MUDA AGRICULTURAL DEVELOPMENT AUTHORITY

STRATEGIES TOWARDS NATIONAL SELF-SUFFICIENCY LEVEL: ESTATIZATION INITIATIVE AS MODEL TO INCREASE RICE PRODUCTIVITY

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NAPICEX 2015
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THE PACIFIC SUTERA HOTEL,
KOTA KINABALU, SABAH

PRESENTATION OUTLINE

1. BACKGROUND
2. STRATEGIES TO INCREASE PRODUCTION
3. EPP 10: STATUS AND ACHIEVEMENT
4. CONLUSION

The Historical Profile (Pre-Muda Project)

- ✓ **Paddy has for centuries been cultivated in coastal Plains of Kedah and Perlis states.**
- ✓ **Paddy cultivation then was carried out using local tradition implements and was planted once a year.**
- ✓ **In general, about 72% of farmers lived under poverty level.**

Policy Changes For Rice Production

- ✓ From 1955 to the immediate post–independence years, a policy of self-sufficiency in rice was adopted by the government.
- ✓ In accordance with the policy, under the First Malaysia Plan (1966-1970) the Muda Irrigation Project was launched.


102° CAMBODIA
Ho Chi Minh City
110°
118°
PHILIPPINES
Palawan
VIETNAM
Gulf of Thailand
THAILAND
S O U T H
C H I N A
S E A
Sulu Sea
8°
Malay
Alor Setar
Georgetown
Taiping
Ipoh
Kuala Terengganu
MADA
Kota Kinabalu
Gunung Kinabalu 4,101m
Sandakan
BANDAR SERI BEGAWAN
BRUNEI
Sabah
Miri
Crocker Rg.
Malinau
Str. of Malacca
M A L A Y S I A
Malaya
Kuantan
Natuna Is.
KUALA LUMPUR
Kelang
Seremban
Segamat
Anambas Is.
Sarawak
Celebes Sea
Melaka
Keluang
Johor Baharu
Kuching
Saratok
SINGAPORE
SINGAPORE
Pakanbaru
Pamangkat
Borneo
Equator
0°
Lingga Is.
Sumatra
Pontianak
Kapuas
Samarinda
I N D O N E S I A
Kalimantan
Celebes
Pangkalpinang
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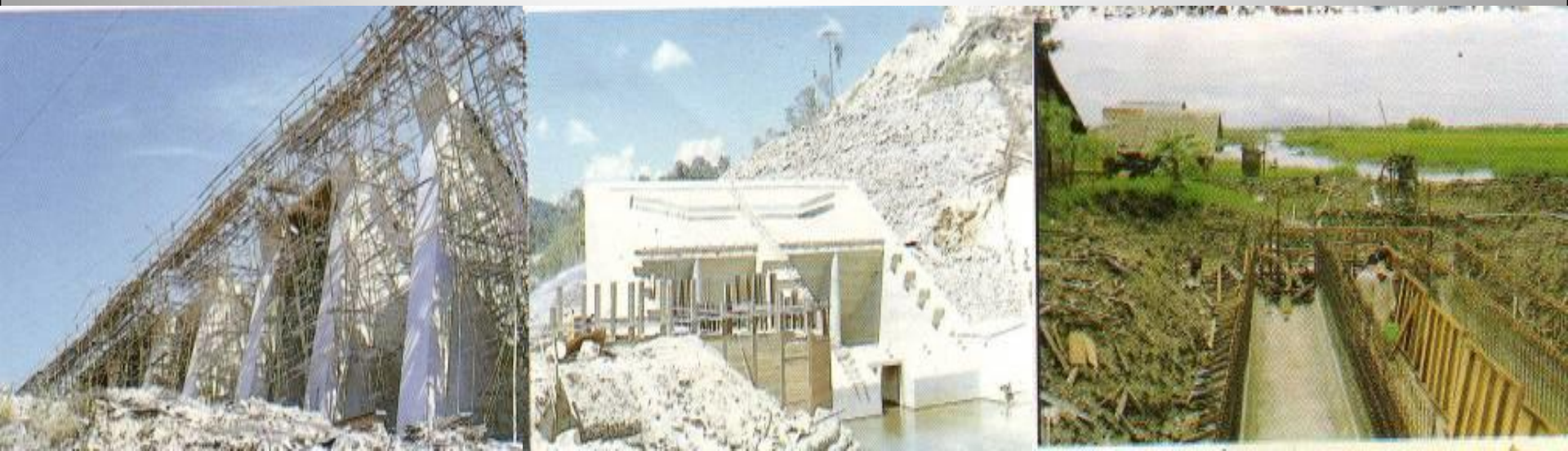
Muda Agricultural Development Authority (MADA)

