



DOST-FNRI

Department of Science and Technology
FOOD AND NUTRITION RESEARCH INSTITUTE



NUTRITION RESEARCHES IN RESPONSE TO COVID-19 PANDEMIC

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Overview of Presentation

The DOST – FNRI Mandates

Food and Nutrition R&D as COVID-19 Response

Challenges encountered in doing R&D during the pandemic

Call to Action: We all Work Together




THE PREMIER RESEARCH AGENCY OF THE GOVERNMENT IN NUTRITION, FOOD, SCIENCE & TECHNOLOGY SERVICES




Department of Science and Technology
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DOST-FNRI MANDATES



Define the citizenry's nutritional status, with reference particularly to the malnutrition problem, its causes and effects through the conduct of National Nutrition Surveys



Develop and recommend policy options, strategies, programs and projects for implementation by appropriate agencies



Diffuse knowledge and technologies in food and nutrition and provide S&T services to relevant stakeholders

What was the issue?

- ❖ **COVID-19 pandemic** has disrupted the **major systems** for improving health and nutrition across age groups, increasing the risk of hunger and malnutrition ¹



Food System



Health System



**Social Protection
System**



Education System

The World Bank. Food security and COVID-19. <https://www.worldbank.org/en/topic/agriculture/brief/food-security-andcovid-19>

The Rapid Nutrition Assessment Survey (RNAS)



RNAS Timeline for its Implementation in Response to **COVID-19** pandemic



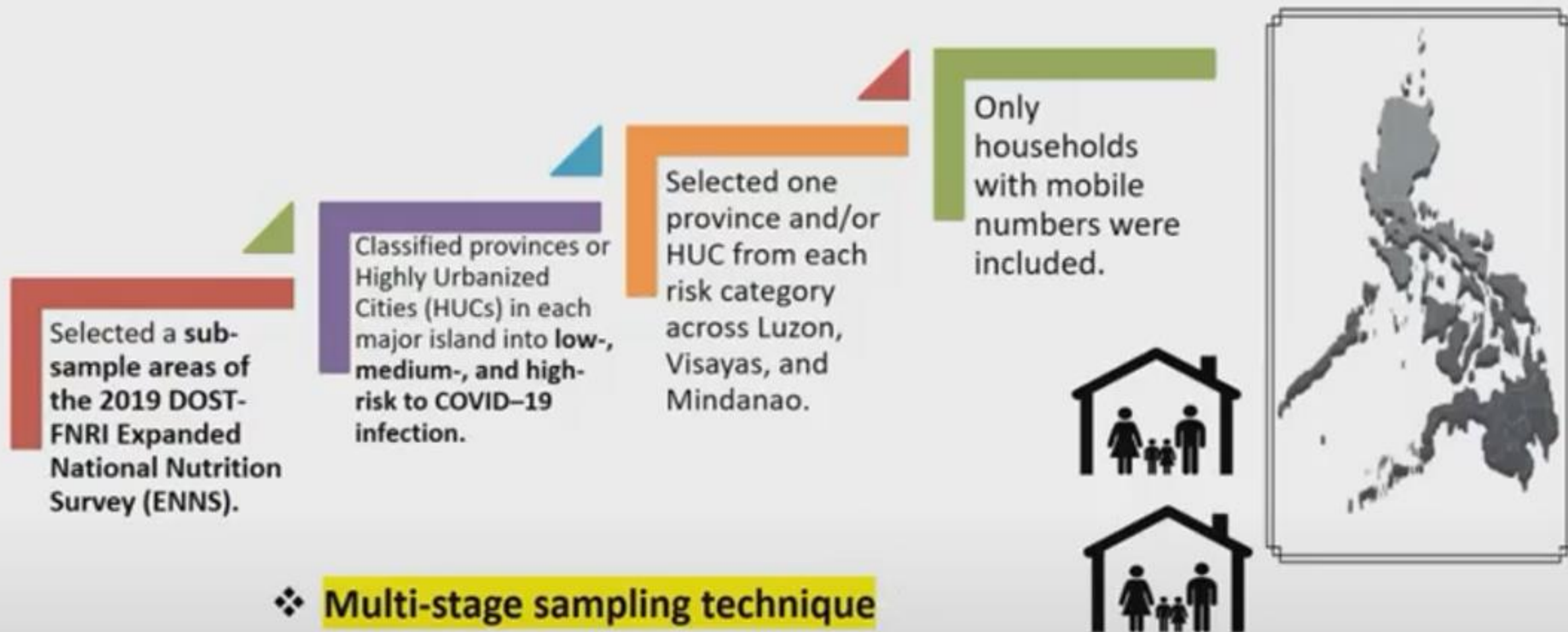
What has been done?



