

# Bio-Intensive Gardening for Schools and Households in City of Batac, Ilocos Norte



Marissa I. Atis  
Geovannie Stanley S. Malab  
Aris Reynold V. Cajigal  
Bella C. Gervacio  
Mercy Fausta Gaño  
Sherlyn B. Nicolas  
Abegail Marcelino



# The devastating effect of Covid 19 pandemic:

## 'Threat of hunger'



- The former Agriculture Secretary, stated that 'The threat of HUNGER is as the threat of Covid-19'.
- Hence, the government gave EQUAL priority and attention to food production.



# What was the advocacy of the government:



- Increase the country's food adequacy level during the emergency situation resulting from the pandemic, we are guided by the **'Whole of Nation' approach**.
- DA should enhance the implementation of refocused programs, including the **Plant, Plant, Plant Program**.
- With the global threat of the pandemic, **"growing your own food"** has become the new normal.

# THE ILOCANOS...



- vegetable lovers, they eat more vegetables than any province in the Philippines
- Ilocos Region is a region known for *pinakbet* vegetable production



Even in times of the lockdowns, more and more Ilocanos were involved in home gardening to have a steady food supply in these trying times.

# WHAT IS **Bio-Intensive** Gardening?

- It utilizes a **small space** of land to grow locally-thriving plants using natural fertilizers and locally-tailored organic gardening methods.

- It utilizes the back or frontyard of houses, where each household will have ready, safe and nutritious food for the family.

- Making a typical home garden premised on a high diversity of plants per unit area.



*Organic* Vegetable  
**GARDENING**



Marissa I. Atis



# Why children in schools need to know about vegetables?

## ARE THESE TRUE?



### Millennials/Young Children

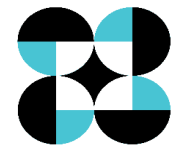
- too exposed to social media
- do not know much about vegetables
- some are detached from environment & refuse to plant even in their own backyards

## REMEDY...



- involved them in vegetable gardening
- schools integrate livelihood education in curriculum to develop sense of environmental consciousness
- the love for vegetables should start early. If the child's dish has vegetable component in it every day, then this will become part of their eating habit

# OBJECTIVES



1

**GENERAL: Increase food security of depressed areas and schools in the Ilocos Region through adoption of bio-intensive gardening**

2

**Promote the adoption of BIG and enhance capabilities of households, and elementary pupils and teachers in bio-intensive gardening**