Established on the 30th of June 1970

(PARLIAMENT ACT 70, MADA 1972)

MUDA IRRIGATION PROJECT

- ✓ The largest development project during First Malaysia Plan (1966-1970)
- ✓ Total Project Cost = RM 248 million (funded by World Bank)
- ✓ Infrastructure development started in the year 1966
- ✓ Fully operational by 1974



OBJECTIVES

- To uplift the living standard of the majority of the rural population
- To increase rice production for the national requirement

VISION

- To be a leading agency in the development of a modern, efficient and stable rice industry in Malaysia, and also as a prime mover of socio-economic development for farming community in the Muda Area

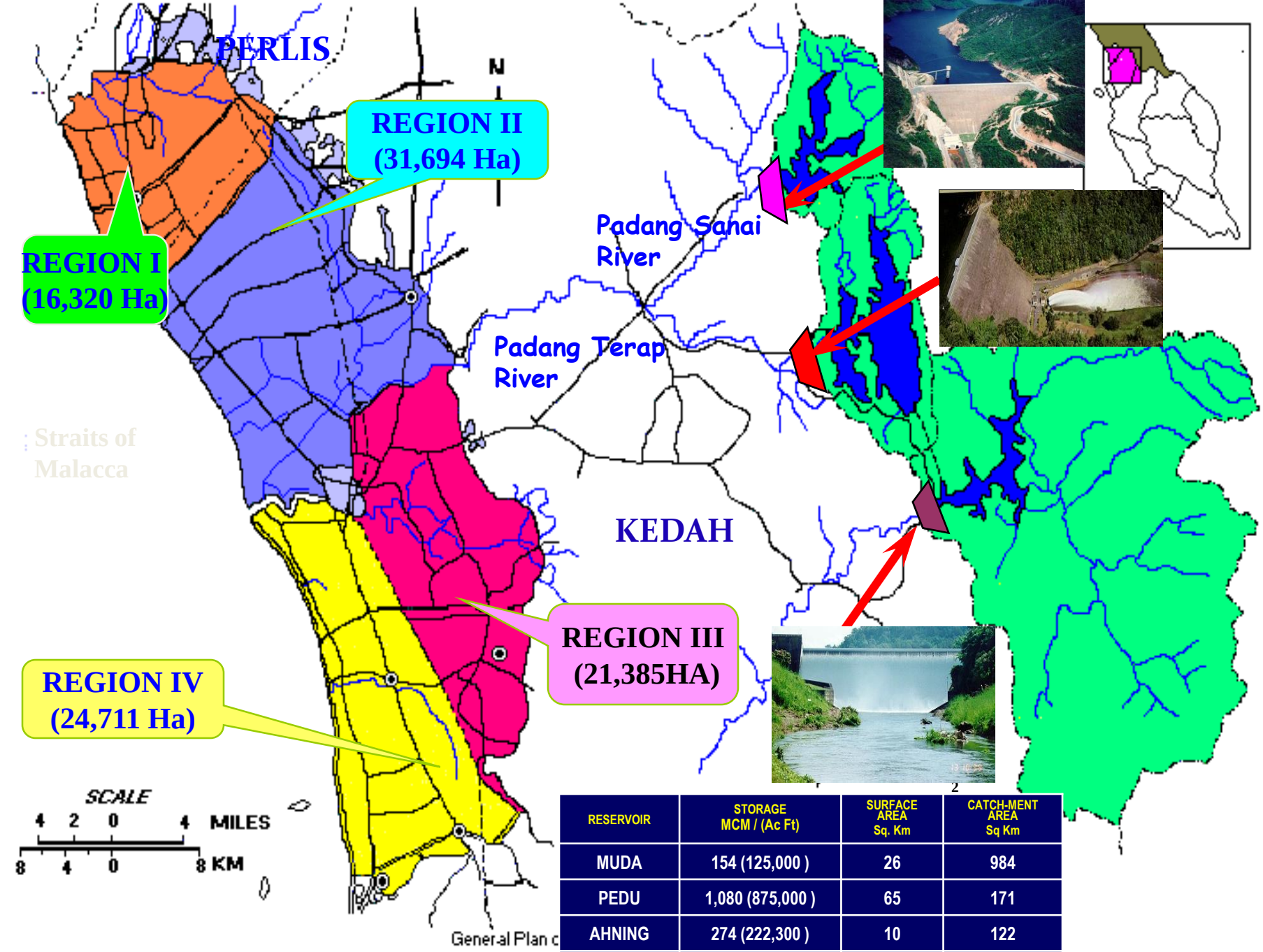
MUDA IRRIGATION SCHEME

- Muda Irrigation Scheme is about **130,282 ha** and named Muda Area.
- It covers:

*__108,581 ha__ (North-western Kedah State) and **21,701 ha** (Southern Perlis State)

•**77% of the land is under paddy cultivation** (100,685 ha)

- **55,130 farmers** operate in Muda Area
- MADA was formed by integrating the functions of 3 main Departments **(Dept. of Agriculture, Farmers' Organisation and Drainage and Irrigation Dept.)**