The rapid nutrition assessment survey (RNAS)

- ✓ provided a snapshot of the changes in food security, nutrition services, and maternal and child feeding practices in selected areas with high, medium, and low risk of COVID-19
- ✓ conducted from **November 3 to December 3, 2020**
- ❖ Results may guide **policymakers, program implementers, and health care workers** in enhancing and intensifying policies, programs, and health promotion strategies including nutrition programs to mitigate the impact of the pandemic.

How were the RNAS areas selected?



How was the RNAS conducted?

- ❖ **Phone interviews** using an existing ENNS electronic data collection system (eDCS) were conducted by trained nutritionists of the DOST-FNRI.
- ❖ **Six (6) structured and pre-tested questionnaires (5)** were developed and used to capture the following changes:
 - Household food security and coping strategies
 - Participation of Filipino Children 0-12 years old to nutrition-specific programs
 - Infant and young child feeding Practices among 0-23 months old children
 - Maternal health practices of pregnant women
 - Knowledge and perception of mothers/caregivers towards their children
- ❖ Approved by the Institutional Ethics Review Committee (FIERC# 2020-013), and by the Philippines Statistics Authority (PSA).



How many areas and households covered?

How many HHs were covered?

5,493 (96.1%) households were covered from the **5,717** eligible households.

Who were the respondents?

- ✓ Household heads
- ✓ Mothers/caregivers of children 0-12 years old
- ✓ Pregnant women

Areas*	Total Households Covered
High Risk	1,333
1. <u>Parañaque City</u>	302
2. <u>Lapu-Lapu City</u>	757
3. <u>Pateros</u>	274
Moderate Risk	2,413
1. <u>Pangasinan</u>	931
2. <u>Southern Leyte</u>	717
3. <u>Zamboanga City</u>	765
Low Risk	1,971
1. <u>Angeles City</u>	774
2. <u>Guimaras</u>	411
3. <u>South Cotabato</u>	786

**Based on IATF announcement on July 15, 2020 and number of COVID-19 positive cases from the DOH NCOV tracker as of July 16, 2020*

How many individuals were covered?

7,240 individuals covered through phone interview, of whom:



792 (10.9%) were children under two (0-23 months old)



1,995 (27.6%) were preschool-age children (2-5.9 years old)



4,305 (59.5%) were school-age children (6-12 years old)



148 (2.0%) were pregnant women

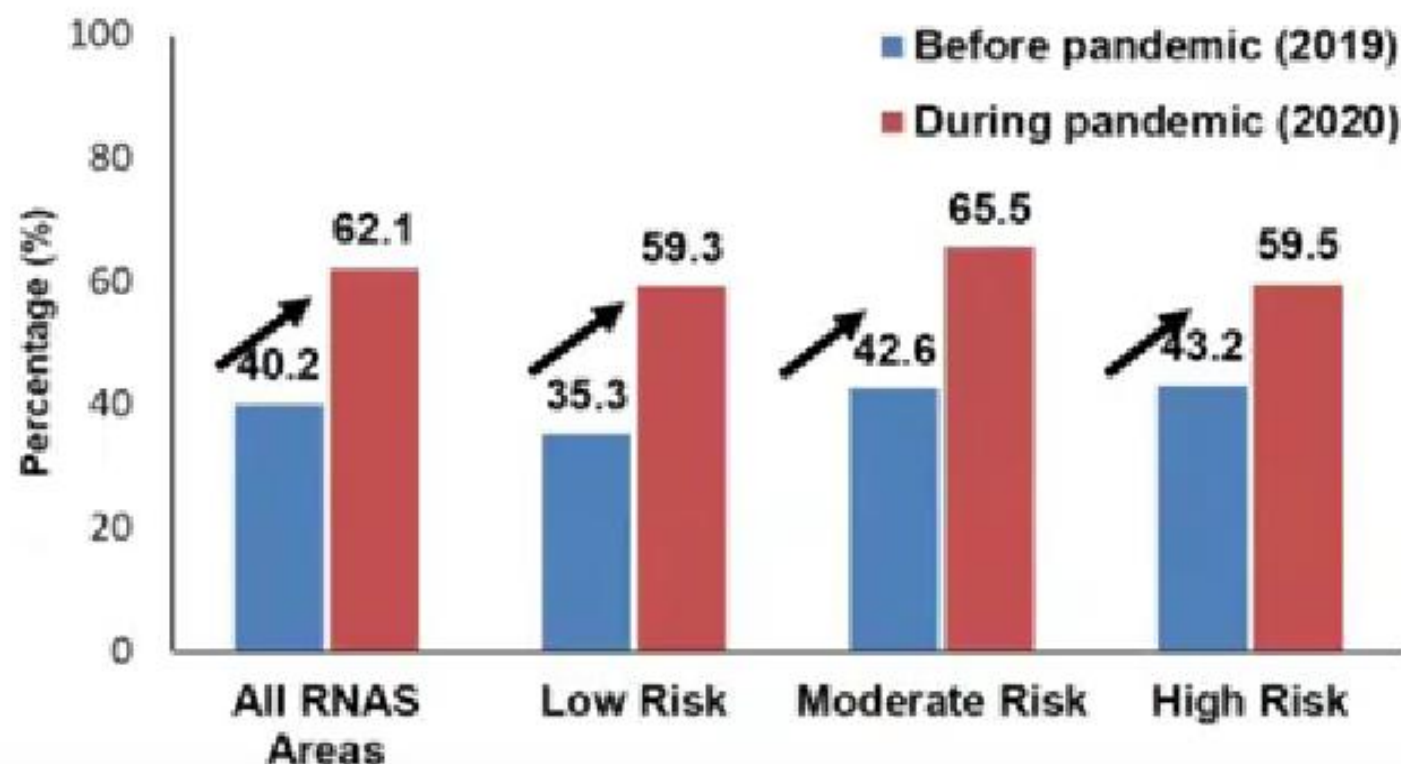
Food insecurity significantly increased during the pandemic.

