



MARIANO MARCOS STATE UNIVERSITY

Strengthening the Implementation of Carrageenan Plant Growth Promoter (CPCR)

The Mariano Marcos State University (MMSU) is directly involved in and provides input into government and non-governmental organizations' SDG policy development. As a proof, it proposed a policy to the Regional Development Office -1 a policy titled **Strengthening the Implementation of Carrageenan Plant Growth Promoter (CPGR)**. This was endorsed through Resolution No. 7, s. 2024 of the Regional Research, Development, and Innovation Committee – 1 (RRDIC – 1) during its 3rd Quarter Meeting on August 30, 2024.

Agricultural productivity is essential for the economic stability and food security of Region 1, particularly in climate-vulnerable areas. Recent experiments with the CPGR have demonstrated its significant potential to enhance crop yields and resilience. This policy paper proposes the promotion and expansion of CPGR usage to increase farm productivity and resilience in Region 1, leveraging the findings and success stories from the Mariano Marcos State University (MMSU) initiative.



REGIONAL DEVELOPMENT COUNCIL – ILOCOS REGION

NOTICE OF MEETING

To : Regional Research Development and Innovation (RRDIC) Committee Members

CHED	MMSU	Governance SeCom c/o DILG
NEDA	DMMMSU	Infrastructure SeCom c/o DPWH
DOST	PSU	Economic Devt SeCom c/o DA
ILAARRDEC	ISPSC	Environment SeCom c/o DENR
R1HRDC	NLPSC	Social Dev't SeCom c/o DepEd
ICIEERD	UNP	UP MSI - Bolinao Marine Laboratory
NWU	DTI	PSR–Pangasinan c/o Racky Doctor
SLC		

Subject : RRDIC and RRDIC-endorsed RDC Resolutions (First Semester 2024)
Date : 19 August 2024

1. The Regional Research Development and Innovation Committee (RRDIC) has endorsed various resolutions during its First and Second Quarter Meeting for CY 2024.
2. In this regard, we are pleased to provide the following RRDIC and RRDIC-endorsed RDC resolutions which were passed during the first two regular meetings this calendar year.

RRDIC Resolution No.	Title	Approved Date	Proponent
Resolution No. 1, s. 2024	Requesting the Regional Development Council-1 (RDC-1) to Endorse the Adoption of Appropriate DRRM Technologies by the Local Government Units (LGUs) as Recommended by the President	March 15	DOST
Resolution No. 2, s. 2024	Requesting the Regional Development Council-1 (RDC-1) to Endorse the Utilization of Carrageenan Plant Growth Promoter (CPGP) to Increase Farm Productivity in Region 1	March 15	DOST
Resolution No. 3, s. 2024	Supporting the Establishment of the Regional Inclusive Innovation Center in Region 1 Under the Regional Research, Development, and Innovation Committee (RRDIC-1)	March 15	DTI
Resolution No. 4, s. 2024	Supporting the Regional Technology Adopters in The Implementation Of Programs of Concerned Stakeholders In Region 1	March 15	DOST
Resolution No. 5, s. 2024	Endorsing the Establishment of the Knowledge, Innovation, Science and	June 10	MMSU



REGIONAL DEVELOPMENT COUNCIL – ILOCOS REGION

	Technology (KIST) Park at Mariano Marcos State University (MMSU) Batac Campus to the Philippine Economic Zone (PEZA)		
Resolution No. 6, s. 2024	Supporting the Department of Science and Technology – Philippine Textile Research Institute (DOST-PTRI) Programs to Revitalize the Textile Industry in Region 1	June 10	DOST

RDC Resolution No.	Title	Approved Date	Proponent
Resolution No. 6, s. 2024	Endorsing the Adoption of Appropriate Disaster Risk Reduction Management (DRRM) Technologies by the Local Government Units (LGUs) of Region 1	March 27	DOST
Resolution No. 49, s. 2024	Endorsing the Establishment of the Knowledge, Innovation, Science and Technology (KIST) Park at Mariano Marcos State University (MMSU) Batac Campus to the Philippine Economic Zone (PEZA)	June 28	MMSU
Resolution No. 57, s. 2024	Supporting the Department of Science and Technology – Philippine Textile Research Institute (DOST-PTRI) Programs to Revitalize the Textile Industry in Region 1	June 28	DOST-PTRI

3. For queries, please contact the RRDIC secretariat c/o Ms. Annalie Rosales of DOST Regional 1 at (072) 888-3399 or Mr. Rey Ferreria and Mr. Francis Gerald Amansec of NEDA RO1 at (072) 888-5501.
4. For your appropriate action.

