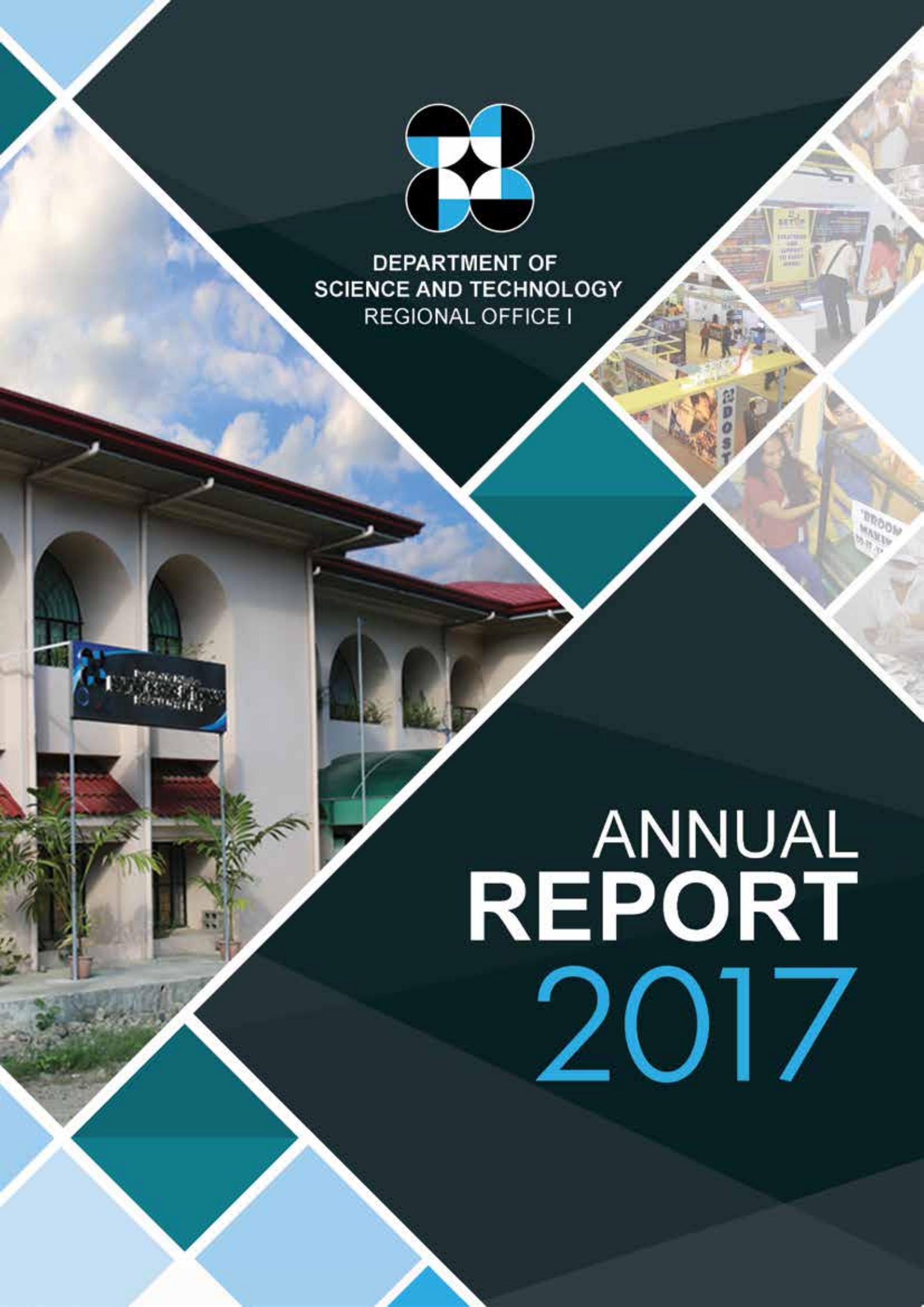




DEPARTMENT OF
SCIENCE AND TECHNOLOGY
REGIONAL OFFICE I

ANNUAL
REPORT
2017

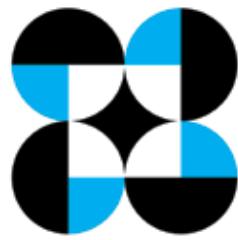


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UALITY POLICY

We are committed to provide products and services to both the government and private sectors in Region I with the highest standards of quality and reliability within our capabilities and resources according to customer and all applicable regulatory and statutory requirements and to continually improve the effectiveness of our QMS at all times in order to meet customer satisfaction.





DEPARTMENT OF
SCIENCE AND TECHNOLOGY

REGION 1

ANNUAL
REPORT
2017

FOREWORD



DOST I maintained strong leadership in S&T-based innovations and services for the delight of its customers. The programs, projects and activities in 2017 involved empowerment of the micro, small, and medium enterprises (MSMEs), the creation and support to food and metals innovation hubs, disaster risk reduction and mitigation, extension of S&T services such as packaging and labeling, technical assistance and consultancies, technology trainings, and laboratory testing and calibration services to different sectors, the development of S&T manpower thru the various scholarships, promotion of available and appropriate technologies for adaptation in the grassroots level thru the S&T caravans, and developing new products, providing for good health, nutrition and sanitation, clean water, and assisting in improving basic education with the Community Empowerment thru Science and Technology.

The efforts were supported with continuous improvement in work places, learning capacities and culture, innovative financial management, and strong linkages and partnership with stakeholders: political and local leaders, and the various academic institutions, government agencies, and the local government units.



ARMANDO Q. GANAL
Regional Director

Table of Contents

Foreword II

Highlights of Accomplishment 01

TECHNOLOGY TRANSFER

- **Small Enterprises Technology Upgrading Program (SETUP)**

03

Food Processing
Metals and Engineering
Furniture Manufacturing
Agriculture
Gifts, Decors & Handicrafts

- **Community Empowerment Through Science and Technology (CEST)**

63

Addressing malnutrition through learning and feeding
Assuring water potability
Utilizing community resource for sustainable livelihood opportunities
Of continuing commitments and strengthening partnerships

SCIENCE AND TECHNOLOGY SERVICES

- **Testing and Calibration Services**

67

- **Label Design and Packaging Services**

70

- **Technical Assistance & Consultancy Services**

71

- **Technology Training**

73

- **Technology Fora**

74

OTHER SCIENCE AND TECHNOLOGY SERVICES

- **S&T Scholarship**

75

- **S&T Library and Information Services**

77

- **S&T Promotion and Advocacy**

78

HIGH IMPACT TECHNOLOGY SOLUTIONS

- Deployment of Early Warning Systems in Disaster-Prone Areas 83
- Roll-out of 1,000 RxBox Telehealth Device in Selected Rural Health Centers in the Philippines 85
- One Store 87
- One Expert 88

R&D CONSORTIA AND INNOVATION CENTER

- Ilocos Consortium for Industry, Energy and Emerging Technology Research and Development (ICIEERD) 89
- Ilocos Agriculture, Aquatic and Natural Resources Research and Development Consortium (ILAARRDEC) 91
- Region 1 Health Research and Development Consortium (R1HRDC) 92
- Food Innovation Center 93
- Metals and Engineering Innovation Center 94

GENDER AND DEVELOPMENT

95

FINANCIAL AND HR MANAGEMENT

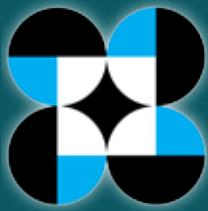
- Financial Resources 97
- Human Resources 98

DOST 1 ORGANIZATIONAL CHART

108

DIRECTORY

109



EXECUTIVE SUMMARY

DOST I maintained strong leadership in S&T-based innovations and services in 2017 for the delight of its customers. The efforts were supported with continuous improvement in work places, learning capacities and culture, and innovative financial management.

I. ENHANCING CUSTOMER SATISFACTION

Regional R&D Agenda & Technology Promotion

The Regional Development Council handed the leadership of the Regional Research Committee to DOST I in recognition of the pivotal role of science, technology and innovation in achieving robust economic growth in region I. Consequently, the Harmonized Region I R&D Agenda for 2017-2022 was formulated aligned with the NHRDA and the Regional Development Plan. Furthermore, DOST I is involved in charting the direction of the three R&D consortia in Ilocos by maintaining its active membership in ILAARRDEC, ICIEERD, and R1HRDC and their coordinating councils.

A total of 101 technologies were promoted in various promotion activities leading to the adoption/use of four technologies, namely, ecosep, bioreactor, brown rice snack bar, and iron fortified rice.

Support to MSMEs and Start-Ups

As a response to the call for sustained economic growth, 312 S&T interventions were given to 61 new and 67 previously assisted micro, small and medium enterprises (MSMEs) through the Small Enterprise Technology Upgrading (SETUP) program enabling them to significantly improve productivity and competitiveness indicated in leaps in gross sales reaching to about P792M and generating employment for 338 individuals.

DOST 1 continued its technology and innovation support in empowering the identified less-privileged communities in Ilocos Sur, namely, barangays Kiat, Pangotan, and Apang in Alilem and barangays Danak and Licungan in Sugpon, under the Community Empowerment thru Science and Technology Program. The interventions in 2017 covered health and nutrition, water and sanitation, and livelihood/economic enterprise development. The interventions resulted in 50% reduction in malnourished 6-72 months old children, access to potable water of 100% of the households in Danac, improved the efficiency in bamboo craft production in Kiat, establishment of ube wine making enterprise, and possible

improvement in productivity and coffee quality in Licungan.

Innovation Hubs

DOST continuously provided assistance in the operation of the food innovation centers located in Pangasinan State University, Bayambang, Pangasinan and Mariano Marcos State University, Batac, Ilocos Norte. A total of 40 prototypes of innovative food products were developed. The prototypes will still undergo standardization and further testing in 2018.

The Metals and Engineering Innovation Center, located at the College of Technology, Don Mariano Marcos Memorial State University mid La Union Campus in the City of San Fernando, La Union served as the host of the 1st S&T Caravan for Metals and Engineering Industry. A total of eight (8) training and seminars on metals technology and related topics were conducted for 299 participants coming from 11 firms.

Disaster Risk Reduction and Mitigation

DOST'S efforts likewise responded to the needs of the times to improve the integrity of the environment and climate change adaptation and mitigation. In 2018, 8 sensors and warning stations were installed while maintaining 77 units more. The initiatives enhanced the flood forecasting and monitoring capability of the concerned LGUs and in coming out with appropriate mitigation strategies and action plans.

Science and Technology Services

S&T services such as testing and calibration, product labeling and packaging, technical assistance and consultancy services, technology training and technology clinic/fora were given to 3,590 business firms which maintained or improved their process efficiencies and business competitiveness.

The 9,184 microbiological and chemical laboratory tests conducted at the Regional Standards and Testing Laboratory served as basis in the improvement of food quality and safety, water potability and in managing wastewater among the MSMEs and the local government units.

Calibration services ensured the accuracy of measure of 2,530 volume and mass measuring devices through the standards, the Regional Metrology Laboratory and the Satellite Metrology Labs based at the PSTCs are maintaining that are traceable to the standards at the National Metrology Laboratory.

The 63 MSMEs assisted with technical assistance and consultancy services resulted in reduction in waste generation, savings in raw materials, lower energy cost, and compliance to good manufacturing practices leading to higher productivity. Better packaging and labeling provided to 15 firms led to 41 new market reach that increased total sales of about PhP33 M.

Science and Technology Scholarships

The government's commitment to develop the country's science and technology human resources is reflected in S&T scholarships provided to deserving students. In 2017, DOST continued providing scholarships to 497 college scholars under the RA7687, Merit, and RA 10612 Scholarships enrolled in accredited SUCs and HEIs in the region. The assistance included financial assistance for tuition fees, monthly stipends, and other fees, job hunting seminar and orientation, among others.

Science and Technology Promotion and Advocacy

DOST's technologies and services were promoted to the public through the various promotion activities which included 412 press releases in the quad-media, 12 fairs and exhibits, 133 press conference/interviews, and distribution of 48 STARBOOKS software and hardware.

All the fairs featured new technologies generated by the DOST system and other research and development institutes and the products of SETUP-assisted firms. Technologies were likewise promoted during the technology fora and other S&T related events conducted as additional features of the fairs/ exhibitions.

II. CONTINUOUS IMPROVEMENT OF WORK PROCESSES

Information Systems

Information systems such as human resource management information system, document tracking system, Unified Laboratory Information Management System (ULIMS), Electronic National Government Accounting System (eNGAS), Electronic Budget Reporting System (eBudget) were maintained and continuously used which enhanced operational efficiency.

DOST 1 also maintained its website, group messaging through Messenger and facebook.

Sustain QMS and other recognitions/accreditation

DOST I maintained its certification on ISO 9001:2008 with Socotec/CIPI which will be effective until February 19, 2018 and has worked for the transition to ISO 9001:2015. The Regional Standards and Testing Laboratory also maintained its ISO 17025 accreditation with PAB, accreditation as regional lab for drinking water and food from DOH and FDA respectively and recognition as regional laboratory for wastewater from the DENR-EMB.

Good Governance

DOST I complied with the state requirements in the implementation of Gender and Development, Freedom for Information, Senior Citizen Law, and Citizen's Charter or Anti-Red Tape Act.

III. LEARNING CAPACITIES AND CULTURE FOR ORGANIZATIONAL TRANSFORMATION

Enhance personnel capacities and performance management system

DOST 1's performance /accomplishments were delivered through its human resources composed of 87 personnel, comprising 29 permanent and 52 job order/contractual staff. Based on Office Performance Commitment and Review, DOST I garnered a very satisfactory rating in 2017.

Personnel capacities and responsiveness were strengthened by allowing them to attend training. In 2017, 57 personnel attended a total of 255 trainings.

Partnerships with other Institutions

Linkages and partnership with various institutions and LGUs were established to implement S&T-based projects such as SETUP, CEST, technical assistance and consultancy services, STARBOOKS, and conduct of S&T Caravan.

IV. JUDICIOUS MANAGEMENT OF FISCAL RESOURCESES

DOST I's operation in 2017 was supported with financial resources amounting to PhP 97,550,557. Out of the amount, PhP59,552,695 (61%) was generated externally.

TECHNOLOGY TRANSFER



SET^{UP}
S&T Innovation for MSMEs

The Small Enterprises Technology Upgrading Program (SETUP) is the banner program of DOST designed to upgrade the productivity of micro, small and medium enterprises (MSMEs) through technology innovations. It aims to improve the viability of MSMEs, enhance their productivity and competitiveness through infusion of technology, provision of technical services, and manpower development.

Something is bringing Small and Medium Enterprises to New Heights

DOST 1 focused its assistance or S&T interventions to sixty-one (61) micro and small enterprises in six priority sectors: twenty five (25) in food processing, twelve (12) in metals and engineering, twelve (12) in furniture making, four (4) in agriculture, six (6) in gifts, decors and handicrafts production, and two (2) in other Regional priority sectors.

The assistance or interventions provided to the firms included acquisition/upgrading of production equipment and facilities, product label design and packaging execution, technical assistance and consultancy on energy use and efficiency, cleaner production, equipment design and engineering, food safety, product testing and standardization, and manpower training such as good manufacturing practices cum food safety, productivity and quality, and wood finishing techniques, among others.

Table 1. Number of projects approved per province

Sector	Ilocos Norte	Ilocos Sur	La Union	Pang I	Pang II	Total
Food Processing	6	7	3	4	5	25
Metals & Engineering	3	2		4	3	12
Furniture	1	2	7	1	1	12
Agriculture			1	2	1	4
Gifts, Decors & Handicrafts	2	1	2	1		6
Pharma						
Others					2	2
TOTAL	12	13	12	12	12	61

Note: Fourteen (14) SETUP projects were approved in 2016 but funded in 2017.

Figure 1. Percentage distribution of firms assisted by sector

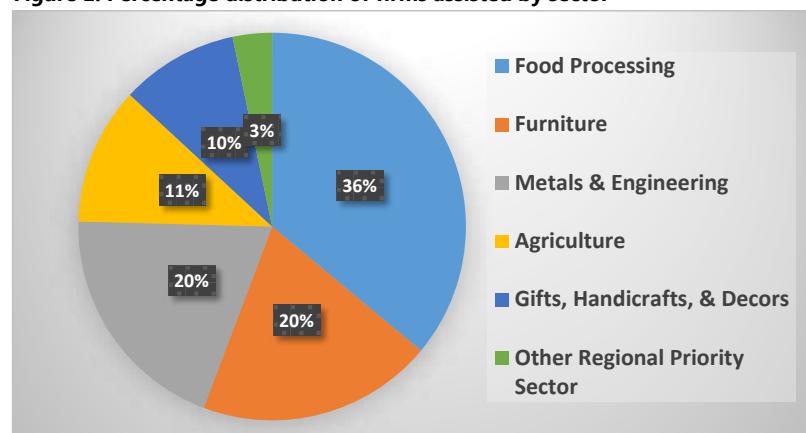
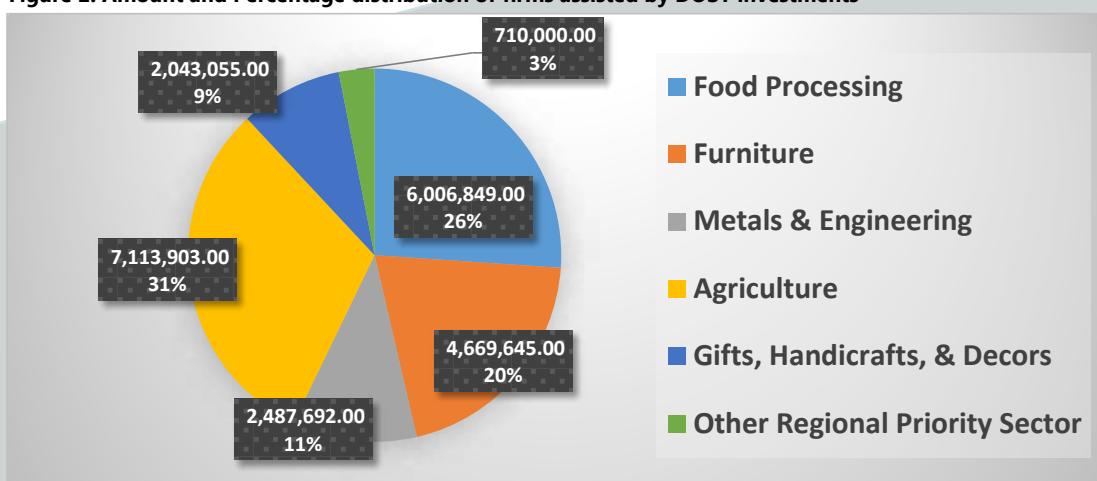


Figure 2. Amount and Percentage distribution of firms assisted by DOST investments





SET UP

Food Processing



Upgrading of Production Facilities and Packaging of Bash Longaniza

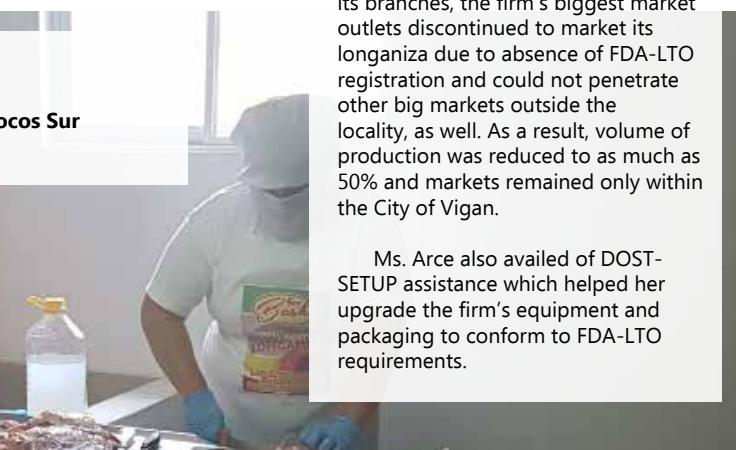
Implementing Firm: **BASH LONGANIZA**
Project Cooperator: **Ms. Ana Marie P. Arce**
Project Location: **San Julian Sur, Vigan City, Ilocos Sur**
Project Cost: **Php 245,800.00**

In the business for 22 years, Bash Longaniza experienced its biggest setback in 2015. CSI Malls and its branches, the firm's biggest market outlets discontinued to market its longaniza due to absence of FDA-LTO registration and could not penetrate other big markets outside the locality, as well. As a result, volume of production was reduced to as much as 50% and markets remained only within the City of Vigan.

Ms. Arce also availed of DOST-SETUP assistance which helped her upgrade the firm's equipment and packaging to conform to FDA-LTO requirements.

INTERVENTIONS

- Provision of:
 - 1 unit HD SS Meat Grinder
 - 1 unit SS Meat Mixer
 - 1 unit SS Preparation Table w/ SS Undershelf
 - 1 unit SS Packaging Table w/ SS Undershelf
- Provision of Label Design and PE Packaging Materials
- Technical assistance on plant layout
- Technical assistance on the acquisition of FDA – LTO
- Food Safety Assessment
- Seminar-workshop on cGMP with emphasis on Food Safety
- Seminar on Cleaner Production Technology
- Seminar on Basic Productivity



The workers of Bash Longaniza with the Stainless Steel Preparation Table from DOST-SETUP.



Workers using the Stainless Steel Meat Grinder and Mixer.

OUTCOMES

- 22.45% increase in annual volume of production (from 46,800 packs to 57,306 packs processed meat products)
- 21.71% increase in annual gross sales (from P5,179,200 to P6,303,660)
- 2 additional production worker employed
- 2 additional bulk-buying market distributors for Nueva Ecija and Manila; Recently started to supply Vigan Longganiza again to CSI Mall, initially with CSI San Fernando City, La Union
- Improved production area and working process
- Uniform /even mixing of the ingredients; Reduce human handling that may cause contamination
- Increase in equipment productivity by 350%
- Acquired FDA-LTO



Upgrading of Production Facilities and Packaging of JQF Meatshop

Implementing Firm: **JQF MEATSHOP**
 Project Cooperator: **Mr. Jimmy Q. Famorca**
 Project Location: **Ayusan Norte, Vigan City, Ilocos Sur**
 Project Cost: **Php 345,000.00**



Stainless steel meat mixer



Worker of JQF Meat using the Vacuum Packaging Machine.

JQF Meatshop is engaged in the production of Vigan Longganisa and Tocino. The business was established in 2005 by Jimmy Famorca as a kitchen-scale processed meat manufacturer. In 2015, right after Mr. Famorca, retired from being a Production Supervisor in a private company, he elevated his business operation into a commercial one.

In 2016, Mr. Famorca encountered a problem on business permit acquisition because Vigan City initially launched the policy of "No FDA-LTO, No Business Permit". Though he was still able to acquire a temporary business permit, he then realized the necessity of having FDA-LTO. He availed of SETUP assistance which helped him upgrade equipment and packaging that conform to FDA-LTO requirements.

INTERVENTIONS

- Provision of:
 - 1 unit SS Meat Mixer
 - 1 unit Vacuum Packaging Machine
 - Packaging Materials (Vacuum Pack)
- Technical assistance on plant layout
- Technical assistance on the acquisition of FDA – LTO
- Seminar-workshop on cGMP with emphasis on Food Safety
- Seminar on Cleaner Production Technology
- Seminar on Occupational Health and Safety Standard
- Seminar on Basic Productivity

OUTCOMES

- 30% increase in annual volume of production (from 6,120 packs to 7,956 packs processed meat products)
- 24.81% increase in annual gross sales (from P594,000 to 741,360)
- 1 additional production worker employed
- 3 additional market outlets (Bigway Supermarket, Two Brothers Grocery – Vigan Branch, Sto. Domingo Branch and Cabugao Branch) and 3 additional distributors (Cainta, Rizal; Biñan, Laguna; Margaay, Narvacan) and an Online Shop Website established/ maintained
- Improved production area and working process
- Increase in productivity by 200%
- Uniform /even mixing of the ingredients; Reduced human handling that may cause contamination
- Vacuum Packaging Machine enhances the integrity of seal of the finished products compared to hand sealer
- Additional 4 product lines to wit, Hamonado Longganisa, Sweet Longganisa, Sweet & Spicy Longganisa, Sweet and Spicy Tocino



Upgrading of Production Facilities and Packaging of BRS Longaniza

Implementing Firm: **BRS LONGANIZA**
 Project Cooperator: **Mr. Byron B. Tacata**
 Project Location: **Brgy. V, Vigan City, Ilocos Sur**
 Project Cost: **Php 245,000.00**



INTERVENTIONS

- Provision of:
 - 1 unit SS Meat Mixer
 - 1 unit SS Preparation Table
 - 1 unit SS Tying Table
 - 1 unit SS Packaging Table
 - 1 unit SS Basin-Container
 - Label Design and PE Packaging Materials
- Technical assistance on plant layout
- Technical assistance on the acquisition of FDA – LTO
- Seminar-workshop on cGMP with emphasis on Food Safety for MSMEs
- Seminar on Cleaner Production Technology
- Seminar on Basic Productivity



The Stainless steel tying table in the photo is one of the acquired equipments of BRS Longaniza from the project



Stainless steel mixer and basin



Stainless steel preparation table

Mr. Byron B. Tacata, learned the ins and outs of longaniza production from his parents at an early age. He started his own firm, the BRS Longanisa, Vigan City, a heritage city with a rich history of longaniza making.

Ninety percent of the daily produce of BRS Longanisa is supplied and marketed by Marsha's Delicacies, a favorite one-stop-shop of tourists/travelers in Bantay, Ilocos Sur. Sometime in 2016, the FDA issued an advisory to Marsha's Delicacies, that food products with no FDA-LTO must not be marketed by them or else a corresponding fine per product displayed will be imposed. The firm was among those affected by the FDA advisory thus, Mr. Tacata availed of SETUP assistance which helped him upgrade his equipment and packaging that conforms to FDA-LTO requirements.

OUTCOMES

- 37.65% increase in annual volume of production (from 33,120 packs to 45,591 packs processed meat products)
- 37.65% increase in annual gross sales (from P3,312,000 to 4,559,100)
- 1 additional production worker employed
- 2 additional market outlets (Angkong Seafood Restaurant & Hotel Salcedo de Vigan) established/ maintained; Continued to supply Vigan Longanisa to Marsha's Delicacies
- Constructed a new production area and improved working process
- 300% increase in productivity
- Uniform /even mixing of the ingredients; Reduced human handling that may cause contamination
- Acquired FDA-LTO



Upgrading of Production Equipment for JND Healthy Foods

Implementing Firm: **JND HEALTHY FOODS**
 Project Cooperator: **Ms. Nezy P. Dager**
 Project Location: **Greenville Subdivision, Brgy. Baroro, Bacnotan, La Union**
 Project Cost: **Php 743,180.00**

Mrs. Nezy Dager poses with her baked products.



INTERVENTIONS

- Provision of:
 - 1 unit Calamansi Juice Extractor
 - 1 unit Cake Mixer
 - 1 unit Automatic Digital Gas Oven
 - 2 units Stainless Steel Table
 - 4 units Cooling rack
 - 1 unit Bread Slicer (on-going procurement)
 - 1 unit Upright Freezer (on-going procurement)
- Training on cGMP
- Food Safety Assessment
- Technical assistance on plant layout
- Technical assistance on the acquisition of FDA-LTO

Ms. Nezy Dager used to work at Manila Adventist Medical Center in Pasay City as a therapeutic cook. During nutrition month, she was fortunate to join a cooking contest in making delicious and nutritious juice. From then, she started to make juice with no preservatives and sold it to the doctors, nurses and employees of the hospital. After her retirement, Ms. Dager and her husband went to La Union and started baking cookies as a hobby. In CY 2008, JND Healthy Foods was established and registered with the Department of Trade and Industry Region 1. At present, it has a total of five regular workers and capitalization of P 2,561,904.00.

Before DOST intervention, the owner prepares the materials manually and bakes the products at her kitchen. In same manner, she also manually squeezes and presses 20kg calamansi fruits per batch of production. This takes so much time of preparation and does not comply to good manufacturing practices (GMP). Hence, the project aimed at improving the bakery/juice operations and quality of products through compliance to food safety standards.

OUTCOMES

- Increase in productivity by 6.67%, machines just acquired and installed last December 11, 2017
- Acquired FDA License to Operate (LTO) Certification
- Employed 4 additional workers
- Penetrated 7 additional markets
- Gross sales: from Php50,000 - Php60,000 per month to Php200,00 per month



The newly acquired calamansi juice extractor.



The baker of JND Healthy Foods with the Automatic Digital Gas Oven.



Cake Mixer



Cooling Rack



Equipment Upgrading of Bread Production for F & A Bakery

Implementing Firm: **F & A BAKERY**
 Project Cooperator: **Mr. Eduardo J. Jardin**
 Project Location: **Brgy. Poblacion West, Pugo, La Union**
 Project Cost: **Php 443,068.00**

The various bakery products of F&A Bakery.

Mr. Eduardo Jardin owns a store in Pugo, La Union and usually buys bread at Baguio City to sell. Upon realizing the profitability of selling bread, he started his own bakery in 2006. In 2011, he attended a one-month Baking Course at Foremost Flour Milling Corporation in Manila and started improving the bakery and its products. Now, the firm has a total of four workers with present capitalization of P1,142,052.64.

As a typical bakery shop, the firm prepares the materials manually and some facilities/equipment being used are not compliant to good manufacturing practices (GMP).

Hence, the project aimed at improving the bakery operations and quality of products through compliance to food safety standards.

INTERVENTIONS

- Provision of:
 - 1 unit Automatic Digital Gas Oven
 - 1 unit Stainless Storage rack
 - 1 unit Stainless Steel Table
 - 1 unit Bread Slicing Machine
 - 4 units Cooling rack
- Technical assistance on the acquisition of FDA-LTO
- Seminar on Productivity Improvement through 5S Practice
- Technical assistance on plant layout



Automatic digital gas oven

OUTCOMES

- Increase in productivity by 17%
- 17% increase in sales (Average monthly gross sales increased from Php 133,146.67 to Php 156,400.00)
- The firm accepts 7-10 students from Tubao NHS under the K-12 program
- Additional product lines: Chocolate and Yema cakes, Special donuts



Stainless steel table



Bread slicing machine



Stainless storage rack



Upgrading of Production Equipment for Valentino's Cake Boutique

Implementing Firm: **VALENTINO'S CAKE BOUTIQUE**
 Project Cooperator: **Mr. Valentino I. Baoanan Jr.**
 Project Location: **Brgy. Pagdalagan Sur, Bauang, La Union**
 Project Cost: **Php 301,024.00**



The Workers of the Valentino's Cake Boutique.

In 2011, Valentin started his home-based cake and pastry business at initial capitalization of P20,000.00 and promoted it in social media. From the recommendations and connections of his customers, he received orders for different local meetings and events and from cooperatives. His online business became successful. After 2 years, he registered his firm, Valentino's Cake Boutique, with the Department of Trade and Industry. At present, the firm employs 3 workers, including the owner, and capitalization of Php 1,449,297.00.

The firm prepares the materials manually and some facilities/equipment being used are not compliant to good manufacturing practices (GMP).

Hence, the project aimed at improving the bakery operations and quality of products through compliance to food safety standards.

INTERVENTIONS

- Provision of:
 - 1 unit Gas Convection Oven
 - 1 unit 2-door Upright Display Chiller
 - 3 units Stainless steel table
- Training on cGMP
- Food Safety Assessment
- Technical assistance on plant layout
- Technical assistance on the acquisition of FDA – LTO



The acquired equipment and facilities of Valentino's Cake Boutique.



OUTCOMES

- Increase in productivity by 8%
- Generated employment of 9 regular workers (2 females assigned in the shop while 3 males and 4 females in the production area); Currently accepts 5 OJTs from La Union National High School.
- The firm has established an outlet located at GSMA Bldg., San Fernando, La Union
- In terms of income, the firm earns a gross of P300,000.00 per month (net of P50,000.00) compared before which is only Php80,000.00 – Php100,000.00.
- The firm practices "Clean As You Go" for maintenance and cleanliness of the production area.