❖ **62.1% (6 out of 10)**

of the surveyed households experienced **moderate to severe** food insecurity since the start of ECQ in March 16, 2020.

❖ **Moderately to severely food insecure families** experienced:

- eating inadequately
- reducing their food intake to less than the usual
- not eating at all due to lack of food.



** Based on FIES with recall period of since the community quarantine started in March*

The most food-insecure were:



Households with children
0-12 years old (**7 out of 10**).



Households with pregnant
members (**8 out of 10**).



56.3%

of the households reported having problem accessing food during community quarantine period due to:



No money to
buy food

22.1%



No/limited public
transportation

21.6%



No money due to
Loss of job

19.5%



Limited food stores
in the area

10.8%




Elderly (no other
members to buy food)

5.1%

Top food-coping strategies adapted by food insecure families

71.8% 
have purchased
food on credit

30.2% 
bartered food

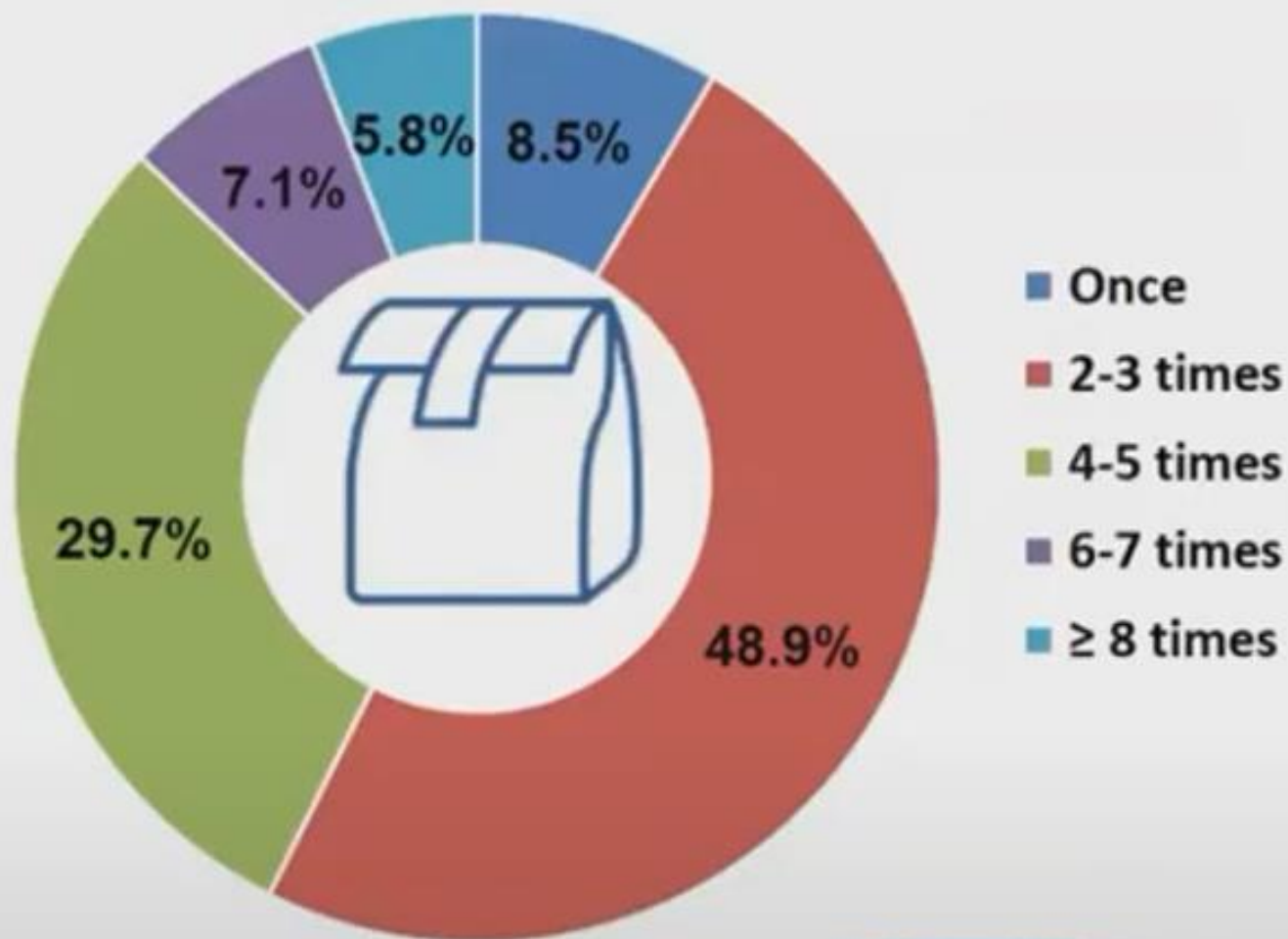
66.3% 
have borrowed food from
family/neighbors/friends

