RICE CROP MANAGER: FROM RESEARCH TO EXTENSION IN DAVAO REGION, PHILIPPINES

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THIS PRESENTATION AIMS TO SHARE THE EXPERIENCE OF RCM DISSEMINATION, ADOPTION, AND TRANSITION AT THE REGIONAL LEVEL

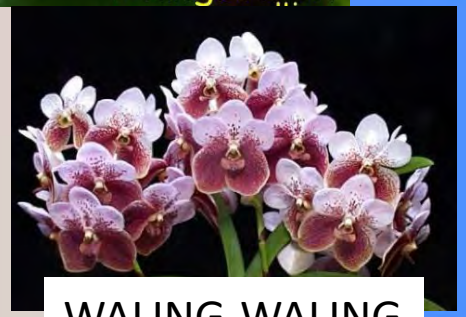
OUTLINE OF PRESENTATION

- Rice Cultivation in the Philippines and in Davao Region
- Challenges and Opportunities in Nutrient Management
- What is Rice Crop Manager - Advisory Service?
- Generic Pathway of RCM Implementation in Philippines
- Introduction of RCM to 16 Regions in the Philippines
- Davao Region's Initiatives on RCM Implementation
- RCM Deployment in Davao Region
- Results of RCM Techno Demo in Davao Region
- Monitoring, Evaluation, and Learning in Davao Region
- Importance of RCM-AS to Farmers, Extension Workers, and other Government Sectors
- Transition of RCM from IRRI to DA
- Summary and Conclusion


Map of the Philippines showing the 16 regions
0
700 km
China
Vietnam
South China Sea
Philippine Sea
REGION I
CAR
REGION II
REGION IV-A
REGION III
NCR
REGION V
LUZON
MIMAROPA
REGION VIII
VISAYAS
REGION VII
Spratly Islands (disputed)
REGION XIII
REGION VI
REGION IX
Sulu Sea
REGION X
MINDANAO
REGION XI
Palau
ARMM
REGION XII
N
Malaysia
Brunei
Indonesia
Celebes Sea
PhilAtlas | Map data © OpenStreetMap contributors

PHILIPPINE EAGLE

DURIAN



WALING-WALING

DAVAO REGION

RICE CULTIVATION IN THE PHILIPPINES

Cropping Intensity: 1 dry season, 1 wet season
Crop establishment method: 65.45% transplanting
Average landholding per farmer: 1.48 ha
Annual per capita consumption: 109.87 kg
Total Land Area for Rice: 4.8M has
Annual Production: 19 MMT
Average Yield: 4.16 MT/ha

Source: PhilRice Palaystat, 2021

DAVAO REGION

Cropping Intensity: 1 dry season, 1 wet season
Crop establishment method: 67.05% transplanting
Annual Production: 484,724 MT
Total Land Area for Rice: 108,013 has
Irrigated: 93,790.58 has
Rainfed: 14,223 has

Average Yield: 4.48 MT/ha (2021); 4.37 (2019)
Total number of municipalities/cities: 49
Number of rice-producing municipalities/cities: 44
Basis for fertilization: Mostly visual observation

Source: PhilRice Palaystat, 2021

TARGET Average Yield: 6 MT/ha

THE CHALLENGE: THE BETTER MANAGEMENT OF RICE NEEDED FOR HIGHER INCOME AND HIGHER PRODUCTION DIFFERS AMONG FIELDS AND FARMERS

THE OPPORTUNITY: UPGRADE THE EXISTING NUTRIENT MANAGER TO RICE CROP MANAGER BY ADDING IMPROVED CROP MANAGEMENT

Our Approach: Use ICT (Information and Communications Technology) to deploy improved nutrient and crop management practices to farmers

-Dr. Roland Buresh

WHAT IS RICE CROP MANAGER-ADVISORY SERVICES

- The Rice Crop Manager Advisory Service (RCMAS) for the Philippines is a digital agriculture service that provides farmers with information geared toward increasing productivity and profitability of rice farming through targeted integrated nutrient and crop management.
- With IRRI, PhilRice, DA, DA-BAR, DA-RFOs, DA-ATIs, ATI-RTCs, LGUs. It uses ICT gadgets to generate farming guide online and offline.
- RCMAS is a free service provided by the Philippine government for the benefit of Filipino rice farmers.