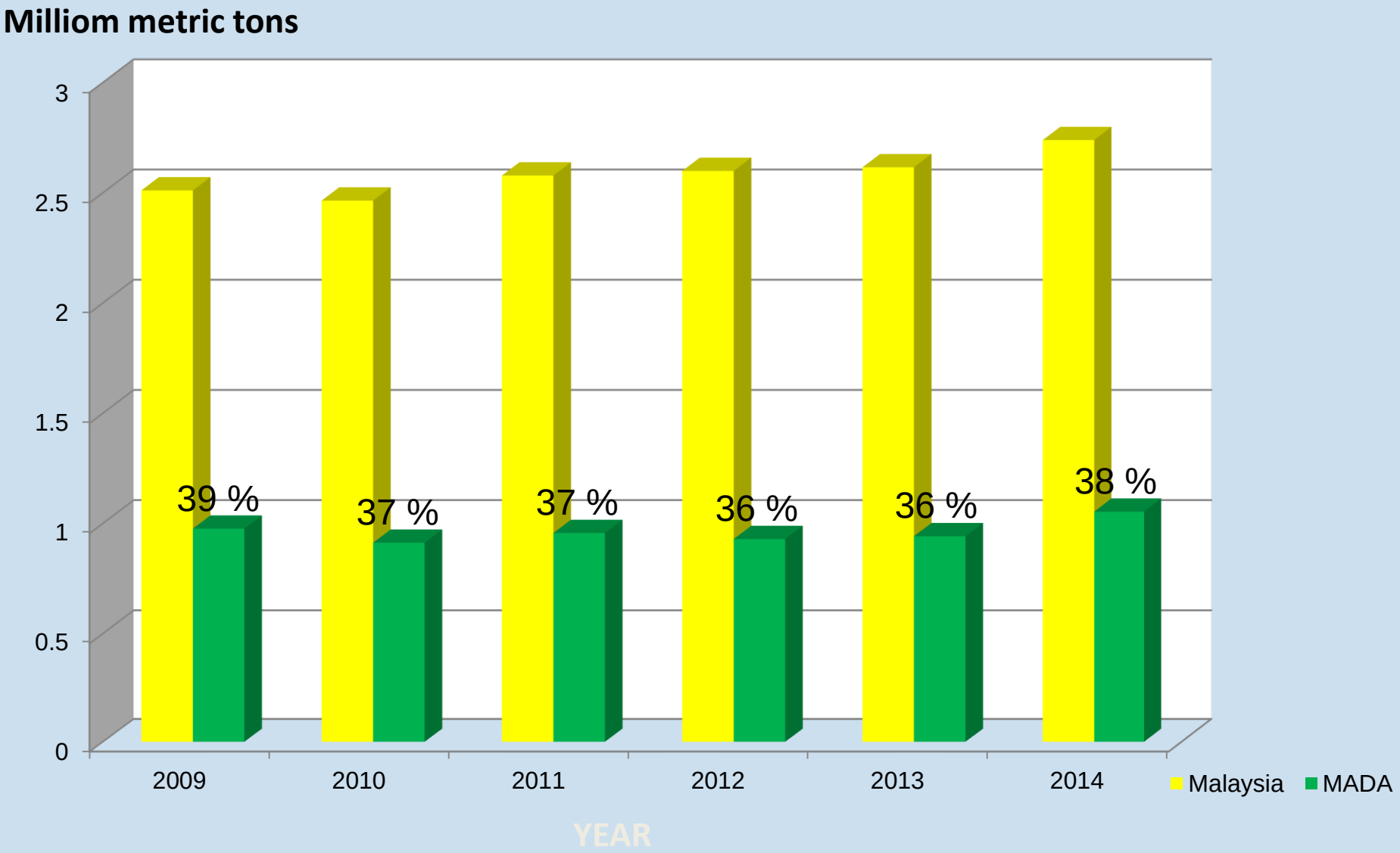


RESERVOIR	STORAGE MCM / (Ac Ft)	SURFACE AREA Sq. Km	CATCH-MENT AREA Sq Km
MUDA	154 (125,000)	26	984
PEDU	1,080 (875,000)	65	171
AHNING	274 (222,300)	10	122
TOTAL	1,508 (1,222,300)	101	1,277

The Historical Profile (During Muda Project)