21.1% 
have reduced amount of intake of
adults for children to have more

Food Assistance:

96.6% of the surveyed households received food assistance from LGU or private sector.

- ✓ **48.9%** received 2-3 times
- ✓ **42.6%** had 4 or more times



Proportion of surveyed households by frequency of food assistance during the pandemic



Most common food items included in the food packs



Rice and cereals

93.2%



Instant Coffee

31.3%



Canned and other dry goods
(delatang sardinas, corned beef,
meat loaf, condiments)

82.6%

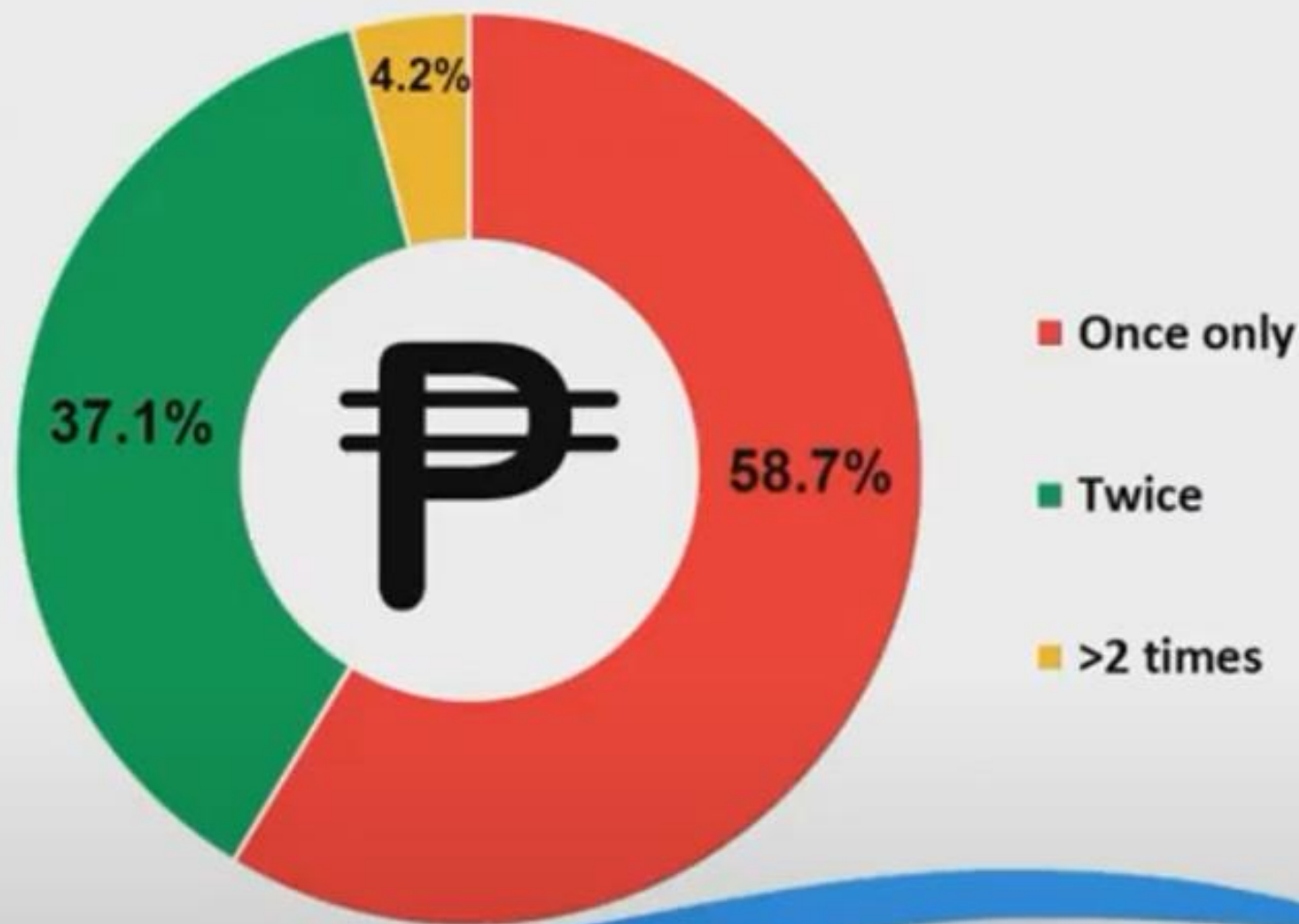


Milk and other dairy products
(gatas, yogurt, cheese)

