DEVELOPMENT ACTION PLAN

35th INTERNATIONAL TRAINING COURSE

FROM SEED TO TABLE

MODULE 3: SUSTAINABLE DEVELOPMENT
31 OCT – 25 NOV 2016
KASERTSART UNIVERSITY, KAMPHAENG SEAN CAMPUS, THAILAND

AVRDC
The World Vegetable Center

PERSONAL BACKGROUND

Nurin Izzati bt Mohd Zulkifli

- Research Officer (2014-now)
- Malaysian Agricultural Research Centre and Development (MARDI)

Education background

- BSc : Science (Ecology and Biodiversity)
- MSc : Medical Entomology

Main Responsibility / Job Description

- Conducting research on insect pest (paddy and vegetables)
- Helping farmers on insect pest management

WELCOME TO MALAYSIA

- ±30 billion population
- Land area : 329, 847 sq km
- 4th the world best retirement Havens (internationaliving.com, 2015)
- 4th most famous international tourist destination in Asia
- Multi-racial and multi-ethnic
- State Religion : Islam

WELCOME TO MALAYSIA

- Independence Day : 31st August 1957
- Government :Federal constitutional elective monarchy. Head of state is Yang Dipertuan Agong.
- Tropical country and rich in biodiversity
- Staple food : Rice
- Economy : petroleum, natural gases, oil palm, rubber and tourism.
- Official language : Bahasa Malaysia

PROTON

PERODUA

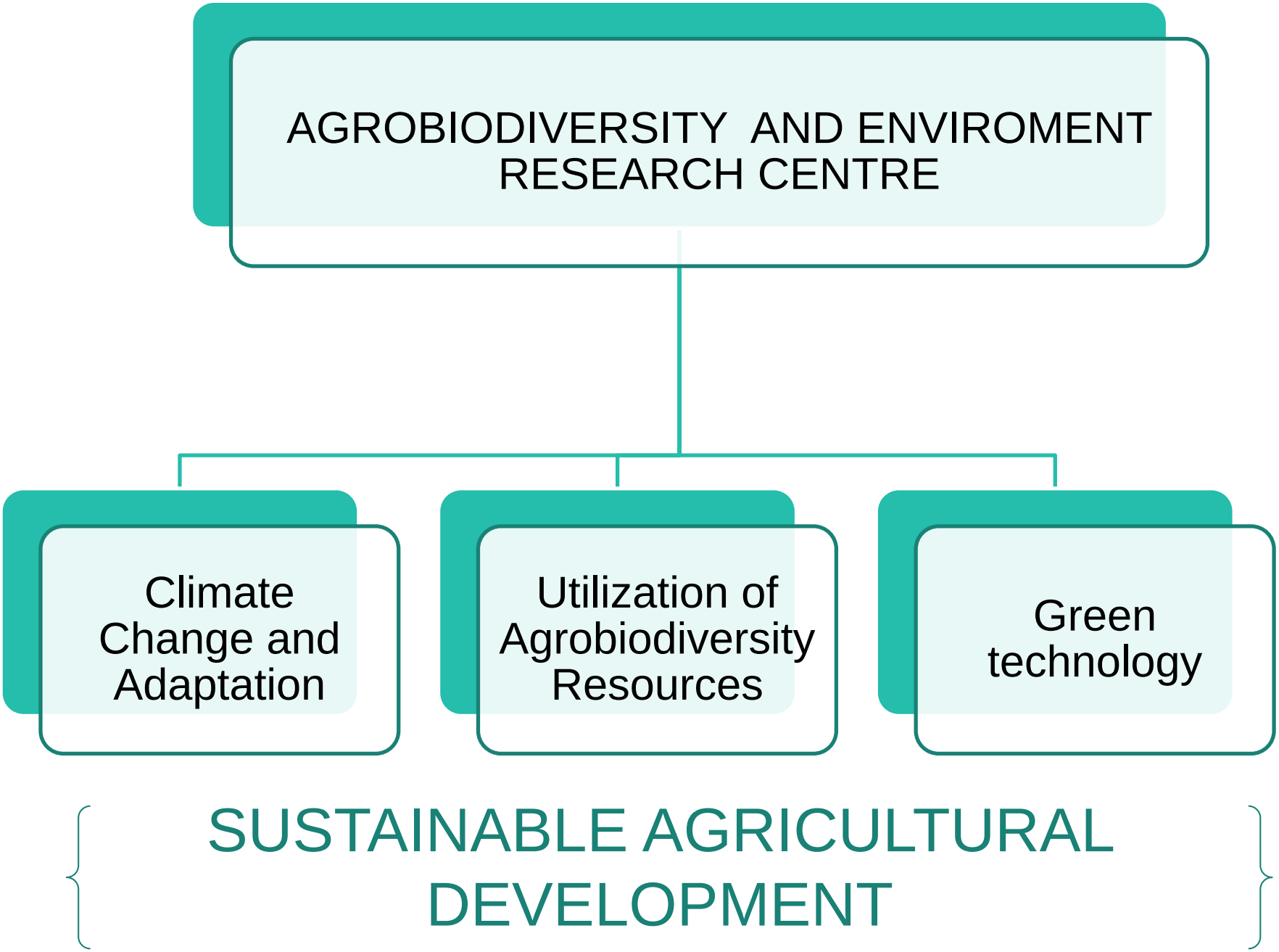
MALAYSIAN AGRICULTURE RESEARCH AND DEVELOPMENT INSTITUTE

- Establish in 1971

- Semi government body and got mandate from Ministry of Agriculture to conduct research on agriculture, food and agro-based industries.