Prepared by:

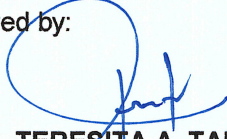


DECTH-1180 P. LIBUNAO

RRDIC Secretary

(DOST 1 ARD for Field Operations)

Noted by:



DR. TERESITA A. TABAOG

RRDIC Chairperson

(DOST 1 Regional Director)



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Policy Paper: Strengthening the Implementation of Carrageenan Plant Growth Promoter (CPGR) to Increase Farm Productivity in Region 1

Proponent: Dr. Nathaniel R. Alibuyog, Dr. Dionisio Bucao, Dr. Sherlyn Nicolas
Mariano Marcos State University

Introduction

Agricultural productivity is essential for the economic stability and food security of Region 1, particularly in climate-vulnerable areas. Recent experiments with the Carrageenan Plant Growth Promoter (CPGR) have demonstrated its significant potential to enhance crop yields and resilience, especially for rice, corn, and peanut farming. This policy paper proposes the promotion and expansion of CPGR usage to increase farm productivity and resilience in Region 1, leveraging the findings and success stories from the Mariano Marcos State University (MMSU) initiative.

Background

The "Sustaining Crop Productivity in Climate Vulnerable Areas in Ilocos Norte" project, implemented by MMSU, aimed to enhance crop productivity through science and technology-driven community-based farm (STCBF) interventions. CPGR was a key technology used in this project, which ran from July 2017 to December 2019, involving 1,479 farmers across seven municipalities. The project focused on promoting climate-resilient production technologies, with CPGR being applied to rice, corn, and peanut crops.

Results of Carrageenan Plant Growth Promoter Implementation

The use of CPGR led to significant improvements in crop yields and farmer incomes:

- **Rice:** A 20.53% increase in yield, with a net income change of PHP 21,665.40 over traditional practices.
- **Corn:** A 15.79% increase in yield, with a net income change of PHP 19,308.00.
- **Peanut:** A remarkable 111.11% increase in yield, with a net income change of PHP 16,361.00.

Farmers reported that crops treated with CPGR showed improved resistance to pests and adverse weather conditions. For example, rice plants exhibited higher resistance to bacterial leaf blight and lodging during strong winds. These results indicate that CPGR is an effective tool for enhancing crop resilience and productivity in climate-affected areas.

Policy Recommendations

1. **Expand CPGR Adoption in Region 1:**
 - **Targeted Extension Programs:** Establish extension programs to educate farmers about the benefits of CPGR and train them in its application. These

programs should be tailored to address the specific needs of rice, corn, and peanut farmers in different municipalities.

- **Demonstration Farms:** Set up demonstration farms across Region 1 to showcase the benefits of CPGR in enhancing crop yields and resilience.

2. Enjoin Local Government Units (LGUs) to Promote and Support CPGR:

- **Promotion and Advocacy:** Encourage LGUs in Region 1 to actively promote the use of CPGR among farmers. LGUs should integrate CPGR promotion into their agricultural development plans and provide logistical and financial support for its distribution.
- **Local Policy Support:** LGUs should create local ordinances and policies that incentivize the adoption of CPGR and provide subsidies or financial assistance to farmers for purchasing the promoter.

3. Strengthen Partnerships with Stakeholders:

- **Collaborate with Local Governments and Agencies:** Work with local government units (LGUs), the Department of Agriculture (DA), and other relevant agencies to facilitate the distribution of CPGR and provide technical support to farmers.
- **Engage with Farmer Cooperatives:** Partner with farmer cooperatives to encourage the collective purchase and use of CPGR, ensuring cost-effective and widespread adoption.

4. Enlist Agricultural Training Institute (ATI) and Higher Education Institutions (HEIs) for Capacity Building and Information, Education, and Communication (IEC) Efforts:

- **Capacity Building Programs:** ATI and HEIs should conduct capacity-building programs for farmers and agricultural extension workers on the effective use and benefits of CPGR. These programs should include practical training sessions and workshops.
- **IEC Campaigns:** Develop comprehensive IEC campaigns to increase awareness and understanding of CPGR among farmers. These campaigns should utilize various platforms, including radio, social media, and community meetings, to reach a broader audience.