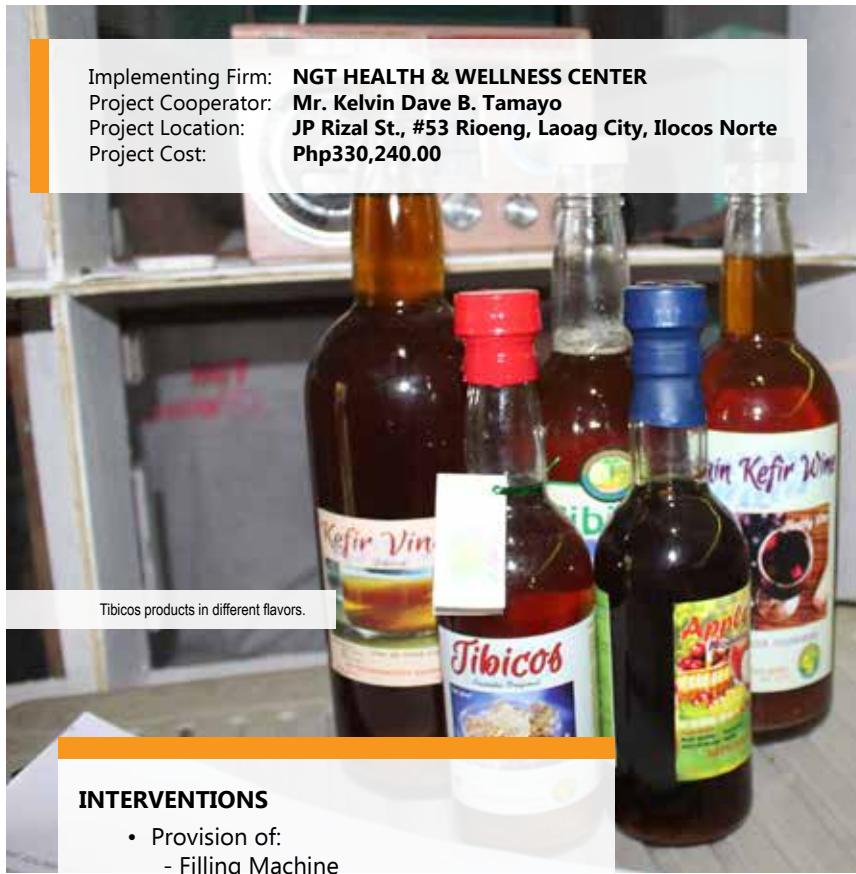


The Valentino's Cake Boutique acquires new market outlet at the GSMA Bldg., City of San Fernando, La Union.



Packaging, Labelling and Equipment Improvement of Tibicos Product

Implementing Firm: **NGT HEALTH & WELLNESS CENTER**
 Project Cooperator: **Mr. Kelvin Dave B. Tamayo**
 Project Location: **JP Rizal St., #53 Rioeng, Laoag City, Ilocos Norte**
 Project Cost: **Php330,240.00**



INTERVENTIONS

- Provision of:
 - Filling Machine
 - Autoclave
 - Packaging Materials
- Food Safety Assessment
- Training on Financial Management
- Seminar on cGMP



NGT (Nature's Greatest Treasure) Health and Wellness envisioned being a world class formulator and distributor of probiotics. Recently, he started that endeavor by formulating his own water kefir line, known as Tibicos. Currently, this is being sold locally and abroad to NGT Health & Wellness' growing market through its distribution channels in Cagayan Valley, Abra, and Ilocos Norte, respectively. Through the intervention of DOST, the firm increase its production by 20%.



OUTCOMES

- Increase in volume of production and sales by 30%
- Generated 2 employment in the first year of implementation



Dr. Honey Tamayo together with Mr. Decth 1180 Libunao and other Food Safety members during the assessment at the NGT Health and Wellness production area last July 28, 2017.



Process Improvement and Upgrading of Production Equipment of Ice Cream

Implementing Firm: **MANG TOTO ICE CREAM**
 Project Cooperator: **Mr. Jayson E. Gerras**
 Project Location: **#1 Sta. Rita, Bacarra, Ilocos Norte**
 Project Cost: **Php482,000.00**

The collage includes:

- A man in a red polo shirt holding a clipboard, standing next to another man in a white shirt who is leaning against a piece of industrial equipment.
- A close-up of two large wooden boxes labeled "Ice cream box" containing stacks of ice cream containers.
- A person in a blue shirt standing next to a stainless steel ice cream maker machine.
- A collection of numerous silver-colored ice cream tubes.

Mang Toto Ice Cream was established in 2010 as a hobby of Mr. Jayson Gerras and his wife. At first, this was only for the consumption of the family, but then, as they developed different kinds and flavors of ice cream, they saw it as a good source of income. Mr. Jayson Gerras is the general manager, and at the same time the person in-charge in production. His wife serves as the bookkeeper of the firm. Likewise, the business employs 13 vendors selling the products within the province of Ilocos Norte.

This year's assistance includes the acquisition of ice cream maker, ice cream box with tubes, and chest freezer

INTERVENTIONS

- Provision of:
 - Ice Cream Maker
 - Ice Cream Tubes
 - Chest Freezer
- Training on Financial Management
- Energy Audit
- Food Safety Assessment

OUTCOMES

- 20% increase in production
- Improved plant lay-out
- Compliance to cGMP and Food Safety



Upgrading of Production Equipment for Native Delicacies

Implementing Firm: **NIEVES NATIVE DELICACIES**
Project Cooperator: **Ms. Nieves Pascual**
Project Location: **Brgy. San Leandro, Sarrat, Ilocos Norte**
Project Cost: **Php117,800.00**

The Nieves Native Delicacies is owned and managed by Mrs. Nieves Pascual located at Brgy. San Leandro, Sarrat, Ilocos Norte. It is one of the pioneers of native delicacies (puto, sapin-sapin, and tupig made from glutinous rice) in the municipality. Its products are known for its tastiness and affordability.

To continually improve and develop their products to sustain the demand of their customers with quality native delicacies, the Department of Science & Technology assisted the firm.

Prof. Rhoda Garcia with Mrs. Nieves Pascual during the food safety assessment in the production area of Nieves Native Delicacies in Sarrat, Ilocos Norte.



INTERVENTIONS

- Provision of:
 - 1 unit Stainless Steel Table
 - 1 unit Stainless Steel Steamer
 - 1 unit Stainless Steel Griller
- Food Safety Assessment

OUTCOMES

- Improved plant lay-out
- Compliance to cGMP and Food Safety
- Increase in volume of production by 10% and sales by 10%



Upgrading of Production Facilities and Packaging for Various Baked Products

Implementing Firm: **LOUIS ROY BAKESHOP**
 Project Cooperator: **Mr. Luis O. Sebastian**
 Project Location: **40 Maravilla St. (Poblacion), Mangatarem, Pangasinan**
 Project Cost: **Php 450,000.00**



Production staff working on Stainless Steel working table.

Mr. Luis O. Sebastian started the business in May 4, 1998 producing pandesal, hamburger buns, loaf bread, cookies, and other assorted baked products. The bakeshop grew and became one of the well-known bakeshops in Mangatarem, Pangasinan.

However, most of the processes in the bakeshop were not compliant with good manufacturing practices. The products did not have appropriate packaging and labeling.



Label design and packaging of loaf bread and burger bun

INTERVENTIONS

- Provision of:
 - 3 units Stainless Steel Working Table (Food grade)
 - 1 unit Spiral Mixer – 2 bags capacity
 - 1 unit Rotary Oven
 - 1 unit Stainless Steel Proofing Cabinet (30 trays capacity)
 - 10 units Stainless Steel Cooling Rack
 - Label Design and Packaging
- Training on Equipment Operation, Maintenance and Troubleshooting
- Awareness-Seminar on cGMP and Updated Food Safety Practices
- Technical assistance on the acquisition of FDA-LTO
- Seminar on Cleaner Production Technology
- Forum on Intellectual Property Rights
- Forum on Food Innovation Center
- Food Safety Assessment



Rotary oven



Spiral mixer



Stainless steel cooling rack

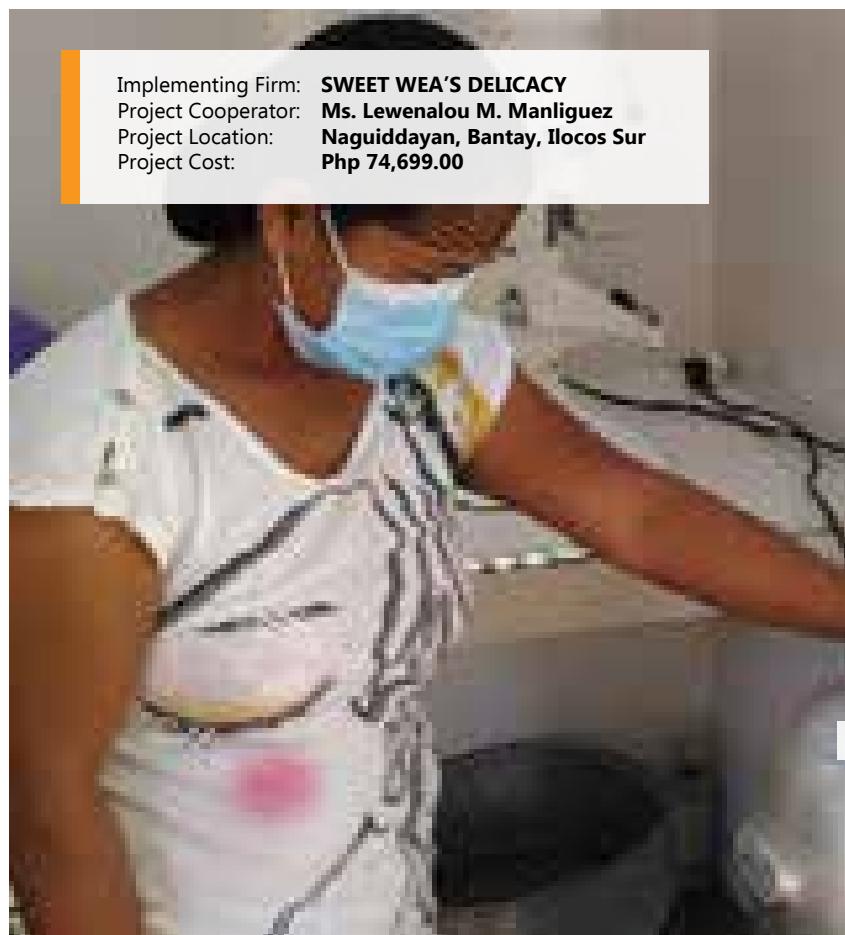
OUTCOMES

- Increase in daily average sales of 80%
- Increase in productivity by 20%
- Established 1 additional market in Mangatarem, Pangasinan.
- 3 additional regular workers employed and 14 OJT workers
- Increase in production volume by 80%
- Increase in monthly gross income by 80%



Production Facilities Upgrading of Sweet Wea's Delicacy

Implementing Firm: **SWEET WEA'S DELICACY**
 Project Cooperator: **Ms. Lewenalou M. Manliguez**
 Project Location: **Naguiddayan, Bantay, Ilocos Sur**
 Project Cost: **Php 74,699.00**



Sweet WEA's Delicacy produces classic Filipino 'pasalubong' snacks such as macaroons, yema, pastillas, and many more. Ms. Manliguez came up with the business because of her passion in baking which started when making puto cheese was still her part-time source of income until she learned how to bake macaroons in 2010.

Eventually, the demand for macaroons in cupcake sizes surprisingly increased but the firm was not able to take advantage of the situation because of its limited facilities. Moreover, the firm's lack of FDA-LTO also concerned the owner, thus sought the help of the Department of Science and Technology to assist her in improving the firm's productivity through provision of suitable technologies for the firm.

Ms. Manliguez using the cake mixer.



Stainless steel working table.



INTERVENTIONS

- Provision of:
 - 1 unit SS Working Table
 - 1 unit Cake Mixer
 - Label Design
- Seminar on Productivity
- Seminar on Cleaner Production Technology
- Seminar- Workshop on cGMP with Emphasis on Food Safety
- Food Safety Assessment
- Technical assistance on the acquisition of FDA-LTO

OUTCOMES

- Increase in productivity by 100%
- Uniform mixing of ingredients and improved quality of mixture in terms of texture
- Reduced human handling that may cause contamination with use of Cake Mixer
- Reduced sources of contaminants with the use of stainless steel equipment
- 2 additional product line, i.e. banana walnut cupcake and puto sekó
- 1 additional market outlet

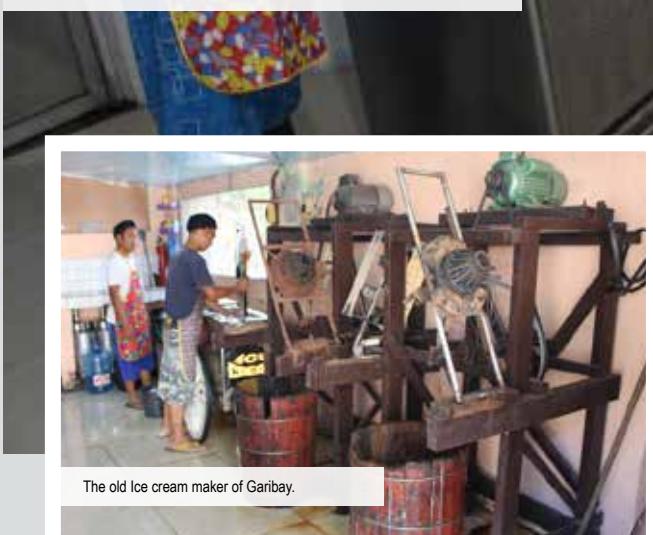


Technology Upgrading of Garibay's Ice Cream

Implementing Firm: **GARIBAY'S ICE CREAM**
 Project Cooperator: **Ms. Rosita C. Garibay**
 Project Location: **#42 Rizal St., Brgy.3, Vigan City, Ilocos Sur**
 Project Cost: **Php 145,000.00**



Garibay's Ice Cream acquired new ice cream making machines.



The old Ice cream maker of Garibay.

Mrs. Rosita Garibay is a former OFW in Hongkong for 3 years. After her contract ended, she established an ice cream business (dirty ice cream), so that she will not be going abroad again. In 1997 the business finally materialized and later registered the business with the name Garibay's ice Cream.

Garibay's Ice Cream is located in the heart of Vigan City where there is strict implementation in food safety. Mrs. Garibay had difficulties in securing her business permits and mandatory requirements due to old and non GMP compliant processing equipment. With this constraints being faced by the management, the firm availed of DOST's technology upgrading program.



INTERVENTIONS

- Provision of 1 unit Hard Ice Cream Making Machine
- Seminar-Workshop on Current Good Manufacturing Practices w/ Emphasis to Food Safety
- Seminar on Basic Occupational Health and Safety Standards
- Seminar on Cleaner Production Technology
- Seminar on Basic Productivity

OUTCOMES

- Increase in productivity by 100%
- Smoother texture of ice cream
- Eliminated the use of cracked ice during processing, thus generating additional Php150.00 savings per cart
- Less human handling during processing
- More convenient/efficient processing by the vendors, as a result the owner procured additional unit of Hard Ice Cream Making Machine
- The acquisition of cGMP compliant facility allowed the firm to acquire necessary requirements for the renewal of their business permit.



Upgrading of Production Facilities and Packaging of LFB Morales Meat Products

Implementing Firm: **LFB MORALES MEAT PRODUCTS**
 Project Cooperator: **Ms. Leila Flordelita B. Morales**
 Project Location: **Poblacion, Sta. Catalina, Ilocos Sur**
 Project Cost: **Php 154,744.00**



The new processing equipment and facilities of LFB Morales Meat Products.



Stainless steel meat stuffer



The new label design of vigan longganisa to be printed in PE Plastic Bags.



The new production area of LFB Morales Meat Products.

INTERVENTIONS

- Provision of:
 - 1 unit SS Meat Mixer
 - 1 unit SS Meat Stuffer
 - 3 units SS Working Table
 - Label Design and PE Packaging Materials
- Nutrition Analysis of Vigan Longganisa
- Barcode
- Technical assistance on plant layout
- Seminar on Cleaner Production Technology (CPT)
- Seminar-Workshop on Current Good Manufacturing Practices (cGMP) with Emphasis on Food Safety

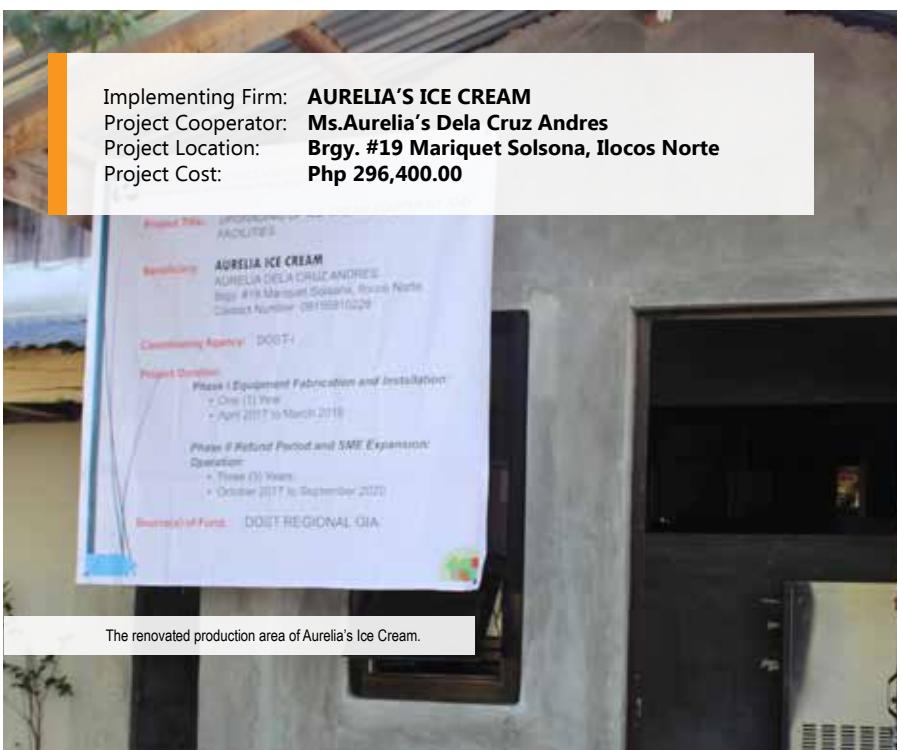
OUTCOMES

- Increase in productivity by 225%
- Provided appropriate packaging and label design with required product information
- Completed the new production area/facility in compliance with the Food Safety Standards
- Integrated cGMP to the firm's operation
- Generated two (2) additional employment



Upgrading of Ice Cream Equipment and Facilities

Implementing Firm: **AURELIA'S ICE CREAM**
 Project Cooperator: **Ms. Aurelia's Dela Cruz Andres**
 Project Location: **Brgy. #19 Marquet Solsona, Ilocos Norte**
 Project Cost: **Php 296,400.00**



Aurelia's Ice Cream started as a family-owned micro enterprise in the year 1993 with an official capital of Php10,000.00. The factory site is located in Brgy. #19 Marquet, Solsona, Ilocos Norte. It was finally registered as a single proprietorship business with the Department of Trade and Industry in 2006. It has now a capitalization of Php50,000.00 and provides employment for two workers.

The firm directly supplies its products to caterers, walk-in clients and, has a store in Solsona Public Market, and cater its clients from nearby towns. Ice cream in the area is growing demand because of the resort in the nearby Brgy. Karingking. In order to compete with the other ice cream manufacturing firms, the firm needs to upgrade its production equipment for better efficiency and increased productivity.



INTERVENTIONS

- Provision of:
 - 1 unit Chest Freezer
 - 1 unit Ice Cream Maker Machine
- Training on Financial Management
- Food Safety Assessment

OUTCOMES

- Improved the operation of the ice cream business
- Upgraded production equipment for ice cream making
- Increase in production by 25%
- Increase in productivity by 15%



Equipment and Process Improvement for Pastry Products

Implementing Firm: **ILOCOS LITTLE SWEETS PATRIES AND CAFÉ**
 Project Cooperator: **Mr. Michael Marck Yabut**
 Project Location: **Brgy. 14 P. Acosta St., Laoag City, Ilocos Norte**
 Project Cost: **Php 169,383.00**



Mr. Marck Yabut during the awarding of equipment.



Mr. Marck Yabut and family posed with the newly acquired equipment for their pastry business.



The firm started as a hobby of Mr. Yabut and his wife. Since they have the best toasted pastillas and merengue in town, they distributed and sold their products to restaurants and pasalubong centers in the province. Catering to a bigger market, the demand for their products increased, causing them the need to upgrade and improve their production process in order to meet the emerging demand of customers.

INTERVENTIONS

- Provision of:
 - 1 unit Stainless steel Table
 - 1 unit Planetary Mixer
 - 1 unit Dough Mixer
 - 1 unit Stainless steel Oven
- Food Safety Assessment
- Seminar on cGMP

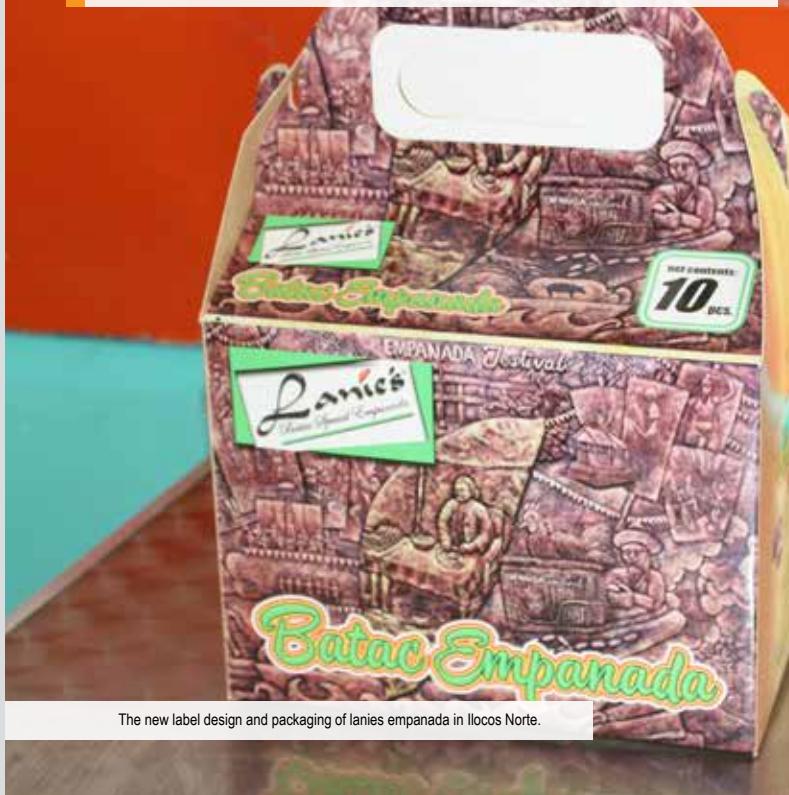
OUTCOMES

- Increased the production capacity of the firm by 35%
- Increase in productivity by 25%



Packaging and Labeling Improvement for Lanie's Batac Special Empanada

Implementing Firm: **LANIE'S BATAC SPECIAL EMPANADA**
 Project Cooperator: **Ms. Melanie L. Simbulan**
 Project Location: **Brgy. Valdez, Batac City, Ilocos Norte**
 Project Cost: **Php 110,000.00**



The new label design and packaging of lanies empanada in Ilocos Norte.



Mr. Gerald Gabriel of PSTC-Ilocos Norte demonstrates the folding of the new packaging material of lanies empanada.

The Lanie's Batac Special Empanada started making empanada since 1995. It has two (2) outlet located at Brgy. 1 Valdez, Batac City, Ilocos Norte with an initial capital of Php50, 000.00.

The firm asked an assistance to DOST since they are catering a big market within and outside the province so the owner thought of an effective packaging material for bulk of orders.

At present, the firm has a capitalization of Php150, 000.00 with six (6) workers. The firm increased its sales by 30% through the improved packaging and labeling material.



INTERVENTION

- Packaging and Labeling Execution
- Food Safety Assessment
- Training on productivity and quality improvement

OUTCOMES

- Improved packaging and labelling of the product
- Joined food expo in Mall of Asia using the assisted packaging labeling material.
- Improved production area



Upgrading of Packaging & Labeling and Technology Innovation Support for the production of homemade ensaymada

Implementing Firm: RIVERA'S HOMEMADE ENSAYMADA
Project Cooperator: Mr. Roel M. Rivera
Project Location: Bonuan Boquig, Dagupan City
Project Cost: Php 150,000.00



The Dough Kneader Machine.



Rivera's Homemade Ensaymada acquired new oven.



INTERVENTIONS

- Provision of:
 - 1 unit Dough Kneader
 - 1 unit Oven
 - Packaging & labeling execution (sticker/structured box)
- Food Safety Assessment



Label design and packaging of the ensaymada.



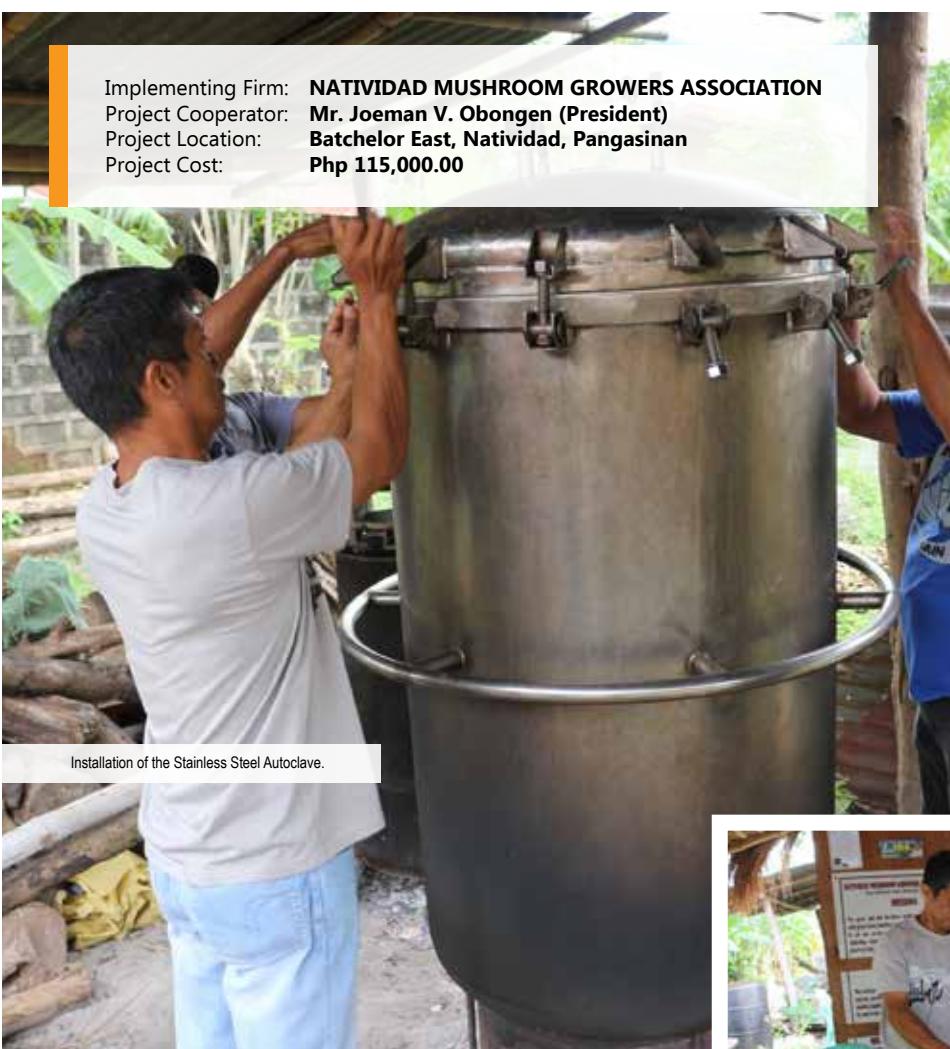
OUTCOMES

- Increase in production by 50% from 80 boxes to 120 boxes
- Reduced kneading time by 25% (from 2 hours to 1.5 hours)
- Additional 2 employees hired
- 3 additional markets penetrated
- Increase in productivity by 29%



Technology Equipment Upgrading in support to Mushroom Growers

Implementing Firm: NATIVIDAD MUSHROOM GROWERS ASSOCIATION
 Project Cooperator: Mr. Joeman V. Obongen (President)
 Project Location: Batchelor East, Natividad, Pangasinan
 Project Cost: Php 115,000.00



Installation of the Stainless Steel Autoclave.

The Natividad Mushroom Growers Association was established in January 2016 headed by the elected president Mr. Joeman V. Obongen. The association offers fresh oyster mushroom and fruiting bags to the neighboring areas and around the schools of Natividad.

Demand for fresh oyster mushroom and fruiting bags is steadily increasing but the Association experiences contamination. The sterilization process needs to be improved.



The harvested mushrooms.

INTERVENTIONS

- Provision of 1 unit Stainless Steel Autoclave
- Seminar-Workshop on Product Costing

OUTCOMES

- Increase in productivity by 71.72%
- Reduced sterilization time of fruiting bags by 73% (from 6-7 hours to 1.5-2 hours per batch)
- Increased production of fruiting bags by 358% (from 84 bags to 300 bags per batch)
- 75% savings in fuel



Mr. Joeman Obongen with the DOST Monitoring Team.

Metals and Engineering



Production Facilities Upgrading of F. Raboy Metalcraft

Implementing Firm: **F. RABOY METALCRAFT**
Project Cooperator: **Mr. Fernando R. Raboy**
Project Location: **Cabuloan, Sta. Catalina, Ilocos Sur**
Project Cost: **Php 127,180.00**

Aluminum Puncher

INTERVENTIONS

- Provision of:
 - 1 unit Aluminum Puncher
 - 1 unit Pipe Bender
 - 1 unit TIG Welding Machine
- Seminar on Productivity
- Seminar on Basic Occupational Health and Safety Standards
- Seminar on Cleaner Production Technology (CPT)

F. Raboy Metalcraft offers different metal services and accepts made-to-order products such as steel and aluminum casements, windows, doors, grills, steel gate, and installation of roofing, railing, truss, fence and the like.

The firm cannot keep up with increasing demand since some of the processes are done manually and equipment available are already old. Hole punching and bending takes so much time in the process, cannot instantly create uniform and repetitive output, and sometimes these are being outsourced to other fabricators just to meet the agreed deadline. Likewise, the welding machine used by the firm also requires frequent change of electrode and grinding the finish of the welded product to smoothen the surface. Thus, during peak season and mass production, the firm becomes inefficient which causes delays and additional expenses for outsourcing.

To address these problems and to improve and upgrade its facility, assistance from the Department of Science and Technology (DOST) was sought through the agency's technology upgrading program.