- ✓ First pilot project of double cropping was conducted in 1968
- ✓ Double cropping was fully commenced in 1974
- ✓ In general, about 72% of farmers lived under poverty level.

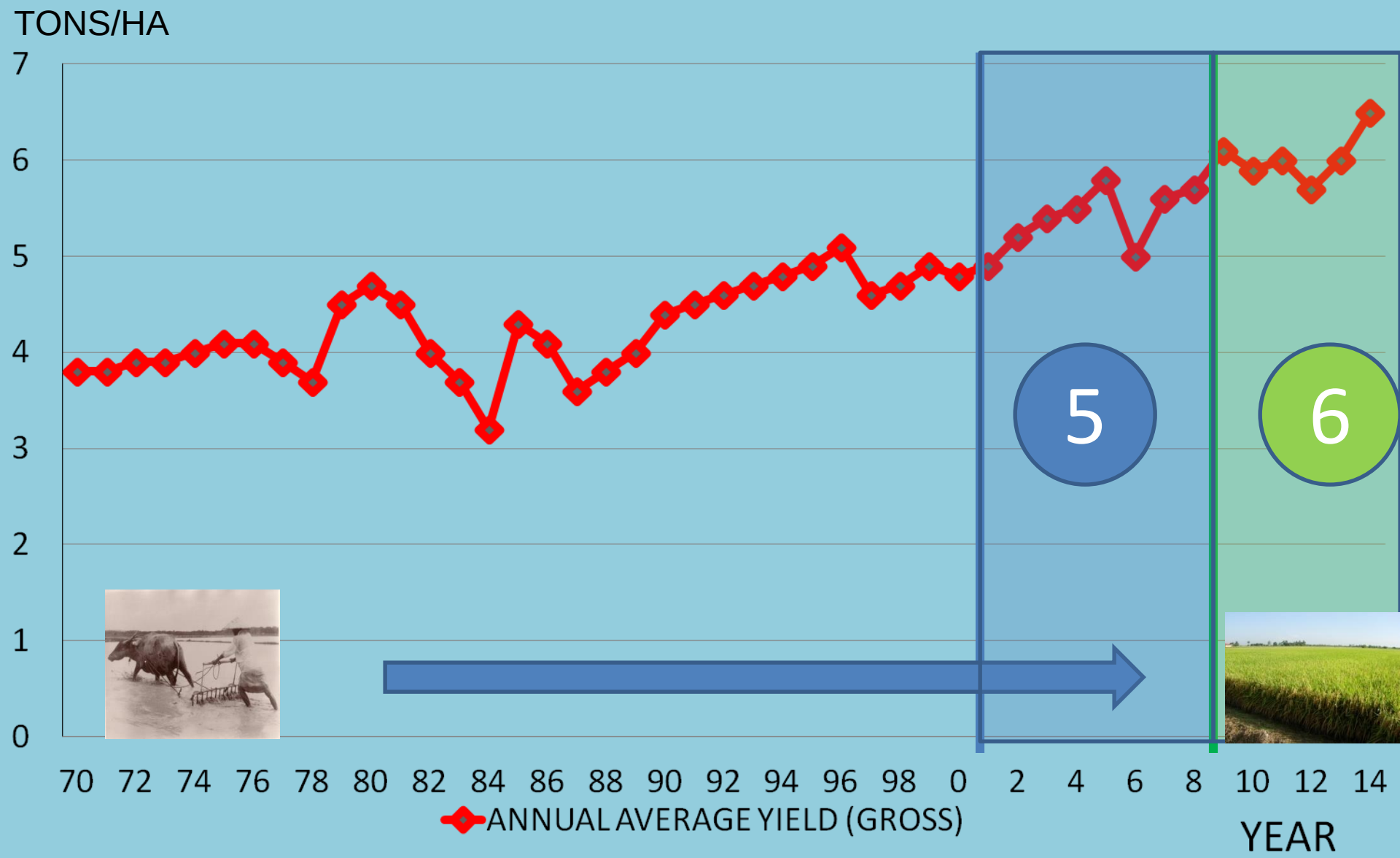
CONTRIBUTION OF MUDA AREA TO NATIONAL PADDY PRODUCTION (%)



