



Department of Science and Technology
Republic of the Philippines

Crisis- Proofing Production Technologies

#ResilienceandRecoveryPH

29 April 2020

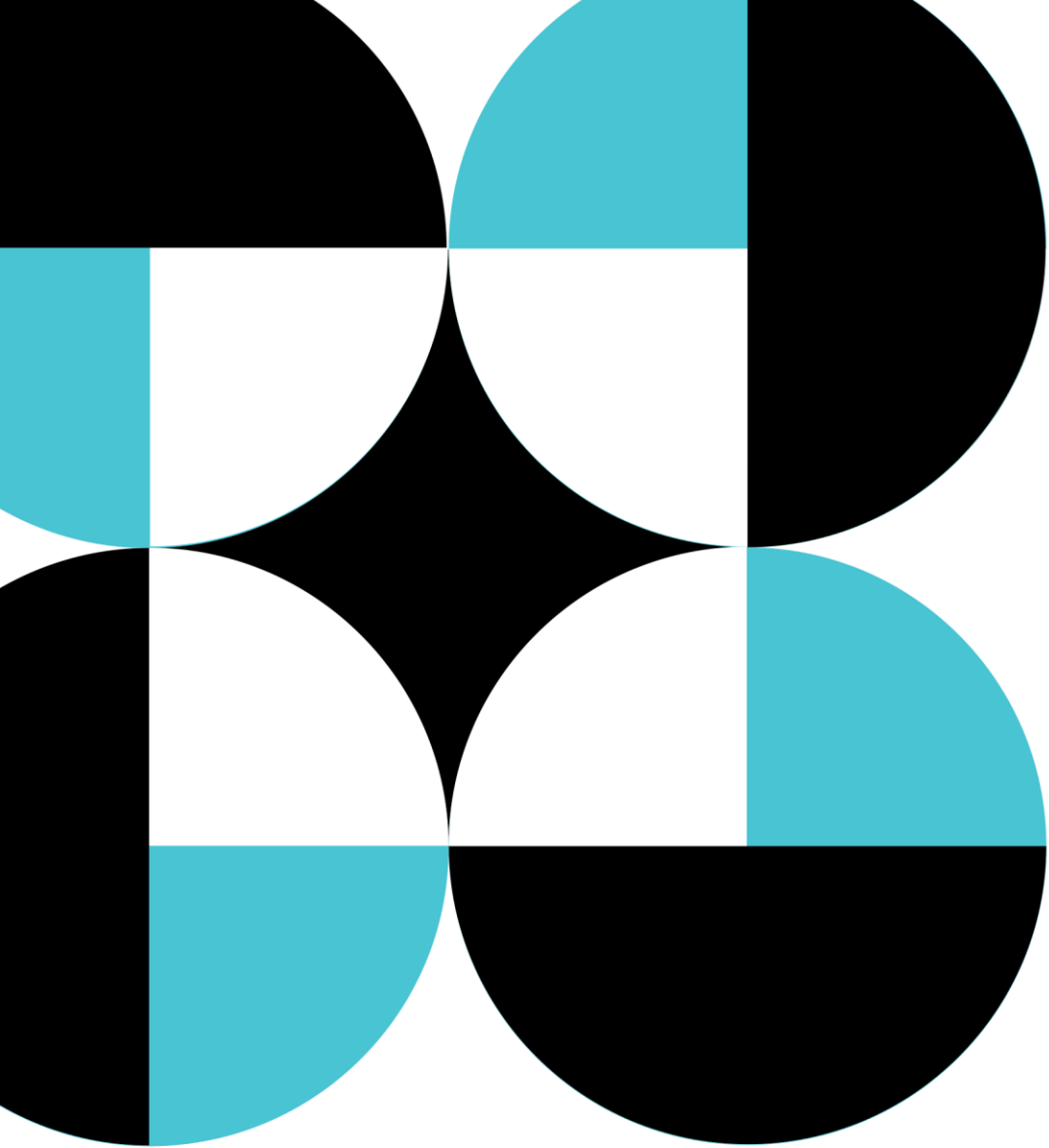
GRACE F. ESTILLORE
DOST-PCIEERD



Outline

- I. DOST
- II. DOST's Support for MSMEs
- III. CoViD-19 Research Projects





DOST

Crisis-Proofing Production Technologies



DOST

Mandate

“provide central direction, leadership and coordination of scientific and technological efforts and ensure that the results therefrom are geared and utilized in areas of maximum economic and social benefits for the people”

