, Makati City	Rodel R. Oracion
53	Seminar-Workshop on Data Privacy Impact Assessment	05 August 2019 TAPI AVR	
54	Course on Basic Project Management	05-09 August 2019 DAP	Mylene A. Alano Lea Ruby C. De Castro
55	TAPI -GAD Focal Point System Planning Workshop	14-15 August 2019 Lucky Chinatown Hotel, Binondo	Nora P. Gumia Josephine Q. Reyes Lourdes C. Palileo Clifford Glenn D. Malaay Rosemarie L. Olaer Florisa Mae A. Ilagan Esteve Ronnel H. Lopez Janice W. Cornel
56	AsianSIL Junior Scholars Conference	21 August 2019 UP Diliman	Rizalño L. Noble
57	Attendance to AsianSIL Junior Scholars Conference	21 August 2019 UP Diliman	Rizalño L. Noble



## TRAININGS AND SEMINARS ATTENDED

No.	Trainings/Seminars Attended	Date / Place	Participants
61	2019 Women Inventors' Luzon Summit	4-5 September 2019 Binondo	Nora P. Gumia Marion Ivy D Decena Romeo M. Javate Florescia P. Pangilinan Josephine Q. Reyes Lourdes C. Palileo Clifford Glenn D. Malaay Rosemarie L. Olaer Florisia Mae A. Ilagan Esteve Ronnel H. Lopez Janice W. Cornel Jund Rian A. Doringo Virma E. Dimaguila Wilson I. Manza
62	Attendance to the 2019 National GAD Budget Forum	06 September 2019 Pasay City	Florescia P. Pangilinan Josephine Q. Reyes
63	Attendance to the Planning Workshop for HRDP (2020-2022)	06 September 2019 NAST	Mary Ann S. Nicdao
64	Attendance to the Salinlahi Conference: Embracing the Emerging Technologies in Museum Content Development	10-11 September 2019 UP Los Baños	Judith R. Fabros
65	In-Depth Privacy Impact Assessment (PIA) and Data Protection Controls Workshop	10-12 September 2019 Pasig City	Israel Jacob R. Zaragoza Esteve Ronnel H. Lopez
66	Records Management Alert: Protect your Records & Yourself	16-18 September 2019 Cebu City	Marissa A. Melosantos Mary Ann S. Nicdao Rizalnio L. Noble Ella U. De Luna Janice W. Cornel Mylene A. Alano
67	Attendance to the HRDP-Funded Activity entitled "Risk Management Training"	16-18 September 2019 Quezon City	Pierre Sonia S. Dela Corte
68	Attendance to the "Data Privacy Awareness and Compliance Workshop"	24-26 September 2019 Pasig City	Nora P. Gumia Lourdes C. Palileo
69	2019 Women Inventors' Visayas and Mindanao Summit	3-4 October 2019 (Cebu City) 14-15 November 2019 (CDO)	Nora P. Gumia Marion Ivy D Decena Josephine Q. Reyes Lourdes C. Palileo Clifford Glenn D. Malaay Rosemarie L. Olaer Florisia Mae A. Ilagan Esteve Ronnel H. Lopez Janice W. Cornel Maricris A. Almazan
70	Attendance to the Seminar-Workshop on "Contract Enforcement and Dispute Resolution for Non-Legal Professionals"	08 & 11 October 2019 TAPI-AVR & RTC Taguig	Please see SO
71	Attendance to the Training/Seminar on Crisis Management"	10 October 2019 AdMU	Eilleen S. Fernando Rizalnio L. Noble