Rice Crop Manager

- a digital platform of reaching and benefiting farmers through increased yield and income with improved nutrient and crop management practices

Personal computer

Smartphone

AEW, technician, or DA staff use the app

Printout

Text message

Farmer receives recommendation

- **One page print out**
- **SMS**
- **Exact inputs for farmers field size**

GENERIC PATHWAY OF RCM IMPLEMENTATION

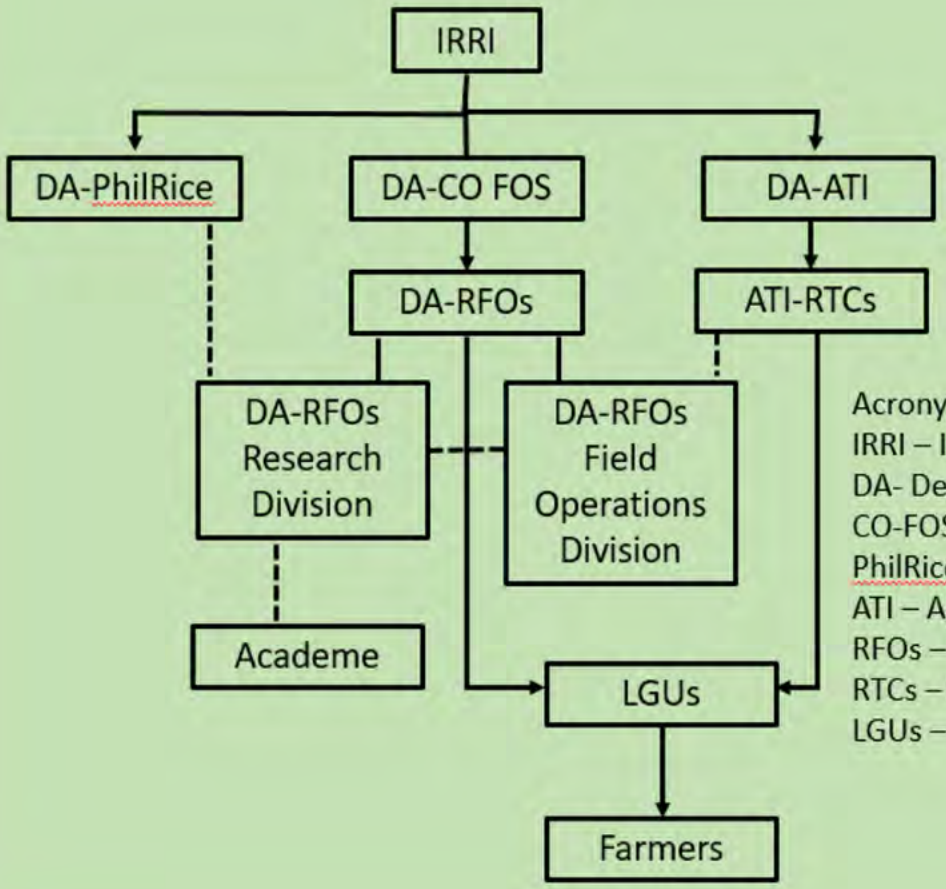
> All RFOs has RCM- Project Management Team which composed of DA-FOD, DA-Research, DA-PMED, DA-ICTs, and ATI-RTC

> Each member has its functions in RCM implementation

> All regions provided funds and gadgets to the LGUs for the RCM dissemination activities

> Regular updating and re-tooling to LGUs is one of the tasks of the RCM-PMT

> In Davao Region, we tapped the academe for more RCM development



Acronyms:
IRRI – International Rice Research Institute
DA- Department of Agriculture
CO-FOS – Central Office, Field Operations Section
PhilRice – Philippine Rice Research Institute
ATI – Agricultural Training Institute
RFOs – Regional Field Offices
RTCs – Regional Training Centers
LGUs – Local Government Units

IRRI INTRODUCED RCM TO THE 16 REGIONS IN PHILIPPINES

- One of DA-IRRI Partnership Projects started in 2013 in support to food staple sufficiency program
- IRRI trained the Department of Agriculture – Regional Field Offices' Research Division and provided laptops, tablets, and GPS units.

Dr. Roland Buresh pioneered the Site Specific Nutrient Management (SSNM) which led to the development of the Rice Crop Manager (RCM).