5. Develop and Distribute Information, Education, and Communication (IEC) Materials:

- **Vernacular-Based IEC Materials:** Create and distribute IEC materials in local languages to ensure that all farmers, regardless of literacy levels, understand the benefits and application of CPGR.
- **Use of Multimedia Platforms:** Utilize radio, television, and social media to disseminate information about CPGR and its successful application in Region 1.

6. Monitor and Evaluate CPGR Implementation:

- **Establish Monitoring Frameworks:** Develop a monitoring and evaluation framework to assess the impact of CPGR on crop yields and farm incomes regularly.
- **Feedback Mechanisms:** Implement mechanisms for farmers to provide feedback on CPGR usage, enabling continuous improvement of the technology and its application.

Conclusion

The implementation of Carrageenan Plant Growth Promoter has shown significant promise in increasing crop yields and resilience, especially in climate-vulnerable areas of Region 1. By expanding CPGR adoption, enjoining LGUs to support its promotion, leveraging the capacity-building capabilities of ATI and HEIs, strengthening stakeholder partnerships, enhancing farmer education, and monitoring implementation, Region 1 can improve farm productivity and ensure food security. These efforts will contribute to the sustainable development of agriculture in the region, benefiting both farmers and the broader community.

By promoting the widespread use of CPGR, Region 1 can take a proactive step toward enhancing agricultural resilience and productivity, ultimately supporting the livelihoods of its farmers and the stability of its food systems.



Policy Proposal: Strengthening the Implementation of Carrageenan Plant Growth Promoter (CPGR)

Increasing Farm Productivity in Region 1



Nathaniel R. Alibuyog
Mariano Marcos State University

EDSECOM 3rd Quarter Meeting
September 6, 2024

Introduction

Agricultural productivity is essential for the economic stability and food security of Region 1, particularly in climate-vulnerable areas. Carrageenan Plant Growth Promoter (CPGR) has shown significant potential to enhance crop yields and resilience, especially for rice, corn, and peanut farming.



Background

- The **Sustaining Crop Productivity in Climate Vulnerable Areas in Ilocos Norte** project by MMSU demonstrated the effectiveness of CPGR in improving crop productivity. The project, involving 1,479 farmers across seven municipalities, resulted in significant increases in yield for rice, corn, and peanut crops.



Rice varieties, area planted, and number of cooperators

Data Source: Department of Agriculture Region 1

WS 2018							DS 2018-2019					
Province	Area (ha)			Number of Cooperators			Area (ha)			Number of Cooperators		
	Inbred	Hybrid	Total	Inbred	Hybrid	Total	Inbred	Hybrid	Total	Inbred	Hybrid	Total
Ilocos Norte	95	542	637	168	1053	1221	106	1251	1357	223	1916	2139
Ilocos Sur	102.8	205.49	308.29	218	363	581	32.25	183.6	215.85	54	450	504
La Union	79.09	0	79.09	110	0	110	0	77.48	77.48	0	110	110
Pangasinan	729.91	17.3	747.21	572	22	594	637.04	125.87	762.91	125.87	508	633.87
Grand Total	1006.8	764.79	1771.6	1068	1438	2506	775.29	1637.95	2413.24	402.87	2984	3386.9

Beneficiaries of CPGP in Region 1 per province

Data Source: Department of Agriculture Region 1

Province	No. of project sites/Municipalities		Actual Area (ha)		Total No. of farmer-cooperators	
	<i>WS 2018</i>	<i>DS 2018-2019</i>	<i>WS 2018</i>	<i>DS 2018-2019</i>	<i>WS 2018</i>	<i>DS 2018-2019</i>
Ilocos Norte	6	13	637	1357	1221	2139
Ilocos Sur	5	5	308.29	215.85	581	504
La Union	2	2	79.09	77.48	110	110
Pangasinan	5	6	747.21	762.91	594	634
Total	18	26	1771.59	2413.24	2506	3387

Results of CPGR Implementation

01

Rice: 20.53%
increase in yield,
net income
change of PHP
21,665.40

02

Corn: 15.79%
increase in yield,
net income
change of PHP
19,308.00

03

Peanut:
111.11%
increase in yield,
net income
change of PHP
16,361.00

04

Crops treated with
CPGR showed
improved
resistance to pests
and adverse
weather
conditions.

Policy Recommendations



Conclusion

The implementation of CPGR has shown great promise in increasing crop yields and resilience in Region 1.

By expanding adoption, enjoining LGUs to support its promotion, leveraging capacity-building capabilities, and monitoring implementation, Region 1 can improve farm productivity and ensure food security.