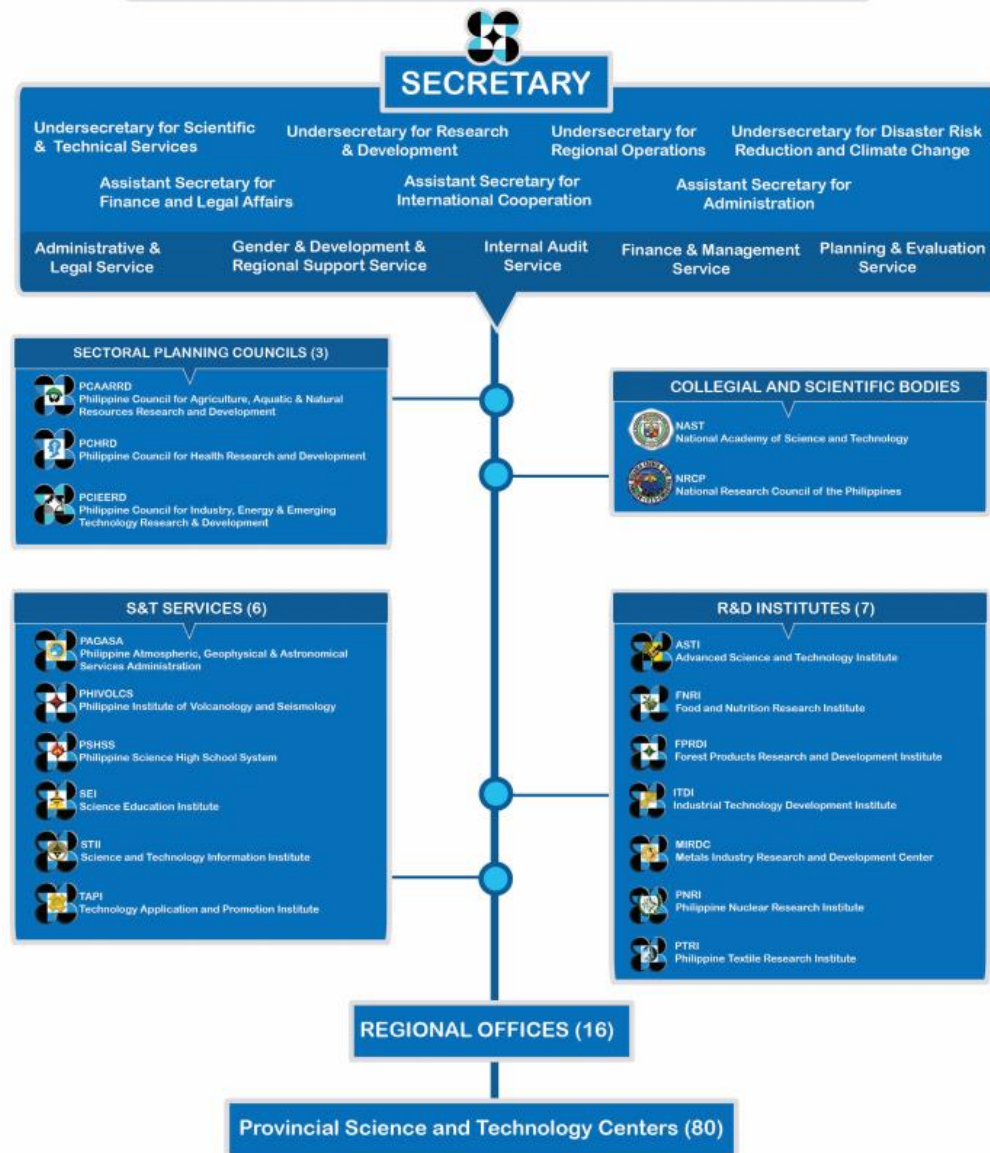
Executive Order No. 128



Photo courtesy of en.wikipedia.org



DOST Organizational Chart





DOST's support for MSMEs

Crisis-Proofing Production Technologies



Support for MSMEs

SETUP

- ***Small Enterprises Technology Upgrading Program***
- Improving operations and production by adopting technologies
- Helps MSMEs by assessing and providing technological needs and markets



Support for MSMEs

SETUP

- **Response of DOST for SETUP Beneficiaries which are severely hit by the pandemic**
 - Mobilization of MSMEs to produce products helpful in the pandemic
 - Face-mask and face shields
 - PPEs
 - Food and beverages for medical workers



DOST's partnership with SETUP Beneficiaries

DOST has partnered with the beneficiaries of its SETUP Program to help in the pandemic.