PRODUCTION

YEAR	TOTAL MALAYSIA PRODUCTION (Metric tons)		TOTAL MADA PRODUCTION (Metric tons)		% MADA CONTRIBUTION TO MALAYSIA RICE AND PADDY
	PADDY	RICE	PADDY	RICE	
2009	2,511,043	1,632,178	976,192	634,525	39
2010	2,464,831	1,602,140	912,321	593,009	37
2011	2,578,519	1,676,037	956,417	621,671	37
2012	2,599,382	1,689,598	929,070	603,896	36
2013	2,615,845	1,700,299	941,889	612,228	36
2014	2,739,395	1,780,606	1,053,116	684,525	38

ANNUAL GROSS AVERAGE YIELD



STRATEGIES USED TO INCREASE YIELD

1. Centralized Farm Management
2. Usage of Hybrid Seed
3. Efficient Water Management
4. Strengthening the extension and Human Capital
5. The Use of Fertilizer According to Zoning (Cluster)
6. Farm Mechanization

STRATEGIES & ISSUES TOWARD THE PADDY PRODUCTION IN MUDA AREA

1 Centralized Farm Management

- Systematic & efficient establishment of 50,000 hectare paddy estate.
- Overcome the problems of ageing farmers and uneconomic paddy field size
- Reduction of operational cost of individual farming

STRATEGIES & ISSUES TOWARD THE PADDY PRODUCTION IN MUDA AREA

2 Efficient Water Management

- Improvement of tertiary infrastructure density from 18m/hectare to 30m/hectare.
- Implementation of new irrigation technologies e.g recycling of drainage water.

STRATEGIES & ISSUES TOWARD THE PADDY PRODUCTION IN MUDA AREA

3 Usage of Hybrid Seed

- High yield varieties (including disease tolerant hybrid varieties) with sustainable high yielding package and MyGAP
- MADA is collaborating with MARDI and interested parties to conduct trials/observation on the potential hybrid rice varieties for large scale cultivation.

STRATEGIES & ISSUES TOWARD THE PADDY PRODUCTION IN MUDA AREA

4 Strengthening the extension and Human Capital

- A comprehensive program to re-train extension staff being conducted
- 700 personnels
- The establishment of MADA Rice Training Centre (MRTC) – for future young farmers.

STRATEGIES & ISSUES TOWARD THE PADDY PRODUCTION IN MUDA AREA

5

The Use of Fertilizer According to Zoning

- Re-conduct soil survey for Muda Area to re-map the soil fertility zones
- Collaboration works with DAO, MARDI and private sectors

STRATEGIES & ISSUES TOWARD THE PADDY PRODUCTION IN MUDA AREA

6 Farm Mechanization

- Program to reduce post harvest losses – MARDI study indicated 28% post harvest loses
  - Conduct and promoting tonnage based harvesting
- Study suitable agricultural machineries for Muda Area
- Conduct training to machineries operators – a collaboration training between MRTC and RTD (JPJ)

ESTATIZATION INITIATIVE AS MODEL TO INCREASE RICE PRODUCTIVITY IN MUDA AREA

KEMENTERIAN PERTANIAN DAN INDUSTRI ASAS TANI MALAYSIA

PROJECT BACKGROUND

NKEA EPP 10 PADDY ESTATE PROJECT was started to solve **THREE (3) MAJOR ISSUES** of paddy development sector:

INFRASTRUCTURE

INFRASTRUCTURE DENSITY

LOW

18 Meter/Hectare

FARM SIZE

AVERAGE FARM SIZE

UNECONOMIC

2.12 Hectare

FARMER'S AGE

AVERAGE FARMER'S AGE

LESS PRODUCTIVE

60.2 Years Old

NKEA EPP 10 PADDY ESTATE PROJECT WAS STARTED IN 2011 (SEASON 2/2011)

Centralized Farm Management (NKEA)

- **Objectives**
  - Increase rice production to achieve SSL
  - Increase farmers' income

- **Improve farm management**
  - Entrepreneur farmers
  - Rice estates
  - Exit programme for traditional farmers

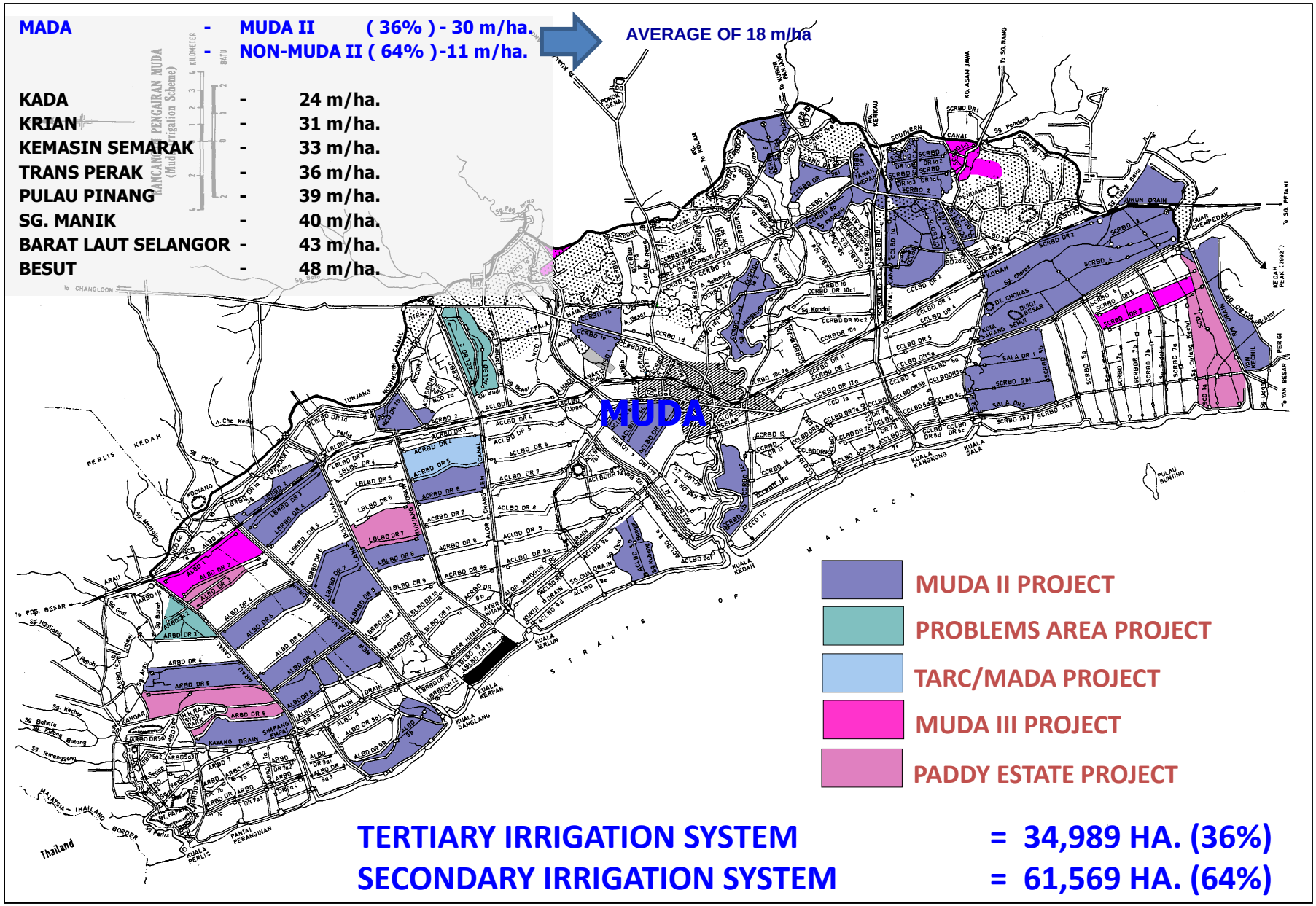
- **Accelerate Technology use**
  - New varieties and production technologies
  - Professional seed farming
  - New milling technologies