3

**Develop and disseminate IEC materials on bio-intensive gardening**

4

**Establish BIG model farms in depressed areas and schools in the Ilocos Region.**



# The Process:



## Inception meeting & implementation arrangement



Inception meeting (a) among MMSU project implementors; (b) with DOST-PCAARRD

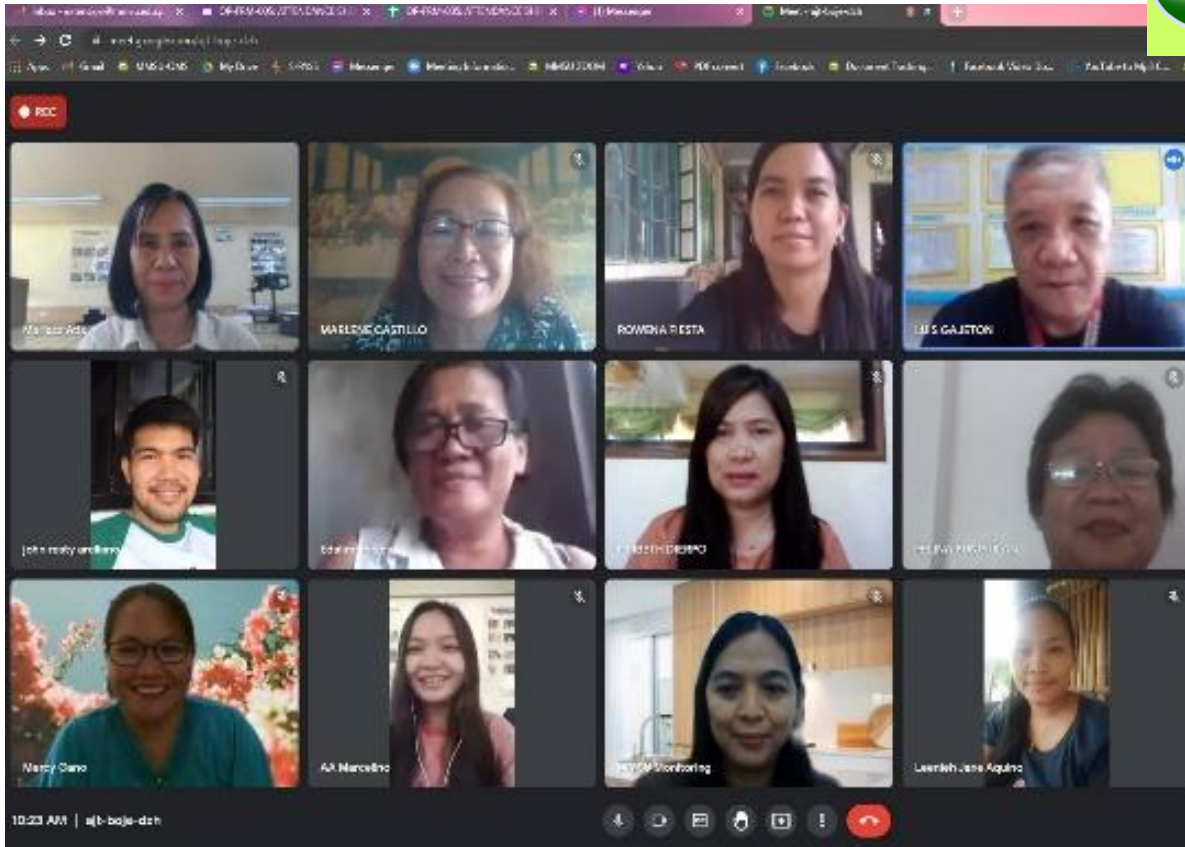
# The Process, cont'n:



- **MMSU coordinated with Schools Division Office of the City of Batac**
- **The SDO coordinated with the different elementary schools of the City of Batac for the identification of pupil-beneficiaries**
- **Both parties cleared out each roles and obligations; and partnership was agreed.**

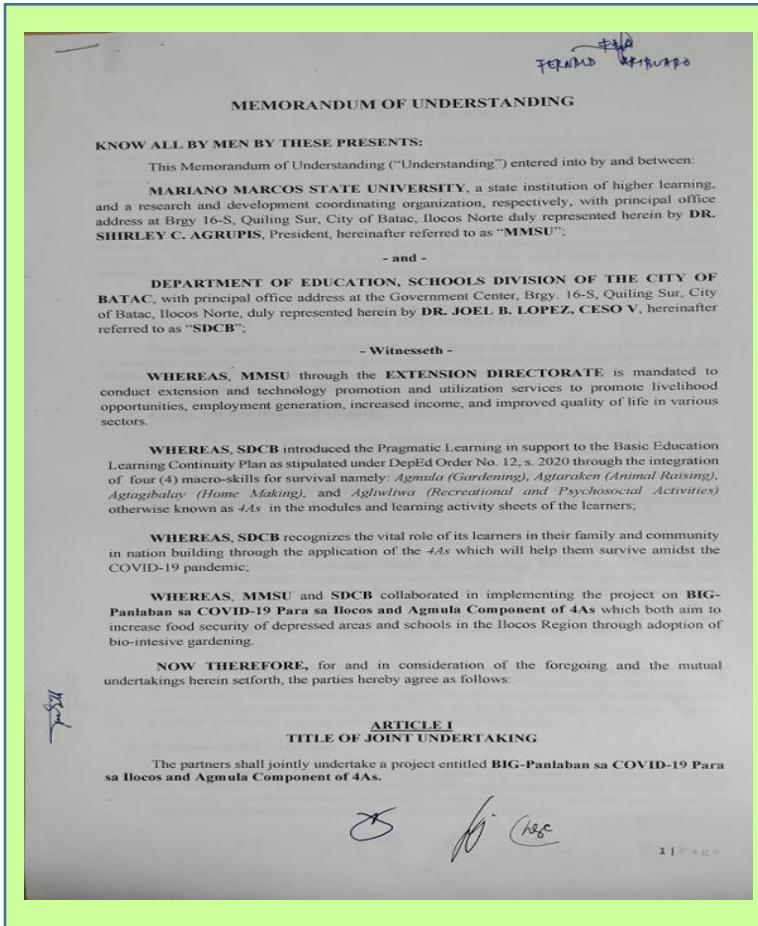
# The Process, cont'n:

## Consultation Meeting



- Consultation meeting was done with the representatives of the different elementary schools for the vegetable production, together with the school principals, and the focal persons of each school.

# The Process, cont'n:



## MOA/ Contract Signing

- A Memorandum of Understanding (MOU) was prepared and signed by the respective heads.



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# Establishment of vegetable nursery...



- Preparation of soil potting media
- Sowing of different vegetable seeds
- Maintenance of seedlings

# The Process, cont'n:

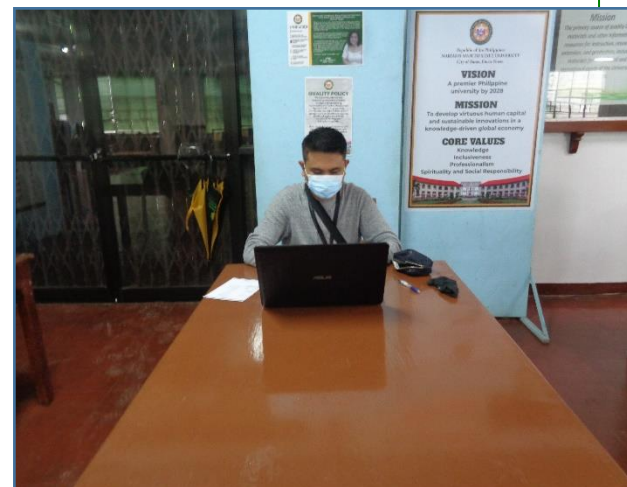
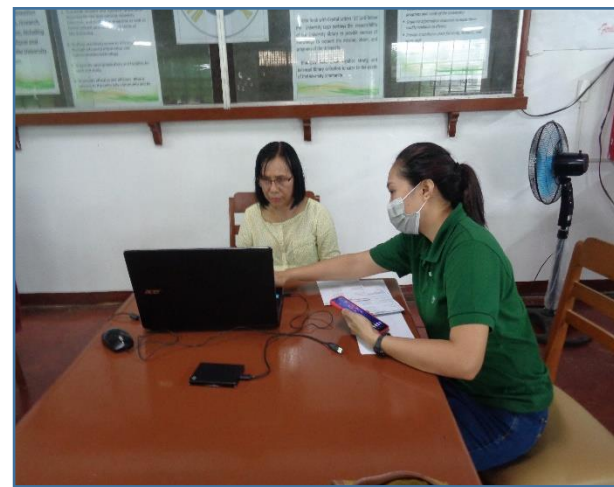
## Pre-dispersal Training of Elementary pupil-beneficiaries



- **Participants:** Grade 5 pupils, with the guidance of their school teachers and parents.