- Provide technical services and courses to farmers.

- MISSION : Creating Inclusive Knowledge & Technologies For Sustainable Agro food Sector


AGROBIODIVERSITY AND ENVIROMENT RESEARCH CENTRE
Climate Change and Adaptation
Utilization of Agrobiodiversity Resources
Green technology
SUSTAINABLE AGRICULTURAL DEVELOPMENT

USEFUL TOPICS

- Extension
  - How to attract audience (farmers)
- Sampran RiverSide Trip
  - Sampran Model
- Chiangmai Trip
  - HRDI
  - Royal Angkhang Project

Title : IMPLEMENTATION OF ECOLOGICAL ENGINEERING TO MANAGE RICE PESTS IN MALAYSIA

WHAT IS ECOLOGICAL ENGINEERING ?

- Ecological engineering is an emerging study of combination between ecology and engineering, focusing on design, monitoring and structure of ecosystems

- Design of ecosystems for the mutual benefits of human and environment (Mitchs, 2012).

PROBLEM IN PADDY FIELD

- The paddy field usually lack of food and shelter for beneficial predators and parasitoids

Leading to increase the use of

PESTISIDE !!!

RECOMMENDED PESTICIDES			
Crop	Pest	Chemical Name	Dose
Paddy	Stem borer/ Gall midge	Carbofuran 3 G Fifronil 0.3 G Cartap-hydrochloride 50% SP Chloropyriphos 20% EC Monocrotophos 36% SL	30 kg /ha 17.5-25 kg/ha 1 gm/lt 2ml/lit 2 ml/lit
	Leaf folder	Endosulfan 35% EC Cypermethrin 25% EC Lambda -Cyhalothrin 5% EC	2ml/lt 0.7ml/lt 1ml/lt
	GLH/BPH/WBPH	BPMC(Fenobucarb) Ethofenprox 10%EC Imidachloprid 17.8%SL Phosalone 35%EC Azadirachtin 0.5%	2ml/lt 1.0ml/lt 1ml/4lt 2.5ml/lt 1ml/lt
	Hispa/Case worm /Cut worm	Endosulfan 35% EC Quinalphous 25% EC Monocrotophos 36%SL Chloropyriphos 20%EC	2ml/lt 2ml/lt 2ml/lt 2ml
	Mealybug	Oxydemeton methyl 25 % EC Dimethoate 30% EC	2ml /it 2ml
	Gundibug	Malathion 50% EC ,DDVP	1ml/lt
		Carbaryl 50% WP	3gm/lt
	Thrips	Monocrotophos 36%SC Triazophos 40%EC Imidacloprid 17.8%SL	2ml/lt 2ml/lt 1ml/4lt

Flowering Plants Provide Resources To Enhance Biological Control.





OBJECTIVES

- **To develop a sustainable method in managing pest in rice paddy field**
- **To implement a robust solution for rice farmers in Malaysia by promoting biodiversity based agriculture to enhance ecosystem**

OUTPUTS

- Effective landscape to implement ecological engineering identified
- Suitable flowers planted in paddy field identified
- Beneficial insects and parasitoid in paddy field documented

ACTIVITIES






YEAR	2016				2017				2018			
	1	2	3	4	1	2	3	4	1	2	3	4
Selection of research plot			—	—								
Field testing (soil survey, design of landscape, selected nectar flower)				—	—	—	—	—	—			
Monitoring and field evaluation of beneficial and parasitoid					—	—	—	—	—	—		
Implementation of ecological engineering package to 100 rice farmers									—	—	—	—

BUDGET REQUESTED

	2016 (RM)	2017 (RM)	2018 (RM)
Travel and transportation	8,000	20,000	15,000
Rental (Farmer land rental and farm machinery)	5,000	25,000	35,000
Research material and supplies (irrigation system, planting material and etc)	5000	50,000	50,000
Special services (Compensation for farmers, consultancy, in-house training)	-	30,000	30,000
	18,000	125,000	130,000
TOTAL		273,000	

PROJECT BENEFITS/OUTCOME

SHORT TERM OUTCOME :

- beneficial insects and parasitoid will be increased in paddy field;
- pesticides used will be reduced; and
- quality of paddy harvested will be improved

LONG TERM OUTCOME :

- adaptation of eco-engineering as a new culture to ensure the sustainability in Malaysia agriculture

COLLABRATORS

- Department of Agriculture
- Farmers
- Economist

CHALLENGES

- Budget allocation
- Farmers participation (new areas)
- Climate change (results variability)

THANK YOU FOR YOUR ATTENTION

TERIMA KASIH ATAS PERHATIAN

KHOB KUN KHA

ACKNOWLEDGEMENT

- AARDO
- MARDI
- WORLD VEGETABLE CENTRE
- KASERSART UNIVERSITY
- MS.SOMCHIT
- BONG, WOW N FERN
- LECTURERS
- FRIENDS (DR. SAIDOV, DR. NUENG, MR. LY, MR. PRESIDENT, YUK, CHIAP, PAUL,MR. DONALD, MR. KAIPATI, MR. UMAR)