14.0%

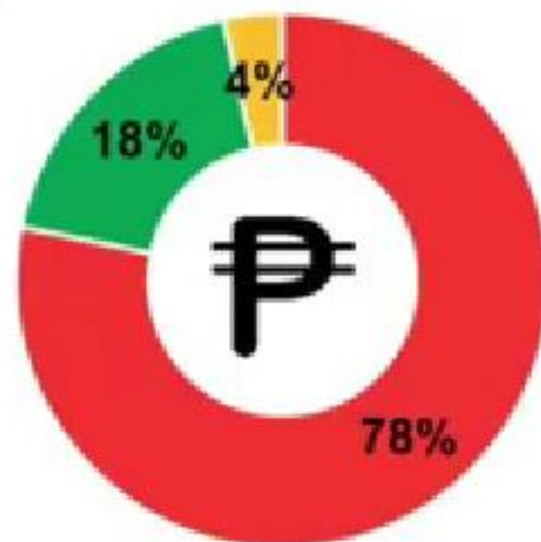
Cash Assistance:

62.9% of the households received cash assistance during the pandemic, of which more than half (**58.7%**) received once.

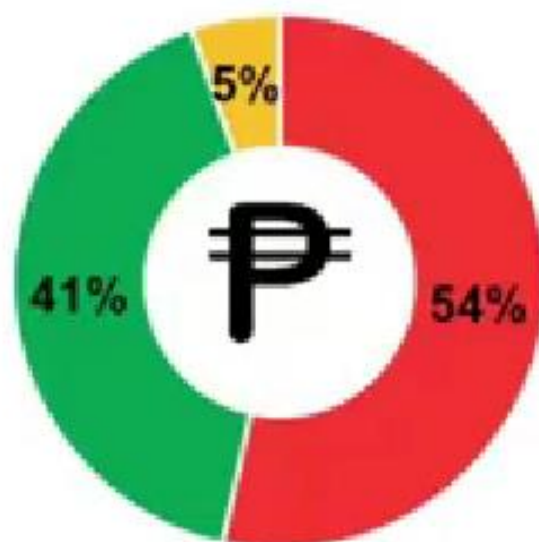


Proportion of households by frequency of cash assistance among those who received during the pandemic

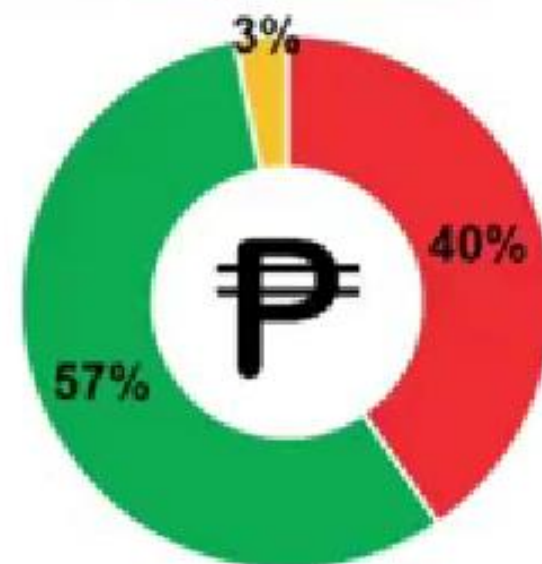
Low Risk



Moderate Risk



High Risk



Once only 2 times >2 times

The **Barangay Health Center** was reported to be **the most accessible health facility** for maternal health services



Barangay Health Center

69.6%



Private Clinic

23.2%



Government Hospital

3.2%

Complementary Feeding Practices



Only 3 out of 10

Filipino children aged 6 to 23 months were able to meet the **minimum dietary diversity score (DDS)** of at least 4 food groups a day.



9 out of 10

Filipino children aged 6 to 23 months were able to meet the **minimum meal frequency**:

- 2x for breastfed infants 6-8 months old
- 3x for breastfed children 9-23 months old
- 4x for non-breastfed children 6-23 mos.old



Only 2 out of 10

Filipino children aged 6 to 23 months **received** appropriate complementary feeding based on **minimum acceptable diet**, implying poor quality and quantity of complementary foods

IN ANOTHER STUDY

- ❖ Simulation using updated, more conservative assumptions show that poverty [in the NCR] almost doubled (UNICEF, 2020)
- ❖ A household survey done by UNDP showed that 83% of respondents in NCR and Cebu faced a decrease in income early in the pandemic, with 40% having lost all income



During the COVID-19 pandemic...