DOST-NCR'S SMALL ENTERPRISE TECHNOLOGY UPGRADING PROGRAM (SETUP) CLIENTS ON COMBATING COVID-19

We continue our operations amidst the ECQ to address the current scarcity of alcohol in the market and help flatten the curve.

J. CHEMIE LAB. INC.


ISOPROPYL ALCOHOL
70% disinfectant solution and antiseptic isopropyl alcohol

#23 Victoria Village,
Canumay, Valenzuela City
L_chemie@yahoo.com
8-983 3854

J. Chemie Laboratories Inc.

As one of the trusted manufacturers and distributors of galenical products such as disinfectants, surgical skin cleansers, antiseptics, fumigants, and other household cleansing agents in the Philippines, J. Chemie Laboratories Inc. sought the assistance of the DOST-Small Enterprise Technology Upgrading Program (SETUP) 2.0 program to progressively produce quality and competitive products that pass the standards of FDA.

The company is focusing on continuous operations amidst the enhanced community quarantine to address the current scarcity of alcohol in the market and contribute to combating the COVID-19 pandemic.



DOST-NCR'S SMALL ENTERPRISE TECHNOLOGY UPGRADING PROGRAM (SETUP) CLIENTS ON COMBATING COVID-19

We serve the needs of our patients by producing various hospital and healthcare equipment.

MANNA Shameyn Enterprises

FUNCTION HOSPITAL BED
ABS plastic heads/footboards with 5 post collapsible side rails

Bldg 2 Lot 7 & 8,
New Guinea St. Annex 25,
Better Living Subdivision,
Parañaque City
mannashameynphil@gmail.com
8-804 2742

Manna Shameyn Enterprises

Manna Shameyn Enterprise designs and fabricates hospital beds and medical equipment such as stretchers, bedside cabinets, over-bed tables, medicines and instrument trolleys, instrument cabinets, and baby basinet for health care institutions and hospitals.

The company continues to produce the increasing requirements of various hospitals and healthcare institutions in the country despite the enhanced community quarantine (ECQ) due to COVID-19 to continuously serve the needs of the patients. On a monthly average, the company manufactures 100 units of hospital beds and 170 pcs of various medical equipment.

DOST's assistance on process improvement and technology and equipment upgrading resulted in the improvement of their product quality and reduction in production cycle time from 10 days to 5 days.



DOST's partnership with SETUP Beneficiaries

Protective suits produced by Nicodemus Exclusive Apparel



Subida Souvenirs, a craft shop in Valencia, Negros Oriental more known for its native bags and traditional toys, has added personal protective equipment (PPE) to its array of products.



Nutridense products distributed by the local government of Alaminos City, Pangasinan



Headband earloops produced by Dreamkraft Gift Shop and General Merchandise, Tarlac City



Zinex Zign Express, an advertising firm operating in Zamboanga City, is working to produce and deliver 6,000 face shields for hospitals to the Zamboanga, Basilan, Sulu, and Tawi-Tawi (ZamBaSulTa) area.



Subida Souvenirs, a craft shop in Valencia, Negros Oriental more known for its native bags and traditional toys, has added personal protective equipment (PPE) to its array of products.



To date, Pixelite T-Shirt printing and Sticker Design has produced a total of 900 pieces of face masks that were distributed to municipal health offices and barangay checkpoints in their province.



Zinex Zign Express, an advertising firm operating in Zamboanga City, is working to produce and deliver 6,000 face shields for hospitals to the Zamboanga, Basilan, Sulu, and Tawi-Tawi (ZamBaSulTa) area.



Mr. Pedro Jane and Ms Joecylyn Jane, owners of Jeah Pauline Advertising. They are beside the fabricated aerosol boxes ready for delivery.