OUTCOMES

- Increased production by 100%, from 66 units of different items to 132 units
- Increased gross income by 50%, from Php961,200.00 to Php1,441,800.00
- Additional income from bending services availed by other firms
- Increase in productivity by 142%
- More precise and better quality of finished products
- Eliminated outsourcing practices
- Improved production area and more efficient process



Equipment Upgrading of Jopat Motorworks

Implementing Firm: **JOPAT MOTORWORKS**
 Project Cooperator: **Ms. Elifaih D. Acosta**
 Project Location: **Brgy. Baay, City of Batac, Ilocos Norte**
 Project Cost: **Php175, 000.00**



Jopat Motorworks offers automotive repair, body repair and painting and was established in 1999 by Mr. and Mrs. Joseph Acosta of Brgy. Baay in the City of Batac. Since the firm was established, they satisfied the needs of their clients with best of their known repair practices. However, as time goes by, they had a hard time in repairing due to lack of equipment. Their worker inspected and used the traditional method in checking the underneath of the unit by using pillow block and crocodile jack. Hence, they asked for assistance at the Department of Science and Technology

**INTERVENTIONS**

- Provision of:
 - 1 unit Car Lifter
 - Engine Crane
- Training on Financial Management

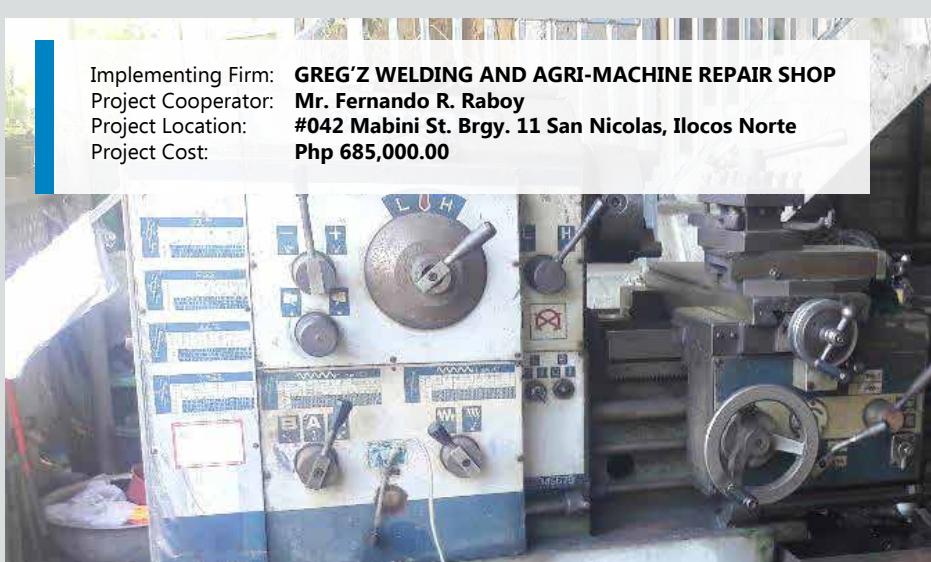
**OUTCOMES**

- Increase in productivity by 20%
- Production time reduced by 15%
- Improved quality of product



Upgrading of Service Processes for Machine Parts Fabrication and Repair

Implementing Firm: **GREG'Z WELDING AND AGRI-MACHINE REPAIR SHOP**
 Project Cooperator: **Mr. Fernando R. Raboy**
 Project Location: **#042 Mabini St. Brgy. 11 San Nicolas, Ilocos Norte**
 Project Cost: **Php 685,000.00**



Lathe Machine

Greg'z Welding and Agri-Machine Repair Shop, formerly known as the San Nicolas Car Station is located at 042 Mabini St., Brgy. 11 San Nicolas, Ilocos Norte. The firm was established in 1974 by "Tata Peping" Ruiz as a single proprietorship enterprise with an initial capitalization of Php 100,000.00.

In 2009, the management of the business was transferred to his son, Gregorio. However, "Tata Peping" still provides assistance through advice and consultancy. At present, the firm's capitalization has reached P1M with 5 employees, 3 in production and 2 in non-production.

The firm provides welding services, fabrication by aluminum and metal casting and auto parts repair.



Pipe Threading



Hydraulic Press

INTERVENTIONS

- Provision of:
 - 1 unit Lathe Machine
 - Pipe Threading Machine
 - Hydraulic Press

OUTCOMES

- Increased volume of services by 30%
- Increased gross income by 20%
- Increase in productivity by 20%



Process Enhancement for a Metals and Fabrication Shop (Phase II)

Implementing Firm: **D.T. METAL INDUSTRIES**
 Project Cooperator: **Mr. Dexter B. Tarectecan**
 Project Location: **Pasibi East, Urbiztondo, Pangasinan**
 Project Cost: **Php 335,000.00**



INTERVENTIONS

- Provision of:
 - 1 unit Hydraulic Press Machine
 - 1 unit Air-compressor Machine
 - 1 unit Pipe Bender
 - 1 unit 2-in-1 Reboring and Honing Machine
 - 1 unit MIG Welding Machine
 - 1 unit Plasma Cutter
- Seminar-Workshop on Occupational Safety
- Training on Turning with Crankshaft Grinding
- Training on Heat Treatment of Steels
- Forum on Intellectual Property Rights
- Inter-Agency Design and Engineering Assessment

D.T. Metal Industries is engaged in the fabrication, farming and food processing equipment/machineries and steel gate, various metal products like windows, trusses, grills, and gym equipment

In 2013, the firm was a beneficiary of technology upgrading under the SETUP where they were able to acquire lathe machine, drill press and a heavy-duty bench grinder. The project helped the firm reach larger market and cater to additional customers. Lately, the firm is developing the fabrication of "ram pump" and different farm equipment while still working for the production and fabrication of other iron works like gates, windows, grills, steel trusses and gym equipment.

Business is good but there are still bottlenecks in production. It still outsources pressing and reboring jobs in San Carlos City, limited capacity of pipe bending machine, manual grinding and painting, and absence of precise cutting equipment for stainless steel, aluminum and copper.



OUTCOMES

- Increase in productivity by 20%
- Employment increased from 2 workers to 6 workers
- The additional product line includes: Bagoong Squeezer, Solar Tunner Dehydrator, Cacao Roaster, Cacao Winnower, Colloid Mill, Bamboo Splitting Machine, Ramp Pump, Rice/Corn Paddy Huller
- Purchase Order at present amounting to: Php 1M for the 4th quarter, Php 700,000.00 for the 3rd quarter against Php 150,000.00 per quarter before



Production Facilities Upgrading of Roger Custodio Metalcraft

Implementing Firm: **ROGER CUSTODIO METALCRAFT**
 Project Cooperator: **Mr. Roger B. Custodio**
 Project Location: **Caburao, Santiago, Ilocos Sur**
 Project Cost: **Php 40,000.00**



Speed Cutter

Roger Custodio Metal Craft is a micro enterprise that offers the fabrication of rice thresher, bolo, manual cultivator, scythe, traditional plow and other farming tools.

Equipped with the skills developed through decades in the business, Mr. Custodio has gain a good reputation among his customers. However, he admits that his current production equipment is not enough to cope up with the number of orders especially during peak season. Thus, Mr. Custodio approached the DOST technology upgrading program to address the problem that hinders his business to expand its operation.



HD Drill Press

INTERVENTIONS

- Provision of:
 - 1 unit Speed Cutter
 - 1 unit Air Compressor w/Accessories
 - 1 unit Hand Drill
 - 1 unit HD Drill Press



Air Compressor w/ accessories

OUTCOMES

- More efficient painting works compared to the manual brush painting
- Eliminated the snapping of drill bits with the use of the HD Press Drill in drilling thick metal bars that resulted to the savings of Php300.00/month
- 100% increase in volume of production which resulted into 37.5 % increase in sales (from an annual gross sales of Php300,000.00 to Php412,500.00 as of November 2017)
- Increase in productivity by 200%
- Generated 1 new distributor

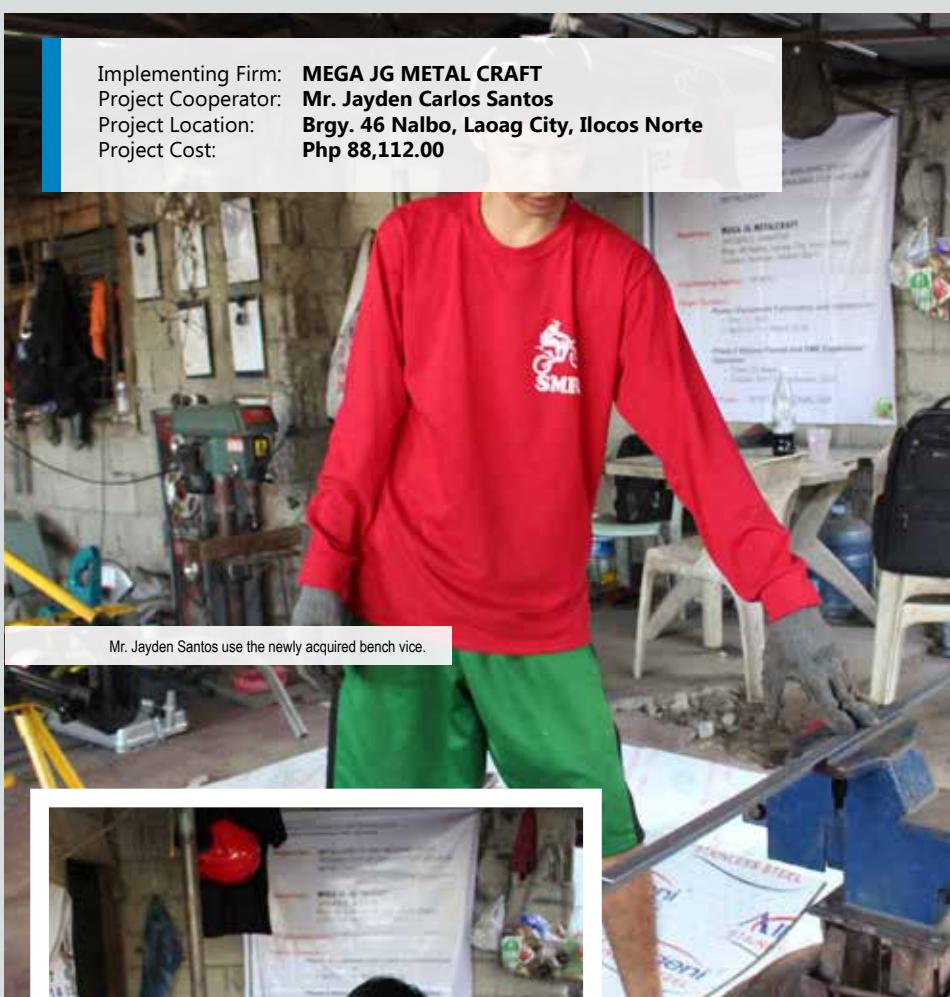


Hand Drill



Metal Crafts and Welding Shop Technology Upgrading for Mega JG Metal Craft

Implementing Firm: **MEGA JG METAL CRAFT**
 Project Cooperator: **Mr. Jayden Carlos Santos**
 Project Location: **Brgy. 46 Nalbo, Laoag City, Ilocos Norte**
 Project Cost: **Php 88,112.00**



The Mega JG Metal Craft is located at Brgy. 46 Nalbo, Laoag City, Ilocos Norte. It was registered in 2009 under the name of Mr. Jayden Carlos Santos and started his fabrication business with just few basic tools such as fabricated welding machine, disk grinder and compressor with an initial capital of Php40,000.00.

The Mega JG Metal Craft is one of the pioneer sidecar makers in Ilocos Norte. The firm is one of the first to design the so called lowered sidecar which is very much in demand in the province of Ilocos Norte and nearby towns like Cabugao and Sinait, Ilocos Sur. The sidecar designs were also introduced in Cagayan.

The shop offers fabrication and general welding services. Currently, Mega JG Metal Craft has five (5) dependable employees who attend to all the needs of their customers.

INTERVENTIONS

- Provision of:
 - 1 unit Welding Machine 300amp
 - 1 unit Welding Machine Inverter
 - 1 unit Spray Gun and Hose
 - 1 unit Pipe Bender
 - 1 unit Bench Vice
 - 1 unit Cut-off Machine

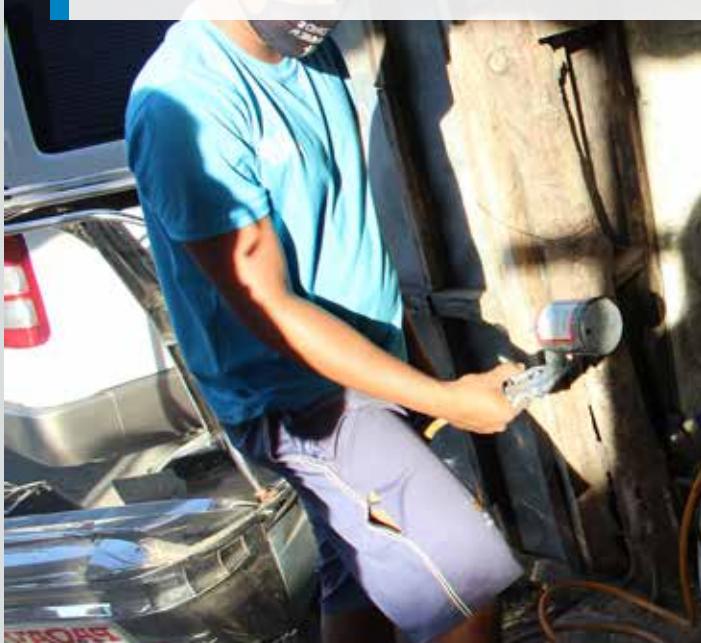
OUTCOMES

- Improved quality of products and production process using the upgraded equipment for furniture making
- Increase in production by 20%
- Increase in productivity by 10%
- Hired 2 additional workers



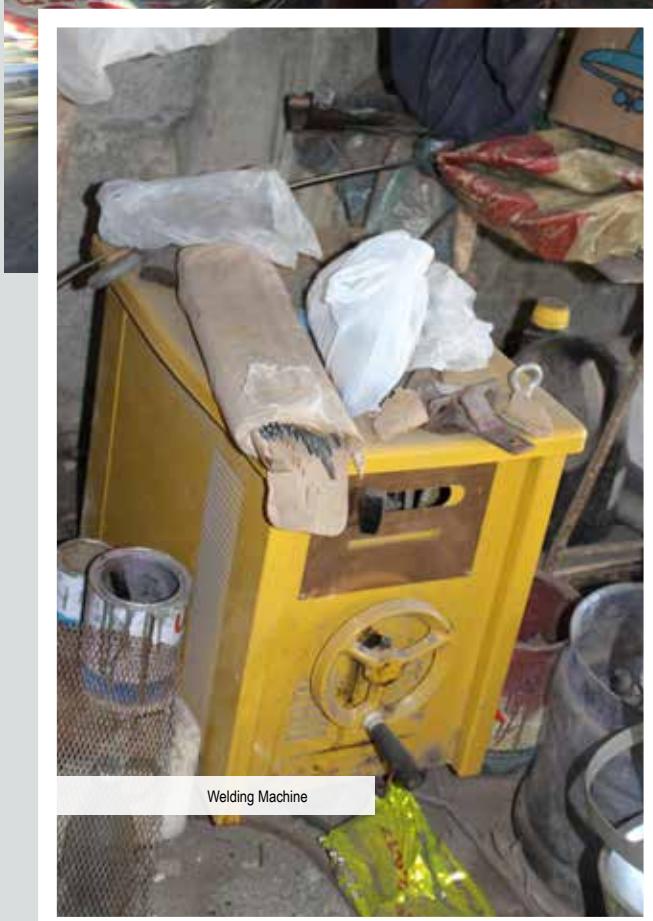
Metal Crafts and Welding Shop Technology Upgrading for Calasag Metal Craft

Implementing Firm: **CALASAG METAL CRAFT**
Project Cooperator: **Ms. Mariechris Calasag**
Project Location: **Brgy. 11 Cabangaran, Paoay, Ilocos Norte**
Project Cost: **Php 65,250.00**

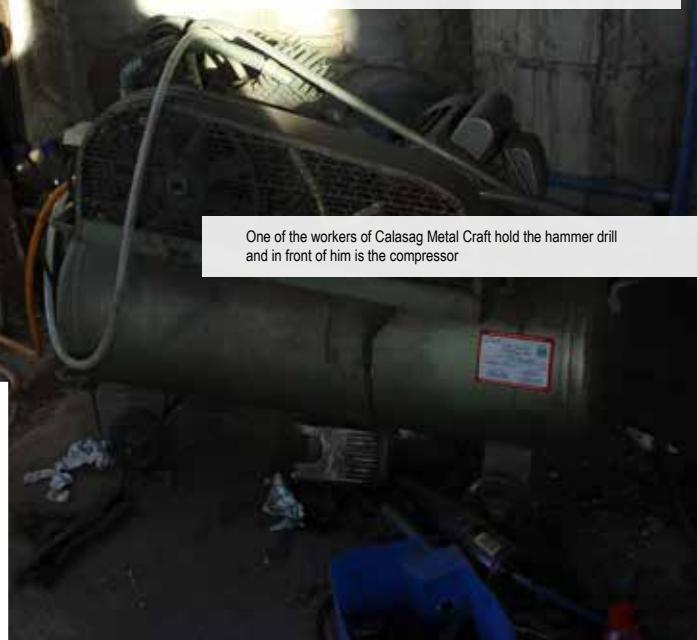


The Calasag Metal Craft is located at Brgy. 11 Cabangaran, Paoay, Ilocos Norte. It was registered in 2015 under the name of Mrs. Mariechris L. Calasag and operated by her husband who started with the fabrication business with few basic tools such as welding machine, disk grinder and compressor. Initial capital was Php40,000.00.

The shop offers fabrication and general welding services. Currently, Calasag Metal Craft has two dependable employees who attend to all the needs of their customers.



One of the workers of Calasag Metal Craft hold the hammer drill and in front of him is the compressor



INTERVENTIONS

- Provision of 1 unit Welding Machine
- Energy Audit

OUTCOMES

- Increase in volume of production by 25%
- Increase in sales by 20%
- Increase in clients by 15%
- Increase in productivity by 15%
- 2 additional employment generated



Upgrading of Production Equipment for Agri Machinery Parts

Implementing Firm: **ECU AGRI MACHINERY PARTS**
 Project Cooperator: **Mr. Ericson C. Ulit**
 Project Location: **#10 Barangay Ricarte, Batac, Ilocos Norte**
 Project Cost: **Php 230,000.00**

ECU Agri Machinery Parts at Brgy. 1 Ricarte, Batac City, Ilocos Norte, is a single proprietorship business established in 2015 with an initial capital of Php100,000.00. This is owned and managed by Ericson C. Ulit. A family of the owner as a machine shop operating since 1980 wherein he is one of the lathe machine operators. In 2015, he decided to put up and manage his own shop. During the same year, it was registered with the Department of Trade and Industry – Provincial office.

At present, the firm's capitalization has reached Php200,000.00 with 3 employees. The firm provides welding jobs and fabrication of agricultural parts. Due to limited equipment, the firm has to outsource the machining process to be used in its fabrication. Outsourcing costs the firm about Php15,000.00 or more per month. This can be the firm's potential income if he has the appropriate equipment to do the job.



INTERVENTIONS

- Provision of 1 unit Lathe Machine
- Training on Financial Management

OUTCOMES

- Improved production capacity of the enterprise in catering the demand of the customers
- Increased gross sales by 15%



Upgrading of Production Facility for a Steel Fabrication

Implementing Firm: **GRAVITY STEEL FABRICATION AND SUPPLY**
Project Cooperator: **Mr. Jackson A. Solomon**
Project Location: **Mamarlao, San Carlos City, Pangasinan**
Project Cost: **Php 180,000.00**

Gravity Steel is engaged in the fabrication and installation of stainless steel food processing facilities like, oven, kitchen sink, preparation table, cut-out letters, and railings. The firm experienced delays in fabrication jobs since sheet bending is outsourced either in San Carlos or Dagupan City. Travel and waiting time, and costs of bending resulted in inefficiency.



Mr. Jackson Solomon and his worker using the newly acquired Heavy-duty Sheet Bender

INTERVENTIONS

- Provision of 1 unit Heavy-Duty Sheet Bender
- Training on Equipment Operation, Maintenance and Troubleshooting

OUTCOMES

- Increase in gross income by 10%
- Increase production volume by 10%
- Increase in productivity by 15%



Upgrading of Production Facility for a Machine and Metal Fabrication Shop

Implementing Firm: **MESA MACHINE SHOP**
 Project Cooperator: **Mr. Edmundo L. Mesa**
 Project Location: **Clemencia St., Basista, Pangasinan**
 Project Cost: **Php 200,000.00**

Mesa Machine is engaged in sale of motor part and accessories, repair and welding services. It is currently one of the reliable and affordable machine shops in Basista, Pangasinan.

In many instances, machining demands were refused since the shop's lathe machine is small and already not very precise.



INTERVENTIONS

- Provision of:
 - 1 unit Lathe Machine (open gap 22")
- Seminar-Workshop on Occupational Safety
- Training on Turning with Crankshaft Grinding
- Training on Heat Treatment of Steels

OUTCOMES

- Increase in production volume by 10%
- Increase in productivity by 15%
- Increase in gross sales by 15%, (present sales - PhP 15,000.00/month. Before, they only earn PhP 10,000.00/month)



SET UP

Furniture



Production Facilities Upgrading of Avenel's Furniture

Implementing Firm: **AVENEL'S FURNITURE**
Project Cooperator: **Ms. Avelorna P. Bas-ilan**
Project Location: **Cabugao, Suyo, Ilocos Sur**
Project Cost: **Php 284,000.00**

Avenel's Furniture main product lines include cabinet, bed, table, chair, door, door jamb and dining and sala set. It also accepts made-to-order furniture and installation and offers after sales service. However, with minimal available equipment and tools in the shop, production is slow and sometimes cannot meet the deadline for the delivery of products. Cutting and planing are two (2) of the most vital and laborious processes in furniture making, thus, working with just ordinary tools such as circular and jig saw and portable planers compromise the process, time and quality of the output.

Hence, the firm requested assistance from the Department of Science and Technology (DOST) to upgrade and improve its facility as well as efficiency and to meet the increasing market demand.

INTERVENTIONS

- Provision of:
 - 1 unit Thickness Planer
 - 1 unit Bandsaw
 - 1 unit Jointer
- Seminar on Productivity

Jointer



OUTCOMES

- Improved quality of finished products
- Increased volume of finished products of the firm by 60 – 70%, from 59 units of different items to 94-100 units
- Increased volume of raw materials used for production by 80%, from an estimated 500 bd. ft. to 900 bd. ft.
- Increased sales of the firm by 60 – 70%, from Php485,000.00 to Php776,000.00 – Php824,500.00 for the year
- Increase in productivity by 200%
- Generated additional one (1) employment



Bandsaw

Production Facilities Upgrading of a Furniture Shop

Implementing Firm: **EUNICE FURNITURE**
 Project Cooperator: **Mr. Santos S. Ancheta**
 Project Location: **Pug-os, Sinait, Ilocos Sur**
 Project Cost: **Php 270,000.00**

Thickness Planer



INTERVENTIONS

- Provision of:
 - 1 unit 3-in-1 Thickness Planer
 - 1 unit Hollow Chisel Mortiser
- Energy Audit
- Seminar on Basic Productivity
- Seminar on Basic Occupational Health and Safety Standards

Eunice Furniture manufactures different kinds of furniture and other woodcrafts such as cabinet, bed, sala and dining set, door, door jamb, rack and decors. However, some processes are slowly done due to the equipment currently used by the firm.

Initially, the firm uses portable planers to smoothen and create wooden boards with uniform thickness and drill press to mortise wood. Uniformity, accuracy and quality of the board being designed are not always attained instantly since the work done using these tools were only by estimation. Thus, the existing methods become very inefficient especially during peak season and mass production. The firm sought assistance from the Department of Science and Technology (DOST) to improve and upgrade the shop's facility and processes.



Chisel Mortiser

OUTCOMES

- Improved quality of finished products
- Generated two (2) employment
- Increase in equipment productivity by 200%
- Attained accurate, uniform and repetitive cuts
- More precise wood cuts
- Eliminated rejects due to faulty joints
- Improved production facility



Productivity Enhancement of Baptista Furniture



Implementing Firm: **BAPTISTA FURNITURE**
Project Cooperator: **Mr. Christopher Q. Baptista**
Project Location: **Bantaoay, San Vicente, Ilocos Sur**
Project Cost: **Php 220,000.00**



INTERVENTIONS

- Provision of 1 unit Mini-Sawmill
- Seminar on Cleaner Production Technologies



Mini-Sawmill

Baptista Furniture is a sole proprietorship established in 2009 by Mr. Christopher Q. Baptista primarily to help his father earn better income from the latter's furniture making skills as his father used to work on a per output basis but would not usually receive his pay on time. His father, then, served as the lead man of the production/carpentry work of the firm. The business flourished as the firm found its niche market through Facebook® that comprises about eighty percent of his clients mostly Overseas Filipino Workers.

Until Mr. Baptista realized that the firm's outsourcing practice for wood cutting is costly and impractical, he later sought assistance from the Department of Science and Technology to acquire his own more efficient equipment

OUTCOMES

- 14% increase in gross sales (from PhP671,500.00 to PhP768,800.00)
- 12% increase in volume of production (from 1,125 units of various furniture to 1,282 units of various furniture)
- 17% increase in productivity (from 1.14 to 1.37)
- Savings of up to PhP10,000.00 outsourcing costs per month
- Reduced wasted raw materials by as much as 75%
- No more delay in production time due to outsourcing
- Improved working process
- Better quality of finished furniture items



Mini-Sawmill

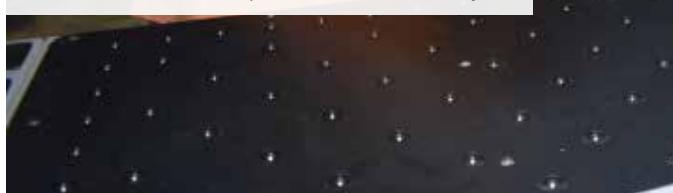


Process Upgrading For Home And Office Modular Furniture Systems Production

Implementing Firm: **MODULHAUS INC.**
 Project Cooperator: **Mr. Richard S. Chan**
 Project Location: **Purok 5 Brgy. San Marcos, Agoo, La Union**
 Project Cost: **Php 3,000,000.00**



The designated workers shows off the operation of the computerized beam saw and how it efficiently cuts the material with minimal wastage.



Modulhaus Inc. is a dynamic and innovative company striving to be one of the leading manufacturers of modular home and office furniture systems. The firm employs 21 regular workers and additional 21 contract workers during peak season with present capitalization of PhP 50,000,000.00.

However, the firm cannot meet the demand of their customers due to low productivity. The firm uses a cutting machine which requires manual setting of blade of sliding table panel saw to cut boards of different sizes. The process takes too much time and require 2-3 workers.

The project aimed at upgrading the existing process and increase productivity through the provision of an automated beam saw machine.



INTERVENTIONS

- Provision of 1 unit Beam Saw
- Training on TIG welding

OUTCOMES

- Increase in productivity by 50%
- Production became 60% faster
- 30% increase in the number of customers
- 2 operators were designated for the operation and manning of the beam saw
- Number of regular employees increased to 30 (both from the assembly unit & office). All employees are on regular status





Upgrading of Technology for Piton Furniture Shop



Mr. Leonie G. Abdul, owner and manager of Piton Furniture Shop, gained experience from working in wood furniture shop in Isabela. His family decided to settle in La Union and put up his own furniture shop in 2000. The firm has four (4) regular workers including Mr. Abdul and 2 on-call workers and a capitalization of Php 300,000.00.

However, the firm uses improvised tools and equipment for some processes, like cutting woods to desired sizes, cutting square/rectangular holes and planing, which caused too much wastage on raw materials, uneven thickness and size of cut materials, and low productivity.

The project aimed at improving the operation of the furniture manufacturing business through provision of S&T interventions such as 3-in-1 machine and mortiser.



INTERVENTIONS

- Provision of:
 - 1 unit Mortiser machine
 - 1 unit 3-in-1 machine (circular saw, thickness planer, jointer)
- Technical Assistance on plant layout

OUTCOMES

- Precise thickness of the wood & quality output was attained.
- Increase in productivity by 14%
- Monthly gross income increased by almost 100% from Php30,000 to Php50,000- Php60,000
- The firm has 20% net income



Upgrading of Technology for Alpha Sash Factory

Implementing Firm: **ALPHA SASH FACTORY**
 Project Cooperator: **Mr. Dube G. Abdul**
 Project Location: **Brgy. Urbiztondo, San Juan, La Union**
 Project Cost: **Php 318,500.00**



Mr. Dube Abdul, project proponent, shows off the operation of the 3-in-1 machine to DOST provincial staff during its monitoring.



INTERVENTIONS

- Provision of:
 - 1 unit Mortiser machine
 - 1 unit 3-in-1 machine (circular saw, thickness planer, jointer)
- Energy Audit
- Technical assistance on plant layout

OUTCOMES

- Increase in productivity by 14%
- The firm got a contract with one of the resorts in San Juan where they will deliver 156 beds (@ P6,500/unit). The project started in November 2017 and to be completed in January 2018.
- Monthly gross income increased by 67% from P30,000 to P50,000 per month
- The firm has 20% net income

The shop was originally located at Lipay Este, San Gabriel carrying the business name "Alpha Sash Factory", but now relocated at Brgy. Urbiztondo, San Juan, La Union with the same Business name. It is owned and managed by Mr. Dube G. Abdul where he gained experience from working in wood furniture shop in Isabela. When his family decided to settle in La Union, he put up his own furniture shop in CY 2001. At present, the firm has four (4) regular workers including Mr. Dube and 3 on-call workers and a capitalization of PhP 300,000.00.

However, the firm uses improvised tools and equipment for some processes, like cutting woods to desired sizes, cutting square/rectangular holes and planing, which caused too much wastage on raw materials, uneven thickness and size of cut materials, and low productivity.

The project aimed at improving the operation of the furniture manufacturing business through provision of S&T interventions such as 3-in-1 machine and mortiser.



Mortiser



The Energy Audit Teams assessed the firm's energy consumption and recommended ways on how to improve energy efficiency, performance and management



Upgrading of Production Facilities for Furniture Shop

Implementing Firm: **BACNAT FURNITURE SHOP**
Project Cooperator: **Mr. Edison Bacnat**
Project Location: **Brgy. 9 Aglipay, City of Batac, Ilocos Norte**
Project Cost: **Php 439,020.00**



Thickness Planer 3HP

Bacnat Furniture Shop was established in 2000 and managed by Mr. and Mrs. Edison Bacnat. The firm started with three (3) workers while Mr. Bacnat and his wife oversee the total operation of the business. At present, the firm employs 15 skilled workers in direct production with another three people in the indirect operations. For the past 6 years, the firm has already grown to Two Million Pesos (Php2,000,000) and has expanded its production lines catering to both home and office furniture.

With DOST assistance, the firm has widely grown because of the upgraded technologies acquired through the SETUP project.



Thickness Planer 20"



Mini Saw Mill

INTERVENTIONS

- Provision of:
 - 1 unit Mini Saw Mill
 - Thickness Planer, 20"
 - Circular Saw
 - Thickness Planer, 3HP

OUTCOMES

- Improved quality of products and production process using the upgraded equipment for furniture making
- Increased production by 20%
- Generated 2 employments



Technology Innovation Support for a Furniture Shop

Implementing Firm: **SHOW ME THE WAY WOOD CARVER AND FURNITURE SHOP**
 Project Cooperator: **Ms. Dominga M. Tiyad**
 Project Location: **National Highway, Brgy. Ventinilla, Sta. Barbara, Pangasinan**
 Project Cost: **Php 318,500.00**



Mr. Ruben Tiyad, Mrs. Dominga's husband was a former furniture shop worker in Mountain Province, with his experiences, skills, and expertise; they decided to establish their own furniture shop in Pangasinan through their savings. Due to the increasing demand of their furniture products, they applied for the Innovation System Support in 2014 which enabled them to acquire upgraded and appropriate production equipment. However, wood cutting service is being sourced out costing the shop P2,000 per week. Furthermore, sanding and finishing processes are slow since the processes are done manually.