- **Mode:** Virtual

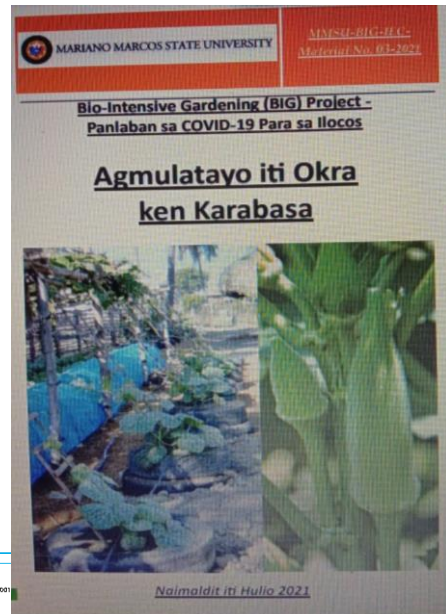
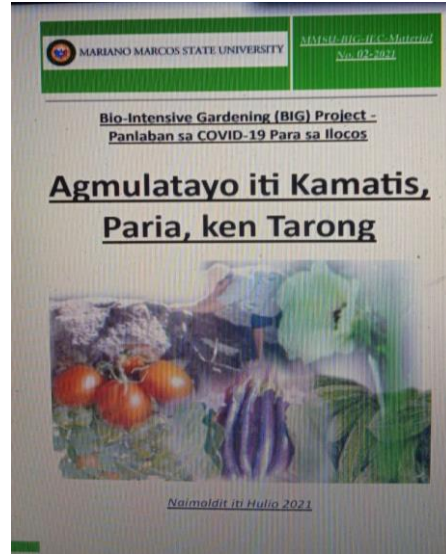
- The project staff, resource speakers, representative from SDO of the City of Batac, school principals and focal persons, and the beneficiaries together with their parents attended the pre-dispersal training on vegetable production.



# Site Validation after the Pre-Dispersal Training



# The Process, cont'n:



## Provision of IEC Materials

- IEC Materials were prepared on the different vegetable production technologies (for bittergourd, bottlegourd, squash, eggplant, tomato, finger pepper, okra, pole sitao and pechay)



# The Process, cont'n:



## Distribution of Farm Inputs

- Vegetable seeds/ seedlings and farm inputs such as organic fertilizers were distributed to the beneficiaries



■ **Regular monitoring** and provision of technical assistance to the beneficiaries were done to ensure efficient and effective implementation of the project.

# The Process, cont'n:

- **Monitoring** was also done through the messenger Group Chat accounts and facebook page for every school.





**Baseline information**

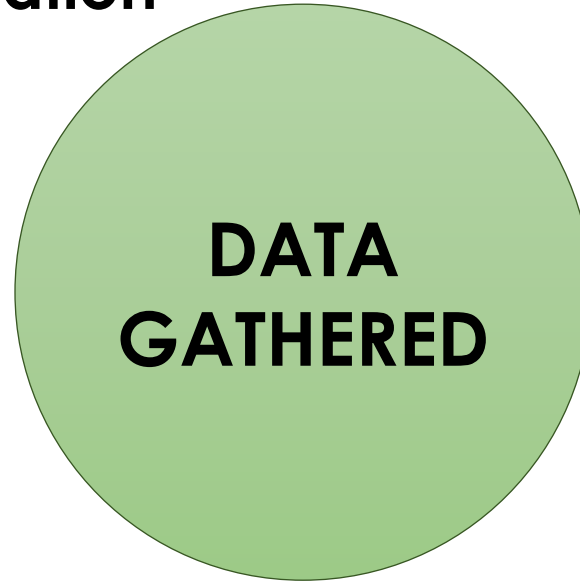


**Personal experiences/  
opinion**

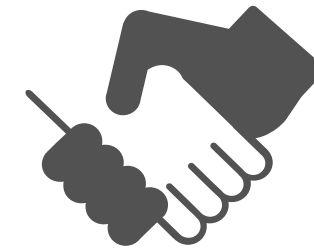


**Area planted**

**Gross income**



**Crops planted**



**Use of products**



**Gardening practices**



**Problems met, cope-up  
mechanisms**



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# The High Lights



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# 1. Vegetable gardening among elementary pupils

## Pre-Dispersal Training

- Enhance knowledge and skills on the vegetable production technologies and be aware of the implementing guidelines of the project.



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# MOA Signing

✓ The MOA stipulated the responsibilities of the MMSU, DepEd/ SDO, LGUs and the beneficiaries.