IRRI - DA-RFO RESEARCH DIVISION

DAVAO REGION HOSTED THE 1ST COUNTRY-WIDE RCM MEETING

DAVAO REGION HOSTED THE 1ST MINDANAO CLUSTER TRAINING

DAVAO REGION'S INITIATIVES ON RCM IMPLEMENTATION

FROM DA-RFO

Provided token to deserving AEWs

Included RCM to their target to claim the quarterly incentive

PCIC

RSBSA

Attributed RCM to various programs

Provided funds to LGU for RCM

LGUs on educational tour to Luzon

Continued training amid pandemic

DAVAO REGION'S INITIATIVES ON RCM IMPLEMENTATION

Piloted RCM-AS to one municipality

RCM Farmer ID

RCM Generation

Geo-referencing

Field days were conducted with the presence of AEWs from the entire region

M, E, & L

Monitoring by IRRI

LGU's INITIATIVES

- LGUs mobilized their AEWs, Local Farm Technicians, and Barangay Agri. Workers by providing extra incentives from local funds
- Prescription form in local dialect is given to farmers in farflung areas

Ngalan sa Mag-uuma: _____ Field ID no: _____
Ngalan sa Luna: _____ Barayti: _____
Petsa sa Pagluyong/Pagdayrek: _____ Luna (ha): _____ Target nga abot: _____

Pahinumdom: Gamiton kini nga Giya alang sa _____ cropping season lamang.

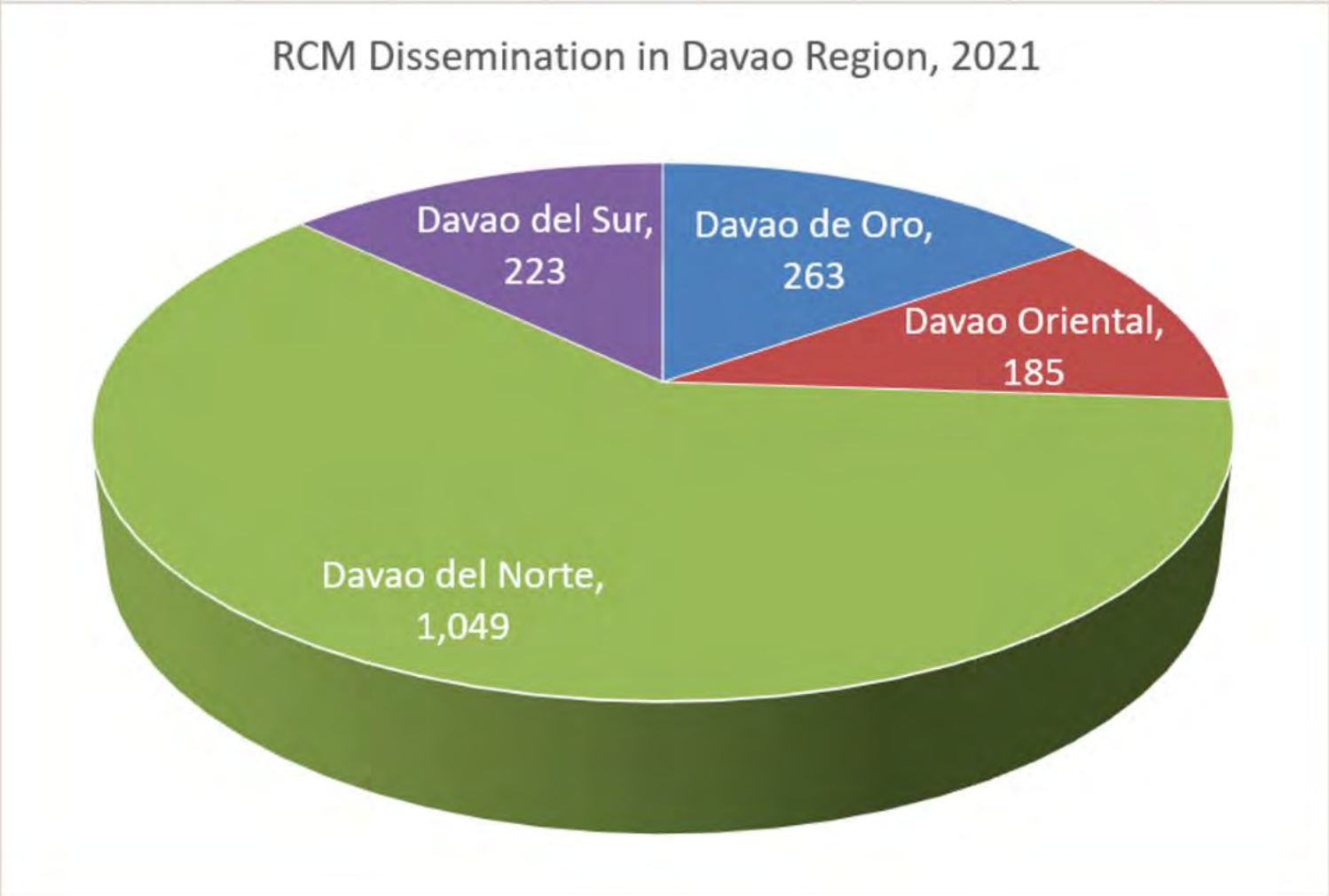
Mag-aplay ug abuno basi sa mosunod nga giya:

ANG-ANG SA TUBO SA HUMAY	ADLAW GIKAN PAGTANOM/PAGSABOD	KLASE UG GIDAGHANON SA ABUNO		
		COMPLETE FERTILIZER (14-14-14-with sulfur)	Urea (46-0-0)	Muriate of Potash (0-0-60)
BASAL				
PAGSIPAK				
PAGPANGALA				
PAGBUSWAK				
		Total:		

ATI INITIATIVES

DAVAO REGION'S INITIATIVES ON RCM IMPLEMENTATION

RCM DEPLOYMENT IN DAVAO REGION



MONITORING, EVALUATION AND LEARNING (MEL) IN DAVAO REGION

KEY INFORMANT INTERVIEW

Number of municipalities: 9
Number of respondents: 51

26

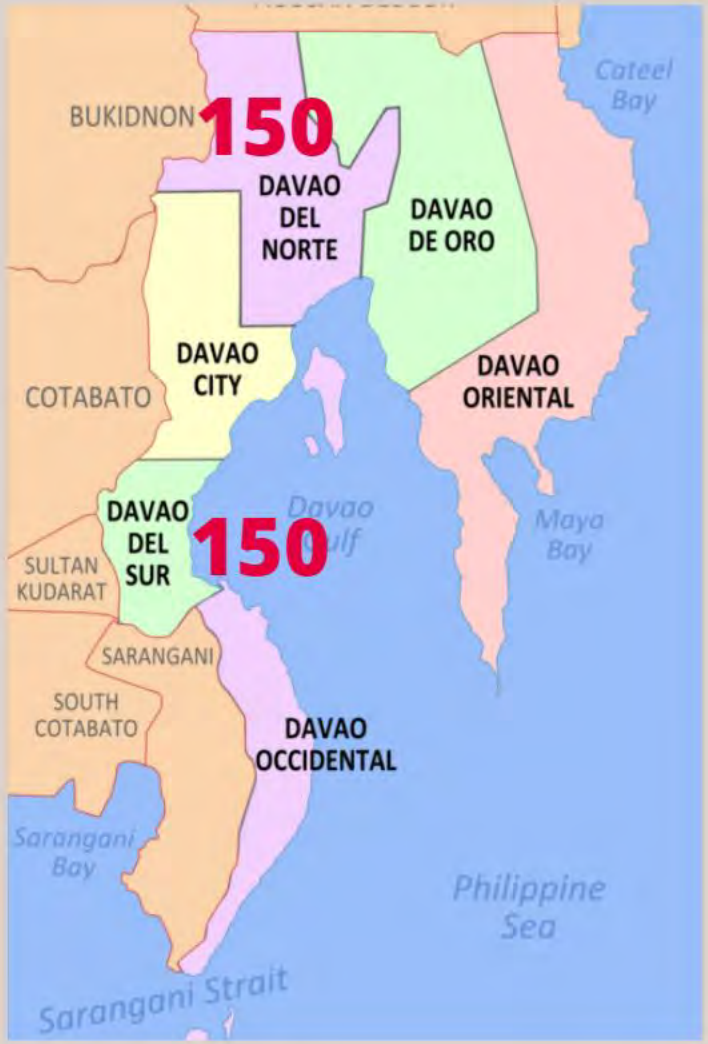
25

MONITORING, EVALUATION AND LEARNING (MEL) IN DAVAO REGION

M, E, L INTERVIEW TO FARMERS

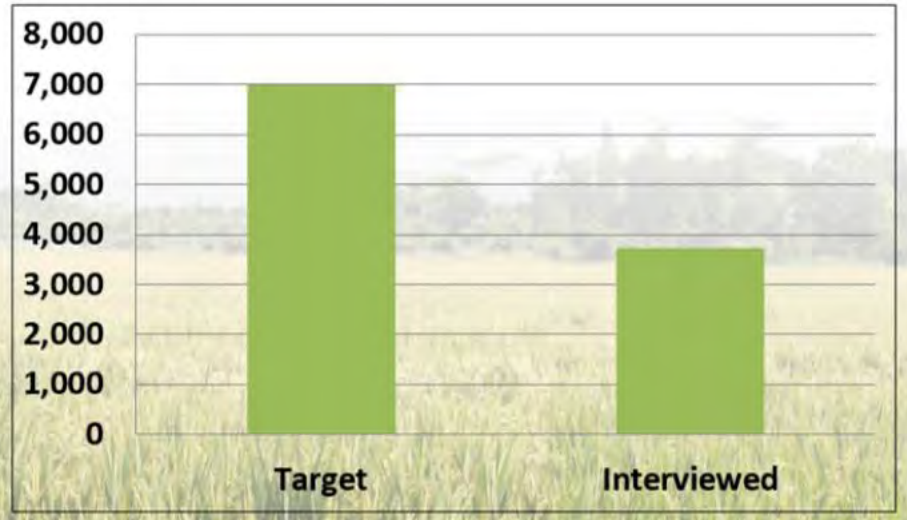
Number of municipalities: 2
Number of respondents: 300

RCM FARMER: 150 NON-RCM: 150