## TRAININGS AND SEMINARS ATTENDED

No.	Trainings/Seminars Attended	Date / Place	Participants
72	Attendance to the "Public Financial Management Program (PFMCP) Foundation Track"	28-30 October 2019 UP-NCPAG	Nora P. Gumia Florescia P. Pangilinan Virma E. Dimaguila
73	Attendance to the 26th Course on Food Safety	21-25 October 2019 Malate, Manila	Rodel R. Oracion
74	2019 DOST-Wide GAD Focal Point System (GFPS) Assembly	5-7 November 2019 Palawan	Nora P. Gumia Josephine Q. Reyes Lourdes C. Palileo Clifford Glenn D. Malaay Rosemarie L. Olaer Florisa Mae A. Ilagan Esteve Ronnel H. Lopez Janice W. Cornel
75	Attendance to the 2019 4th Quarter Seminar & Meeting with the Theme, "Public Financial Management in a Difficult & Changing Environment"	06-09 November 2019 Tagbilaran City	Alona D. Iguiz Cristina T. Pili
76	Training Course on Creating Animated Explainer Videos with Adobe After Effects	16-17 November 2019 (Sat&Sun) Makati City	Esteve Ronnel H. Lopez Ramon D. Navarrete Jr. Judith R. Fabros Hanika C. Maghirang
77	Luzon Convention of HRMPs	27-29 November 2019 Puerto Princesa City	Lourdes C. Palileo Mary Ann S. Nicdao
78	Workshop Entitled "Intensive Vulnerability Assessment and Penetration Testing (VAPT)"	2-5 December 2019 ADMATEL	Ramon D. Navarrete Jr.



# FUTURE DIRECTIONS

The Institute continues to undertake major programs, particularly in invention and innovation development, IP protection, technology promotion, prototyping, pilot testing, technical consultancy services, and venture financing, as well as recognizes the principles that fairness and equity demand that everyone in the society regardless of gender has the right to achieve their full potential.

Moreover, the Institute follows more efficient and responsive ways of supporting our inventors, local enterprises, academe, and various stakeholders.

Specifically, the gains obtained from the IPRAP motivate DOST-TAPI to strike further. Given the fact that successful commercialization can only be ensured once IP ownership is established.

With the Department's priority in protecting IPRs from government funding as well as privately-funded technologies, DOST-TAPI is in the perfect position to bolster the current efforts in view of protecting and commercializing research products. The Institute aims high in accomplishing 2,000 IP applications.

Part of DOST-TAPI's envisioned achievement is the annual conduct of the regional and national Science and Technology Week and Invention Contests and Exhibits. These major events serve as an excellent platform in disseminating, sharing, and exchanging of information and ideas involving S&T development for the benefit of various sectors. These events also provide a venue for

inventors to showcase their innovations to potential investors.

For the following year, the Institute targets achieving 152 inventions, innovations, and technologies funded under the pre-commercialization support programs, a comprehensive support that enables selected inventions to take off from the final stage of development up to commercialization.

With DOST-TAPI's continued efforts in improving its programs and services, and loyalty to the vision as the strategic partner in advancing national socio-economic growth through the advocacy of an innovative culture and globally-competitive technologies, promoting the innovation system is reinforced, business development of technologies is facilitated, and partnership with stakeholders is strengthened.

The Institute collectively resolves to move forward even during this difficult time in the advent of the new normal with comprehensive invention and innovation development, technology transfer and commercialization, and technology promotion services in synergistic complementation with the DOST, other government institutions, and private programs.

# Organizational Chart

## OFFICE OF THE DIRECTOR

**ENGR. EDGAR I. GARCIA**  
Director

### PLANNING UNIT

**ELENA P. OBLEGO**  
Planning Officer II

### LEGAL UNIT

**ATTY. ISRAEL JACOB  
ZARAGOZA**  
Attorney IV

### INVESTMENT & BUSINESS OPERATIONS DIVISION

**ROMEO M. JAVATE**  
Office-in-Charge

### TECHNOLOGY INFORMATION & PROMOTION DIVISION

**NORA P. GUMIA**  
Division Chief

### INVENTION DEVELOPMENT DIVISION

**ATTY. MARION IVY D.  
DECENA**  
Division Chief

### FINANCE & ADMINISTRATIVE DIVISION

**LILIA B. FERRER**  
Division Chief



DEPARTMENT OF SCIENCE & TECHNOLOGY  
**TECHNOLOGY APPLICATION & PROMOTION INSTITUTE**  
TAPI Bldg., DOST Complex, General Santos Ave., Bicutan, Taguig City 1631 Philippines  
Direct: 8837-2071 loc. 2151 to 67



[tapi.dost.gov.ph](http://tapi.dost.gov.ph)



DOST TAPI



[tapi.dost@yahoo.com](mailto:tapi.dost@yahoo.com)



DOST.TAPI