## MEMORANDUM OF UNDERSTANDING

KNOW ALL BY MEN BY THESE PRESENTS:

This Memorandum of Understanding ("Understanding") entered into by and between:

**MARIANO MARCOS STATE UNIVERSITY**, a state institution of higher learning, and a research and development coordinating organization, respectively, with principal office address at Brgy 16-S, Quiling Sur, City of Batac, Ilocos Norte duly represented herein by **DR. SHIRLEY C. AGRUPIS**, President, hereinafter referred to as "MMSU";

- and -

**DEPARTMENT OF EDUCATION, SCHOOLS DIVISION OF THE CITY OF BATAc**, with principal office address at the Government Center, Brgy. 16-S, Quiling Sur, City of Batac, Ilocos Norte, duly represented herein by **DR. JOEL B. LOPEZ, CESO V**, hereinafter referred to as "SDO";

- Witnesseth -

**WHEREAS, MMSU and SDCB collaborated in implementing the project on BIG-Panlaban sa COVID-19 Para sa Ilocos and Agmula Component of 4As** which both aim to increase food security of depressed areas and schools in the Ilocos Region through adoption of bio-intensive gardening.

**NOW THEREFORE, for and in consideration of the foregoing and the mutual undertakings herein setforth, the parties hereby agree as follows:**

### ARTICLE I TITLE OF JOINT UNDERTAKING

The partners shall jointly undertake a project entitled **BIG-Panlaban sa COVID-19 Para sa Ilocos and Agmula Component of 4As.**



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# B. Enhance capabilities on the principles, techniques, and recommended technologies in vegetable gardening



## Vegetable Demonstration Gardens

- ✓ The 40 elementary pupils, Grade 5, from 4 urban elementary schools of the City of Batac, Ilocos Norte, participated and committed themselves to be part of the project.



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## Vegetable gardening practice

- ✓ The pupil –beneficiaries planted in less than 100 sq m, there were 25% in an exact area of 100 sq m, and 17% planted in 50 sq m area, and used additional container pots.
- ✓ They practiced both zero tillage and with tillage in preparing their land.
- ✓ Used **organic pesticides** to control pests, manual weeding to control weeds.
- ✓ Produced their own seeds for the next season.



## C. Establishing gardens to produce vegetables for livelihood or household consumption

### Profitability of organic vegetable garden of pupil-beneficiaries

- Active participation in vegetable gardening
- Health and fun experience among pupils
- Enhanced sense of responsibility
- Fruitful learning opportunity for young people
- Ready source of vegetables for domestic consumption



# Cook Festival of Pupil-Beneficiaries

- At the peak of fruiting stage of the vegetable gardens of the pupil-beneficiaries formulated new and unique dishes, using their own ideas and creativity.



- This activity made them active and excited.
- The competition brought the best creative ideas in them.
- This reignited the pupils' awareness of vegetables as important part of a healthy diet.

# CATALINO ACOSTA MEMORIAL ELEM SCHOOL



# BAAY ELEMENTARY SCHOOL



# HILARIO VALDEZ MEMORIAL ELEM SCHOOL



# MARIANO MARCOS MEMORIAL ELEM. SCHOOL





# Profitability of demo gardens

Vegetable Planted	Yield/Harvest
Bottlegourd	712 kg
Squash fruit	583.5 kg
Pole Sitao	533.5 kg
Bittergourd fruit	453.5 kg
Bittergourd tops	122 bundles
Finger pepper	408.5 kg
Eggplant	490.5 kg
Kangkong	471 bundles
Pechay	506 bundles



- Able to sell some of their harvest aside from their own household consumption.



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ISO 9001:2015



# Testimonials of Pupil-beneficiaries:

## Padasentayo man ti Pechay Veggie Balls

ni John Josef S. Rosini

Grade 5, HVMES

[#BIG](#) Project Beneficiary


...Agyamankami iti BIG Project ti MMSU, ta babaen iti daytoy a proyekto, ad-adda a natukay ti kalikagom dagiti ubbing iti benneg ti panagmulamula. Awisek ngarud dagiti padak a nagannak ken dagiti dadduma pay nga ubbing nga agmula met kadagiti natnateng. Pudno nga adu ti maited a pagsayaatan dagitoy para iti nasayaat a salun-at ti tunggal miembro ti familia. Laglagipen a ti salun-at ti mangted iti ragsak ken rang-ay iti pinagbiag, innayon pay ni Ms. Rosini.