Based on the Labor Force Survey (June 2021)

7.7%

Unemployment rate

14.2%

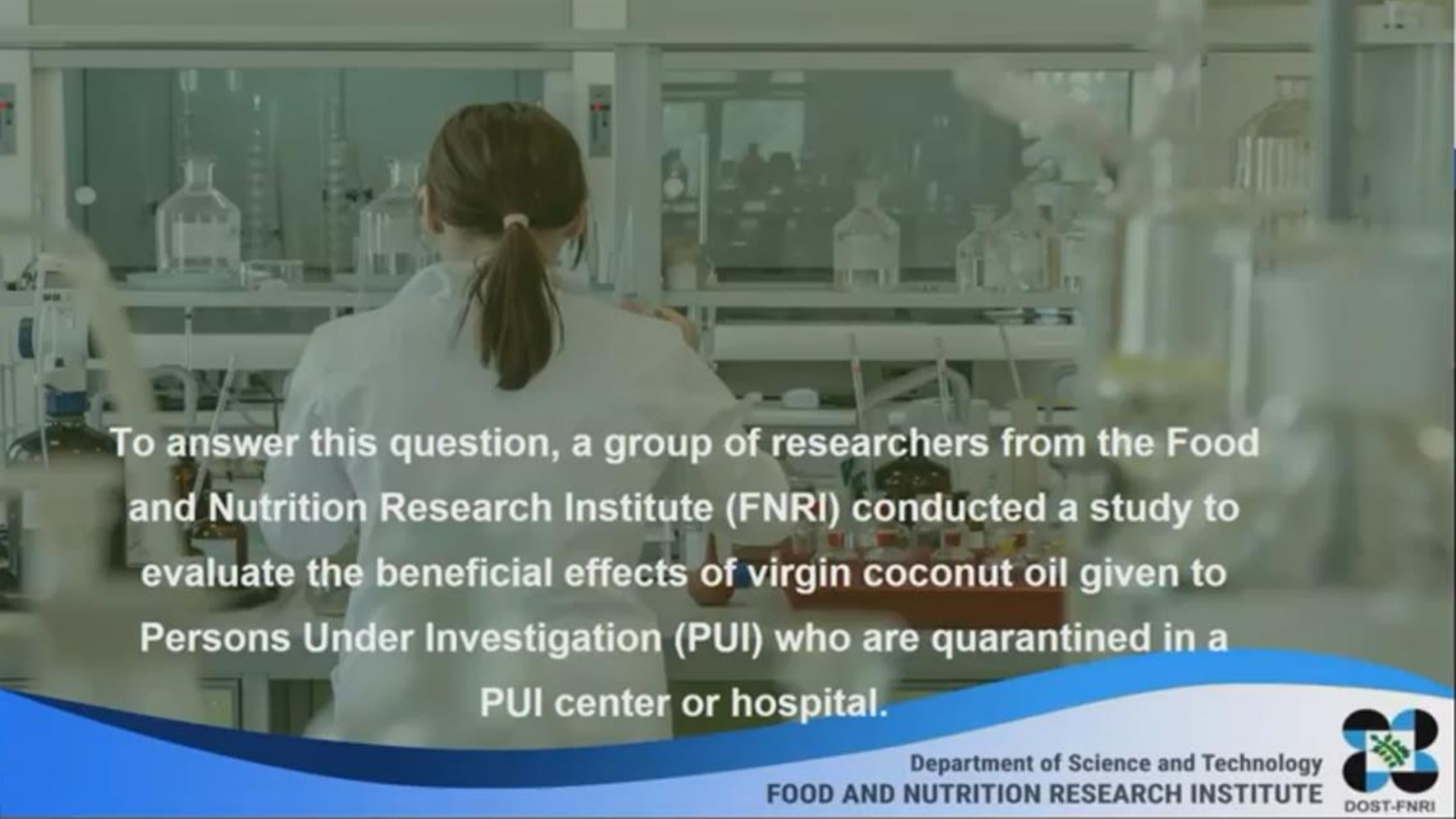
Underemployment rate




BENEFICIAL EFFECTS OF

VCO AGAINST COVID-19





To answer this question, a group of researchers from the Food and Nutrition Research Institute (FNRI) conducted a study to evaluate the beneficial effects of virgin coconut oil given to Persons Under Investigation (PUI) who are quarantined in a PUI center or hospital.



**Virgin Coconut Oil (VCO)
is now being pushed as
an adjunctive therapy for
COVID-19 patients.**



CAN VCO STOP

THE COVID-19 VIRUS?

There were 57 suspect and probable COVID-19 patients who participated and underwent the 28-day intervention period. The investigators randomly assigned the volunteers into either the Intervention or VCO Group or the Control Group, in which the VCO Group had 29 cases and the Control Group had 28 cases.