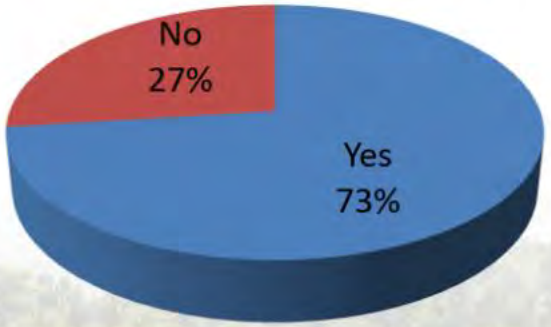


MONITORING, EVALUATION AND LEARNING (MEL) IN DAVAO REGION

1. How many farmers were provided with RCM recommendation?



Difficulty in Achieving RCM targets



Constraints

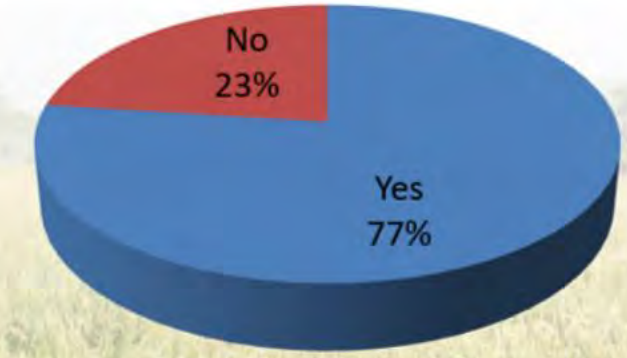
- Lack of gadgets
- Poor internet connection
- Lack of manpower, ATs are mostly generalist

Source: KII

MONITORING, EVALUATION AND LEARNING (MEL) IN DAVAO REGION

How was the RCM recommendation delivered to the farmers?

Timeliness of Delivery



Facilitating Factors:

- Involvement of BAEWs/LFTs
- Gather farmers in area with good internet connectivity
- Activities were based on the cropping calendar
- Team approach
- Text farmers if recommendations are ready for pickup