Maipalagip a maipatpatungpal ti programa babaen iti Mariano Marcos State University (MMSU) ken ti Ilocos Agriculture, Aquatic, and Natural Resources Research and Development Consortium (ILAARRDEC) iti pannakibinnuligna iti Department of Education (DepEd), Schools Division iti ciudad ti Batac. Inpaay ti Philippine Council for Agriculture, Aquatic, and Natural Resources Research and Development (PCAARRD) ti kasapulan a pondo iti pannakaimplementar ti programa. . . . .

**Panangaramid iti Pechay Veggie Balls**

**Dagiti kasapulan**


- 1 kilo a naiwa-iwa a pechay
- 2 pedaso a sibuyas
- 3 kangipen ti bawang
- 2 tasa arena (all purpose)
- 1 tasa a cornstach
- 1 kutsara nga asukar
- 2 pedaso nga itlog
- Asin
- Paminta



**Panangisagana**

1. Mangala iti mixing bowl. Ikabil ti naiwa-iwa a pechay, agraman dagiti dadduma pay a ramen kas iti sibuyas, bawang, arena, cornstach, asukar, itlog, asin, ken paminta. Paglalaoken a nasayaat.
2. Ipadot ti manteka. Pormaen a bolabola ti *mixture*.
3. I-dip fry daytoy agingga nga ag golden brown ti kolorna.
4. Ipaubos a nasayaat ti mantekana.
5. Idasar karaman ti paggugusto a pagsawsawan.

*Palagip. Mabalintayo a nayunan wenno kurangan dagiti ramenna base iti kayattayo a templa wenno raman.*



# Testimonials of Pupil-beneficiaries:

Ragsak, Nasayaat a Salun-at, ken Nasustansia a Taraon ti Pamilia, Ipapaay ti BIG Project Idi nangrugikami iti Bio-Intensive Gardening (BIG), ditoy metten a nangrugi ti healthy and fun activities mi kadagiti annakko, da **Gen Lorenz, 11, Grade 5** kenni **Aisha Chloe, 6, ken Grade 1**, ni Roselyn M. Corpuz, 35, manipud iti Brgy. Baay, iti ciudad ti Batac.

**Gen Lorenz, Grade 5, with her little sister. It was fun for them.**



# **Testimonials of Pupil -beneficiaries:**

*“When we started with the BIG Project, our healthy and fun activities with my children also started. Joining them in doing their gardening activity strengthened our family relationship.”*

*“We were able to produce our healthy and nutritious food during the pandemic.”*

*“Added knowledge for us and also our children. We need not to buy our vegetable in the market anymore because of the BIG Project.”*

*“We were able to increase our yield with the use of Bio-N as one of the technology interventions in corn production. The inoculant really works.”*

**These are just some of the positive feedback our beneficiaries provided as they enjoy the benefits provided by the Bio-Intensive Gardening (BIG) project.**

# Best Practices Identified

- **Due to restrictions on mobility and mass gathering, the pre-dispersal training was conducted online and was attended by the pupils, students and teachers.**
- **The monitoring of the project through the social media platform was done through the creation of the Facebook group.**





## Best Practices Identified

- The teachers and students worked together to ensure the application of knowledge and skills gained in the pre-dispersal training.
- With close and constant coordination of the project staff with the teachers and administrators, the project was implemented successfully. Participatory monitoring and evaluation were intensified in order to address identified gaps and immediate needs of the pupils.





# Promotional Activities

**Press Releases.** social media account/FB page of the Extension Directorate, *Extensionist*, the quarterly newsletter of the Extension Directorate, *Bannawag*, MMSU FB Page and Chronicle.