INTERVENTIONS

- Provision of:
 - 1 set Mini Sawmill
 - 1 unit Flat Sander
 - 1 unit 2HP Air-compressor Machine
- Training on Equipment Operation, Maintenance and Troubleshooting



Flat Sander

OUTCOMES

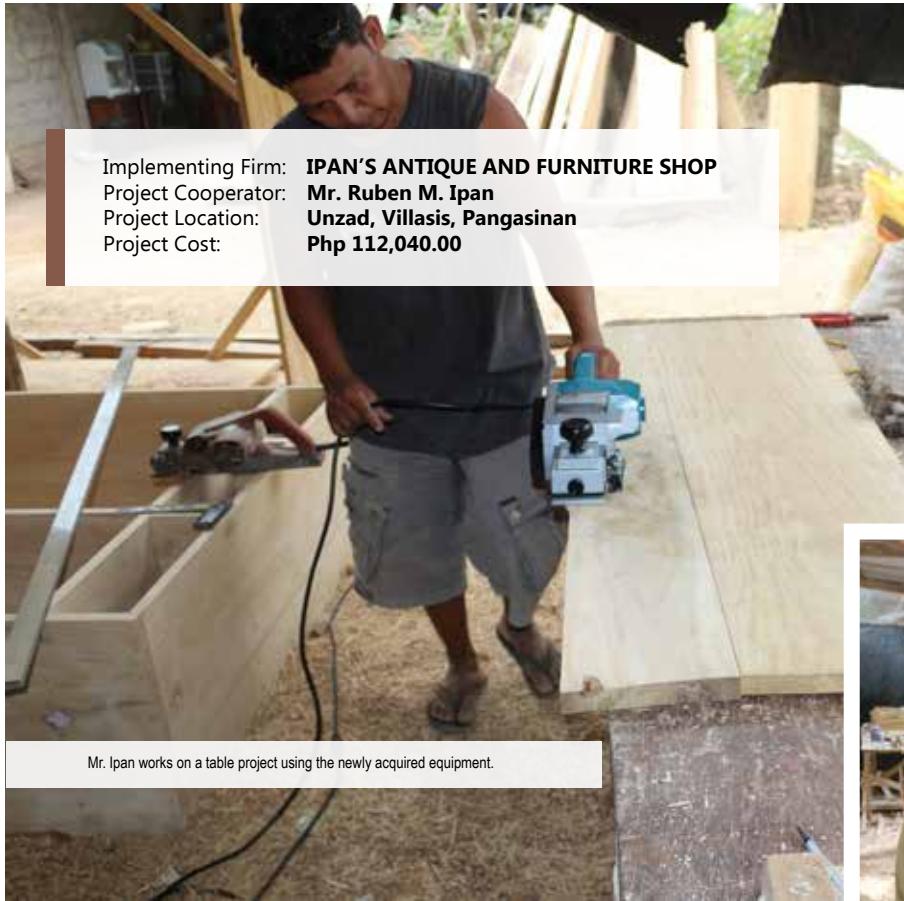
- Increase in gross income by 50%
- Increase in production volume by 50%
- Increase in productivity by 16%
- Increase in gross sales by 50%
- Generated 5 additional employment



DOST monitoring team with Ms. Dominga Tiyad



Production Facility Upgrading of Ipan's Antique and Furniture Shop



Mr. Ipan works on a table project using the newly acquired equipment.

The furniture shop is offering antique-designed items for more than 5 years now. The shop has already established a good reputation to its clients through its quality products and services. And with good customer connection, orders from different towns in the province kept on coming.

The shop could not cope up with demand due to its old bandsaw which bogged down often. The shop would rent a chainsaw depending on its availability. These instances delayed the production of the firm.



INTERVENTIONS

- Provision of:
 - 1 unit Chainsaw
 - 1 unit Bandsaw
 - 1 unit Planer
- Cleaner Production Assessment

OUTCOMES

- Savings of Php 4,000.00/month from outsourcing
- Increase in sales by 8% from Php 166,800.00 to Php 180,144.00
- Improved quality of the finished products
- Reduced production time of 1 table by 50% (from 2.5 days to 1.25 days)
- Increase in productivity by 50%



Wood-based Technology Innovation Support for the Enhancement of Production Facilities

Implementing Firm: **ARLIN FURNITURE**
 Project Cooperator: **Mr. Arlin C. Bolon**
 Project Location: **Pinmaludpod, Urdaneta City, Pangasinan**
 Project Cost: **Php 330,000.00**

Arlin Furniture produces doors, door jams, cabinets, tables, cleopatra and beds. Production is inefficient due to manual wood planing and cutting of boards. Cutting of wood for curved parts were being sourced out delaying production more.



Mr. Bolon works on a new project using the newly acquired equipment in his production area

INTERVENTIONS

- Provision of:
 - 1 unit Bandsaw
 - 1 unit Thickness Planer
- Energy Audit

OUTCOMES

- Increase in sales by 30%
- Savings of Php 12,000.00/month from outsourcing
- Increase in productivity by 50%
- Additional 8 employees hired



Technology Upgrading of a Furniture Shop

Implementing Firm: **CAJINDOS FURNICRAFT**
Project Cooperator: **Ms. Buena R. Cajindos**
Project Location: **Poblacion, San Vicente, Ilocos Sur**
Project Cost: **Php 35,000.00**



Bandsaw

Cajindos Furnicraft is a single proprietorship established in 1972. The firm's product lines include wooden furniture like sala set, dining set, cabinet, bed, door, door jamb. They also accept repairs or refurbishing of old wooden furniture.

Due to limited production equipment the firm outsources cutting of raw materials during peak seasons and some are being done manually using light equipment, hence production is slower and productivity is low. Mrs. Cajindos requested the assistance of the DOST on the appropriate technologies thru the SETUP for more precise wood cutting and to make work easier and faster.



Bandsaw

INTERVENTIONS

- Provision of 1 unit Bandsaw
- Seminar on Basic Occupational Health and Safety Standards

OUTCOMES

- Additional income of approximately of Php 2,900.00 weekly savings from outsourcing of bandsaw services
- Monthly gross sales increased by 62.5% (from Php 40,000.00/month to Php 65,000.00/month)
- Increase in productivity by 125%



Upgrading of Technology for Jhunet Furnitures



The production area of Jhunet Furnitures



Jhunet Furnitures is owned by Janet L. Aquino and managed by her husband, Mr. Rogelio Aquino Jr. The firm was established in CY 2010. It has four (4) regular workers including Mr. Rogelio and 3 on-call workers and a capitalization of PhP 200,000.00.

However, the firm uses improvised tools and equipment for some processes, like cutting woods to desired sizes and planing, which caused too much wastage on raw materials, uneven thickness and size of cut materials, and low productivity.

The project aimed at improving the operation of the furniture manufacturing firm through provision of S&T intervention such as 3-in-1 machine.

INTERVENTIONS

- Provision of 1 unit 3-in-1 machine (circular saw, thickness planer, jointer)
- Technical assistance on plant layout



OUTCOMES

- 25% increase in volume of production (from 20 to 25 different wood furniture per month)
- 27% increase in monthly gross sales from PhP 53,583.34 to PhP 68,000.00
- Increase in productivity by 27%



The monitoring team headed by Dr. Paulina P. Nebria, ARD for TO of DOST-1, interviews Mr. Rogelio Aquino, the owner of Jhunet Furnitures, on the operations of the provided equipment and its impact to the firm.



Technology Upgrading of Small Scale Furniture Making



Implementing Firm: **FAME CONSTRUCTION AND SUPPLY**
 Project Cooperator: **Mr. Ferdinand Soriano Sr.**
 Project Location: **Brgy. Garcia, Tubao, La Union**
 Project Cost: **Php 202,125.00**



Mr. Ferdinand Soriano, owner of FAME Construction and Supply, shows how the machines are operated as the DOST monitoring team looks on.



INTERVENTIONS

- Provision of:
 - 1 unit 3-in-1 machine
 - 1 unit Portable Mortiser
- Technical assistance on plant layout

OUTCOMES

- 33% increase in volume (from 30 to 40 different wood furniture per month)
- 35% increase in average monthly gross sales (from Php 79,637.50 to Php 107,333.33)
- The firm utilizes 3,000 bd.ft. per month of teak wood and 2,000 bd.ft. per month of Gmelina
- Increase in productivity by 35%
- The firm has currently 8 finishers/carpenters/, 2 varnish painters, and 2 helpers.
- The firm has acquired additional two (2) trucks worth P1,400,000.00 while inventories amounted to P600,000.00
- Improvement of the production area costs around P300,000.00
- On-going projects of the firm include the following: Churches from Aringay, Caba and Tubao.
- Six (6) more additional workers were added into the firm

Fame Construction and Supply is located owned and managed by Mr. Ferdinand Soriano Sr. It was established in CY 2000 with seven (7) regular workers including Mr. Soriano and a Php 500,000.00 present capitalization. Contractual workers are hired when there are big orders/projects.

However, the firm uses improvised tools and equipment for some processes, like cutting woods to desired sizes, cutting square/rectangular holes and planing, which caused too much wastage on raw materials, uneven thickness and size of cut materials, and low productivity. The project aimed at improving the operation of the furniture manufacturing business through provision of S&T interventions.





Upgrading of Technology for Taboy Furniture Shop

Implementing Firm: TABOY FURNITURE SHOP
 Project Cooperator: Mr. Jose V. Taboy
 Project Location: Brgy. Poblacion Norte, Caba, La Union
 Project Cost: Php 160,000.00



Engr. Edison M. Acosta, SRS II of PSTC-LU, interviews Mr. Jose Taboy, the project proponent, about the status of his firm and impact of the DOST intervention.



Taboy Furniture production area

INTERVENTIONS

- Provision of:
 - 1 unit 2-in-1 Machine (thickness planer and jointer)
- Technical assistance on plant layout

OUTCOMES

- Immediate impact was reduction of time in resizing of wood from 1 day to 1 hour.
- Three months after the equipment was provided, the firm delivered the following items last December 2017: 1 sofa bed set, 1 dining set, 1 double bed, 1 cleopatra and 1 table.

Taboy Furniture Shop was established in 1996. The firm has three (3) regular workers, including Mr. Taboy, and present capitalization of P300,000.00. The firm hires contractual workers when there are big orders/projects.

However, the firm uses improvised tools and equipment for some processes, like cutting woods to desired sizes and planing, which caused too much wastage on raw materials, uneven thickness and size of cut materials, and low productivity.

The project aimed at improving the operation of the furniture manufacturing firm.



Technology Upgrading of Wood-based Production Facilities



Implementing Firm: **JERRY'S FURNITURE**
 Project Cooperator: **Mr. Jerry Banig**
 Project Location: **Pinmaludpod, Urdaneta City, Pangasinan**
 Project Cost: **Php 127,500.00**

Mr. Banig designs woodwork using the new acquired equipment in his production area.

Mr. Banig worked in a furniture and handicraft company in Manila as a designer and product developer. He was often sent by his boss to exhibits to see some designs and ideas that they could incorporate in their variety of designs. With his meager income from his previous job, he had no savings to start the planned business; he sold fruits and vegetables to provide for his family while scouting for antique woods. At first, he is just an agent buying and selling the old woods until he was able to buy furniture tools from a junkshop.

With his junkshop-bought tools, he makes antique articles, chairs, consol tables with unique carvings and designs. Antique exhibitors buy some of his outputs and displayed in Cordillera and entry items for exhibits. That was the start of his furniture business –some lent him tools that he can use to create more work of art items and more furniture. From his antique works, he was able to add products like bed, sala set, doors, tables and the like. His furniture business started to grow and he was able to buy some working tools in addition to the tools lent to him. Having steady customers, he needs to have his own tools and upgrade the one bought from junkshops.

INTERVENTIONS

- Provision of:
 - 1 unit Bandsaw
 - 1 unit Lathe Machine
 - 1 unit Portable Planer
 - 1 unit Chainsaw



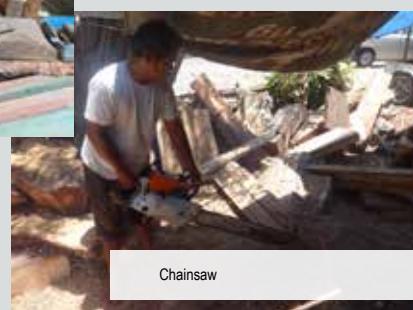
Mr. Jerry Banig using the bandsaw

OUTCOMES

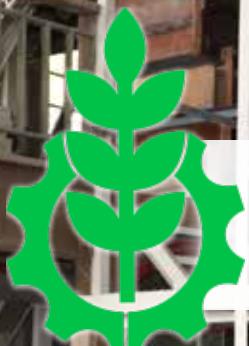
- Savings of Php 9,000.00/month from outsourcing
- Increase in productivity by 50%
- Improved quality of the finished products



Lathe Machine



Chainsaw



SETUP

Agriculture



Color Sorter Technology to Improve the Quality of Milled Rice and Productivity of Costales Ricemill

Implementing Firm: **COSTALES RICEMILL**
Project Cooperator: **Mr. Francisco A. Costales Jr.**
Project Location: **Napo, Magsingal, Ilocos Sur**
Project Cost: **Php 2,000,000.00**



Mr. Costales demonstrates the operation of the Rice Color Sorter Machine



Costales Ricemill, started in 1995 with a single-pass rice mill with capacity of 17 bags of paddy per hour and it continued to flourish. In 2015, they acquired a multi-pass rice mill with a capacity of 70 bags of paddy per hour. In that same year, the firm, was awarded 3rd place in the 2015 National Best Rice Processor/ Miller by the National Food Authority and they are hoping to continuously sustain and improve their rice milling service for this achievement opportunity.

To continuously sustain and improve their rice milling products and services, the firm recognized the need to upgrade their facilities to meet the increasing demand for high quality milled rice free of foreign objects (e.g. stones, stalks, discolored grains, etc.) hence they inquired for appropriate technology assistance at the Department of Science and Technology later in 2016.

OUTCOMES

- 89% increase in monthly gross sales (from PhP317,842.00 to PhP600,806.00)
- 47% increase in volume of production (from 4,524 bags to 6,675 bags)
- 19% increase in productivity (from 1.73 to 2.06)
- 10 additional workers employed
- Additional 8 big rice dealers/companies availing of milling services
- Better quality milled rice free from foreign objects (e.g. stones, stalks, discolored grains, etc.)

INTERVENTIONS

- Provision of 1 unit Rice Color Sorter Machine
- Seminar on Basic Productivity



Technology Upgrading of JC Laroco Ricemill



A satisfied SETUP co-operator, Ms. Jennifer Laroco happily shows off the recently delivered rice color sorter and the sorted rice product.



Mrs. Jennifer C. Laroco has been a rice retailer since 1998 in Aringay, La Union. Upon realizing the profitability of the rice milling industry, she became a rice miller in 2010, buying palay then having it milled at San Jose, Nueva Ecija. In 2012, she bought a land at Lloren, Tubao, La Union and gradually bought her own rice milling equipment. JC Laroco Rice Mill has now two compact milling machines and a multi-pass rice mill that caters to rice dealers and rice retailers in the province.

However, its well-milled rice contain impurities that include black tipped, chalky and yellow grains. Hence, to automatically remove the impurities and enhance the quality of rice produced, a color sorter was provided.

INTERVENTIONS

- Provision of 1 unit Color sorter
- Forum/seminar on Smart Energy Program

OUTCOMES

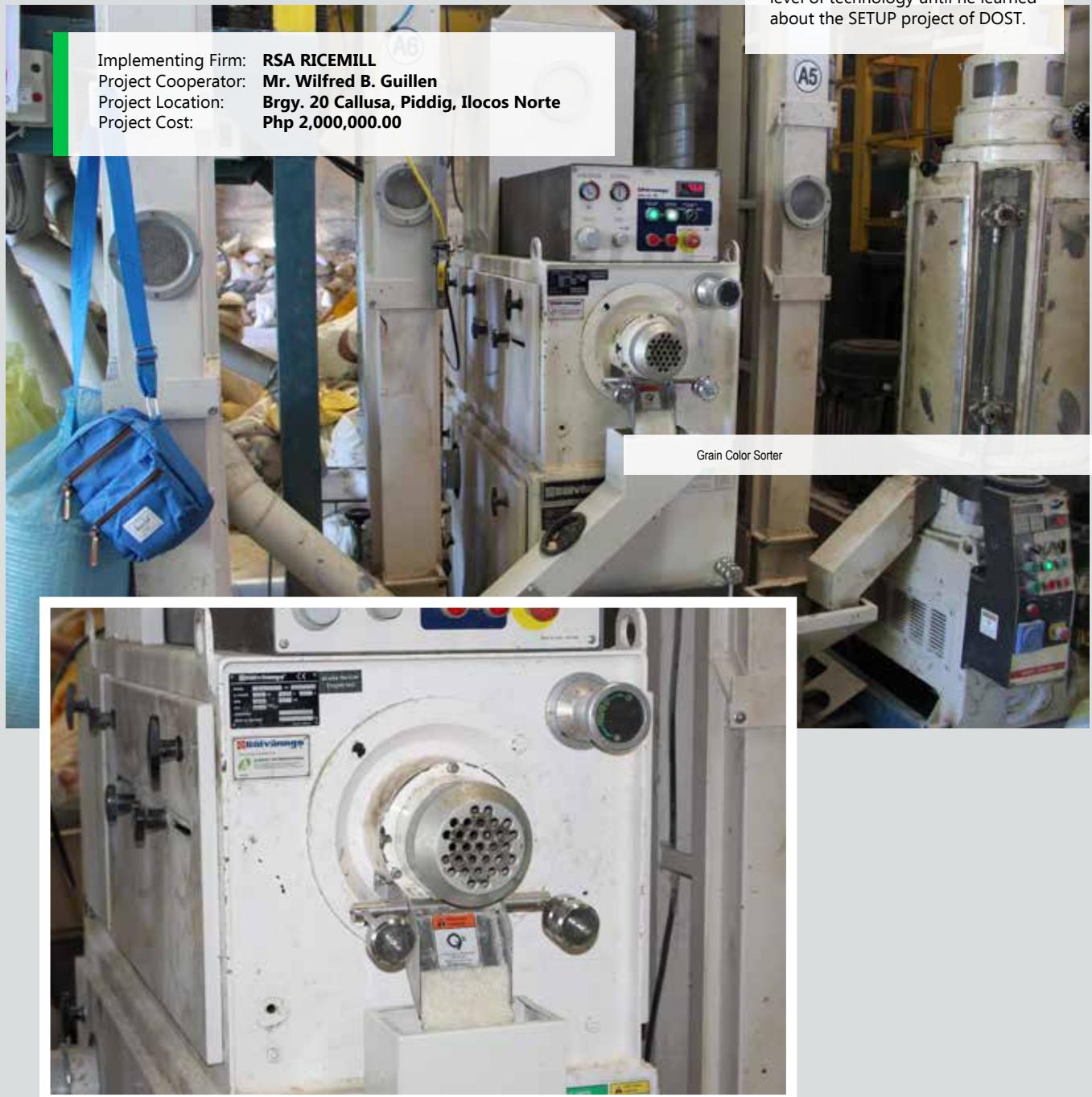
- Increase in productivity by 8%
- 69% increase in average monthly gross sales (from Php 3,750,000.00 to Php 6,336,004.2 per month)
- Generated 2 additional employment
- A total of Php 400,000.00 is collected from the milling fee per month.



Upgrading and Enhancement of Production Efficiency of Post-Harvesting Facilities in Support to Processing Palay and Grains and Allied Products

Implementing Firm: **RSA RICEMILL**
 Project Cooperator: **Mr. Wilfred B. Guillen**
 Project Location: **Brgy. 20 Callusa, Piddig, Ilocos Norte**
 Project Cost: **Php 2,000,000.00**

SA Ricemill has become one of the top rice millers in Ilocos Norte. Mr. Wilfred Guillen started his business in 2008 with an initial capital of Php200,000.00. With that, he continued to raise the firm's level of technology until he learned about the SETUP project of DOST.



INTERVENTION

- Provision of 1 unit Grain Color Sorter

OUTCOMES

- Increased productivity by 25%
- Increased sales by 25%
- Generated two (2) employment
- Improved milling efficiency from 65% to 75%
- Increased production efficiency by 15% minimizing wastage



Upgrading of Facilities for Moon Light Farm to Enhance Quality of Poultry Products

Implementing Firm: **MOON LIGHT FARM**
Project Cooperator: **Ms. Norma L. Mangaliag**
Project Location: **Brgy. Cabolaoan, San Carlos City, Pangasinan**
Project Cost: **Php 1,128,600.00**

Moon Light Farm is a chicken contract grower and was established in 2013 with a total capacity of 108,000 birds per cycle. However, the firm is using a low clearance (6 inches) plastic slat matting from the ground which exposes the birds to ammonia burns that resulted to Low Feed Conversion Ratio (FCR), and uneven growth of birds.



INTERVENTIONS

- Provision of 3,960 units Plastic Slat Matting (2 ft x 3ft x 8")
- Training on Proper Installation and Cleaning System



OUTCOMES

- Increase in gross sales by 20%
- Increase in production by 20%
- Increase in productivity by 26%
- Decreased/reduced mortality rate from 3% to 2%



Advancement of Facilities for a Poultry Farm in Support to Renewable Energy

Implementing Firm: **BONIFACIO TABRILLA POULTRY FARM**
 Project Cooperator: **Mr. Pastor S. Tabrilla**
 Project Location: **Brgy. San Raymundo, Balungao, Pangasinan**
 Project Cost: **Php 2,000,000.00**



20KW solar panels mounted on the rooftop of the poultry house.



Display of the power and energy generated.

Mr. Trabilla sets the controller of the solar panels.

INTERVENTION

- Provision of 20KW Solar Power System

OUTCOMES

- 50% savings in electricity consumption from Php 70,000.00/mo. to Php 35,000.00/mo.



Technology Innovation System Support for the Enhancement of Broiler Production in Support to Meat Processing

Implementing Firm: **DE ROXAS POULTRY FARM**
 Project Cooperator: **Mr. Ramon De Roxas**
 Project Location: **Capulaan, Villasis, Pangasinan**
 Project Cost: **Php 1,186,383.00**



Display of 2.5ft. x 3.25ft. x 8" plastic slat matting.



De Roxas Farm is one of the pioneering chicken contract growers of San Miguel Food Inc. here in Pangasinan. The company employs twelve direct workers. It follows environment, health and safety practices for the workers and for the poultry farm.

The firm has two poultry houses, with semi-automatic tunnel vent type with capacity of 36,000-38,000 heads of chick per poultry house. The major concerns of the poultry farm are ammonia burns, hematoma and feet injuries of broilers which could be addressed by better production facilities, so the firm sought the assistance of DOST through SETUP.



INTERVENTION

- Provision of 2,812 plastic slat matting 2.5 ft x 3.25ft x 8" Polyethylene brown/red/green

OUTCOMES

- Better air circulation reducing the effect of ammonia burn
- Increase in recovery rate by 2% from 95% to 97%
- Reduced cycle time from 30-31 days to 27-28 days
- Increase in productivity by 13%



Process Upgrading for the Enhancement of Production Efficiency of Grains Postharvest Facilities in Support to Food Processing and Allied Industries

Implementing Firm: **CAYABYAB RICEMILL**
 Project Cooperator: **Mr. Augusto Alfonso G. Cayabyab**
 Project Location: **21 Espiritu St. Poblacion, District II, Pozorrubio, Pangasinan**
 Project Cost: **Php 1,705,000.00**



Display of the newly installed equipment of Cayabyab Ricemill



INTERVENTIONS

- Provision of:
 - 1 unit Paddy Separator
 - 1 unit Pneumatic Huller
 - 1 unit Vertical Polisher
 - 1 unit Destoner
- Cleaner Production Assessment

OUTCOMES

- Milling recovery increased from 62% to 68%
- Increase in productivity by 40%
- Improved quality of milled rice

Cayabyab Ricemill is in the grains trading and rice milling business since 1978. Its cono-type milling facility was upgraded to a bigger type due to the increased number of customers coming from nearby towns and provinces

With the established good standing in the rice milling market, Cayabyab Ricemill attracted more customers. However, due to demand of higher grains quality of customers and continuous upgrading of competitors, Cayabyab Ricemill's ageing rice mills cannot deliver the expected output.



Technology Innovation System Support for the Enhancement of Broiler Production in Support to Meat Processing

Implementing Firm: **R&E POULTRY FARM**
 Project Cooperator: **Mr. Rogelio Godoy**
 Project Location: **Panaga, Laoac, Pangasinan**
 Project Cost: **Php 1,035,188.86**

The poultry farm is one of the contract growers of broilers of Magnolia Food Incorporated since 1996. Currently, the farm produces an average of 70,000 birds per cycle using a semi-automated system of operation.

Mr. Godoy is aware that brooding is very crucial in poultry operation. However, there were miscalculations on temperature inside the brooding house which adversely affected the growth of the chicks.



Inside the poultry farm



Mr. Godoy regulates the heater system

INTERVENTIONS

- Provision of:
 - 10 units GSI-Super saver Heater with standard kit, Gas Line Pipings, LPG Regulator, Ball Valve, LPG Hose, Fittings
 - 4,000 pcs. GSI Cumberland Drinking Cup



OUTCOMES

- Increase in productivity by 17%



Mechanization of the Post-harvest Facility of Gandang Ani Enterprises

Implementing Firm: **GANDANG ANI ENTERPRISES**
 Project Cooperator: **Ms. Fatima V. Soriano-Baltazar**
 Project Location: **Capas, Binalonan, Pangasinan**
 Project Cost: **Php 880,000.00**



A worker demonstrates how the grain dryer operates.



INTERVENTION

- Provision of 1 unit Grain Dryer (7.2 ton capacity)

OUTCOMES

- Increase in productivity by 50%
- Increase in production by 30%.
- Improved quality of dried grains
- Continuous operation even during rainy season
- Able to accept rice drying service at Php 1.50 per kg
- 8 additional workers employed

Gandang Ani Enterprises is engaged in corn and palay trading. Drying rice and corn was the major problem encountered by the firm. The enterprise could not buy grains offered to them during the rainy and peak season due to the limited capacity of their flat-bed dryer. Likewise, flat-bed dried grains are graded second class due to its smoky odor.

With the advancement of technologies in Agriculture, Gandang Ani Enterprises sought the assistance of DOST to not just to speed up drying but to produce a higher quality of grain and to maximize their buying capacity during peak season.



Gifts, Decors and Handicrafts



Enhance of Production Process for Embroidery Products

Implementing Firm: **LORENZ TEES PRINTS AND SOUVENIRS**
Project Cooperator: **Ms. Laurence B. Lopez**
Project Location: **#43 General Segundo Avenue, Brgy. 11,
Laoag City, Ilocos Norte**
Project Cost: **Php 354,695.00**

Lorenz Tees Prints and Souvenirs is a sole proprietorship type of business engaged in the production of printed products and souvenirs. The firm is located at #43 General Segundo Avenue, Brgy. 11, Laoag City. At present, the firm has three (3) direct regular workers composed of two (2) in the production and one (1) in non-production aspect.



Embroidery Machine



INTERVENTIONS

- Provision of 1 unit Embroidery Machine
- Training on Financial Management

OUTCOMES

- Increase in sales by 20%
- Increase in Walk-in clients by 15 %
- Increase in printing jobs by 20%
- Improved production area



Technology Upgrading for Production of Printed Products of Fab Printline & General Merchandise

Implementing Firm: **FAB PRINTLINE AND GENERAL MERCHANDISE**
 Project Cooperator: **Mr. Franklin John Barroga**
 Project Location: **Brgy. Acosta, City of Batac, Ilocos Norte**
 Project Cost: **Php 420,000.00**



Mr. Franklin Barroga operate the sublimation machine

Mr. Franklin Barroga is a registered nurse and served in a hospital for a year. However, he used to pursue his hobby as a graphic designer in various printing shops in the City of Batac with his brother. With that, it was his starting point in establishing the Fab Printline and General Merchandise in 2011. Now, he is not just the manager of his own business but also the graphic designer.

To continue to improve his production, Mr. Barroga requested DOST for technology to modernize his products.



INTERVENTIONS

- Provision of:
 - 1 unit Heat Press
 - Sublimation Printer
- Training on Financial Management

OUTCOMES

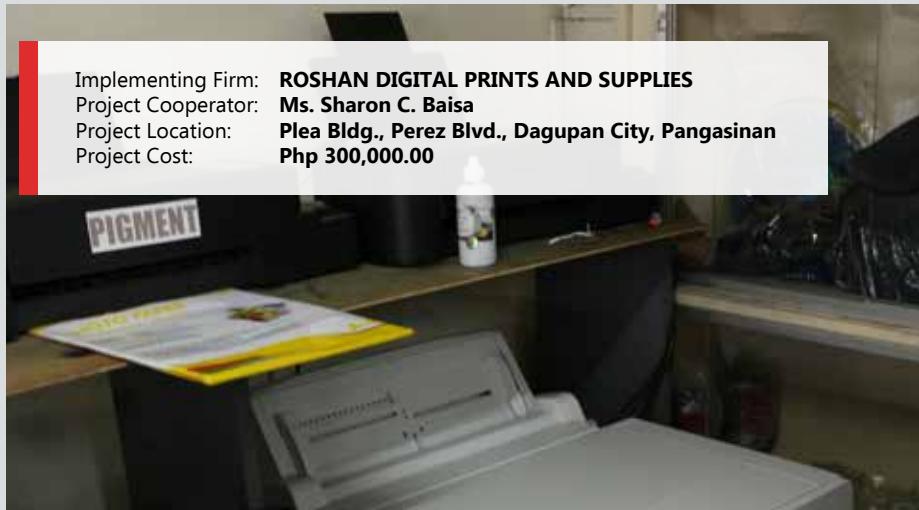
- Increased production and sales by 20%
- Generated 1 employment
- Improved production area

Heat Press



Advancement of Production Facility to Support Printing Services

Implementing Firm: **ROSHAN DIGITAL PRINTS AND SUPPLIES**
Project Cooperator: **Ms. Sharon C. Baisa**
Project Location: **Plea Bldg., Perez Blvd., Dagupan City, Pangasinan**
Project Cost: **Php 300,000.00**



Multifunction Copying Machine & Integrated Printing



Soft Binding Machine

Roshan Digital Prints and Supplies provides customer services/ products such as T-shirt printing, mug printing, tarpaulin, desktop publishing and graphic designs. The company also outsources printing of flyers, brochures and A3 posters in Manila.

Due to increasing demand for printing services and to add product lines such as A3 size posters, flyers, brochures and lanyard labeling, the enterprise availed the assistance of DOST through SETUP to acquire the equipment that will address the needs of customers without outsourcing.



INTERVENTIONS

- Provision of:
 - 1 unit Multifunction Copying Machine & Integrated Printing
 - 1 unit Soft Binding Machine
 - 1 unit Sawgrass 800 Virtuoso HD Product Decorating System Machine



OUTCOMES

- 30% increase in gross sales
- Reduced time in printing 100 pcs T-shirt by 67% (from 3 days to 1 day)
- Additional product lines: Lanyard labeling, Jersey printing from A4 to A3; Calling cards (thick paper, size A3) and Invitation cards
- 3 additional workers employed



Production Process and Product Quality Improvement for T-Shirt Printing Shop

Implementing Firm: **HUE AND STYLE SHOP**
 Project Cooperator: **Ms. Joan R. Palacio**
 Project Location: **Bagani Gabor, Candon City, Ilocos Sur**
 Project Cost: **Php 31,360.00**



Automatic Heat Press Machine

INTERVENTIONS

- Provision of 1 unit Automatic Heat Press Machine
- Seminar on Basic Productivity



OUTCOMES

- Increase in equipment productivity by 1500%
- Increased income of the firm by 50%, from Php 2,975,000.00 to Php 4,462,500.00
- Generated two (2) employment
- More efficient heating process
- Controlled and well-distributed heat for better printing
- Improved quality of finished products
- Eliminated accidental burning /damaging and rejects of finished products



Upgrading of Production Process and Product Quality Improvement for Printed Souvenir Products

Implementing Firm: **POSITEEV PRINTS AND GENERAL MERCHANDISE**
Project Cooperator: **Mr. Marc Caesar C. Torres**
Project Location: **Brgy. #7 Caunayan, City of Batac, Ilocos Norte**
Project Cost: **Php 166,659.00**

The Positeev Prints and General Merchandise is located at Marcos Road, Brgy. 7 Caunayan, Batac City, Ilocos Norte. The business was started by Mr. Marc Caesar C. Torres as a hobby, later realized that it is a good source of income. The firm caters to all kind of printed products like customized shirts and other souvenir products.



INTERVENTIONS

- Provision of:
 - Aluminum Frame
 - Stretcher
 - Frame Guide

OUTCOMES

- Generated 1 employment
- Improved production area
- Increased production volume by 20%



Upgrading of Facilities of Khe Net Zone in Support for T-Shirt Printing Industry

Implementing Firm: **KHE NET ZONE**
 Project Cooperator: **Mr. Herald Junio**
 Project Location: **Poblacion West, Calasiao, Pangasinan**
 Project Cost: **Php 90,000.00**



Heat Press Machine

Khe Net Zone has the highest number of customers in terms of printing services in Calasiao. Demand comes in various ways.