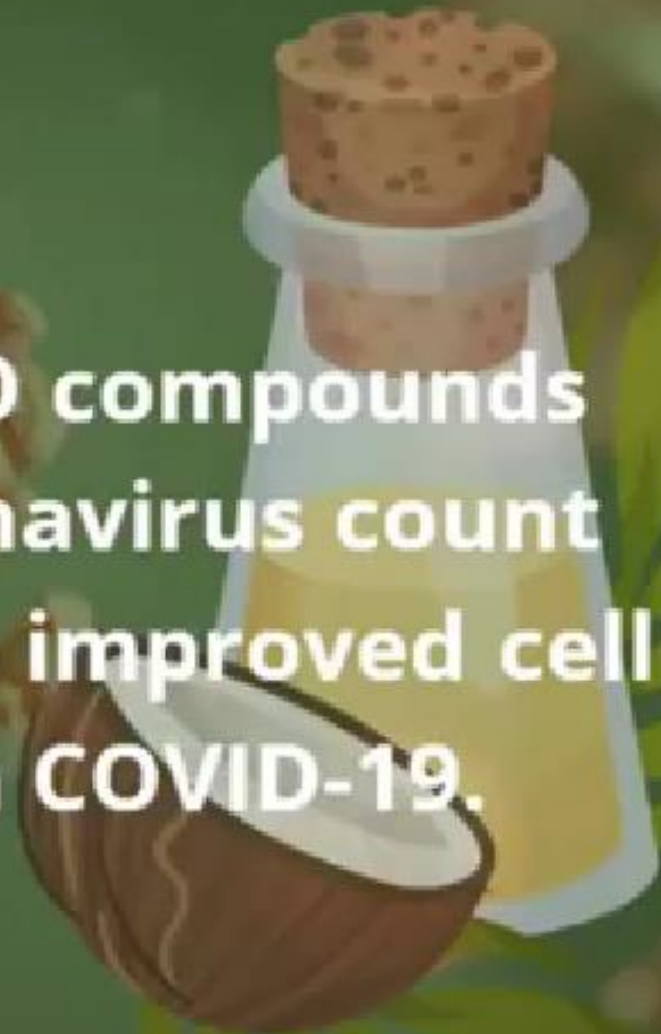


Immediate effects of the VCO intervention were observed among five of the 29 patients in the VCO Group who experienced decreasing signs and symptoms of COVID-19 as early as Day 2, while only 1 patient from the Control Group showed similar improvement.

Moreover, the VCO group experienced no more symptoms at Day 18, while the Control Group exhibited no symptoms only at Day 23.




More importantly, the VCO compounds not only reduced the coronavirus count by up to 90 percent but also improved cell survival of patients with COVID-19.



These findings about using VCO for enhancing the immune system of patients can greatly help in our fight against the pandemic. Once the research and development are completed, VCO can be used as an adjunctive therapy that could prevent COVID-19 from becoming severe.

With renewed public interest in VCO and other coconut oils' alternative health benefits, stakeholders are seeing a 20-percent growth in the demand by 2022.





Through this project,
we will not only be
providing a solution to
the challenges brought
by the pandemic but
will also aid the
recovery of the
Philippine's economy.

FNRI S&T Products and Tools



Enhanced Nutribun



**Complementary Food
Products**



**Nutrition promotion
for behavior change**

DOST-FNRI developed Recipes

DOST – FNRI Menu Guide Calendar

is an annual publication of the DOST – FNRI that aims to provide **useful and practical information to promote proper nutrition and healthy lifestyle**

The themes depend on the immediate and pressing issues of vulnerable groups or to promote the consumption of food items.



DOST-FNRI R&D Project

Development of Front-of-Pack Nutrition Label for Processed Foods and Beverages

General Objective

Develop a new front-of-pack (FOP) nutrition label for food and beverage products to promote healthy diet for Filipino children

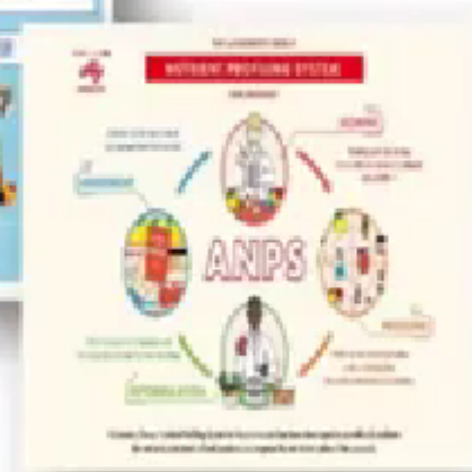
Research Perspectives

- ❖ Food Environment Survey
- ❖ Analysis of trans fat content of foods
- ❖ Effects of Planetary Diet
- ❖ Healthy Lifestyle among Adolescents and Adults
(Supporting Adolescent Growth in the Philippines, Happy Aging, etc)
- ❖ Glycemic index of different rice varieties

Research Perspectives

❖ Nutrient Profile

- ✓ Develop National Nutrient Profile Model for Children's Diets
- ✓ Nutrient Profile Model for Complementary Foods (recommended)



Nutrient profiling is the science of classifying foods based on their nutritional composition and can be a tool to help address all forms of malnutrition.