Ragsak, Nasayaat a Salun-at, ken Nasustansia a Taraon ti Pamilia, Ipaapaay ti BIG Project

Idi nangrugikami iti Bio-Intensive Gardening (BIG), ditoy metten a nangrugi ti healthy and fun activities mi kadagiti annakko, da Gen Lorenz, 11, Grade 6 kenni Aisha Chloe, 6, ken Grade 1, ni Roselyn M. Corpuz, 35, manipud iti Brgy. Baay, iti ciudad ti Batac.... See more



### BIO-INTENSIVE GARDENING (BIG)-PANLABAN SA COVID-19 PARA SA ILOCOS.

Tapan moaddaan ti manayon, nasustansia, ken natalog a taroon dagiti ubbing ken ti sibubukel a familia ti daytoy a panawen ti pandemia, nangrugi itoy nabali ti implementacion ti programa a Bio-Intensive Gardening (BIG). Pannalagan sa Covid 19 Para sa Ilocos. Maijatanggal daytoy a programa baineen ti Mariano Marcos State University (MMSU) ken ti Ilocos Agriculture, Aquatic, and Natural Resources Research and Development Consortium (IAARRDEC) manipud ti pando nga impay ti Philippine Council for Agriculture, Aquatic, and Natural Resources Research and Development (PCAARRD) ken ti panakibinsulig ti Department of Education (DepEd), Schools Division ti Ciudad ti Batac. Ti BIG ket mayta a wagas ti panagmula, nangruna kadagiti sallet arubayan, ken panagaramat kadagiti recycled materials. Suportaran daytoy a programa ti agdama a gaseat ti gobierno a Plant, Plant, Plant Program (3Ps) agraman ti programa ti DepEd – ti Agnula, Agteraken, Agtagibalek ken Agliwliwa (4As) Program. Naki-partisipar ti programa ti Mariano Marcos Memorial Elementary School (MMES), Hilario Valdez Memorial Elementary School (HVMS), Catalino Acosta Memorial Elementary School (CAMES), ken Baay Elementary School (BES). Naisunong kadagiti partisipante dagiti bin-i a bukbal, napatubo a karabasa, paria, tarong, patsay, ken daddama pay, agraman organiko ken inorganiko nga abono ti panangidaulo da Ms. Marissa Atis ken Abegail Marcelino, Project Leader ken Research Assistant ti BIG Project, kas panagsapannada. (Ladawan manipud ken ni Abegail Marcelino ken beneficiaries/taosta: Mercy K. Guio)



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# Promotional Activities

**Virtual program.** MMSU Graduate School and Community Collaboration for a Healthy Society (August 20, 2021).

**Radio Program MMSU Rimat ti Ilocandia and School-on-the Air (SOA) /Eskuela iti Tangatang-Tarabay iti Pagtaengan, Pagbiagan, Salun-at (TIPPS) ken Dadduma Pay.**

**Creation of Facebook (FB) Group.** easier access on the activities, information and technologies promoted, each participating school was created with their FB group with MMSU and the Focal Person as in-charge.

**SOA-Tarabay iti Pagtaengan, Pagbiagan, Salun-at (TIPPS) ken Dadduma Pay**

**PROGRAM HOST** **DR. FLORAMANTE C. PASTOR**  
Department of Environmental Science  
College of Agriculture, Food, and Sustainable Development (CAFSD)

**Topic:**  
**COMPOSTING/  
VERMICOMPOSTING OF BIOWASTES**  
**43<sup>rd</sup> Airing**

**Mercy R. Gano**

**August 4** 12 noon-1 p.m. Wednesday  
**August 5** 5-6 a.m. Thursday  
**August 5** 11 a.m.-12 noon Thursday

**School-on-the-Air/Eskuela iti Tangatang**  
EXTENSION DIRECTORATE /  
R&D/COE/CAS/CAFSD/CBEA/CHS/CASAT/CIT/CTE/COM/GS /GAD/ILAARRDEC  
In partnership with  
Provincial Government of Ilocos Norte thru the Office of the Provincial Agriculture (OPAG),  
Ilocos Norte LGUS-City of Batac, Laoag, Bacarra, Banna, Marcos, Vintar, San Nicolas, Solsona, Sarrai, Burgos,  
Currimao, Paoy, Badoc, Piddig, Pasuquin, Dingras, and Nueva Era, Ilocos Norte

CP Numbers: Smart 0961 972 1528 / Globe 0995 079 4055 / FB Page: MMSU Extension Directorate