The operation of Khe Net Zone is not very efficient since printing of large designs for t-shirt (A3 size) is outsourced costing the firm P35.00 per print, inaccurate cutting of shirt designs, and limited capacity of heat press.



Computerized Cutting Machine

INTERVENTIONS

- Provision of:
 - 1 unit Printer for T-shirt Design
 - 1 unit Computerized Cutting Machine
 - 1 unit Heat Press Machine
- Training on Equipment Operation, Maintenance and Troubleshooting



Printer for t-shirt design

OUTCOMES

- Increase in gross sales by 70%
- Increase in production by 72%
- Increase in productivity by 22%
- Increase in income by 50%
- Generated 3 additional employment
- Established 2 additional markets

TECHNOLOGY TRANSFER



COMMUNITY EMPOWERMENT
through
SCIENCE AND TECHNOLOGY

The program aims to undertake social mobilization activities in cognizance of existing values, skills/capabilities and talents, resources and problems in the community, and create opportunities for wealth generation through appropriate technological interventions.



Empowering Lives Building Communities

The Community Empowerment through Science and Technology Program (CEST) launched in the Province of Ilocos Sur in 2016 adopted the Municipalities of Alilem and Sugpon. The program adopted five barangays namely: Danac, Licungan, Pangotan, Apang, and Kiat for provision of S&T interventions in the five priority areas: health and nutrition, water and sanitation, education and basic literacy, livelihood enterprise development, disaster risk reduction and mitigation and climate change adaptation.

For the year 2017, previously implemented interventions in the program's five priority areas were monitored and evaluated while new projects were conducted addressing technological gaps observed.

Addressing malnutrition through learning and feeding

Under health and nutrition, the program implemented a Malnutrition Reduction Program (MRP) covering not only the five barangays but all the 15 barangays of the two municipalities. The MRP program adopted the DOST PINOY (Package for the Improvement of Nutrition of Young Children) strategy. It contains package of interventions that include calibration of weighing scales, training of community workforce and guardians, and the 120-day feeding.

The 1st Phase of the MRP benefited 45 participants for the training on DOST



For a healthy future. Beneficiary kids of the Malnutrition Reduction Program in Alilem and Sugpon are nourished with several complementary foods like brown rice nutty-fruity bar, blend, curls, and momsie. These are seen to address problems and concerns of beneficiary kids who were "fed-up" of the usual complementary foods.

PINOY modules and fed 147 kids (borderline and undernourished) ages 6-72 months old. Results of the intervention revealed that out of the 147 kids, 41.5% or 61 kids elevated in Normal Nutritional Status based on increased weight by age. Meanwhile, 6.3% or 24 children on the borderline (with weight >0.4 of the lower range of Normal Status), 39.5% is Underweight, and 2.7% in the Severely Underweight. However, in the evaluation on the change in nutritional status as to improved, declined or no-change, the program resulted to a 48.3% improvement rating higher than the percentages in "no-change" with 39.5% and "declined" with 12.2%.

After the 1st Phase, the program conducted the 2nd Phase considering the gaps from the previous implementation determined through a consultative meeting with the stakeholders. The 2nd Phase benefited 252 individuals for the onsite (localized) DOST-PINOY Modules training catering to 83 beneficiary children aged 6-54 months old. The results of the 2nd phase will be evaluated in March of 2018.



Nourishment learning. Series of trainings about DOST PINOY Modules were conducted to BNSs, BHWS and parent beneficiaries of Alilem and Supgon teaching them proper meal management, preparations of complementary foods and other strategy to curb malnutrition in their community.



Towards safe drinking water. Water filters with waterine solutions were distributed to residents of barangay Danac to ensure potability of water supply especially during the rainy season. These devices are then monitored for efficacy after a year of use.



Assuring water potability

With regards to water and sanitation, the package of intervention entitled Disinfecting Aqua's Noxious and Unwanted Microorganisms (DANUM) aimed to give access to potable water in the communities through the provision of water disinfectant solutions and devices after series of water testing in their water sources

was continued. Barangay Danac's 72 households or 100 % of households received units of ceramic water filters with waterine solution.

To determine its efficacy after a year of usage, previously awarded water filters were sampled and tested. Based on the results of the water potability test conducted, two out of 11 filters failed or were not suited for use. The results, however, will be further evaluated based on the survey conducted as it could be correlated to poor cleaning practices and the frequency of use. Recommendations of the deployed intervention will then be disseminated in the affected communities for continuity of use and other findings.

Utilizing community resource for sustainable livelihood opportunities

The livelihood intervention of the program focuses on the development of locally available resource in the community with potential to create or provide alternative livelihood. Continuous monitoring of previously conducted training on ginger, turmeric, and banana processing and Good Agricultural Practices (GAP) in Barangays Pangotan and Apang was undertaken to increase adoption of the technology promoted. This year's results of the monitoring and several community mobilization activities conducted in the communities resulted in the adoption of banana chips making, ginger tea and turmeric tea processing of Barangay Apang. These products were provided with packaging and labeling assistance for marketing and now sold in the town and in nearby municipalities.

On the other hand, the development of bamboo tools and equipment such as width sizer, thickness sizer, and bamboo splitter was initiated as an additional intervention to the training in bamboo bleaching and dyeing, and on bamboo handicraft making of the Gunglo Dagiti Aglaglaga in Barangay Kiat. The development of these tools aims to hasten the production of bamboo strips and will

be fabricated for demo-operation and use in the community after testing and evaluation.

To help promote and develop the one town one product of the Municipality of Sugpon, a livelihood training on Ube processing was conducted in Barangay Danac focusing on the following products: ube wine, ube chips, ube halaya and ube powder. Eighteen (18) participants attended in each of the training courses. Monitoring in the community showed that the group was organized for the processing venture and is currently producing ube wine. Startup kits were also deployed in the community as well as assistance in the laboratory test of their product. At present, the Danac Rural Improvement Club produces ube wine for the town's consumption.

Meanwhile, using the farmer training model, eight farmers of Barangay Licungan were trained in Benguet State University- Institute of Highland Farming Systems and Agroforestry (BSU-IHFSA) on Coffee production and processing. The farmers who attended the training are expected to practice and share the knowledge acquired to their constituents in the barangay.



Empowering Women. Danac, an Ube Producing Barangay of Sugpon, was the recipient for the Ube processing Livelihood training to introduce alternative livelihood to its people, especially to women.



Developing Tools. Aims to mechanize splitting of bamboo strips, DOST-1 is developing the locally fabricated and designed bamboo splitting machine with width sizer and thickness sizer for bamboo handicraft makers.



Sorting the Best! Farmer representatives of Barangay Licungan, Sugpon, updated their knowledge in coffee production and processing as they participate in the training on "Quality production of coffee from seed to cup."

Of continuing commitments and strengthening partnerships



Forging Commitments. (Sitting From Right) DOST-1 Regional Director Dr. Armando Q. Ganal, ISPSC President Francisco Lopez, Alilem Mayor Hon. Mar Ruel Sumabat, Sugpon Vice-mayor Leano, was witnessed by Barangay Officials of the five beneficiary communities (standing) as they sign the memorandum of agreement for the continuity of the CEST program in their municipalities until 2018 after its launching in 2016.

With the activities of the program, a presentation of accomplishments to the stakeholders for updates and for continuing partnerships through the signing of Memorandum of Agreement. The signing was between DOST, ISPSC, LGU-Sugpon, LGU-Alilem and the beneficiary barangays wherein all parties commit to support initiatives and projects the program will undertake and to foster the development of previously conducted interventions for sustainability.

Indeed, 2017 highlights several accomplishments that in one way or the other could provide a long-term effect in the communities assisted. This program which brings Science and Technology closer to the people was seen to uplift the living conditions of the communities through the provision of appropriate interventions towards poverty alleviation.

SCIENCE & TECHNOLOGY SERVICES



TESTING AND CALIBRATION SERVICES

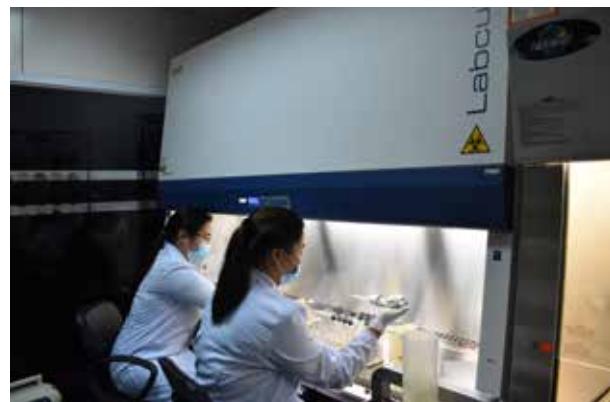
The DOST I Regional Standards and Testing Laboratory performed very satisfactorily in 2017 with an overall accomplishment rating of 128%.

The special project entitled, "Enhancing ONELAB for global competitiveness", paved the way for DOST I RSTL to be one-step ahead of other laboratories in the region in the delivery of quality testing and calibration services. ONELAB is an IT-based solution that broadens public access to testing and calibration services of all DOST laboratories at a single touch point. No single lab can cater to the testing needs of an SME or firm, but it is possible through the ONELAB Network, one of the best practices being implemented by all DOST laboratories.

The acquisition of a Graphite Furnace, Atomic Absorption Spectrophotometer, specialized equipment that applies, a more sensitive technique for the detection of trace metals concentrations in the ppb range was made possible through the project ONELAB version 2. Determination of Arsenic in water, one of the mandatory tests for drinking water under the new PNS 2016 edition was already validated using this equipment and now offered as new test

for CY 2017. Other new tests offered are fatty acids (saturated/unsaturated/transfat), Vibro cholera, Vibrio parahaemolyticus and Listeria monocytogenes.

Upgrading of the RSTL is continuously done like the acquisition of new equipment, setting-up for additional Testing Facility, the Shelf-life Laboratory and offering of new test parameters to cater to the emerging needs of industries including hospitals, gasoline stations, food processing firms in the region. Capability building of all laboratory staff through attendance to trainings and seminars is another activity to enhance competitiveness.



Newly acquired latest generation of Biosafety Cabinet Class II, Type A2 for optimum analyst, product and environmental protection. It can accommodate two (2) analysts simultaneously working together.

Table 2. RSTL Highlights of Accomplishment

	2017 TARGETS	ACTUAL ACCOMPLISHMENT	% ACCOMPLISHMENT
To meet extensive customer requirements with satisfaction			
Customer Satisfaction Index (CSI)	96%	98%	102%
Number of New Test Services Offered	6	5 (As, Total fatty acids, Listeria monocytogenes, Vibrio parahaemolyticus, Vibrio cholerae)	Pressure, Temperature and length to be offered 2nd quarter of 2018 Establishment of Shel-life Testing Lab is on-going
To ensure its processes are at par with international standards, compliant with good governance requirements and with robust and secure IT system			
Number of test referred	10	10	100%
Fees collected from referred samples, Php	20,000	47,682	238%
Sustain ISO accreditation/recognition	- 3 accreditations PAB ISO/IEC 17025 accreditation (Chem, Micro & Metrology Labs) FDA accreditation (Chem & Micro Labs) DOH accreditation (Chem & Micro Labs) - 1 recognition DENR recognition (DAO 98-63) (Chem & Micro Labs)	- 3 accreditations PAB ISO/IEC 17025 accreditation (Chem, Micro & Metrology Labs) FDA accreditation (Chem & Micro Labs) DOH accreditation (Chem & Micro Labs) - 1 recognition DENR recognition (DAO 98-63) (Chem & Micro Labs)	100%
Business Continuity Plan developed	1	1	100%
Number of samples received	4,800	6,499	135%
Number of tests conducted	7,380	10,156	138%
Number of customers served (warm bodies)	2,737	4,349	143%
Number of firms served	2,077	2,964	167%
Fees collected, Php	4,341M	6,983,488.33	161%
Value of Assistance rendered, Php	75,800	598,054.83	786%
Number of new lab equipment procured	20	22 2 units Incubator, 2 door 3 units Cabinet desiccator 2 unit Incubator, ambient 12 units Glass desiccator Fat Extraction System, 6 placer (Soxtherm) 1 unit Chiller 1 unit Moisture Analyzer	110%
Number of Proficiency Testing participated	No target	2 PT participated: 16 parameters w/ satisfactory rating for Food (13) and Wastewater (3)	Accomplished as undertaken
Number of modules of Unified Laboratory Information Management System implemented (ULIMS)	3	3	100%
Number of On-the-Job Training conducted	No target	CLSU-3 PSHS-Ilocos Campus-11 LUCI-9 SLU-1	Accomplished as undertaken

RSTL is one-step ahead from other laboratories in the region. Its processes are at par with international standards, compliant with good governance requirements and with robust and secured IT system. The good performance of the RSTL for this year is due to the trust we earned from our loyal customers, because we deliver quality testing services on time.

Newly acquired Compressor-Cooled Incubators for precise and rapid changeover between heating and cooling phases in ramp operation for shelf-life testing laboratory.



Senior High School Student-Interns from Philippine Science High School- Ilocos Region Campus and La Union Cultural School, Inc. undertook 2017 Work Immersion Program.



The newly acquired Graphite Furnace Atomic Absorption Spectrophotometer used for the determination of Arsenic in drinking water. Arsenic is one of the mandatory drinking water parameters, was validated with this unit and already offered as new test for CY 2017.

DOST-I Regional Metrology Lab ends 2017 on a high note

The Department of Science and Technology Regional Office I Metrology Laboratory (RML-I), an ISO/IEC 17025- accredited laboratory continues to offer lower cost and faster calibration, ending the year 2017 with 2,531 calibration services, serving a total of 1,776 clients and customers representative of 765 firms. Moreover, the income generated for the government from the services provided was recorded at Php 1,994,078.00 representing an increase of 368.59% from the annual income target set by the agency for 2017 and furthermore rendered an additional value of assistance at Php 348,530.00.

RML-I undertakes calibration services for mass and volume - both in-house and on-site calibration - to industries, laboratories, LGUs and other stakeholders that have equipment, instruments and devices requiring calibration using methods that conform to national and international standards that satisfy safety and fair trade standards of the market. Local firms – from raw and processed food

exporters to petroleum products/ haulers, local government agencies, public and private hospitals and local colleges and universities had their instruments, standards and apparatus calibrated in the competent and accessible laboratory.

The RML- I was indeed steadfast in implementing its various calibration services for the year 2017, calibrating a total of 1,755 samples in mass calibration and 772 samples in volume calibration. The total accomplishment had an increase of 273.92 % from the laboratory's regional target set by DOST in terms of number of calibration services rendered, 268.28% in relation to the number of clients and 159.04 % relative to the number of firms assisted, respectively. The mass calibration includes weighing scales and test weights while volume calibration encompasses road tankers, test measures, proving tanks and fuel dispensing pumps.



Engr. Marlon Orpilla performing calibration of 10L Bucket/Test Measure.



LABEL DESIGN AND PACKAGING SERVICES

Packaging and labelling plays a very significant role in products' quality and marketability. It serves as a tool for producers to effectively market their products to their target customers. Poor packaging, limited shelf life, no product identity, non-compliance to regulations and non-competitive product are the common issues that the Packaging and labelling services of DOST 1 tries to address.

In CY 2017, DOST 1 continued to render assistance to MSMEs in improving their product through its Packaging and Labelling Assistance. The office maintained the services of two (2) outsourced packaging and labelling designers from the region who facilitate the development of label design requirements of customers.

A total of fifteen (15) firms benefitted from

the service. Fifty one (51) products were provided with label designs of different structure and another fourteen (14) products in various stages of the design process from twelve (12) firms. The Food Innovation Center (FIC) in Pangasinan State University-Bayambang Campus was one of the beneficiaries of the assistance. DOST 1 provided label deisgns for the 11 products of the FIC.

Table 3. Target vs Accomplishment

INDICATORS	ANNUAL TARGET	ACCOMPLISHMENT	% ACCOMP.
Packaging and Labeling Design Provided	24	51	212.50
No. of Firms Assisted	13	15	115.38
No. of New Markets Penetrated	21	43	204.76
Increase in Sales, Php	3,900,000.00	28,679,440.58	735.37

Table 4. List of firm provided with product label designs

PROVINCE	DIST.	Firms	Address	Products	Project
ILOCOS NORTE	2	Lanie's Batac Special Empanada	#1 Valdez, Batac City, ILOCOS NORTE	Empanada	GIA
ILOCOS SUR	1	Bash Longaniza	San Julian Sur, Vigan City	Longganisa	SETUP
		JQF Meatshop	Ayusan Norte, Vigan City	Longanisa, Tocino	SETUP
		LFB Morales Meat Products	Poblacion, Sta. Catalina	Longganisa	GIA
LA UNION	2	Ambros Ilocos Cornik	Bagar, Candon City	Cornik	SETUP
	2	Halog West Producers Coop	Halog West, Tubao	Different variants of Chichacorn	None
PANGASINAN		Bagulin Multi Purpose Coop	Pila, Cambaly, Bagulin	Salabat, Turmeric Tea, Turmeric Powder, Ginger Powder	None
	2	FJB's Bagoong	#80 Mayor St., Maniboc, Lingayen	Boneless Bagoong, Bagoon Padas, Patis, Alamang	None
	3	Li'l Hansam Tan Heritage and Novelty Food	03 Sitio Alegria, Calasiao	Tikoy (Sweet Rice Cake, Rice Candy (Bitsu-Bitso)	GIA
		Food Innovation Center	PSU-Bayambang, DOST-FIC, Bayambang	Crispy Okra , Green Kangkong Stalk, Crunchy Squash, Vacuum Fried Squash Shoestring, Espada in Oil (Fish in Oil), Pinapaitang Kambing (Bitter Good Stew), Sautéed Burong Dalag (Sautéed Fermented Fish), Fresh Burong Dalag (Fermented Fish), Onionology (Vacuum Fried Red Onion), Veronica's Toka (Indian Mango Vinegar, Taro Sticks (Vacuum Fried Taro)	
	5	Yellow Green Vita SKA	LGU-Laoac	Tupig, Vinegar, Veggie Noodles	None
		Mabuhay Chichacorn		Chichacorn-Garlic, Chichacorn-Cheese, Chichacorn	SETUP
		NTRMD	PSU Village, San Vicente, Urdaneta City	Bangus in Oil	None
	6	Grace Farm	1447 Lauren, Umingan	Chili-Garlic Sauce-Beef Flavor, Chili-Garlic Sauce-Shrimp Mix, Chili-Garlic Sauce-Pulis Mix,	None
		Conrado G. Soriano	Umingan	Tablea Cocoa	GIA

A cumulative increase of Php 28.679M in sales was realized from the 43 markets penetrated by the firms assisted with packaging and labelling improvement in the last three years. The Packaging and Labeling Assistance intends to facilitate the improvement of label and packaging designs of local products as a strategy to widen the products' market reach. It is indeed a great strategy of our MSMEs to come up with wider market which would result into bigger sales.

TACS

TECHNICAL ASSISTANCE AND CONSULTANCY SERVICES

Technical Assistance and Consultancy Services (TACS) is a program of the Department of Science and Technology that is being conducted to provide expert/technical services to clients/firms to improve existing operations or those intending to develop new products and services.

For the year 2017, DOST I recognized experts from State Universities and College and other Higher Education Institutions, as well as other government agencies and technical personnel from the Provincial Science and Technology Centers of DOST Region 1 conducted assessment of firms in their corresponding localities.

The TACS included Food Safety Assessment, Energy Audit and Cleaner Production Technology Assessment.

For Food Safety, the experts assisted the firms, in the areas of Good manufacturing Practices (GMP) and Hazard Analysis Critical Control Point, and assessed their production area to improve their level of operations in terms of food safety, meeting customer's requirements, overcoming international trade barriers, improved product quality, cost avoidance and gaining market access. On the other hand, during the Energy Audit, the experts assisted the MSMEs and other business establishments improve their energy related operations for higher productivity. And the Cleaner Production Technology (CPT) Assessment helped the manufacturing enterprises in the identification of waste resources, causes and appropriate cleaner production strategies.

The following firms benefitted from Cleaner Production Technology (CPT) Assessment, Energy Audit and Food Safety Assessment.

Table 5. List of firms assessed on Cleaner Production

PSTC	Firm	Address
PSTC-La Union	MAO Enterprises	San Nicolas Sur, Agoo, La Union
	Seven Seagull Enterprises	Brgy. 2, Quezon Avenue, San Fernando City, La Union
	Molawin Furniture	Cadapil, Bangar, La Union



Table 6. List of firms assessed on Energy Audit

PSTC	Firm	Address
PSTC-Ilocos Norte	Basilio's Chicharon	San Nicolas, Ilocos Norte
	Mang Toto Ice Cream	Laoag City, Ilocos Norte
	Mega JG Metalcraft	Laoag City, Ilocos Norte
PSTC-Ilocos Sur	Ressteel Construction	Bagani Gabor, Candon City, Ilocos Sur
	Eunice Furniture	Pug-os Sinait, Ilocos Sur
	Jacy James Construction Supply	Cabaroan Daya, Vigan City, Ilocos Sur
PSTC-La Union	JC Laroco Rice Mill	Brgy. Lloren, Tubao, La Union
	Molawin Furniture	Cadapli, Bangar, La Union
	Alpha Sash Factory	Brgy. Urbiztondo, San Juan, La Union



Table 7. List of firms assessed on Food Safety

PSTC	Firm	Address
PSTC-Ilocos Norte	Ilocos Little Sweets	Laoag City, Ilocos Norte
	Tuatao's Noodles and General Merchandise	San Nicolas, Ilocos Norte
	NGT Health and Wellness	Laoag City, Ilocos Norte
	Justine Kyle Ice Cream	Brgy. Manalpac, Solsona, Ilocos Norte
	Mang Toto Ice Cream	Bacarra, Ilocos Norte
	Nieves Native Delicacies	Sarrat, Ilocos Norte
	Aurelia's Ice Cream	Solsona, Ilocos Norte
PSTC-Ilocos Sur	Melody's Peanut Butter	Bayubay Sur, San Vicente, Ilocos Sur
	3'S Longanisa and Baguettes	Bulag West, Bantay, Ilocos Sur
	Garibay's Ice Cream	Brgy. III, Vigan City, Ilocos Sur
	Bash Longaniza	San Julian Sur, Vigan City, Ilocos Sur
	Ambros Ilocos Cornik	Bagar, Candon City, Ilocos Sur
PSTC-La Union	JND Healthy Foods	Baroro, Bacnotan, La Union
	Valentin's Cake Boutique	Pagdalagan Sur, Bauang, La Union
	Mauleon Bakery	Central West, Bauang, La Union
	Diamond Star Bakery	San Eugenio, Aringay, La Union
	De Vera's Ice Cream	Pantar, Bauang, La Union
PSTC-Pangasinan I	Mariano S. Layos Enterprises	Domalandan, Lingayen, Pangasinan
	Marie Lou Breads and Pastries	130 M. Soriano St., San Carlos City, Pangasinan
	Chealsea's Peanut Butter	Tococ East, Bayambang, Pangasinan
	PSU-DOST1 Food Innovation Center	PSU-Bayambang, Pangasinan
	Papa Dong's Sine Resto Grill and Bakeshop	Poblacion, Lingayen, Pangasinan
	FJB's Bagoong	80 Mayor St., Maniboc, Lingayen, Pangasinan
PSTC-Pangasinan Satellite Office	Mei Chi Cold Storage Corp.	168 Urdaneta City, Pangasinan
	Win's Bahay Tinapay	Mangaldan, Pangasinan
	Diana's Delicacies	Sto. Domingo, Urdaneta City, Pangasinan
	Beb's Food Products	Manaoag, Pangasinan
	Ferrer Peanut Butter	David, Mangaldan, Pangasinan
	Elisha Bay Dagupan Boneless Bangus and Seafoods	Mangin, Dagupan City, Pangasinan
	Capitos Pastillas	Pugo Grande, Dagupan City, Pangasinan

In summary, 44 Technical Assistance and Consultancy Services (TACS) have been undertaken by the DOST1 experts in the year 2017: 30 firms for Food Safety Assessment, 9 for Energy Audit, 3 for Cleaner Production Technology (CPT) Assessment, and 2 for Inter-Agency Design and Engineering Assessment (IDEA) namely, Mariano S. Layos Enterprises in Lingayen, Pangasinan and TESDA in Marcos, Ilocos Norte. The said assessed firms will continuously be monitored and assisted to be able to comply with the standard rules and regulations in manufacturing operations.



TECHNOLOGY TRAINING

DOST 1 continued the conduct of technology trainings to provide technology-based skills to existing and prospective entrepreneurs to improve the productivity and possible establishment of technology-based livelihood/enterprises, respectively.

A total of 68 trainings on various technologies were conducted for 2,168 participants in 2017. Five hundred twenty-two (522) firms benefited from the training covering topics on ube processing, dragon

fruit processing, heat treatment of steel, turning with crankshaft grinding, basic baking, metals finishing techniques, basic occupational health and safety standards, current good manufacturing practices (cGMP), and many more. The volume of the trainings were conducted during the Science & Technology Caravan held in Dagupan City, Pangasinan, Agoo La Union and during the Regional Science and Technology week held in Candon, Ilocos Sur.



Training on Turning with Crankshaft Grinding at Pangasinan Regency Hotel & Billy-Mar Machine Shop, Calasiao, Pangasinan.



Training on Financial Management at the MMSU Function Hall, Batac City, Ilocos Norte.



Training on Heat Treatment of Steels at Philgerma Manufacturing, Inc., Calasiao, Pangasinan.



Training on Tungsten Inert Gas (TIG) Welding at the La Union Science & Technology Center, City of San Fernando, La Union.



Seminar on Productivity at the Ilocos Sur Science & Technology Center, Vigan City, Ilocos Sur.



Training on Ube Processing during the Regional Science and Technology Week Celebration in Candon City, Ilocos Sur.

TECHNOLOGY FORA

Conduct of fora is one of the technology promotion activities of DOST 1 to inform prospective and existing entrepreneurs of technology-based investible areas and appropriate technologies ready for adoption/commercialization.

A total of 52 technology fora were conducted in 2017. There were 36 technologies and many more S&T-related information presented to various audiences. Some of the technologies promoted were: portable digester, stabilized

brown rice, iron fortified rice, ecosep, bioreactor, carrageenan for rice and many more. S&T-related topics included: food safety, disaster prevention and mitigation, intellectual property rights, food innovation center, mandatory requirements for the License-To-Operate (LTO) for food establishments, etc. The various fora were attended by 2,570 participants benefitting 199 firms.



Technology Forum on Carrageenan Plant Growth Promoter during the Regional Science and Technology Week in Candon City, Ilocos Sur.



Technology Forum for Disaster Prevention and Mitigation at the Center for Teacher Excellence (CTEX), MMSU- College of Teacher Education, Batac City, Ilocos Norte.



Forum on Intellectual Property Rights at Pangasinan Regency Hotel, Calasiao, Pangasinan



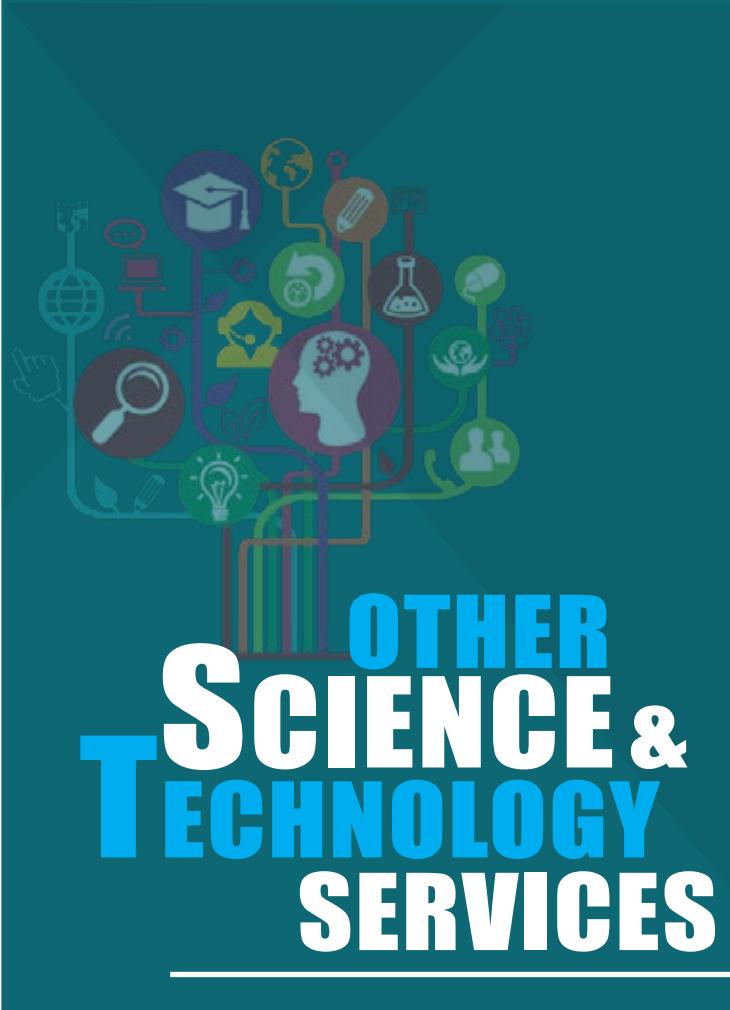
Forum on Hand-tractor-attached Rice Transplanter during the Regional Science and Technology Week in Candon City, Ilocos Sur.



Forum on Food Processing Innovation Center during the Regional Science and Technology Week in Candon City, Ilocos Sur.



Forum on Portable Digester during the Regional Science and Technology Week in Candon City, Ilocos Sur.



OTHER SCIENCE & TECHNOLOGY SERVICES

S&T SCHOLARSHIP

Republic Act 7687, otherwise known as the Science and Technology Scholarship Act of 2002, RA 10612 otherwise known as the Fast-Tracked S&T Scholarship Act of 2013 and the Merit Scholarship Program of the Department of Science and Technology, are evidences of the government's strong commitment to promote the continued development of the country's science and technology human resources in order to support the growth, innovation, as well as their utilization necessary to spur economic development. The scholarship programs aim to produce leaders and decision-makers in various areas of S&T: government, academe, and private industries.

After the successful integration of the K to 12 program in our education system, the school year 2017-2018 marked the first batch of Senior High School graduates. Because of this, DOST-SEI re-structured and re-launched its Undergraduate Scholarship Program which now caters to graduating senior high school students in public or private High schools nationwide. This, along with the Junior Level Science Scholarship for regular third year college students were then advertised and disseminated using information drives and campaigns on various schools, colleges, and universities in the region.

For the year 2017, a total of 382 on-going third year students from Region 1 took the Junior Level Science Scholarship competitive examination. The results: 168 qualified for RA 7687, 45 for RA 10612, and 54 under the Merit Scholarship of DOST. Among the scholarship passers, 67 are studying in Ilocos Norte, 30 in Ilocos Sur, 52 in La Union, and 118 in Pangasinan.

On the other hand, a total of 2,389 graduating Senior High School students took the 2018 Undergraduate Science Scholarship competitive examination. 1,557 students applied to the RA 7687



program, and 832 to the Merit Scholarship Program. The results of the said examination will be released in March 2018.

Meanwhile, as part of the support for the scholars' continued development, a Job Hunting Seminar and Orientation Program was conducted last April 21, 2017. Attended by 35 scholar-graduates, the seminar was conducted to prepare the scholar-graduates in the arduous task of getting a job while also re-orienting them regarding their service obligation, reports to submit to DOST, and guidelines on securing temporary and final clearances.