Research Perspectives

- ❖ **Develop Diet Optimization Software thru linear programming**
 - The DOST-FNRI is currently developing a mathematical optimization software to compute the amounts of locally available foods that must be consumed by an individual or a family that would meet the recommended energy and nutrient intakes (RENI) at the least cost.



Challenges encountered and the **practical solutions** in the context of doing nutrition research during pandemic

Challenges Encountered	Practical Solutions
❖ Risk of exposure to COVID-19 among researchers	Ensured that our office-based phone interviewers followed minimum health protocol at work place; ensured well-planned infrastructure to minimize COVID-19 infection.

Challenges encountered and the **practical solutions** in the context of doing nutrition research during pandemic

Challenges Encountered	Practical Solutions
❖ Limited contacts or no face to face interview	Examined what were the existing information from the ENNS data; Re-designed the study from F2F to phone-interview using the existing phone numbers of the HH

Challenges encountered and the **practical solutions** in the context of doing nutrition research during pandemic

Challenges Encountered	Practical Solutions
❖ Higher non-response due to difficulty establishing rapport and trust of participants through phone interview	Well-structured introduction/script, training of phone interviewers to equip them proper techniques of phone interview, Assigned supervisors to each group of interviewers to closely monitor/supervise members.

Challenges encountered and the **practical solutions** in the context of doing nutrition research during pandemic

Challenges Encountered	Practical Solutions
<ul style="list-style-type: none">❖ Unintentional exclusion of marginalized groups or low income groups due to:<ul style="list-style-type: none">- lack of access to digital technologies- Residing in remote areas or hard to reach groups without connectivity	<p>Tapped community health workers/barangay officials as 'mobilisers' who brought technology to the homes of the people who need to be reached.</p>

Challenges encountered and the **practical solutions** in the context of doing nutrition research during pandemic

Challenges Encountered	Practical Solutions
❖ Inadequate technological devices (mobile phones, headphones, recorder, etc)	Allotted bigger amount of funds to communication and ICT materials to enhance access to technology and connectivity .

Challenges encountered and the **practical solutions** in the context of doing nutrition research during pandemic

Challenges Encountered	Practical Solutions
❖ Phone interview can be interrupted due to weak internet connection	<p>Tapped community health workers/barangay officials as 'mobilisers' who brought technology to the homes of the people who need to be reached.</p> <p>Allotted bigger amount of funds to communication and ICT materials to enhance access to technology and connectivity .</p>

Challenges encountered and the practical solutions in the context of doing nutrition research during pandemic

Challenges Encountered	Practical Solutions
<ul style="list-style-type: none">❖ Greater ethical challenges in the following:<ul style="list-style-type: none">- getting written informed consent- adequate space or private room to conduct the phone interview	<p>Recorded verbal consent was considered, this was clearly outlined in the ethical clearance process.</p> <ul style="list-style-type: none">-Allotted adequate space for the office-based interviewers; staggered schedule of work-from home & skeletal work force



#THEWAYFORWARD:

What are our future needs?

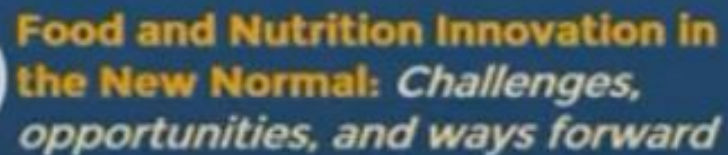
 **Food and Nutrition Innovation in the New Normal: Challenges, opportunities, and ways forward**



#THEWAYFORWARD:


What are our future needs?

 **Food and Nutrition Innovation in the New Normal: Challenges, opportunities, and ways forward**



#THEWAYFORWARD:

*What are our
future needs?*

 **Food and Nutrition Innovation in
the New Normal: Challenges,
opportunities, and ways forward**



**TRANSCENDING
INNOVATIVE
ACTIVITIES INTO
ONE WHICH MAY
BE PERMANENTLY
RESPONSIVE AND
PROACTIVE**



#THEWAYFORWARD:

*What are our
future needs?*

**ALIGNING OUR
EXPERTISE TO
PROPEL OUR
WORK
FURTHER**




**Food and Nutrition Innovation in
the New Normal: Challenges,
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DOST-FNRI

#THEWAYFORWARD:

*What are our
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**PRIORITIZING OUR
FOCUS ON THE
MOST
VULNERABLE AND
LEAVING NO ONE
BEHIND**



“If we can conquer space, we can conquer childhood hunger.”

– Buzz Aldrin



Thank You