**SOA-Tarabay iti Pagtaengan, Pagbiagan, Salun-at (TIPPS) ken Dadduma Pay**

**PROGRAM HOST** **Ms. Marissa I. Atis**  
Research and Development Directorate

**Topic:**  
**Bio-Intensive  
Gardening (BIG)**  
**54<sup>th</sup> Airing**

**Mercy R. Gano**

**Sept. 10** 12 noon-1 p.m. Biernes  
**Sept. 11** 5-6 a.m. Sabado  
**Sept. 14** 11 a.m.-12 noon Martes

**School-on-the-Air/Eskuela iti Tangatang**  
EXTENSION DIRECTORATE /  
R&D/COE/CAS/CAFSD/CBEA/CHS/CASAT/CIT/CTE/COM/GS /GAD/ILAARRDEC  
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# Promotional Activities

[https://m.facebook.com/story.php?story\\_fbid=230413052458041&id=100064680431915](https://m.facebook.com/story.php?story_fbid=230413052458041&id=100064680431915)



Manarimaan ti pannakaisayangkat ti panagsanay iti panagmula iti mais iti Pasuquin, Ilocos Norte, paset ti implementasion ti programa Galing-PCAARRD Kontra Covid-19 Program: Bio Intensive Gardening (BI MMSU Extension Directorate



DOST-1 conducts consultative meeting with MMSU on Bio Intensive Gardening

By: Jaypee A. Solee

The Department of Science and Tec...  
DOST 1 - Department of Science an...

- With increased public visibility of the project and the outputs of pupils on various media, interest on vegetable production became evident as shown by the queries made on the messenger and FB posts.



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# OUTPUTS

- **On vegetable production,** proactive and strategic coordination with administrators, teachers, and students were necessary to ensure the successful conduct of the project. Students and their parents have also shown their commitment as evidenced by their participation in the pre-dispersal training.
- Anchoring a development project on curricular activities and based on learning competencies would be a potential opportunity to actively engage the younger generation in the teaching-learning process.



# OUTPUTS

- **Record keeping is important to help track activities, production efficiency, and other important aspects to improve production management.**
- **The project was able to engage the Grade 5 elementary pupils in establishing vegetable gardens in their own domestic domains. With the training given, they adopted the vegetable production technologies and were able to harvest for their own consumption and as source of livelihood.**





# **WAY FORWARD**

## **Promotion of Inter-School Communication:**

- **Advocate for ongoing communication channels between project coordinators and school officials to facilitate the seamless replication of successful initiatives.**

## **Expansion of Vegetable Gardening in TVL Agriculture Schools:**

- **Encourage the integration of vegetable gardening initiatives in DepEd schools, particularly those offering Technical-Vocational-Livelihood (TVL) Agriculture programs under the Agri-Fishery Arts strand.**
- **Emphasize the potential benefits for students, emphasizing the hands-on application to enhance technical knowledge and skills in vegetable farming.**



# **WAY FORWARD**

## **Integration of Vegetable Gardening in Elementary Schools:**

- **Extend the implementation of vegetable gardening initiatives to elementary schools, aligning with the Gulayan sa Paaralan program.**
- **Support teachers in guiding pupils to apply recommended technologies for sustainable vegetable farming, fostering a culture of environmental awareness and practical agricultural skills at an early age**



# **WAY FORWARD**

## **Teacher Training and Support:**

- **Implement training programs for early childhood educators to equip them with the knowledge and skills necessary to teach basic gardening concepts to young children.**
- **Establish a support system, including mentorship programs and resource-sharing platforms, to sustain teacher enthusiasm and effectiveness in integrating gardening into their teaching.**



# WAY FORWARD

## Community Involvement:

- **Foster community partnerships to involve parents and local volunteers in gardening activities within early childhood education settings.**
- **Organize community events such as gardening workshops or harvest festivals to create a positive and inclusive atmosphere around agriculture.**





## Get in Touch With Us

Send us a message or  
visit us

City of Batac, Ilocos Norte,  
Philippines

(63) 77-600-0459  
[op@mmsu.edu.ph](mailto:op@mmsu.edu.ph)

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 [www.mmsu.edu.ph](http://www.mmsu.edu.ph)