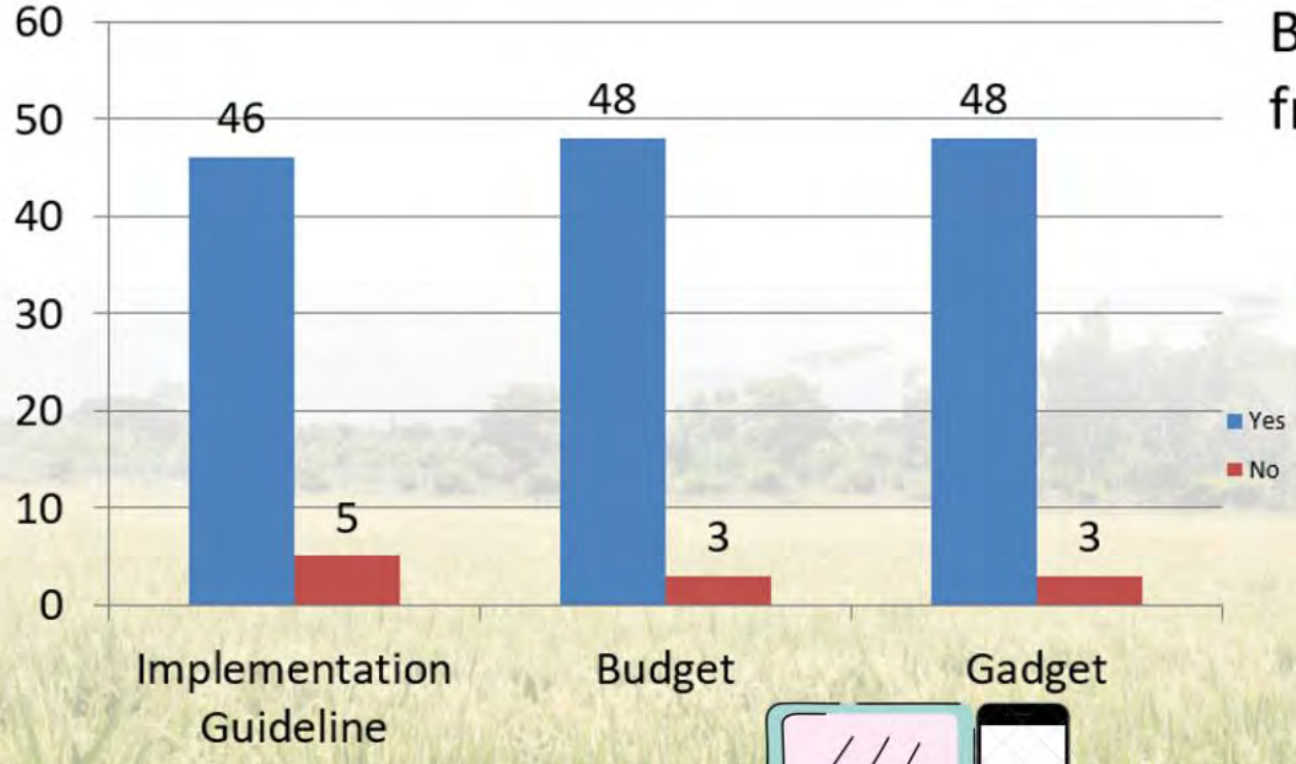
Source: KII

Constraints:

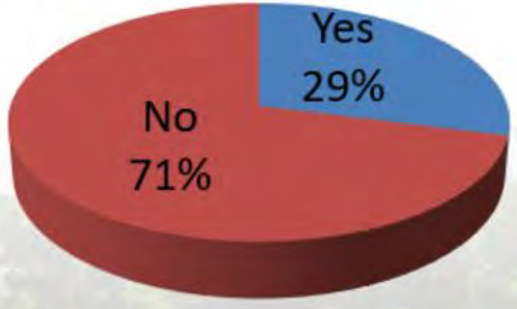
- Delayed distribution by the IA president/officers
- Delayed printing
- Poor internet connection

MONITORING, EVALUATION AND LEARNING (MEL) IN DAVAO REGION

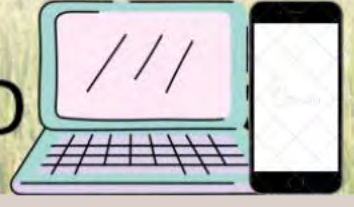
Support on RCM Implementation:



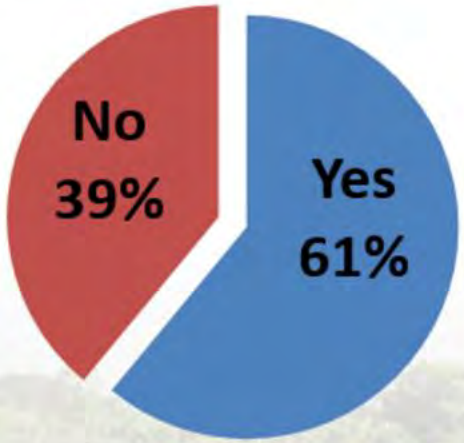
Budgetary Support from LGU



Support from RFO

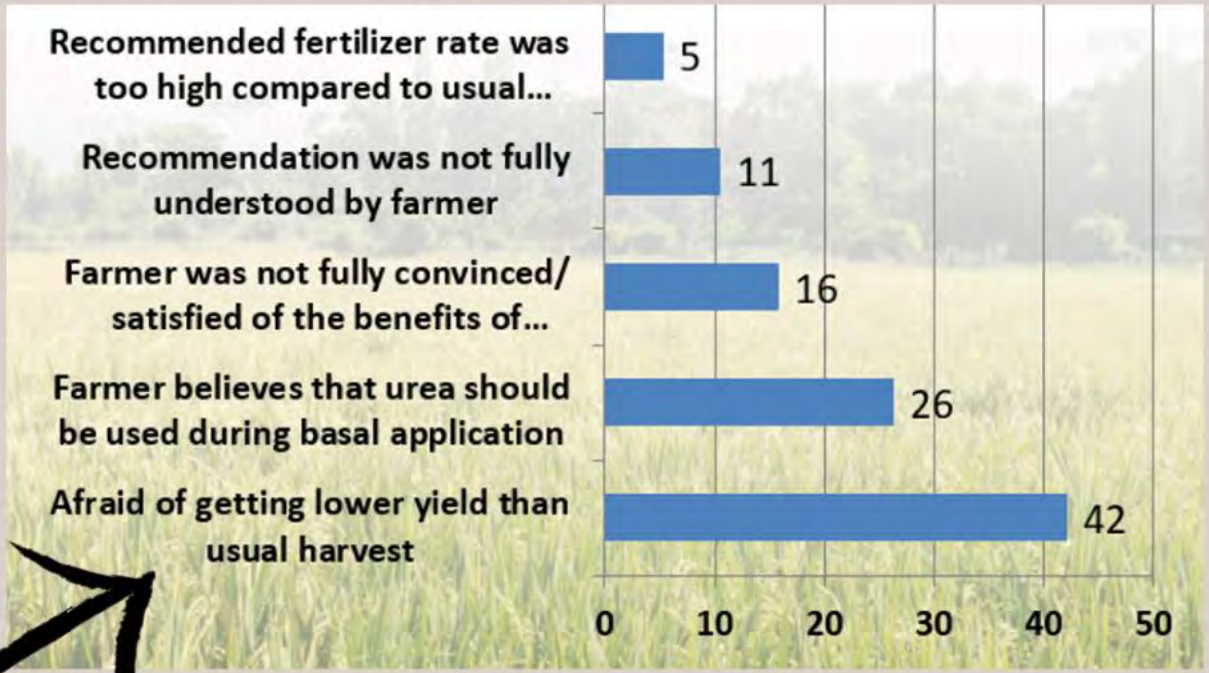


Farmers who followed the exact amount of fertilizer recommended by RCM

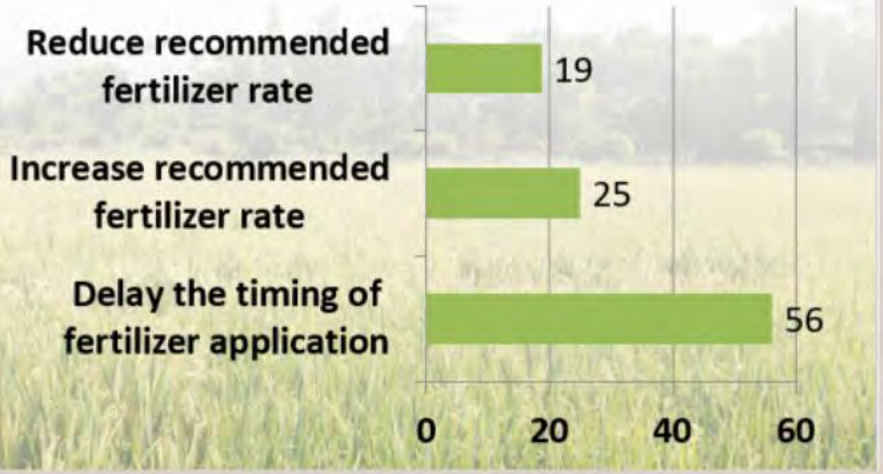


Reasons for not following the recommended rates of fertilizer:

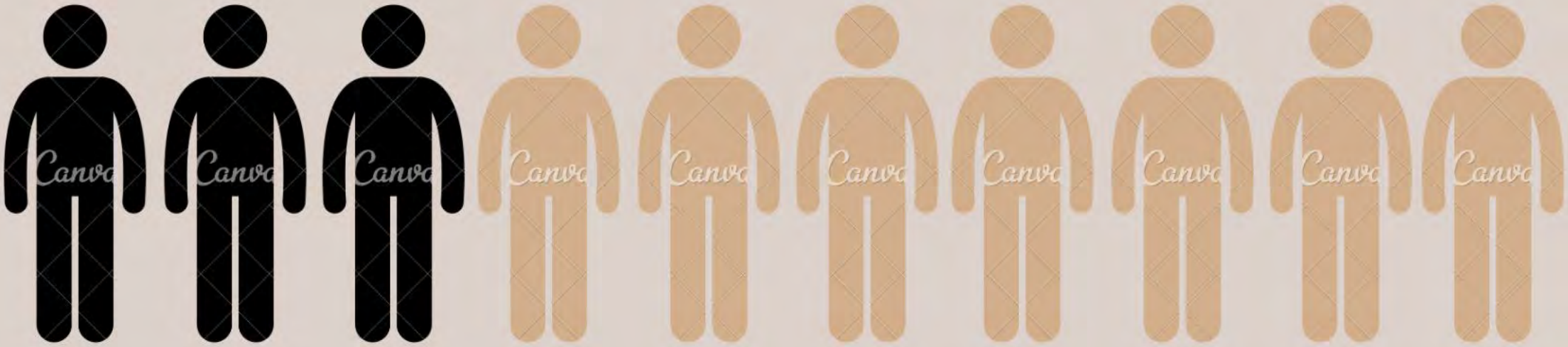
1. Hesitant to follow the recommendation
2. Farmer felt the need to adjust recommendation due to weather condition
3. Did not have funds to purchase needed fertilizer



Adjustments done in the recommendation if reason is due to weather condition and water availability (%)



MONITORING, EVALUATION AND LEARNING (MEL) IN DAVAO REGION



Adopters: 30%

MONITORING, EVALUATION AND LEARNING (MEL) IN DAVAO REGION

Did the farmer benefit from adopting/following the RCM?
Did their yield and income increase?

Farmer's Classification	Pre RCM	Post RCM	Diff
Without change	5.03	5.41	0.39*
With change	4.78	5.70	0.92*
With change in quantity only	5.04	5.62	0.58
With change in timing & N distribution	4.25	5.34	1.09*
With change in quantity and timing & N distribution	4.83	6.02	1.19*

* significant at 5%

IMPORTANCE OF RCM-AS TO FARMERS, EXTENSION WORKERS, AND OTHER AGENCIES

TO THE FARMERS:

- Learned new way of managing crop
- Reduced inputs used
- No more mixing of fertilizers
- Knowledge on the exact farm size
- Improved yield

TO THE EXTENSION WORKERS:

- Fastest and easiest way of generating nutrient management guide
- More farmers served per day
- Enhanced extension services
- Contribute to the increase in rice production

IMPORTANCE OF RCM-AS TO FARMERS, EXTENSION WORKERS, AND OTHER ORGANIZATIONS

TO OTHER GOVERNMENT PROGRAMS/AGENCIES:

- Used in Registry System for Basic Sector in Agriculture (RSBSA)
- Used in Philippine Crop Insurance Corporation (PCIC)
- Used as basis in providing interventions by DA and other agencies
- Used in model farms and other large-scale demo

TO THE RICE INDUSTRY

- Provide technology option for increased rice production and attain the target average yield of 6 t/ha from 4.48 t/ha in 2021
- Improved soil
- Sustainable rice production

TRANSITION OF RCM FROM IRRI TO DA

ROLE OF RCM PLAYERS:

PHILRICE: Maintenance of the App, Continued RCM Researches

ATI: Funding, Promotion, and Dissemination

DA - FOS: Funding and other logistics support

DA-RFO: Continued inclusion in annual plans and budget; strengthen the RCM-PMT

LGU: Funding, Provide manpower for massive, but efficient dissemination, Strengthen FITS center

SUMMARY

Contributors to challenges in RCM dissemination by the LGU:

- Limited manpower
- Limited gadget
- Poor internet connectivity (this is now addressed)

Factors affecting adoption of RCM by farmers:

- Hesitation to follow RCM recommendation for they are afraid of getting lower yield
- Feeling the need to adjust recommendation due to weather condition
- No enough funds to purchase recommended fertilizer

Benefits to farmers who followed RCM recommendation:

- Farmers increased yields and income
- Highest gains were obtained following the right quantity of fertilizer with the right timing and N distribution in the particular cropping season

On RCM implementation, funding and other logistic support are properly cascaded from national to local government.

CONCLUSION

- Full support of the government both national and local to RCM dissemination is key to its massive adoption and sustainability.

- Continued research to refine RCM recommendation vis a vis the changing climate is likewise important.


THANK YOU