There were 104 scholars who graduated at the end of the Second Semester of AY 2016-2017. These came from Mariano Marcos State University (MMSU) with 29 scholar-graduates, 28 from the different campuses of the Don Mariano Marcos Memorial State University (DMMMSU), 26 from the campuses of Pangasinan State University (PSU), 11 from the University of Northern Philippines (UNP), nine (9) from Colegio de Dagupan (CDD), and one (1) from Lorma Colleges. Among the graduates, 16 graduated as Cum Laude while Ms. Maria Johanna S. Rivera of UNP and Mr. Orlando A. Padin of DMMMSU-South La Union Campus were Magna cum Laudes.

The achievement of scholar-graduates does not end there. They have passed, and others even topped, in their respective board examinations. 25 scholar-graduates passed the Licensure for Teachers Exam, nine (9) for the board exam for Registered Electrical Engineering, nine (9) for the Registered Mechanical Engineering, four (4) for the Agricultural Engineering, two (2) for the Electronics Engineering, and one (1) passed the Fisheries Technologist examination.

Moreover, out of the nine (9) passers for the Registered Mechanical Engineering board, two (2) scholar-graduates landed in the Top 10 namely Engr. Lean Maverick Nikko "LMN" T. Alcantara (5th placer) and Engr. Raymar N. Otero (6th placer) who are both from DMMMSU-Mid La Union Campus.

At the start of First Semester for AY 2017-2018, there are currently 380 on-going DOST assisted scholars enrolled in various accredited universities and



Dr. Estrella Perez, Dean of College of Management inspired the graduating JLSS Students from the different provinces of Region 1 during the job hunting seminar held at the College of Arts Management, Don Mariano Marcos State University-Mid La Union Campus.



The DOST 1 through its Scholarship Unit conducts school to school campaign for the JLSS Scholarship Program. The photos shows participants of North Luzon Philippine State College (NLSPSC) in Candon City, Ilocos Sur.



The photo shows the examinees of the JLSS Scholarship Program in Saint Louie College (SLC) in San Fernando, La Union.

colleges in the region, 289 under the RA 7687, 86 under the RA 10612, one (1) under the Special Financial Assistance Program, and four (4) under the Merit scholarship program.

Meanwhile, out of the 116 municipalities in region 1, only 9 municipalities remain without a scholar: Six (6) from Ilocos Sur: Lidlidda, Nagbukel, Quirino, San Emilio, Santiago, and Sugpon; Santol in La Union; and Mabini, and Umingan in Pangasinan.



S&T LIBRARY AND INFORMATION SERVICES

The DOST Regional Office and the PSTC's continued to provide library services to users in all sectors especially to the students. Technical journals and magazines, other reference and reading materials on science and technology were continuously acquired to help user needs. Areas of interest included investigatory projects, environmental science and natural sciences, food processing and other applied sciences.

There were 2,023 library users served in 2017 mostly catered by the regional office S&T Library. Moreover, 1,061 of these students availed of the free internet services provided.

The S&T Libraries at the regional office, PSTC Ilocos Norte, PSTC Ilocos Sur and Pangasinan likewise provided S&T information service through the S & T Academic and Research-Based Openly Operated Kiosk Stations (STARBOOKS), a stand-alone electronic library containing information on various locally developed technologies, investigatory projects, and other S&T related information. In 2017, DOST assisted 58 schools, colleges and universities in the installation of Super STARBOOKS.



DOST Secretary Fortunato T. De la Peña and Mayor Chevylle Fariñas awarded the STARBOOKS to the DepEd Laoag City Schools Division.



Presentation of the STARBOOKS contents to Mayor Fariñas and DepEd Officials.



The 40 STARBOOKS-laden computer units awarded to public schools by LGU-Laoag City, Ilocos Norte



S&T PROMOTION AND ADVOCACY

DOST 1 implemented various promotion activities to increase the awareness and appreciation of the public on S&T programs and services especially to the target users of science, technology, and innovation.

PRESS RELEASES

Press releases on the different programs and activities of DOST 1 were published, posted, and circulated through the quad-media. A total of 175 press releases for the radio, 101 for the print, 40 for TV, and 96 postings in the DOST I website were accomplished this year. Target readers, mostly S&T stakeholders, were also informed of the success stories of DOST beneficiaries and other programs and activities of DOST 1 through the publication and distribution of the Ilocos S&T Trends, the DOST 1 news magazine.



FAIRS

DOST 1 participated in the 2017 National Science and Technology Week (NSTW) Celebration. It also conducted the 2017 Regional S&T Week (RSTW) celebration, Regional Invention Contest and Exhibits (RICE) and S&T Caravans within the region. These activities featured technologies in the field of agriculture, forestry and natural resources, industry, education, energy, advanced technologies, disaster management and health, among others.

1. National Science and Technology Week

The NSTW Celebration was conducted in July 11-17, 2017 at the World Trade Center, Pasay City.

Key staff from DOST Region 1 came and viewed the various exhibits in the sectors of: agriculture, fisheries and natural resources; health; industry and energy; disaster risk reduction; and many more.



The DOST Regions Cluster booth was divided into the Centerpiece, CEST booth, Luzon, Visayas, and Mindanao Cluster booths. Among others, the transformation of AVP Dressing Plant in Bauang, La Union was highlighted in the information board in the Luzon Cluster booth. Vino Fortunato wine was also launched.



The Vino Fortunato wine was launched during the 2017 NSTW.

The do-it-yourself (DIY) on soft broom production was featured in the CEST booth. The products, like bugnay wine and banana chips from CEST beneficiaries from Bagulin, La Union were likewise displayed in the booth.



Various products of DOST 1 SETUP-assisted beneficiaries were displayed and sold in the Techno Bazaar which generated a sales of more than Php 6,000.



Featuring the AVP Dressing Plant, the 2017 Best SETUP Adaptor of Region 1 during the NSTW Celebration.



Jordan L. Abad (black shirt), DOST 1 Science Research Analyst shows the CEST-assisted Bagulin Broom to NSTW visitors.



SETUP-assisted products from Region 1 were showcased during the NSTW.



AVP Dressing Plant receives recognition as 2016 Best SETUP Adopter in Region 1 during the 2017 NSTW.

DOST 1 provincial nominees in the nationwide search for the BEST SETUP Adopter were: AVP Dressing Plant, La Union; Precy Valdez Rice Mill, Pangasinan, Green Thumb Food Depot ad Pauline's Bakers Percent, both from Ilocos Norte, and Long Live Pharma of Pangasinan. AVP dressing plant was declared as the regional winner and joined the national competition. AVP Dressing Plant was awarded during the NSTW celebration.



Ilocos Sur Governor, Hon. Ryan Luis V. Singson delivers his message during the opening ceremonies.



Official switching of the Philippine Standard Time (Juan Time Clock) at Candon City Plaza, Candon, Ilocos Sur.



Ceremonial signing of the MOA for the creation of Candon City Science and Technology Coordinating Council (CCSTCC)



21st Century Model Classroom



Interactive Exhibits

2. Regional Science and Technology Week Celebration

The DOST Region 1 conducted the 2017 Regional Science and Technology Week (RSTW) Celebration cum S&T Caravan on October 3 to 6, 2017 at the Candon City Civic Center in Candon City, Ilocos Sur.

Staging the theme "Science for the People", the 4-day event showcased the DOST's programs and services as well as the 95 technologies and products from the DOST-Research and Development Institutes, and the State Universities and Colleges and Science Communities in Region 1, ready for commercial applications.

The other activities included promotion of 17 technologies through fora which was attended by 309 participants, techno bazaar by 22 DOST-assisted MSMEs that generated a total sales of Php 439,000, training on four technologies benefiting 185 individuals, and free calibration services for 272 clients valued at Php 90,160.

Activities to promote Science, Technology and Innovation among the students and the teachers were conducted. These included the mobile planetarium, quiz bees for elementary and secondary students, seminar on Invent School Program, and Seminar on DOST-SEI's 21st Century Model Classroom.

A total of 9,763 individuals came to view the exhibits and participated in the various activities of the Fair.



DOST-assisted products displayed at the SETUP Centerpiece



Demo on Soft broom making at CEST Centerpiece



Techno-Bazaar



Free Calibration Services at Candon City Market



Technology Forum on Bamboo Technologies



Training on Bagoong Processing

3. Science and Technology (S&T) Caravans

The S&T Caravan has been the tool to raise grassroots' awareness and appreciation of DOST programs and services, and develop possible partnership with local stakeholders to establish relevant S&T projects.

In 2017, three (3) S&T Caravans were conducted, at CSI Mall, Dagupan City, Jose D. Aspiras Civic Center, Agoo, La Union, and Candon City Civic Center, Candon City, Ilocos Sur. Featured in these caravans are the DOST programs and services, as well as technology exhibits, technology fora, free technology

trainings and seminars on identified appropriate technologies, free calibration services of weighing scales, and various activities for students that promote S&T. The value of services rendered totaled to Php 923,761.00.

A total of 15,771 participants benefited in the three caravans. The major output of the S&T Caravan is the creation of Municipal/City Science and Technology Coordinating Council (MSTCC) in various partner municipalities/cities. The STCCS are expected to lead the identification and implementation of appropriate S&T projects and interventions in the municipality/city.

**March 27-29, 2017
CSI Mall, Dagupan City, Pangasinan**



Opening of the 3-day S&T Caravan at CSI Mall, Dagupan City, Pangasinan, led by Secretary Fortunato T. de la Peña and other DOST officials.



Press Conference during the S&T Caravan at Dagupan City, Pangasinan



Opening of the S&T Caravan at Jose D. Aspiras Civic Center, Agoo, La Union.



Press Conference during the S&T Caravan at Jose D. Aspiras Civic Center, Agoo, La Union.

**May 30- June 1, 2017
Jose D. Aspiras Civic Center, Agoo, La Union**



Ribbon Cutting and opening of exhibits during the RSTW cum S&T Caravan led by Undersecretary Brenda L. Nazareth-Manzano with Mayor Singson and Governor Singson.



Press Conference at Center for Culture and the Arts, Candon, Ilocos Sur.

**October 3-6, 2017
Candon Civic Center, Candon City, Ilocos Sur**



Ribbon Cutting and opening of exhibits during the RSTW cum S&T Caravan led by Undersecretary Brenda L. Nazareth-Manzano with Mayor Singson and Governor Singson.

Creative Research – SIBOL (High School). The entries were dominated by high school students at 86% of the total number of entries.



4. 2017 Regional Invention Contest and Exhibit (RICE)

The Regional Invention Contest and Exhibit (RICE) promoted creative and inventive efforts of the participants through showcasing the products of creativity/inventiveness/ ingenuity that are hoped to address specific social needs.

The 2017 RICE featured the technologies and inventions developed and created by the 234 participating teams of inventors, researchers, and students from Region I, in the following categories: Utility Model; Creative Research (LIKHA), Student Creative Research – SIBOL (College), and Student





Opening of the Regional Invention Contest and Exhibit at Robinsons Place, San Nicolas, Ilocos Norte led by TAPI Director Edgar I. Garcia and Mayor Alfredo P. Valdez Jr. of San Nicolas, Ilocos Norte.



Dr. Armando Q. Ganal gives his opening message during the inventors summit at Robinsons Place, San Nicolas, Ilocos Norte.

The declared regional winners received a Plaque of Recognition and cash prizes. The following will compete in the National Invention Contest and Exhibits:

Category	Name & Address of Regional Winner	Cash Prize (Php)
Outstanding Utility Model		
Bobby F. Cabe, San Fabian, Pangasinan	A Mathematical Game Device	25,000
Likha/Creative Research		
Zaldy A. Fernandez Mariano Marcos State University, Batac City	Modified Smokehouse	20,000
Sibol Award (College)		
Roel DAmisel, Rimelyn Aquino, Bernadette Boado, Francis Darel Orejudos, Joel Niko Ritumalta DMMMSU-MLUC, City of San Fernando	A multi-platform Rice Insect Pest Control & Management System	20,000
Sibol Award (High School)		
Beatrice Gale Burgonio, Marvin Jerico Cava, Pancho Ruedas Philippine Science High School-Ilocos Region Campus San Ildefonso, Ilocos Sur	Design and Synthesis of Graphene/Zinc Oxide Hybrid Electrodes for Flexible High Performance Supercapacitors	20,000

Dr. Merlita Opeña of PCHRD, Engr. Jose Ferrer of MIRDC, and Ms. Jeanne Dugui-es of IPO Field Office Baguio, served as the Judges.

The two topics during the Inventors' Summit, TAPI's Assistance to Inventors, and Intellectual Property Rights, spurred great interest of the inventors and researchers.



Lecture on Intellectual Property Rights through Ms. Jeanne Dugui-es, Intellectual Property-Baguio Satellite Office.



Lecture on DOST-TAPI programs and services for inventors through Engr. Elizabeth I. Garcia, DOST-TAPI.

PRESS CONFERENCE/INTERVIEWS

A total of 69 press conferences and interviews were also conducted with the different media correspondents for promotion of DOST1 programs and activities.

Interview with Dr. Armando Q. Ganal with DZSO Correspondent, Bombo JC Laron.



Promotion of DOST1 activities at PIA Kapihan sa Ilocos

HIGH IMPACT TECHNOLOGY SOLUTIONS

DEPLOYMENT OF EARLY WARNING SYSTEMS (DEWS) IN DISASTER-PRONE AREAS PROJECT

In line with the on-going efforts of the Department of Science and Technology in putting up nationwide disaster mitigation system, the agency was able to install additional Hydrometeorological Stations: Automated Rain Gauges (ARGs) and Water Level Monitoring Stations (WLMS), along the Minor River Basins in Region 1. This endeavor was undertaken in the project entitled "Deployment of Early Warning Systems (DEWS) in Disaster-Prone Areas".

The project is led by the Advanced Science and Technology Institute (DOST-ASTI) and the Philippine Atmospheric, Geophysical and Astronomical Services Administration (DOST-PAGASA). Activities under the project were:

- a) Confirmation of deployment sites and deployment priorities;
- b) Installation of automated rain gauges, water level monitoring sensors, and warning stations;
- c) Capacity building on hydromet calibration for DOST Regional Office; and
- d) Ensure reliable transmission and sustainability of the network.

Confirm deployment sites and determine deployment priority

The DOST-PAGASA and DOST Region 1 conducted Hydromet Station Site selection, assessment and validation as early as December 2014. Thirty-three (33) station sites were identified along the 16 Minor River Basins in 25 LGUs in Region 1.

Installation of Hydromet and Warning stations

The DOST-ASTI initiated the procurement of the sensors along with the production of the locally developed Advanced Remote Data Acquisition Unit (arQ) which controls all functions and data communications of the station. Basically, a hydromet station is composed of a) hydromet sensors (i.e. Automated Rain Gauge, Water Level Gauge, Pressure Gauge, etc); b) Solar panel as power source; c) arQ with installed SIM card; and d) Satellite antenna that serves as a backup for data transmission.

The DOSTs automated Hydromet station is rugged unmanned/standalone system that use sensors to gather data (i.e. rainfall amount, water level) and transmits these data to a server through SMS.

This year, 2017, DOST 1 completed the installation of the hydromet stations for the DEWS project in the region. A total of 34 Hydromet Stations or 103.03% of the target were installed under the project.



DEWS PROJECT

Deployment of Early Warning Systems in Disaster Prone Areas

ARGs

Automated Rain Gauge

WLMS

Water Level Monitoring Station

Tandem

WLMS and ARG Station

AWS

Automated Weather Station



DEPARTMENT OF SCIENCE AND TECHNOLOGY
REGIONAL OFFICE NO. 1

Table 8. Deployed stations under DEWS Project

Province	Location	Minor River System	Station Type	Date Installed
ILOCOS NORTE	1. Brgy. Payac, Bangui	Pusuac River	ARG	21 April 2016
	2. Brgy. Uguis, Nueva Era		ARG	21 April 2016
	3. Brgy. Quiom, Batac City		ARG	21 April 2016
	4. Bridge, Brgy. Lubigan, Badoc		WLMS	21 April 2016
	5. Sarrat Bridge, Sarrat	Laoag River	WLMS	15 September 2016
	6. Vintar National High School, Vintar		ARG	13 July 2017
	7. Tamdagán Bridge, Vintar	Vintar River	WLMS	13 July 2017
ILOCOS SUR	1. Sinait Bridge II, Baliw, Sinait	Sinait River	WLMS	11 December 2015
	2. Poblacion Sur, Gregorio del Pilar	Buaya River	WLMS	11 December 2015
	3. Brgy. Bugbuga, Sta. Cruz		WLMS	11 December 2015
	4. Quinsariano, Sta. Cruz		WLMS	11 December 2015
	5. Brgy. Nagcullooban, Sinait	Cabugao River	WLMS	7 April 2016
	6. Brgy. Carusipan, Cabugao		ARG	7 April 2016
	7. Osmeña Bridge, Baclig (Poblacion), Cabugao		ARG	7 April 2016
	8. Brgy. Lingsat, Bantay	Bantaoay River	WLMS	7 April 2016
	9. San Ildefonso, San Ildefonso		ARG	7 April 2016
	10. Brgy. Maratudo, Magsingal	Parsua River	ARG	8 April 2016
	11. Parsua Bridge, Magsingal		ARG	8 April 2016
	12. Barbar Bridge, Barbar, San Juan	Bical River	ARG	22 April 2016
	13. Brgy. Tay-ac Bantay	Vigan River	WLMS	22 April 2016
	14. Capangpangan, Vigan City		WLMS	22 April 2016
	15. Poblacion, Burgos	Santa Maria River	ARG	16 September 2016
	16. Maynganay Norte, Sta. Maria		TWLMS	16 September 2016
	17. Babal-lasioan Bridge, Sta. Maria		Tandem	14 July 2017
	18. Brgy. Bio, Tagudin	Amburayan River	ARG	14 July 2017
	19. Sigay Municipal Hall, Sigay			16 August 2017
LA UNION	1. Cabaritan, Naguilian	Bauang River	ARG	15 December 2015
	2. Libbo, Bagulin	Aringay River	WLMS	15 December 2015
	3. San Benito Sur, Aringay		WLMS	23 December 2015
	4. Brgy. Lon-Oy, San Gabriel, La Union		ARG	26 August 2016
	5. Mangaan Elem. School, Santol	Amburayan	ARG	16 August 2017
PANGASINAN	1. Embarcadiro Bridge, Poblacion, Alaminos	Alaminos River	WLMS	7 January 2016
	2. Sioasio, Sual		Tandem	7 January 2016
	3. Tambacan Bridge, Caranglaan, Mabini	Mabini River	ARG	4 May 2016

Deployment of Warning Stations is one of the vital components of the project. These warning stations were be deployed in the disaster prone or flood prone communities (or along the identified river basins) in the region.

In 2017, the DEWS Project team of DOST 1 managed to install two (2) Warning stations in Brgy. Samara in Aringay and Brgy. Pugo in Bauang, both in La Union Province. The warning stations developed is composed of a siren and a beacon powered by solar energy and can be triggered automatically (thru remote access) or manually (toggle/press button).

Ensure reliable transmission and sustainability of the network

DOST 1 conducted regular preventive maintenance and troubleshooting of down stations to ensure reliable transmission of data gathered by the stations. Region 1, as of December 31, 2017, maintained a total of 83 Hydromet stations.

All data from the hydromet stations are collected on a central database server and further analyzed for possible flooding if the intensity of rainfall exceeds a pre-determined threshold or critical level. The processed data are readily available and easily accessible by the local authorities especially the disaster response unit over internet, in real time. Data gathered by the stations can be accessed and presented through the following websites:

- a.<http://fmon.asti.dost.gov.ph/weather/predict/>
- b.<http://noah.dost.gov.ph/>

“ROLL OUT-OF 1,000 RXBOX TELEHEALTH DEVICE IN SELECTED RURAL HEALTH CENTERS IN THE PHILIPPINES”



The Department of Science and Technology (DOST) 1, in partnership with the Department of Health (DOH) 1 and University of the Philippines Manila-National Telehealth Center (UP-NTHC), has intensified our advocacy of providing better access to life-saving health care services in Region 1 through the RxBox1000 project.

According to research,

“60% of Filipinos die without seeing a doctor”.

The RxBox1000 project is a multi-component program with 3 elements: an electronic medical device called RxBox, Electronic Medical Record (iClinicSys or CHITS) and Telemedicine. It intends to address the issues of limited resources, fragmented health system, and poor health outcomes in our country, specifically in the rural areas.

In 2017, the Regional Management Team led by DOST1 and DOH1 has finalized the list of beneficiary sites, fifty-five Rural Health Units (RHUs) amongst the four (4) provinces of Region 1. The 55 sites are comprised of seven (7) municipalities from Ilocos Norte, seventeen (17) municipalities from Ilocos Sur, eight (8) municipalities from La Union and twenty-three (23) municipalities from Pangasinan. As to date, 98% of the Letter of Intents from these sites have been collected.

Apart from the pre-validation and finalization of the list, the RxBox1000 Management Team is in accord with the agency in promoting the project by participating in the Science and Technology exhibits all over the region. Several services were offered during these activities like Blood Pressure monitoring, Pulse Rate Reading, Temperature Reading, ECG monitoring and, Maternal and Child monitoring. These amenities were provided for free during the



Regional Science and Technology Week (RSTW) in Candon City, Ilocos Sur and during the caravans at Agoo, La Union and Dagupan City.

The team has travelled extensively around the region to provide orientation to the 55 sites and were given the privilege of representing the project at three momentous occasions: First, at the Pangasinan Municipal Health Officers during their monthly meeting sponsored by the Provincial Health Office; Second, during the City Health Officers meeting of Laoag City at Laoag City Hall where the City mayor of Laoag was also present during the presentation; and Third, at the State of the City Address event by Hon. Belen Fernandez at Dagupan City. The RxBox project was showcased and seen by many as a beneficial and helpful project to improve the health care system of the Philippines.

The status of RxBox1000 project implementation is now all set in the preparation for a series of RxBox training in coordination with the different provincial and regional hospitals to be involved in the program. The Rural Health Unit personnel will undergo a super user training before the deployment of RxBox units to ensure success of the implementation.

Through this initiative, the RHUs will be able to deliver better health care services to improve health outcomes and save more lives, especially in geographically isolated and disadvantaged areas.

Promotion of RxBox Program

The use of the RxBox was tested as part of the various S&T Promotion activities during the Regional Science and Technology Week cum S&T Caravan in Candon City, Ilocos Sur, S&T Caravans in Agoo, La Union and Dagupan City, Pangasinan. A total of 1,093 patients benefitted from the RxBox service.

S&T Caravan in Dagupan City, Pangasinan March 27-29, 2017



Blood pressure monitoring as one free service during the caravans. (Ms. Khariine Sison-UP NTHC Regional Coordinator for Region 1 taking the BP)



S&T Caravan in Agoo, La Union May 30- June 1, 2017



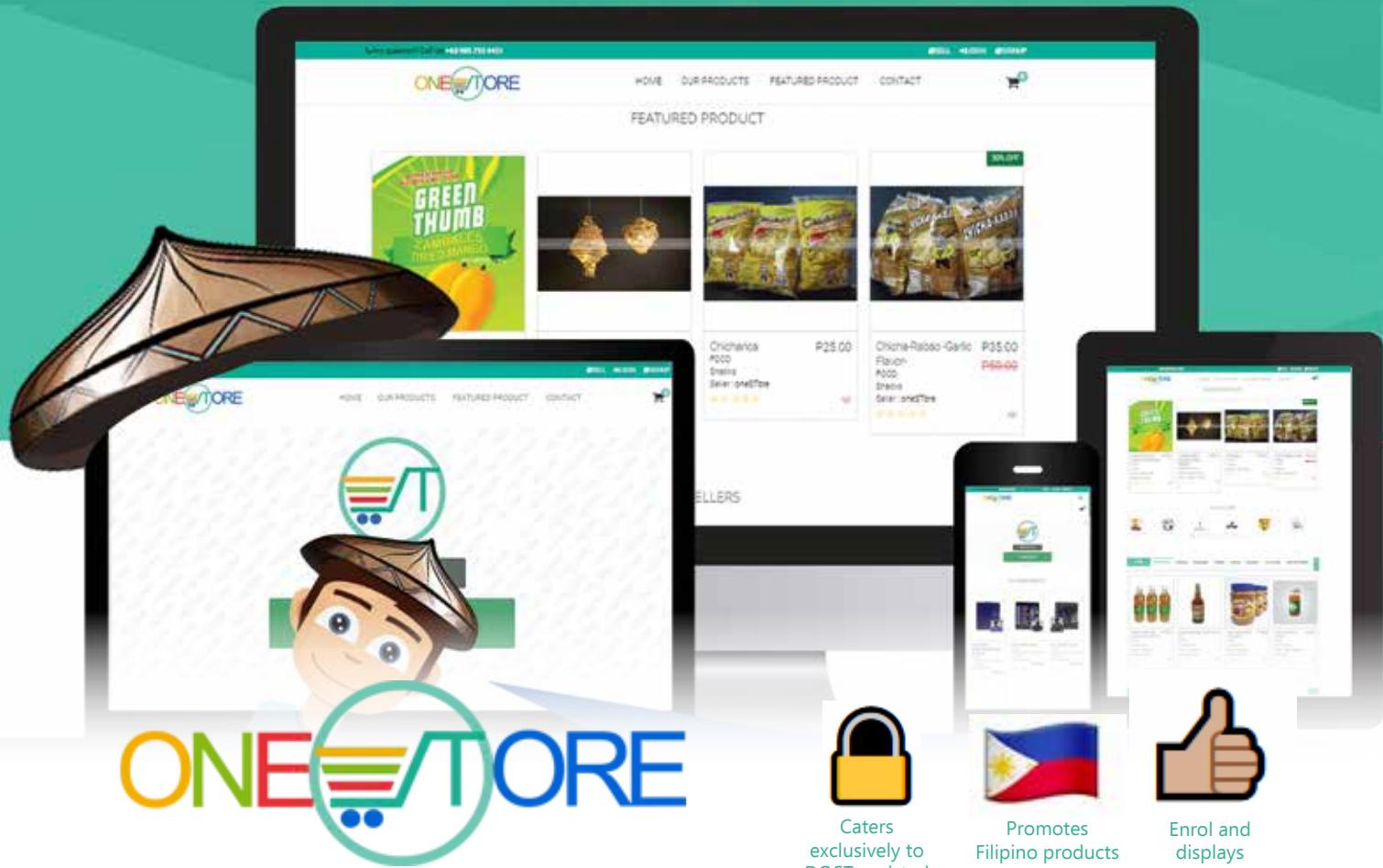
As new technology arises, queries also continue to rise. Regional Director Arman Ganal of the DOST Regional Office No. 1 makes his way to present the device to the Local Government Unit of Agoo.



Regional Science and Technology Week in Candon City, Ilocos Sur October 3-6, 2017

The RxBox booth was visited by the LGUs and residents of Candon City. RxBox Demonstration and Operation catered 600 clients providing blood pressure checkup, measuring of oxygen saturation, ECG, and Electric Fetal Heart Monitoring. RxBox Project Staff Carla Joyce Cajala and NTHC Miss Kharinne R. Sison also introduced the RxBox Program to the LGUs and residents of Candon City.





What is oneSTore.ph?

oneSTore.ph is an E-commerce Web Application that operates nationwide and caters primarily to Philippine consumers. oneSTore helps the Department of Science and Technology's assisted MSMEs widen the scope of their target market. oneSTore provides customers with an effortless shopping experience and retailers with simple and direct access to one of the largest customer bases in the Philippines.

Table 9. OneStore Project Target vs Accomplishment

Output	Target	Accomplishment	% Accomp
OPERATIONS			
Number of Products Uploaded	100	159	159%
Number of Hubs Established	2	1	50%
Number of Activities Conducted	4	9	225%
Amount of Sales Generated, Php	360,000.00	335,455.00	93.18%
Number of Firms Assisted	20	21	105%
MARKETING AND BRANDING			
Number of article with photo shoot contributed	4	-	-
Number of multi-media post	40	59	147.50%
Number of radio/tv featured	10	14	140%
Number of fairs participated	4	4	100%



TV guesting at Bagong Umaga Sabado (BUS ng Bayan) of ABS-CBN North Central Luzon promoting products displayed at oneSTore.ph



OneSTore participated in the 7th Pistay Dayat Tourism Trade and Expo at Lingayen, Pangasinan



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visit
oneexpert.gov.ph

account and populate their profile in the 1E Portal. After the training, certificate of accreditation and membership were awarded to the experts.

Moreover, One Expert also participated in fairs and exhibits as part of the S&T Promotion activities during the 2017 Regional Science and Technology Week in Candon City Ilocos Sur, S&T Caravans in Agoo, La Union and Dagupan City, Pangasinan. One Expert was promoted through infographics, actual demonstration of the portal, technology forum, distribution of brochures and tarpaulins.



Ms. Anita Criste assisting clients in their inquiries during the S&T Caravan in Agoo, La Union.

ONE EXPERT (1E)

"A One-Stop Portal for Science and Technology Consultancy and Technical Services"

Linking up with experts is easier now through the Department of Science and Technology's portal called "One Expert", an online interactive site that allows people to have easier contact with DOST's pool of S&T experts. Said experts who are accessible online are committed to providing technical advice and consultancy services to Filipinos everywhere in the Philippines.

The portal comprises the country's scientists, researchers, engineers, inventors and other technical people from different agencies/institutions. Said experts are DOST's partners in addressing problems of the country through S&T-based solutions.

In 2017, a total of 642 experts nationwide with 36 experts coming from DOST1 were accredited. The said experts are already visible and searchable in the 1E portal. Also, a total of 744 registered clients have already used the portal.

There are clients/MSMEs/students the were already assisted by the DOST 1 experts through the portal, some of them are seeking for advice for the development of their products. Other areas of concern are on procedures to comply with food safety, development of new product out of mushrooms, request for a copy of the published researches of the experts.

One Expert Orientation and Training/Workshop for experts/consultants in Food Safety, Energy Audit, Cleaner and DOST technical staff were conducted to give them better understanding about the 1E Project as well as to activate their



Ms. Anita A. Cristed, 1E Project Coordinator discusses the objectives of the One Expert Project.



Dr. Annabella G. Valdez, food safety expert populating her profile in the 1E Portal



The OneExpert and OneStore Booth during the 2017 RSTW in Candon City, Ilocos Sur.



A college student navigating the 1E Portal.



One Expert infographics during the S&T Caravan in Dagupan City, Pangasinan.



A client downloaded the 1E mobile version and created his user account.

R&D CONSORTIA & INNOVATION CENTER

ILOCOS CONSORTIUM FOR INDUSTRY, ENERGY AND EMERGING TECHNOLOGY RESEARCH AND DEVELOPMENT (ICIEERD)

The Ilocos Consortium for Industry, Energy and Emerging Technology Research and Development (ICIEERD) is an organization of 24 member institutions from government, academe, and industry formed to catalyze, facilitate and integrate R&D and technological activities in engineering, energy and emerging technology responsive to the needs of the local industry. The DOST Regional Director acts as the Co-Chairperson. DOST 1 continues as the fund manager and the seat of the Consortium Director, who leads in the operation of the Consortium.

Research and Development

In 2017, a total of 14 research proposals were evaluated. Out of these, six (6) proposals were submitted to the Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD) for possible funding. Three (3) of them were considered.

1

Title:	Development of Sewing Machine for Softbroom Production
Implementing Agency:	Don Mariano Marcos Memorial State University, City of San Fernando, La Union
Status:	Fabrication of the prototype is 100% complete but subject to further enhancement based on the recommendations from the stakeholders as a result of the performance testing activities.



2

Title:	Utilization of Industrial By-Product Currimao Steel Slag for Green Concrete Products
Implementing Agency:	Mariano Marcos State University, Batac City, Ilocos Norte
Status:	Green concrete products' (GCPs) developed and actual applications/ demonstrations and testing for vertical structure (hollow blocks) is accomplished. GCPs actual applications/ demonstrations and testing for horizontal structure (paving block) is due this month



3

Title:	Design and Development of Processing Machineries for Honey Products
Implementing Agency:	Don Mariano Marcos Memorial State University, City of San Fernando, La Union



Honey Extractor

Solar Wax Melter

Technology Promotion

The list of technologies which are almost ready for adoption or use of intended users were collected from member institutions. A total of 61 industry and energy related patented technologies will be assessed for readiness for promotion.