JOEVID 19 AeroBox



JOEVID 19 AeroBox



Vitamin C capsules with zinc and magnesium by iProvide Health Food Manufacturing



Ready-to-drink calamansi juices by RP Corpus Sales Enterprises



DOST SETUP-funded Multi-pass Milling Facility of Butuan Agusan Farmers Multi-Purpose Cooperative (BAFMPC)





DOST-NCR'S SMALL ENTERPRISE TECHNOLOGY UPGRADING PROGRAM (SETUP) CLIENTS ON COMBATING COVID-19

We offer something that will strengthen the immune system of our patients and front-liners. *'Malusog na Pilipinas, Malakas na Republika'*



COMPACT
PHARMACEUTICALS, CORP.

VITAMIN C
Helps strengthen the immune system against COVID-19

17 Sta. Monica St.,
Manila, Valenzuela City

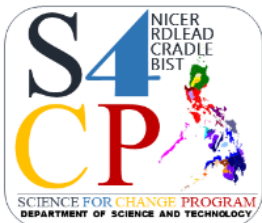
icalica.zeus@gmail.com

8-432 5278

Compact Pharmaceuticals Corp.

Compact Pharmaceuticals Corp. is one of the beneficiaries of the DOST-Small Enterprise Technology Upgrading Program (SETUP) that engages in the manufacture of different branded and generic drugs registered under the FDA. The company is assisted through SETUP Innovation Fund to increase production capacity as they focus on producing clinical drugs and health supplements.

Now that we encounter a health crisis, they continuously supply Vitamin C that has antioxidant properties. It is said that taking a certain dosage of Vitamin C helps strengthen the immune system against COVID-19. Compact is focusing its production activities in making Vitamin C realizing its corporate tag line: "Malusog na Pilipinas, Malakas na Republika."



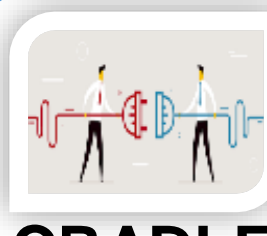
Accelerated R&D Program for Capacity Building of Research and Development Institutions and Industrial Competitiveness



NICER



RDLead



CRADLE



BIST

Niche Centers in the Regions (NICER) for R&D

Establish R&D Centers in the regions to promote regional development.

R&D Leadership (RDLead) Program

Engage R&D experts to lead in strengthening the research capabilities of the Higher Education Institutions (HEIs) and Research Development Institutions (RDIs).

Collaborative Research and Development to Leverage Philippines Economy (CRADLE) Program

Create synergistic academe-industry relationship to invigorate Philippine R&D.

Business Innovation through S&T (BIST) for Industry Program

Facilitate the acquisition of strategic and relevant technologies by Filipino Companies to support R&D activities.

Collaborative Research and Development to Leverage Philippine Economy (**CRADLE**)



CRADLE

Business Innovation through S&T (BIST) for Industry Program

To facilitate the acquisition of strategic and relevant technologies by Filipino companies for R&D and immediate incorporation in the companies' activity.

- a. Licensing of technology
- b. Outright purchase of technology
- c. Acquisition of hardware/software for R& D

Funding of up to 70% of the eligible expenses may be supported by DOST, and refunded to DOST at **zero percent** interest



ONESTORE



“BRINGING QUALITY PRODUCTS TO YOUR DOORSTEPS”



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. It can help deliver economic growth and increase business opportunities. oneStore provides customers with an effortless shopping experience and retailers with simple and direct access to the largest customer base in the Philippines.



ONELAB

<http://web.onelab.ph/>

- OneLab is a **Network of laboratories** anchored on an **IT Platform** to provide a referral system for testing and calibration services at a single touch point.



Support for MSMEs

STARTUP

- Startup Research Grant Program
- Providing funding and assistance to innovators
 - Overcome R&D roadblocks
 - Strengthen IP
 - Establish initial market traction
 - Refine business model



R&Ds for a
more
progressive
economy

Industry 4.0

- DOST's *Integrated and Intelligent Sensors and Actuators (IISA)*
- Making use of integrated sensor-actuator systems and technologies for manufacturing



R&Ds for a
more
progressive
economy

Data Analytics (Big Data)

- Integration and interoperability of big data across different government departments and affiliated organizations
- Enhance decision making during national challenges such as unemployment, terrorism, energy resources exploration, and much more



R&Ds for a
more
progressive
economy



Data Analytics (Big Data)