Capability Building

A couple of activities were conducted to improve the capability of researchers of ICIEERD.

Twenty eight (28) technology generators were trained on "Business Plan Preparation for Commercializable Technologies & Seminar on IPR" to enable them to better prepare for technology promotion. The participants were able to prepare six (6) business plans.

The training on "Preparation of Engineering Research Proposals" was conducted to capacitate the Engineers from the member institutions to conduct researches. A total of 30 participants learned the basics of preparing research proposals. The participants generated 10 research capsule proposals.



The participants and the organizers of the training



The participants (standing) and the organizers (seated) of the training.

Linkages and Resource Generation

ICIEERRD linked and partnered with other institutions in the implementation of its various activities. The operation of the Consortium in 2017 was supported with resources generated amounting to Php 1,194,986.

ILOCOS AGRICULTURE, AQUATIC, AND NATURAL RESOURCES RESEARCH AND DEVELOPMENT CONSORTIUM (ILAARRDEC)

ILAARRDEC continually performed its function in planning, monitoring, resource sharing, resource generation, strategic R&D activities and capability building efforts for the 19 member-agencies.

DOST 1 constantly engaged a holistic and participatory approach in planning and programming activities through the Regional Research and Development Coordinating Council (RRDCC). We also remained true in our commitment to provide assistance to researchers through the conduct of various training workshops and writeshop for proposal writing.

We participated in the conduct of in-house and commodity reviews, and regional symposium on R&D highlights. Additionally, after a thorough evaluation, the Urdaneta City University was able to join ILAARRDEC as the newest member agency.

ILAARRDEC also pursued our responsibility to advocate, promote, and commercialize the technologies generated by researchers from the member agencies through the conduct of field days, distribution of IEC materials, and update of the consortium's webpage. Also, this year, the Consortium was able to conduct its first bamboo-seaweeds FIESTA at iba pa during the Regional Symposium on R&D Highlights.

The four working groups of the Consortium, with DOST1 as member, actively performed their duties and responsibilities in all the programs of the Consortium.

The policies and resolutions we have crafted, supportive and implemented much in a better and smoother conduct of our activities this year.

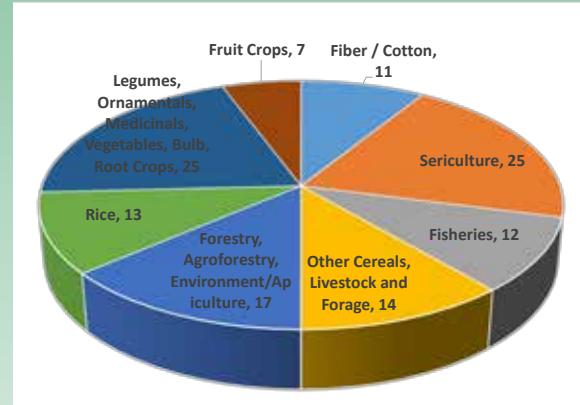
Table 10. Summary of Agency In-House Reviews (AIHRs) conducted by consortium member-agencies, CY 2017

Date	Agency	Number of Projects Presented				Total Projects Reviewed
		New	On-going	Completed	Terminated	
Aug. 7	BFAR-1	1	2	1		4
Sept. 20	PhilFIDA	1	8	1	1	11
July 1	MMSU		6	29		35
July 3	DMMSU	4	50	9		63

Table 11. Number of papers presented per agency

DM-MMSU	MMSU	DA	Phil-FIDA	PSU	BFAR	WWR-RC-ERDB	UNP	PCC	Phil-Rice	TOTAL
68	19	14	11	5	3	1	1	1	1	124

Figure 3. Number of papers presented per commodity



Dr. Armando Ganal led the planning meeting cum proposal writeshop together with the participants from various consortium member-agencies.



Awarding of ICT gadgets and Signing of Memorandum of Understanding between ATI-RTC1 and the 10 FITS Center beneficiaries.



(Left to Right) Dr. Epifania Agustin, Consortium Director, Dr. Armando Ganal of DOST-R1, Dr. Shirley Agrupis, RRDCC Chair and MMSU President, and Dr. Mari-Ann Acidera of PCAARRD during the Q4 RRDCC meeting.



Dr. Armando Ganal of DOST-R1 and the Region 1 SAFE Team Leader led the second strategic planning for the SAFE Program in the Region.

REGION 1 HEALTH RESEARCH AND DEVELOPMENT CONSORTIUM (R1HRDC)

The Region 1 Health Research and Development Consortium (R1HRDC) is continuous in promoting and managing health research and development activities in the Region 1. The R1HRDC was able to recruit 2 institutions which were added to the growing number of the R1HRDC family. These are the Ilocos Sur Community College (ISCC) in Ilocos Sur and Urdaneta City University (UCU) in Pangasinan.

Furthermore, aside from the successful conduct of its regular activities, the consortium is actively participating and coordinating to its partner-stakeholders in order to promote its programs and activities. Among the activities attended is the celebration of 11th Philippine National Health Research System (PNHRS) Week on 24-25 August 2017 at Philippine International Convention Center, Pasay City Metro Manila. It also assisted the conduct of Health Policy Development Program (HPDP) of the UPEcon Foundation Inc. forum on the report entitled "The Challenge of Reaching the Poor with a Continuum of Care: A 25-year assessment of Philippine Health Sector Performance".

The Research and Development Committee (R&D) of the R1HRDC also reviewed 9 proposals from the different State Universities and Colleges (SUCs) in Region 1, and was able to endorse 2 proposals to PCHRD. In 2017, a total of 7 research proposals were submitted to R1HRDC for review, 4 completed projects, and 4 on-going papers. It also conducted trainings and workshops on Intellectual Property Rights and Basic Health Research Method Workshop. It also conducted the regional research conference to motivate the target stakeholders in promoting productivity and innovation.

Also, the consortium established the Regional Ethics Monitoring Board (REMB) thru the Philippine Health Ethics Research Board (PHREB) to assist in protecting the rights, safety and welfare of human participants in health-related research and built an agreement with the University of Northern Philippines (UNP) particularly on the formulation of research information, communication, and utilization for its various clientele. On top of the mentioned support, the UNP will also provide service for plagiarism scan and grammar check.



The R1HRDC headed by the Chairperson Dr Maria Lourdes K. Otaya and the University of Northern Philippines (UNP) headed by President Gilbert Arce with the presence of Ms Lucila Roja, project officer from Philippine Council for Health Research and Development (PCHRD), signed a memorandum of agreement regarding the support of UNP on the programs and activities of R1HRDC particularly on the formulation of research information, communication, and utilization for its various clientele. On top of the mentioned support, the UNP will also provide service for plagiarism scan and grammarly check. The memorandum of agreement was signed on October 12, 2017 at University of Northern Philippines, Vigan City in conjunction with the 3rd quarter meeting and operational planning of R1HRDC.



R1HRDC RESEARCH DISSEMINATION FORUM AND RESEARCH EXHIBIT CARAVAN.



The R1HRDC-Research Utilization Committee launched the R1HRDC Journal of Research Abstracts on March 08, 2017 at University of Northern Philippines, Vigan City and disseminated to all member institutions last May 25, 2017 during the 2017 Regional Research Conference at Teatro Ilcoandia, Mariano Marcos State University, Batac City Ilocos Norte.



FOOD INNOVATION CENTER (FIC)

The PSU-DOST I FOOD INNOVATION CENTER was established through the High Impact Technology Solutions (HITS) program of the Department of Science and Technology under the project "Roll-out of DOST-developed Food Processing Equipment to the Regions". It houses DOST-developed technologies such as freeze dryer, vacuum fryer, and water retort. These technologies are used to develop novel snacks, innovate existing products and produce new ones using the abundant resources of Region 1.

PRODUCT CONCEPTS, PROTOTYPES, UTILITY MODELS, AND OTHER EVIDENCE OF INNOVATIONS

Electrical Cabinet Drier Products: Five (5) products were developed from the fifty three (53) product concepts generated. The products developed through cabinet drying were the following: indian mango, pico mango, indian mango roll, papaya, ube powder, and squash powder.

Vacuum-fried Products: Twenty three (23) product prototypes were developed through vacuum frying taken from the 62 product concepts generated. These include vacuum-fried indian mango, melon, squash, kangkong stalk, kamote, okra, jackfruit, red onion, and white onion ring to name a few.



Freeze Dryer Concepts: The freeze dryer was delivered last December, and the center has generated 32 product concepts. Product development will commence on 2018.

Patents: One (1) developed prototype was filed for Intellectual Property (IP) on Utility Model. Also six (6) prototypes are ready for filing for Utility Model which include vacuum fried indian mango, okra, onion, kangkong, osmo dehydrated indian mango and indian mango roll.

Food Safety Manual and Equipment Standard Operating Procedures: Food safety manual was prepared detailing the following areas: Selection of Raw Materials, Building and Facilities, Equipment, Food Preparation, Personal Hygiene, Laboratory Testing, Sanitation, and Pest Control. Prepared standard operating procedures for water retort and vacuum Fryer.

Publications: Two (2) articles entitled "Preparation and consumer acceptance of indian mango leather and osmo-dehydrated indian mango" and "Exploring Oven-drying Technique in Producing Pineapple Powder" were published and already available in the Asia Pacific Journal of Multidisciplinary Research (APJMR).



Dried Pico Mango



Indian Mango Leather

Water Retort Products: Fifty seven (57) product concepts were generated for the water retort. Five (5) products were sterilized at 116 °C. Some of these are bopis in can, buro in retort pouch, and paksiw na bangus in bottle. Seven (7) products were pasteurized at 100 °C namely tomato salsa, indian mango chutney, indian mango jam, pickled onion, pineapple jam, papaya jam, and savory balsamic onion jam.



CONDUCT OF PROMOTIONAL ACTIVITIES

PSU-DOST 1 Food Innovation Center showcased its products during the 2017 Science and Technology Caravan held at the Jose D. Aspiras Civic Center, Agoo, La Union and during the 2017 Regional Science and Technology Week (RSTW) cum S & T Caravan at the Civic Center in Candon City, Ilocos Sur .





METALS AND ENGINEERING INNOVATION CENTER (MEIC)

The MEIC serves as a HUB to support the Metals and Engineering Industry. It is located at the Don Mariano Marcos Memorial State University (DMMMSU) College of Technology at Mid-La Union Campus, City of San Fernando, La Union.

The Center aims to support the Micro, Small and Medium Enterprises (MSMEs) in production, research and development, materials testing, prototyping and fabrication of local equipment in support to agriculture and food, extension and training in the whole Province of La Union.

For CY 2017, the MEIC has partnered with the Metals Industry Research and Development Center of DOST and the Philippine Welding Society, together with DOST La Union, to conduct the first Science and Technology Caravan for Metals and Engineering Industry last October 25-27, 2017. Table 12 presents the activities undertaken.

Table 12. Technology Trainings and Seminars conducted during the 3-day caravan

Title	Date	No. of Participants	No. of Firms
Training on Welding Processes (TIG/MIG/SMAW)	October 25-27	27	2
Awareness Seminar on ISO 9001:2015	October 25	37	0
Seminar on Productivity Improvement through 5S Practice	October 25	26	0
Seminar on Occupational Safety	October 25	49	3
Training on Heat Treatment of Steels	October 26-27	23	0
Training on Metal Finishing Techniques	October 26-27	21	1
Seminar on Significance of Welding Inspection	October 26	41	0
Seminar on Productivity Improvement through 5S Practice	October 27	75	5
Total		299	11

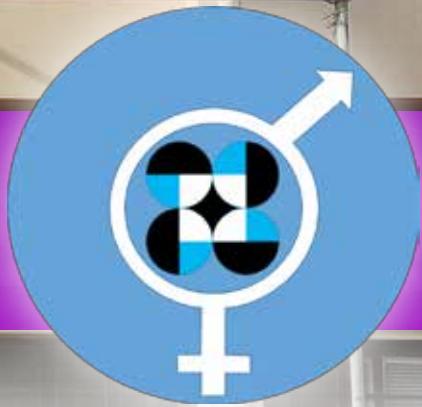


The exhibits were officially opened by (front, left-right) Hon. Nancy Corazon M. Bacurnay, Board Member of the 2nd District of La Union, Dr. Paulina P. Nebrida, DOST Region 1 Assistant Regional Director for Technical Operations, Dr. Gil F. Dela Vega, Vice President for Planning and Resource Generation, DMMMSU, (back, right-left) Dr. Paulito C. Nisperos, Chancellor of DMMMSU-MLUC, Dr. Victorio C. Palabay, Dean of the College of Technology, DMMMSU-MLUC, Mr. Arturo Jacildo, President of DMMMSU-MLUC Faculty Association, and Engr. Reynaldo L. Dela Cruz Jr., Training Specialist IV, DOST-MIRDC.





GENDER AND DEVELOPMENT PROGRAM



Highlights of DOST I gender mainstreaming efforts

GAD Program is formulated to make Philippine governance gender-responsive through RA 7192 and RA 9710 or the "Women in Development and Nation Building Act" and "Magna Carta of Women" respectively. The program recognizes the role of women in nation building, ensures the fundamental equality before the law of women and men, and emphasizes gender sensitivity.

Henceforth, DOST I is persistent in implementing projects/ programs/ activities equipped towards sustaining gender-awareness and gender mainstreaming for both internal and external clientele.

Client-focused

The Gender Responsive Economic Actions for the Transformation of Women (GREAT Women) Project 2 focused on improving competitiveness and sustainability of women's enterprises to produce quality, environmentally sustainable products; making value chain more gender responsive and improve entrepreneurial capacities. And to continue to improve the policy environment and coordination of service delivery among agencies and private sector partners – convergence efforts at national, regional/local.

In GW2P year 2, 18 women micro entrepreneurs (WMEs) from the region were validated and all of them were enrolled in the project. WMEs enrolled are those with potential growth and market stability, large production volumes, diligent tax payer and products with potential export.

In addition, an Orientation on oneSTore.ph was done for selected GW2P enrollees and DOST SETUP cooperators to increase and widen the MSMEs market penetration.

A total of 26 WMEs from the region participated the said activity and 20 of them enrolled in the platform.



Photo taken during the enrollment, photo shoot and uploading of WMEs products in the oneSTore platform held at Pangasinan Science and Technology Center in Lingayen Pangasinan .

Organization-focused

As mandated by the Republic Act 6469 and spearheaded by the Philippine Commission on Women, the Department of Science and Technology Regional Office 1 participated in the 2017 Women's Month Celebration with the theme, "WE Make Change Work for Women!". The celebration ensures that man and woman will be partners in the pursuit of the country's economic, social, cultural and political developments.

The DOST 1 GAD Focal Point System (GFPS) organized and participated in the activities such as:

- (1) Participation in Philippine Commission on Women

(PCW) – led activity in celebrating International Women's Day at GSIS Theatre, Pasay City on March 8, 2017;

(2) Participation in the RAGE - 1 Activities like the parade and zumba, Serbisyo para Kina Juan at Juana trade fair led by La Union Provincial Science and Technology Center, and Symposium on Women held at Bangko Sentral ng Pilipinas La Union Regional Office held on March 10, 17 and 31, 2017 respectively;

(3) Conduct of Orientation on RA 9710, RA 7877 and RA 9262, and Women Inspiring Women Fora for DOST I Staff, DMMMSU-MLUC GAD Focal Point System, Women Micro entrepreneurs, and PWDs to inform and engage them as stakeholders of government programs and services to promote citizen-centric governance and make change a conscious effort to know, understand, and provide what all citizens need. This was held on March 20, 2017.

(4) Distribution of IEC Materials for both internal and external clienteles.

Also, a Gender Analysis Training was also conducted and participated by 31 DOST I staff, employed in 2015 - present. The training aimed to equip the participants with skill on identifying gender issues of DOST projects and design strategies to address gender issues relevant to a proposed/existing PPAs.

In order to increase level of awareness, appreciation and sensitivity of stakeholders/DOST Regional Office I workforce on the importance of GAD and implication in their respective work, DOST I GAD Focal Point System (GFPS) established the GAD Corner to provide information and updates relative to GAD programs, activities and projects (PAPs) and other GAD-related issues/concerns for S&T Stakeholders.

Moreover , the extent of gender mainstreaming efforts of DOST I was determined using the Enhanced Gender Mainstreaming Evaluation Framework (GMEF) tool, the areas of strengths and pointers for improvement of DOST I GAD mainstreaming was rated, and gauged . DOST I garnered 50.43 points implying a Level 2 mainstreaming efforts – Installation of Strategic Mechanisms.

Level 2 describes the organizations' progress to the issuance of policies to address gender issues using gender-fair language and images among its internal and external clients.

GAD-related Capacity Buildings attended by GFPS members

- Resource Person on the Gender Sensitivity Training of National Food Authority (NFA) – Ilocos Norte, December 28, 2017
- DOST GAD Focal Point Assembly 2017, December 6-8, 2017
- Symposium on VAWC, December 4, 2017
- Resource Person on the VAWC Seminar, December 2, 2017
- Final Validation of DOST GAD Kit, November 7-8, 2017
- Orientation on oneSTore.ph for Women Micro Entrepreneurs, September 27, 2017



Resource Speaker Atty. Ana Leah Romero, Attorney IV of CHR-RO1 discusses "Promoting GAD and Social Justice: Orientation on RA 9710, RA 7877, and RA 9260".

IEC materials distributed during the 2017 Women's Month Celebration.



Serbisyo para kina Juan at Juana Trade fair held at CSI the City Mall, San Fernando City, La Union.



Gender Analysis Training for new DOST1 staff and GFPS alternates held at AVR-DOST 1.



Selected DOST1 staff participated in the kick-off activity for the 18-day Campaign to End Violence Against Women.



DOST 1 GAD Corner.



DOST-wide GAD Focal Point Assembly at Emiramona Garden Hotel in Tagaytay.



Photo taken after the training on the Gender Sensitiviy for NFA-ILN staff and stakeholders.

FINANCIAL AND HUMAN RESOURCES MANAGEMENT



FINANCIAL RESOURCES

For this year, DOST I operated within its budget amounting to Php166,555,390.00 broken into: Php109,293,606.00 from General Appropriations and Php57,261,784.00 from other resources. Twenty-three percent (23%) of General Appropriations went to Personal Services (PS) while seventy-six percent (76%) went to Maintenance and Other Operating Expenses (MOOE) and one percent (1%) in Capital Outlay.

TOTAL APPROPRIATIONS 2017 (GAA)

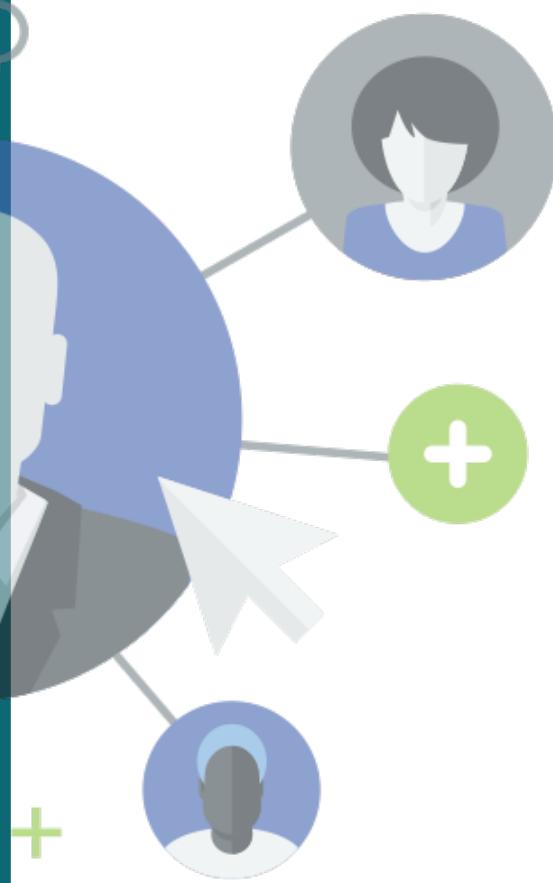
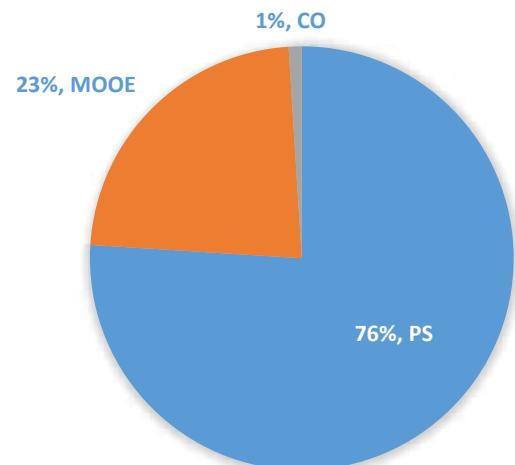


Table 13. Other Sources of Fund

SOURCE	NATURE OF FUNDS	%	AMOUNT, Php
SEI	Scholarship Program	65.27	37,372,250.34
DOST-PCIEERD	DEWS Project	2.72	1,559,972.58
DOST-NCR GIA	ONELAB Project	15.95	9,131,648.90
DOST-NCR GIA	Training on Internal Auditing of ISO 9001-2015	0.17	95,270.00
DOST GIA	ONEEXPERT	0.60	342,936.00
DOST-TAPI	NSTW 2017 & RICE 2017	0.65	372,000.00
DOST-NCR GIA	METROLOGY Project	4.89	2,797,522.84
ICIEERD	ICIEERD	0.54	310,000.00
DOST-IV A	RxBox Project	3.91	2,238,433.84
DOST GIA	SAFE	1.14	650,000.00
DOST GIA	S&T Legislative Advocacy Program	0.51	294,500.00
DOST GIA	MITHI	3.64	2,085,000.00
DOST GIA	Survey of 2015 Research and Development	0.02	12,250.00
TOTAL		100	57,261,784.50



HUMAN RESOURCES

DOST Region I had a total manpower complement of 70 staff during the year, comprising of 29 permanent and 41 Job Order personnel, distributed in the Technical Services Division and the Administrative Services Division.

There are 57 personnel working under the Technical Services Division, and complementing the ARD for Technical Operations: 13 in the Provincial S&T Centers, 2 in the Regional Standards and Testing Laboratory, and 4 in Regional Operations. An additional 37 job order staff were hired to support the various services of the Division.

The Administrative Services Division, headed by the ARD for Finance and Administrative Services, is complemented by 6 personnel with 4 Job Order employees distributed to provide accounting, budget, cash, supply and general services.

The Regional Director has an Administrative Assistant to provide support to general office operations.

According to educational attainment, 64.02% of the staff are college degree holders. There are 24.14% MS graduates and 10.34% PhD holders. One (1) employee is undergraduate.

By age bracket, 6.9% of the staff are already above 60 years old, 31.03% are in the 51-60 years bracket, 10.35% are in the 41-50 years bracket, 31.03% are in the 31-40 years bracket and 20.69% are 30 years and below.

The competency and capability of the staff to deliver the S&T services of DOST were continuously improved through training. The table below indicates the list of training the staff has attended this year.

Table 14. Trainings Attended of Staff of DOST I in 2017

Name & Staff Position	Training Attended	Date& Venue
OFFICE OF THE REGIONAL DIRECTOR		
ARMANDO Q. GANAL Regional Director	Global Entrepreneurship Community Summit	December 12-13, 2017 Kuala Lumpur Conventional Center, Kuala Lumpur, Malaysia
	Regional Symposium on R&D Highlights	November 27, 2017 Teatro Ilocandia, MMSU, City of Batac, Ilocos Norte
	Inventor's Summit	November 16, 2017 Robinsons Ilocos Norte

Name & Staff Position	Training Attended	Date & Venue
ANGEL LYN V. ORTIZ Administrative Assistant III	ASEAN Packaging Conference	October 26, 2017 Hotel Sofitel, Pasay City
	International Conference on Public Sector Productivity	October 10-11, 2017 DAP Conference Center, Tagaytay City
	North Luzon Cluster SAFE Strategic Planning	September 14-15, 2017 Xenia Hotel, Clark, Pampanga
	Creating an Inclusive Innovation and Entrepreneurship Ecosystem: Gearing Up the Regions for Industry 4.0 Luzon Workshop	August 15, 2017 Crowne Plaza Manila Galleria, Quezon City
	2nd Our Food National Conference	July 17, 2017 SMX Bacolod, Bacolod City
	50th ASEAN Anniversary	July 13, 2017 World Trade Center, Pasay City
	PSTC Congress - Lecture on Level Up Leadership with Creativity and Innovation	July 11, 2017 Hotel Jen Manila, Pasay City
	DOST-DTI Synergy	June 22, 2017 SM Mega Trade Hall, Mandaluyong City
	Course on Basic Policy Process	June 13-15, 2017 Development Academy of the Philippines
	Luzon Regional Scientific Meeting	May 15-16, 2017 CAP John Hay Convention Center, Baguio City
	2017 CES Executive Leadership and Work-Life Balance Camp	April 25-28, 2017 Waterfront Insular Hotel, Davao City
	Creating a Culture of Discipline for Collective Accountability Workshop	March 23, 2017 RAI Atrium Suites, Sta. Ana, Cagayan
	GoVergence: Cultivating Exemplary Service	February 22, 2017 Diamond Hotel, Manila
	2nd National Research and Development Conference	February 5, 2017 Manila Hotel
	S&T Action Frontline for Emergencies and Risks in the AANR Sector: Component 2 Conference-Research and Development Agenda Setting Focused on the Emergencies/Risks in the AANR Sector	January 18-20, 2017 El Cielito Hotel, Makati City
PAULINA P. NEBRIDA ARD for Technical Operations	Seminar-Workshop on Records Counter Disaster Preparedness and Business Continuity	August 8-10, 2017 Ninong's Hotel, East Washington, Legazpi City, Albay
	Seminar-Workshop on Social Media Engagement 2.0	6/27/2017 Hotel Kimberly, Malate, Manila
	Gender Analysis Training	June 13-14, 2017 DOST 1 AVR, San Fernando City, La Union
	Training Workshop to Strengthen and Enhance the Capability, Mobility, and Efficiency of the Legal Focal Person/s of Different Offices	May 31-June 2, 2017 Seda Atria Hotel, Mandurria, Iloilo City
	Seminar/Workshop on Internal Quality Audit (ISO 9001:2015)	April 14, 2017 Oasis Resort Hotel, San Fernando City, La Union
	22nd Regional Continuing Professional Education (CPE) for Human Resource Management Practitioners of Region I	April 4-6, 2017 Kultura Splash Wave, Marcos Highway, Cares, Pugo, La Union
	Crisis Communication and DOST Media Core Communication Planning Workshop	March 10, 2017 Bayview Park Hotel, Manila
	Seminar/Workshop on Root Cause Analysis	April 18-19, 2017 DOST 1 AVR, San Fernando City, La Union
	Orientation on Quality Management System	January 25, 2017 DOST 1 AVR, San Fernando City, La Union
TECHNICAL SERVICES DIVISION		
ISMAEL D. GURTIZA Planning Officer	11th PNHRS Week	"August 23, 2017 PICC, Pasay City"
	2nd OURFood	"July 17-18, 2017 SMX Convention Center Bacolod City"
	Level Up Leadership with Creativity ad Innovation	"July 11, 2017 Hotel Jen, Pasay City"
	Luzon Regional Scientific Meeting	May 15-16, 2017 CAP John Hay Convention Center, Baguio City
	1st Science and Technology Legislative Forum	"March 9-11, 2017 Oasis Country Resort City of San Fernando, La Union"

Name & Staff Position	Training Attended	Date & Venue
ADELISA C. FLORENDO Science Research Specialist II	Centralized Training on the 2016 Revised IRR of RA 9184	May 29-30, 2017 DOST Executive Lounge, Bicutan, Taguig M.M.
	Luzon Regional Scientific Meeting	May 15-16, 2017 CAP John Hay Convention Center, Baguio City
	Root Cause Analysis	April 18-19, 2017 AVR, DOST I, City of San Fernando, La Union
	Internal Quality Audit (ISO 9001:2015)	April 17, 2017 Oasis Resort Hotel, City of San Fernando, La Union
	Seminar on the Development of Business Excellence Strategy	March 27-28, 2017 Admatel, Bicutan Taguig
MICHAEL JOHN C. MAQUILING Science Research Specialist II	Training Workshop to Strengthen and Enhance the Capability, Mobility and Efficiency of the Legal Focal Person/s of Different Offices	May 31 - June 2, 2017 Seda Atria Hotel, Iloilo City
	Root Cause Analysis	April 18-19, 2017 AVR, DOST I, City of San Fernando, La Union
	Internal Quality Audit (ISO 9001:2015)	April 17, 2017 Oasis Resort Hotel, City of San Fernando, La Union
	2017 Orientation on the New Undergraduate S&T Scholarship Policies and Procedures	January 18-19, 2017 Westown Hotel, Iloilo City
JORDAN L. ABAD Science Research Analyst	Information Technology Disaster Recovery Planning Workshop	December 12, 14, 2017 DOST-ASTI, CP Garcia Ave., Diliman, Quezon City
	Workshop on the Formulation of Regional Disaster Preparednes Plan	July 19-20, 2017 Chalet Baguio, Baguio City
	One-Day Basic DRRM Training Course (Incident Command System Executive Course)	June 15, 2017 Puerto de San Juan Resort Hotel, San Juan, La Union
	Regional Contingency Plan For Human-Induced Hazard	April 21, 2017 Sea and Sky Resort and Hotel, City of San Fernando, La Union
SHERYL ANN H. ESLAO Project Assistant III	Basic Land Use and Physical Planning Training for RLUC-1 Members and Secretariat	November 27-29, 2017 Sea and Sky Hotel and Restaurant, San Fernando City, La Union
	Scientific Writing for DOST Researchers	November 6-10, 2017 MIRDC, Bicutan, Taguig City
	Training-Workshop on Mixed Methods Research for Value Chain Analysis	October 10-12, 2017 Villa Margarita Hotel, Bajada, Davao City
	Orientation on Risk Based Thinking in ISO 9001:2015	September 22-23, 2017 DOST-1 AVR, San Fernando City, La Union
	Training-Workshop on Program/Project Impact Evaluation Techniques and Procedures	August 30-31, 2017 Villa Margarita Hotel, Bajada, Davao City
	28th Philippine Agricultural Engineering Week, 14th International Agricultural Conference and Exhibition, 6th PSAE Annual National Convention	April 23-29, 2017 Legaspi City Convention Center, legaspi City, Albay, Bicol
	Seminar on the Development of Business Excellence Strategy	March 27-28, 2017 ADMATEL, DOST Compound, General Santos Avenue, Bicutan, Taguig City
VENUS P. ANDAYA Project Assistant III	Community Empowerment Through Science and Technology (CEST) Strategic Planning Workshop	March 7-9, 2017 Alta Village Garden Resort and Convention Center, Tugbungan, Pilipog, Cordova, Cebu
	Training on Project Monitoring and Evaluation using Statistics	October 25-27, 2017 Citylight Hotel, Baguio City, Benguet
	e-Learning Course on Customer Satisfaction Management for the Service Sector	July 25-28,2017 Development Academy of the Philippines, Pasig City
JAMES D. PREPOSE Project Assistant II	Root Cause Analysis	April 18-19, 2017 AVR, DOST I, City of San Fernando, La Union
	Gender Analysis Training for New DOST Scholars	June 13-14, 2017 AVR, DOST I, City of San Fernando, La Union
	Root Cause Analysis	April 18-19, 2017 AVR, DOST I, City of San Fernando, La Union
JAYCE M. ANDRES Science Research Specialist I	Orientation on RA 9710, RA 7877 and RA 9262	March 20, 2017 AVR, , CAM Covered Court, DMMMSU, City of San Fernando, La Union
	PLAI National Congress	November 20-24, 2017 Bacolod City
	4th STARBOOKS Deployment Officers Workshop - Luzon Cluster	October 25-27, 2017 A Hotel, Baguio City
	3rd STARBOOKS Deployment Officers Assembly	April 17-21, 2017 East Asia Royale Hotel, General Santos City
	Gender Analysis Training for New DOST1 Staff	June 13-14, 2017 DOST1-AVR, DMMMSU-MLU Campus, Catbangen, City of San Fernando, La Union
	One Expert 2nd Quarterly Meeting	May 11, 2017 Elena O. Diola Memorial Hall, DOST Region VII, Lahug, Cebu City

Name & Staff Position	Training Attended	Date & Venue
	Orientation on RA 9710, RA 7877 and RA 9262	March 20, 2017 College of Arts and Management Covered Court, DMMMSU-MLU Campus, Catbangen, City of San Fernando, La Union
	One Expert 1st Quarterly Meeting	February 24, 2017 Marzon Hotel, National Highway, Kalibo, Aklan
MAUREEN HEIDI L. PEREZ Project Assistant I	Resource Person on the Gender Sensitivity Training	December 28, 2017 National Food Authority - Ilocos Norte, Laoag City, Ilocos Norte
	DOST GAD Focal Point Assembly 2017	December 6-8, 2017 Emiramona Garden Hotel, Tagaytay
	Symposium on VAWC	December 4, 2017 Bangko Sentral ng Pilipinas – La Union Regional Office
	RAGE Activity on the 2017 18-day Campaign to End VAW	November 24, 2017 Bangko Sentral ng Pilipinas – La Union Regional Office
	Final Validation of DOST GAD Kit	November 7-8, 2017 Titanium Hall, DOST-MIRDC, Bicutan, Taguig City
	Orientation on oneStore.ph for Women Micro Entrepreneurs	Septemeber 27, 2017 Oasis Country Resort, City of San Fernando, La Union
	SAFE Cluster Strategic Planning	September 13-15, 2017 Xenia Hotel, Clark Freeport Zone, Angeles City, Pampanga
	Lecture Series by the National Scientist	August 29-30, 2017 Brandon Hall, Marand Resort and Spa, Baccuit Sur, Bauang, La Union
	Gender Analysis Training	June 13-14, 2017 AVR-DOST I, City of San Fernando, La Union
	Symposium on Women	March 31, 2017 Bangko Sentral ng Pilipinas – La Union Regional Office
	Orientation on RA 9710, RA 7877 and RA 9262, and Women Inspiring Women Fora	March 20, 2017 DMMMSU-MLUC CAM Covered Court, City of San Fernando, La Union
	International Women's Day	March 8, 2017 GSIS Theatre, Pasay City
NIALLE LOUI MAR "NLM" T. ALCANTARA Project Assistant II	Gender Analysis Training	June 13-14, 2017 DOST 1 AVR, San Fernando City, La Union
	Seminar/Workshop on Root Cause Analysis	April 18-19, 2017 DOST 1 AVR, San Fernando City, La Union
	Orientation Seminar/Workshop for the PSHS System Campus Registrars and DOST-NCE Coordinators	March 31, 2017, Icon Hotel, Diliman, Quezon City
	Orientation on RA 9710, RA 7877 and RA 9262 (as part of the 2017 Women's Month Celebration)	March 20, 2017 DMMMSU-MLUC, San Fernando City, La Union
	Orientation on Quality Management System	January 25, 2017 DOST 1 AVR, San Fernando City, La Union
	2017 Orientation on the New Undergraduate S&T Scholarship Policies and Procedures	January 18-19, 2017 Westown Hotel, Iloilo City
KATRINA F. RONQUILLO Project Assistant I	Gender Analysis Training for New DOST 1 Staff	June 13-14, 2017, Audio Visual Room, DOST Region 1, DMMMSU MLU Campus, Catbangen, City of San Fernando, La Union
	Training on Technology Needs Assessment	March 15, 2017, DOST- Audio Visual Room, DMMMSU-MLU Campus, Catbangen, City of San Fernando, La Union
FLORDE LIZA L. ALIDA Project Assistant I	Orientation Seminar on Mosquito OL Traps	September 19, 2017 Concord Building, PNRO 1 Office
	SAFE Program North Luzon Cluster Strategic Planning	September 14-15,2017 Xenia Hotel, Angeles City, Pampanga
	Symposium for the Youth with National Scientists	August 30, 2017 Baccuit Sur, Bauang, La Union
	Trailblazers in Science: Lecture Series by the National Scientists	August 29, 2017 Baccuit Sur, Bauang, La Union
	#ScienceJournAko: Communicating Space Technology	July 12, 2017 Philippine Trade Training Center, Pasay City
	Social Media Engagement 2.0	June 27, 2017 Hotel Kimberly, Malate, Manila
	Gender Analysis Training	June 13-14, 2017 DOST 1 AVR, San Fernando City, La Union
	Luzon Regional Scientific Meeting themed Attaining Sustainable Development Goals: Philippine Fisheries and Aquatic Resources	May 15-16, 2017 CAP John Hay, Convention Center, Baguio City
	Orientation on the Harmonized protocols in the implementation of DOST Consultancy Programs and 1 Expert Workshop	April 25, 2017 AVR, DOST Region Office, SFCLU

Name & Staff Position	Training Attended	Date& Venue
RYAN JOHN R. BORJA Project Assistant I	Seminar/Workshop on Root Cause Analysis	April 18-19, 2017 DOST 1 AVR, San Fernando City, La Union
	Orientation on RA 9710, RA 7877 and RA 9262 (as part of the 2017 Women's Month Celebration)	March 20, 2017 DMMMSU-MLUC, San Fernando City, La Union
	IT Disaster Recovery Plan Workshop	December 11-14, 2017 DOST-ASTI, Quezon City, Metro Manila
	ICT Resource Acquisition - Terms of Reference (ICTRA-TOR)	November 20-24, 2017 DICT, Quezon City, Metro Manila
	iClinicSys and RxBox Training for Regional Coordinators	November 6-10, 2017 Grace Crown Hotel, Angeles, Pampanga
	4th Starbooks Deployment Officers' Workshop	October 26-27, 2017 A Hotel, Baguio City, Benguet
RAYMOND ARDEE SORIANO Science Research Specialist I	Installation-Workshop of developed Information Systems of DOST IV-A	August 9-10, 2017 DOST IV-A, Los Baños, Laguna
	DICT GovCloudPH Caravan	July 24, 2017 Hotel Ariana, Bauang, La Union
	National Disaster Response Plans Cascading Workshop for Region 1	"July 25-27, 2017 One Vittoria Hotel, Bantay, Ilocos Sur "
	Government Cloud (GovCloud) Caravan	July 24, 2017 Hotel Ariana Restaurant, Paringao, Bauang, La Union
	Climate and Disaster Risk Assesment (CDRA) Review and Ecological Profile (EP) Updating	July 3-7, 2017 Lancaster Hotel Manila, Shaw Boulevard, Mandaluyong City
	Deployment of Emergency Warning System (DEWS) in Disaster-Prone Areas Project Troubleshooting Training on Weather Monitoring and Warning Devices	"June 22-23, 2017 Advance Science and Technology Institute (ASTI) Bldg., UP Technology Park Complex, C.P. Garcia Avenue, UP Campus, Diliman, Quezon City "
CARLA JOYCE CAJALA Project Assistant II	SNT-ICT Live Streaming Seminar	June 5, 2017 Development Academy of the Philippines Conference Center and Hotel, Tagaytay City
	Mainstreaming Disaster Risk Reduction Into the Local Development Planning Process, Contingency Planning and Emergency Preparedness through the Provision and Use of the REDAS Software	April 24-29, 2017 Hotel Ariana Restaurant, Paringao, Bauang, La Union
	Regional GovNet Project Orientation Meeting	March 10, 2017 Oasis Country Resort, San Fernando City, La Union
	Integrated Clinic Information System (iClinicSys) and RxBox Training for Regional Coordinators	November 7-10, 2017 Grace Crown Hotel, Balibago, Angeles City, Pampanga
	Seminar Workshop on Records Counter Disaster Preparedness and Business Continuity	August 8-10, 2017 Ninong's Hotel East Washington, Legaspi City, Albay
	Secretariat Support Services Training	June 20, 2017 NEDA Regional Office 1, City of San Fernando, La Union
CARLA GRACE PACHECO Clerk	Gender Analysis Training for New DOST Staff	June 13-14, 2017 DOST 1 AVR, City of San Fernando, La Union
	Orientation on Quality Management	January 25, 2017 DOST 1 AVR, City of San Fernando, La Union
ADMINISTRATIVE SERVICES DIVISION		
OSCAR G. RIMANDO ARD for Financial & Administrative Services	Orientation Course in Competency Modeling and Position Profiling	OD Corpuz I, DAP Building, Pasig City
ZOSIMO C. GALVEZ Administrative Officer V	Training/Workshop on the Unified Reporting System (URS) for the DOST System	August 17, 2017 Azalea Residences, Baguio City
JASMIN C. BAÑEZ Accountant III	Training-Workshop to Strengthen and Enhance the Capability, Mobility, and Efficiency of the Legal Focal Person/s of Different Offices	May 31 - June 2, 2017 DEPARTMENT OF SCIENCE AND TECHNOLOGY - Central Office
	Root Cause Analysis	April 18-19, 2017 AVR DOST I, City of San Fernando, La Union
	Internal Quality Audit (ISO 9001:2015)	April 17, 2017 Oasis Resort Hotel, City of San Fernando, La union
NIDA P. CLAVERON Administrative Officer V	ICT Resource Acquisition - Project Terms of Reference Seminar	November 20-24, 2017 DICT
	PhilGEPS Buyers Training	August 17-18, 2017 GBOX Internet Café, San Fernando City, La Union

Name & Staff Position	Training Attended	Date& Venue
	Root Cause Analysis	April 18-19, 2017 AVR DOST I, City of San Fernando, La Union
	Internal Quality Audit (ISO 9001:2015)	April 17, 2017 Oasis Resort Hotel, City of San Fernando, La union
	PhilGEPS Buyers Training	March 28-29, 2017 GBOX Internet Café, San Fernando City, La Union
HIALEAH M. GALVEZ Project Assistant II	Training/Workshop on the Unified Reporting System (URS) for the DOST System	August 17, 2017 Azalea Residences, Baguio City
JOHN LOUIE DALAO Clerk	Awareness Seminar on ISO 9001:2015	October 25, 2017 AVR, DOST1, DMMMSU-MLUC, City of San Fernando, La Union
	Gender Analysis Training for New DOST Staff	June 13-14, 2017 DOST 1 AVR, City of San Fernando, La Union
REGIONAL STANDARD AND TESTING LABORATORY		
ANITA A. CRISTE Supervising Science Research Specialist / Head, RSTL	ICT Resource Acquisition- Project Terms of Reference Seminar	November 20-24, 2017 Dept of Information and Communication Technology, Diliman, Quezon City
	Business Continuity Plan Development based on ISO 22301:2012	September 13-16, 2017 NevilleClark- Acacia Hotel, Alabang
	Capability Building on E\Rosk Assessment and Management Based on ISO 22301:2012	August 30 - September 1, 2017 Neville Clark- Acacia Hotel, Alabang
	Training on Sensory Evaluation of Foods	May 25-26, 2017 Institute of Food Science and Technology College of Agriculture and Food Science, UPLB
	Root Cause Analysis	April 18-19, 2017 AVR DOST I, City of San Fernando, La Union
	Internal Quality Audit (ISO 9001:2015)	April 17, 2017 Oasis Resort Hotel, City of San Fernando, La union
DECTH 1180 P. LIBUNAO Science Research Specialist II	Specialized Training on Microbiological Analysis of Food Pathogens	November 20-24, 2017 Bicutan, Taguig City
	Mixed Method Research for Value Chain Analysis	October 10-12, 2017 DOST-XI, Davao City
	Impact Evaluation Techniques and Procedures	August 30-31, 2017 DOST-XI, Davao City
	Sensory Evaluation of Food Products	May 25-26, 2017 Institue of Food Science and Technology, UPLB, Laguna
	Root Cause Analysis	April 18-19, 2017 AVR DOST I, City of San Fernando, La Union
	Internal Quality Audit (ISO 9001:2015)	April 17, 2017 Oasis Resort Hotel, City of San Fernando, La union
	Food Safety and Technology Specialist Programme	February 22-24, 2017 Nanyang Polytechnic, Singapore
HERO D. GALAMGAM Science Research Specialist II	International Research Equipment Expert Course	January 09-20, 2017 Sungkyunkwan University, South Korea
	22nd Course on Food Safety	October 23-27, 2017 Tropicana Suites Residence Hotel, Manila
	Sensory Evaluation of Food	May 25-26, 2017 Institute of Food Science and Technology, College of Agriculture, UP Los banos
LENA C. ROSARIO Science Research Specialist II	Shelf Life Studies and Sensory Evaluation of Foods	November 8-11, 2017 Department Of Science and Technology Region 7, Cebu
	Training Course on the Analysis of Arsenic in Water by Hydride Vapor Generation-Atomic Absorption Spectrophotometric Method	October 25-27, 2017 Taguig City
	Gender Analysis Training for New DOST Staff	June 13-14, 2017 DOST 1 AVR, City of San Fernando, La Union
	Sensory Evaluation of Food	May 25-26, 2017 Institute of Food Science and Technology, College of Agriculture, UP Los banos
	FNRI PT 16-02 (Processed Meat) Post-PT Seminar: Some of the Basic Requirements in Establishing Quality Analytical Results	March 15-16, 2017 Food and Nutrition Research Institute, Taguig
	Compliance to RA 10657: Certificate to Operate of Chemical Laboratory	February 16, 2017 Fertilizer and Pesticide Authority, Quezon City
MARIA ESTELA C. CHICO Science Research Specialist I	Seminar on Kjeldahl-Extraction-NIR (BUCHI)	September 12, 2017 Discovery Suites, Ortigas, Pasig City
	Gender Analysis Training for New DOST Staff	June 13-14, 2017 DOST 1 AVR, City of San Fernando, La Union

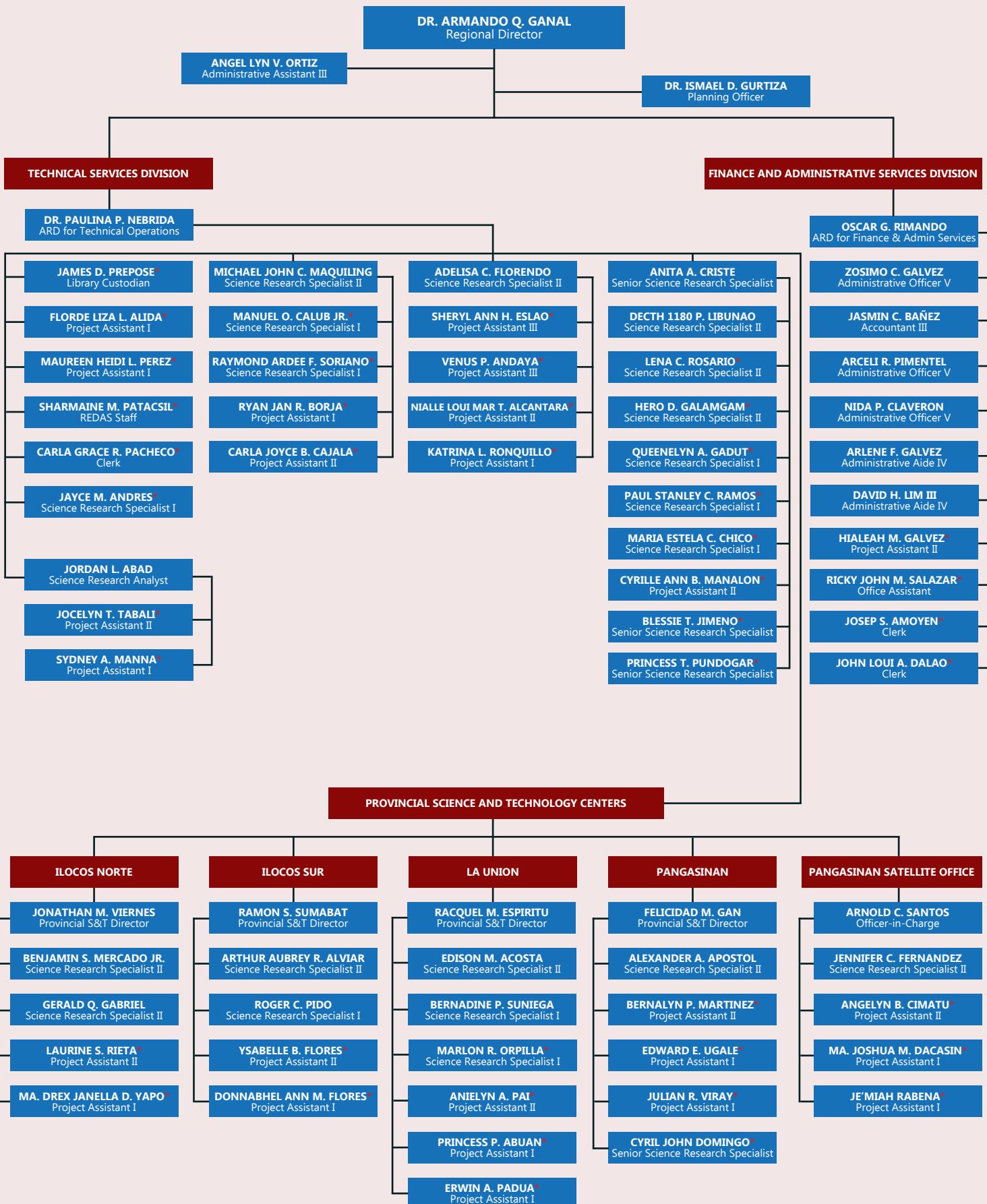
Name & Staff Position	Training Attended	Date & Venue
BLESSIE T. JIMENO Senior Science Research Specialist	Philippine Society for Microbiology, Inc. Cluster 1 Symposium	November 25, 2017 Ateneo de Manila University
	Shelf Life Studies and Sensory Evaluation of Foods	November 8-11, 2017 Department Of Science and Technology Region 7, Cebu City
	46th Annual Convention and Scientific Meeting of Philippine Society for Microbiology, Inc.	July 6-7, 2017 MOA, Pasay City
	Gender Analysis Training for New DOST Staff	June 13-14, 2017 DOST 1 AVR, City of San Fernando, La Union
	Sensory Evaluation of Food	May 25-26, 2017 Institute of Food Science and Technology, College of Agriculture, UP Los banos
	Philippine Society for Microbiology, Inc. Cluster 2 Symposium	March 25, 2017 U.P. Diliman
	Awareness Seminar on GMP with emphasis to Food Safety	March 22, 2017 Municipal Building Bauang, La Union
CYRILLE ANN B. MANALON Project Assistant II	Gender Analysis Training for New DOST Staff	June 13-14, 2017 DOST 1 AVR, City of San Fernando, La Union
PROVINCIAL S&T CENTER - ILOCOS NORTE		
JONATHAN M. VIERNES Provincial S&T Director - Ilocos Norte	Training on Calibration of Test Measure (Calibrating Bucket)	June 23, 2017 PSTC-LU, City of San Fernando, La Union
	Seminar-Workshop on Root Cause Analysis	April 18-19, 2017 DOST-1 AVR, City of San Fernando, La Union
	Seminar-Workshop on Internal Quality Audit ISO 9001:2015"	April 17, 2017 Oasis Country Resort City of San Fernando, La Union
BENJAMIN S. MERCADO JR. Science Research Specialist II	Training on Financial Management	September 25-26, 2017 MMSU-HOSTEL, Batac City, Ilocos Norte
	Training on Calibration of Test Measure (Calibrating Bucket)	June 23, 2017 PSTC-LU, City of San Fernando, La Union
	Seminar-Workshop on Root Cause Analysis	April 18-19, 2017 DOST-1 AVR, City of San Fernando, La Union
GERALD Q. GABRIEL Science Research Specialist II	Training on Calibration of Test Measure (Calibrating Bucket)	June 23, 2017 PSTC-LU, City of San Fernando, La Union
	Capacity Enhancement of Cordillera Administrative (CAR) SUCs and LGUs on Hazard, Risk Assessment and Exposure Database Development through the Use of the REDAS Software	May 15-20, 2017 Pangil Beach Resort, Pangil, Curimao, Ilocos Norte
LAURINE S. RIETA Project Assistant II	Training on Financial Management	September 25-26, 2017 MMSU-HOSTEL, Batac City, Ilocos Norte
	Training on Technology Needs Assessment	March 13-15, 2017 DOST-1 AVR, DMMMSU-MLUC, City of San Fernando, La Union
	Orientation on ISO 9001-2008	January 25, 2017 AVR, DOST Region 1, City of San Fernando, La Union
MA. DREX JANELLA D. YAPO Project Assistant I	Training on Financial Management	September 25-26, 2017 MMSU-HOSTEL, Batac City, Ilocos Norte
	Training on Technology Needs Assessment	March 13-15, 2017 DOST-1 AVR, DMMMSU-MLUC, City of San Fernando, La Union
	Orientation on ISO 9001-2008	January 25, 2017 AVR, DOST Region 1, City of San Fernando, La Union
PROVINCIAL S&T CENTER - ILOCOS SUR		
RAMON S. SUMABAT Provincial S&T Director - Ilocos Sur	Training on Food Safety	October 23, 2017 Malate, Manila
ARTHUR AUBREY R. ALVIAR Science Research Specialist II	Seminar on Personal branding	"December 14-15, 2017 La Breza Hotel, Quezon City"
ROGER C. PIDO Science Research Specialist I	Training Workshop for the PSTC Module	June 27, 2017 Admatel Conference Room, ITDI,DOST, Taguig City
	Seminar/Workshop on Root Cause Analysis	April 18-19, 2017 AVR,DOST-1, San Fernando City, La Union
	Training on Calibration of Test Measure (Calibrating Bucket)	January 10, 2017 PSTC-La Union

Name & Staff Position	Training Attended	Date& Venue
PROVINCIAL S&T CENTER - LA UNION		
RACQUEL M. ESPIRITU Provincial S&T Director - La Union	Seminar-Workshop on Root Cause Analysis	April 18-19, 2017 DOST-1 AVR, City of San Fernando, La Union
	Seminar-Workshop on Internal Quality Audit ISO 9001:2015	April 17, 2017 Oasis Country Resort City of San Fernando, La Union
EDISON M. ACOSTA Science Research Specialist II	Personal Branding & Culture Of Excellence	December 15, 2017 La Breza Hotel, Quezon City
	ICT Development Essentials for Government Managers Seminar	October 9-13, 2017 Quezon City
	Development of Early Warning System (DEWS) Project(Disaster Risk Reduction Management)	November 29, 2017 NOVOTEL, General Aguinaldo Ave, Cubao, Quezon City, Metro Manila
	Mainstreaming Disaster Risk Reduction into the Local Development Planning Process, Contingency Planning & Emergency Preparedness Thru The Provision & Use Of The Redas Software	April 24-29, 2017 Hotel Ariana Restaurant, National Highway, Paringao, Bauang, La Union
	Seminar-Workshop on Root Cause Analysis	April 18-19, 2017 DOST-1 AVR, City of San Fernando, La Union
BERNADINE P. SUNIEGA Science Research Specialist I	Awareness Seminar on ISO 9001:2015	October 25, 2017 DMMMSU-MLUC, City of San Fernando, La Union
	Performance Testing for Sphygmomanometers	September 20-21, 2017 Cebu City
	Calibration of Steel Rule, Tape Measure and Height Board	April 20, 2017 Pampanga
	22nd Regional Continuing Professional Education (CPE) for Human Resource Management Practitioners of Region I	April 4-6, 2017 Pugo, La Union
ANIELYN A. PAI Project Assistant II	Awareness Seminar on ISO 9001:2015	October 25, 2017 DMMMSU-MLUC, City of San Fernando, La Union
	Gender Analysis Training for New DOST-1 Staff	June 13-14, 2017 DOST-1 AVR, DMMMSU-MLUC, City of San Fernando, La Union
PRINCESS P. ABUAN Project Assistant I	Training on Effective Written Communication Skills	November 28-29 CSC RO1 Training Center, City of San Fernando, La Union
	Awareness Seminar on ISO 9001:2015	October 25, 2017 DMMMSU-MLUC, City of San Fernando, La Union
	Gender Analysis Training for New DOST-1 Staff	June 13-14, 2017 DOST-1 AVR, DMMMSU-MLUC, City of San Fernando, La Union
	Training on Technology Needs Assessment	March 13-15, 2017 DOST-1 AVR, DMMMSU-MLUC, City of San Fernando, La Union
MARLON R. ORPILLA Science Research Specialist I	Metal Finishing Techniques	October 26-27, 2017 DMMMSU-MLUC, City of San Fernando, La Union
	Awareness Seminar on ISO 9001:2015	October 25, 2017 DMMMSU-MLUC, City of San Fernando, La Union
	Training on Calibration of Steel Rules, Tape Measures and Height Boards	April 20, 2017 DOST, Region 3, Pampanga
	Introduction to Mass Metrology	January 10, 2017 DOST 1 RML, Sevilla, San Fernando City, La Union
	Calibration of Non-Automatic Weighing Instruments	
	Training on Calibration of Test Weights (OIML R11)	
ERWIN A. PADUA Project Assistant II	Awareness Seminar on Good Laboratory Practice and Orientation on ISO 17025:2005	January 16, 2017 DOST-1 RSTL
JANINE R. CAMPOS Science Research Analyst	Awareness Seminar on Good Laboratory Practice and Orientation on ISO 17025:2005	January 16, 2017 DOST-1 RSTL
	Awareness Seminar on Good Laboratory Practice and Orientation on ISO 17025:2005	November 3, 2017 RML, PSTC-LU
	Awareness Seminar on ISO 9001:2015	October 25, 2017 DMMMSU-MLUC, City of San Fernando, La Union
	Training on Calibration of Test Measure (Calibrating Bucket)	September 19, 2017 PSTC-LU
	Introduction to Mass Metrology	
PROVINCIAL S&T CENTER - PANGASINAN		
FELECIDAD M. GAN Provincial S&T Director - Pangasinan	2nd Our FOOD National Conference	July 17-18, 2017 Bacolod City
	NAST Regional Scientific Meeting	May 15-16 2017 Camp John Hay, Baguio City
	Seminar-Workshop on Root Cause Analysis	April 18-19, 2017 AVR, DOST Region 1, City of San Fernando, La Union

Name & Staff Position	Training Attended	Date& Venue
ALEXANDER A. APOSTOL Science Research Specialist II	Seminar-Workshop on Internal Quality Audit ISO 9001:2015	April 17, 2017 Oasis Country Resort City of San Fernando, La Union
	22nd Regional Continuing Professional Education for Human Resource Management	April 4-6, 2017 Splash Kultura, Pugo La Union
	National R&D Conference	February 14-15, 2017 Manila Hotel, Metro Manila
	Training-Workshop on Convergence Area Development Plan (CADP)	January 30-31, 2017 Salcedo Hotel Vigan City, Ilocos Sur
	Reorientation on DOST Scholarship	August 7, 2017 DOST 1, San Fernando City, La Union
	Seminar-Workshop on Root Cause Analysis	April 18-19, 2017 AVR, DOST Region 1, City of San Fernando, La Union
	Orientation Seminar/Workshop for PSHS System Campus Registrars and DOST-NCE Coordinators	March 31, 2017 Icon Hotel Timog, Quezon City
	Seminar on Cleaner Production Technology (CPT)	March 22, 2017 Pangasinan Regency Hotel, Calasiao, Pangasinan
	Seminar on FDA's License-To-Operate Applications	March 22, 2017 Pangasinan Regency Hotel, Calasiao, Pangasinan
	Training on Heat Treatment of Steels	March 1-2, 2017 Philgerma Manufacturing, Inc., Calasiao, Pangasinan
EDWARD E. UGALÉ Project Assistant II	"Like" at First Sight: Do's and Dont's of Photo-Marketing	February 9, 2017 Valley Hotel, Tuguegarao City, Cagayan
	Delivering Online Sales thru Digital Marketing Effort	
	Workshop on Defying Distance: Strengthening the oneStore Brand thru Effective Virtual Management and Teamwork	February 8, 2017 Valley Hotel, Tuguegarao City, Cagayan
	Training on Turning with Crankshaft Grinding	January 18-19, 2017 Billy-Mar Machine Shop, Calasiao
	Seminar-Workshop on Occupational Safety	January 17-18, 2017 Pangasinan Regency Hotel Calasiao
	Reorientation on DOST Scholarship	August 7, 2017 DOST 1, San Fernando City, La Union
	Gender Analysis Training for New DOST Staff	June 13-14, 2017 DOST 1 AVR, City of San Fernando, La Union
BERNALYN P. MARTINEZ Project Assistant I	Seminar on Cleaner Production Technology (CPT)	March 22, 2017 Pangasinan Regency Hotel, Calasiao, Pangasinan
	Seminar on FDA's License-To-Operate Applications	March 22, 2017 Pangasinan Regency Hotel, Calasiao, Pangasinan
	Orientation on Quality Management	January 25, 2017 DOST 1 AVR, City of San Fernando, La Union
	Training on Turning with Crankshaft Grinding	January 18-19, 2017 Billy-Mar Machine Shop, Calasiao
	Seminar-Workshop on Occupational Safety	January 17-18, 2017 Pangasinan Regency Hotel Calasiao
	Gender Analysis Training for New DOST Staff	June 13-14, 2017 DOST 1 AVR, City of San Fernando, La Union
	Seminar on Cleaner Production Technology (CPT)	March 22, 2017 Pangasinan Regency Hotel, Calasiao, Pangasinan
PANGASINAN SATELITE OFFICE		
ARNOLD C. SANTOS OIC, Pangasinan Sattelite Office	Seminar-Workshop on Root Cause Analysis	April 18-19, 2017 AVR, DOST Region 1, City of San Fernando, La Union
JENNIFER C. FERNANDEZ Science Research Specialist II	Seminar-Workshop on Personal Branding and Culture of Excellence	Dec 14-15, 2017 La Breza Hotel, Quezon City
	e-Learning Course on Customer Satisfaction Management for the Service Sector	Jul 25-28, 2017 DAP Tagaytay

Name & Staff Position	Training Attended	Date& Venue
	Seminar-Workshop on Root Cause Analysis	April 18-19, 2017 AVR, DOST Region 1, City of San Fernando, La Union
	Training on Technology Needs Assessment	March 13-15, 2017 DOST-1 AVR, DMMMSU-MLUC, City of San Fernando, La Union
ANGELYN B. CIMATU Project Assistant II	Gender Analysis Training for New DOST Staff	June 13-14, 2017 DOST 1 AVR, City of San Fernando, La Union
	Training on Technology Needs Assessment	March 13-15, 2017 DOST-1 AVR, DMMMSU-MLUC, City of San Fernando, La Union
	Orientation on ISO 9001-2015	January 25, 2017 AVR, DOST Region 1, City of San Fernando, La Union
JE'MIAH G. RABENA Project Assistant I	Training on Technology Needs Assessment	March 13-15, 2017 DOST-1 AVR, DMMMSU-MLUC, City of San Fernando, La Union
	Orientation on ISO 9001-2015	January 25, 2017 AVR, DOST Region 1, City of San Fernando, La Union
MA. JOSHUA M. DACASIN Project Assistant I	Gender Analysis Training for New DOST Staff	June 13-14, 2017 DOST 1 AVR, City of San Fernando, La Union
	Training on Technology Needs Assessment	March 13-15, 2017 DOST-1 AVR, DMMMSU-MLUC, City of San Fernando, La Union
	Orientation on ISO 9001-2015	January 25, 2017 AVR, DOST Region 1, City of San Fernando, La Union

DOST 1 2017 ORGANIZATIONAL CHART



* Special Project Staff

Directory of DOST-1 Officials



DEPARTMENT OF SCIENCE AND TECHNOLOGY

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Regional Director



DR. PAULINA P. NEBRIDA
ARD for Technical Operations



MR. OSCAR G. RIMANDO
ARD for Finance & Administrative Services



MR. JONATHAN M. VIERNES
Provincial S&T Director - Ilocos Norte

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MS. RACQUEL M. ESPIRITU
Provincial S&T Director - La Union

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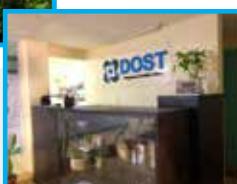


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