- **SPARTA** (*Smarter Philippines through Data Analytics R&D, Training and Adoption*)
 - Online course
 - Enable the industry of data science and analytics
 - For smart governance





R&Ds for a
more
progressive
economy

Artificial Intelligence

- Simulation of human **intelligence** in machines that enables auto-learning and problem-solving.
- AI will lead to a society that is very different from today's world
- Readiness for automation and connectivity





R&Ds for a
more
progressive
economy

Artificial Intelligence

Because of social distancing as the new normal, **AI may prove to be very significant** in today's crisis or even in future set-ups





R&Ds for a
more
progressive
economy

Artificial Intelligence

- Philippine Sky Artificial Intelligence Program (SkAI-Pinas)
 - To develop AI-technology to process the massive data from remote sensing in the Philippines



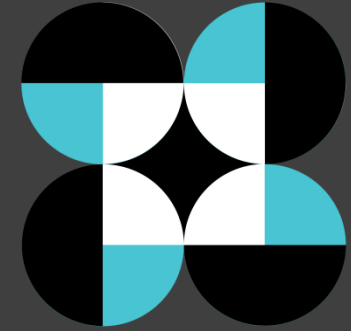


Proposal and Initiatives for *CoViD-19* situation

Crisis-Proofing Production Technologies



Summary of Proposals and Initiatives



- **Development of detection kits**
- **Production and distribution of PPEs**
- **Development of ICT applications and AIs for:**
 - Ease of implementation
 - Monitoring and allocation
 - Detection
- **Food Production and Distribution**

CoViD-19 Initiatives

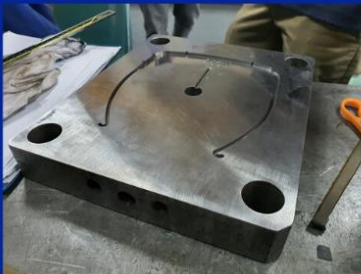
Initiatives

- **Testing and Diagnostics**
 - Field implementation of a **locally-developed diagnostic kit** for the detection of COVID-19 +AA11:E16
 - **Detection Kit** that offers a real time detection of SARS Cov-2 in respiratory samples



CoViD-19 Initiatives

DOST-MIRDC's Plastic Injection Molding Technology



Initiatives

- **Face Shield for the People in the Frontlines**
 - Production of Face Shield Frames using plastic injection
 - Coordination and Distribution to various hospitals and frontliners



CoViD-19 Initiatives

Initiatives

- **Mobilization of Satellite Images**
 - Collect and disseminate satellite images
 - To be used in planning and policy making



CoViD-19 Initiatives

Initiatives

- **FASSSTER for COVID**
 - Mathematical and STEM-based models to predict the spread of COVID-19 in the Philippines, LGU dashboard and self-report system for monitoring of constituents with symptoms



CoViD-19 Initiatives

Initiatives

- **3D printing of medical devices and accessories**
 - Venturi valves and tensile specimen for “Dose Mapping” and irradiation respectively
 - Modified oxygen concentrator mask with filter attachment



CoViD-19 Initiatives

Initiatives

- **Production and Distribution of REwear**
 - Reusable, Washable and Rewearable Face Masks Made Smart
 - Makes use of textile technologies to produce face mask



CoViD-19 Initiatives

Initiatives

- **Food Production and Distribution**

- Distribution of Oyster Mushroom to affected communities and frontline hospitals
- Production and distribution of planting materials and inputs in Region IV-B
- Distribution of agricultural products



CoViD-19 Proposals



Approved Proposals

- Pilot Testing and Deployment of **Rapid Pass** in Support of National Covid-19 Initiatives
 - An IT system solution that verifies documents of individuals passing on checkpoints
 - Uses digital passes with QR codes to ease the flow of front-liners and priority vehicles



CoViD-19 Proposals

Approved Proposals

- Project **RAM DAM** Resource Allocation Management, Distribution, and Monitoring
- project which uses geoinformation systems to allocate, management, distribute, and monitor resources

MUNICIPALITY OF LOS BAÑOS

What: Food packs distribution
When: April 6 and 7, 2020
Beneficiary Barangay: Brgy. Timugan and Brgy. Anos
No. of Target Households: 200
No. of Relief Packs: 200 pcs
Relief Packs Content:

QTY	ITEMS	UNIT PRICE (PHP)	TOTAL AMT (PHP)
5 lbs	Rice	60.00	300.00
2 pcs	Sardines	15.00	30.00
4 pcs	Noodles	6.75	27.00
1 pcs	Rice bag	10.00	10.00
ESTIMATED TOTAL AMT (PHP)			367.00

Total Relief Supply:


QTY	ITEMS	UNIT PRICE (PHP)	TOTAL AMT (PHP)
50 sacks	Rice	1,200.00	60,000.00
400 pcs	Sardines	15.00	6,000.00
800 pcs	Noodles	6.75	5,400.00
200 pcs	Rice bag	10.00	2,000.00
ESTIMATED TOTAL AMT (PHP)			73,400.00

Funding source: DRRM Quick response Fund
Remarks: Values encoded are estimated
LGU Contact info: Ms. Hanna Ericka Lavina, MSWDO Los Baños
(049) 555 7777
+63 927 1234 567
helavina@gmail.com

SATISFIED FEEDBACK

Rating: 4

Received relief packs content:



Code: PH043411012_1
Date: April 5, 2020
Address: Purok 2, Brgy. Batong Malake
Name: Abel Lagon
Contact No.: 09278869631
Household size: 5
Classification: PWD
Relief Packs:

Plan		Actual		Remark
QTY	ITEMS	QTY	ITEMS	
5 lbs	Rice	5 lbs	Rice	complete
2 pcs	Sardines	2 pcs	Sardines	complete
4 pcs	Noodles	4 pcs	Noodles	complete
1 pcs	Rice bag	1 pcs	Rice bag	complete

Message: Marami pong Salamat sa tulong ninyo.



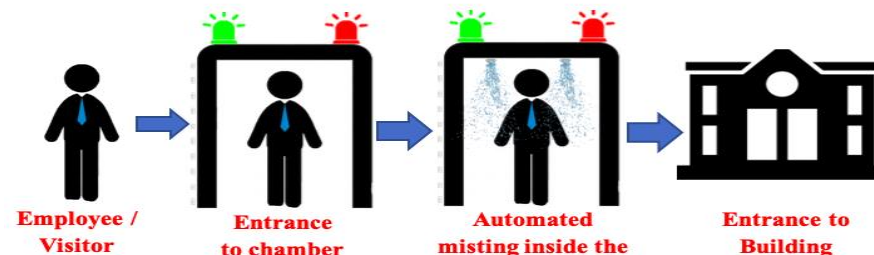
CoViD-19 Proposals



Approved Proposals

- USHER **GO-CLEAN** Disinfecting Chamber System Deployment
 - development and production of fabricated chamber (*called GO-CLEAN*) that sprays disinfecting solution to individuals entering enclosure
 - Can be installed at the entrances of establishments

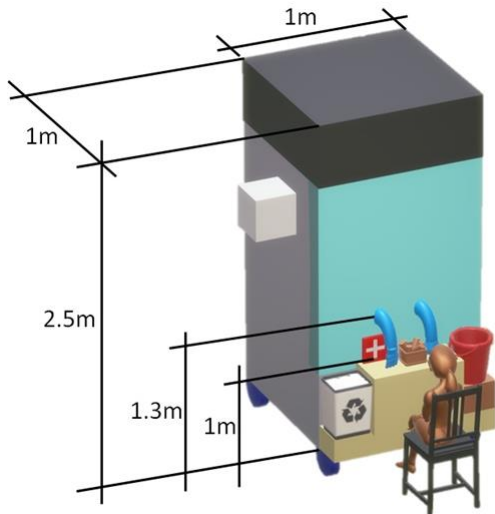
GO-CLEAN CHAMBER DISINFECTION PROCESS



CoViD-19 Proposals

Approved Proposals

- Development of Sixty (66) Units of **Swab Testing Stations** and Conduct of Testing and Data Gathering in Selected Areas
 - Mass testing booths that can be done without direct contact with the people being tested
 - Reduces risk of frontline health workers of getting infected



CoViD-19 Proposals

Approved Proposals

- Production of Six (6) Units of the **Artificial Intelligence-based Thermal Scan Technology**, Pilot Testing and Deployment in Selected LGUs
 - An AI-based thermal scanner mounted in drones or station bays
 - Able to scan and identify people with high temperature
 - Reduces screening time and closer exposure of frontline workers





For more
information:

www.dost.gov.ph