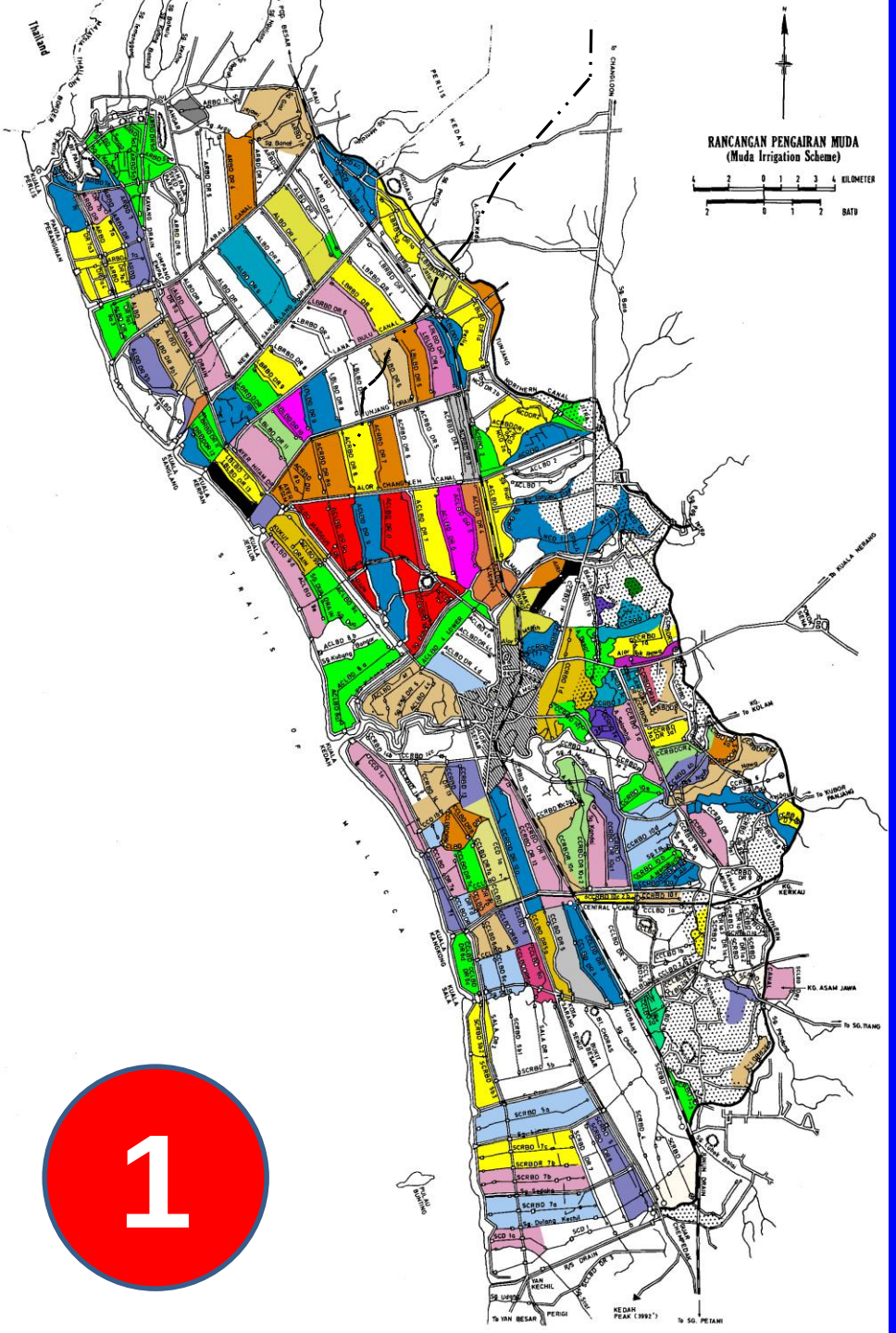
- **Expand Infrastructure**
  - Improvement of irrigation density for better water distribution at field level

- Yield increase from 5 mt / ha to 6.5 mt / ha through better management and irrigation
- Yield increase from 6.5 mt / ha to 8 mt / ha through better seed varieties

EPP 10: Strengthening and Scaling-up Productivity of Paddy Production in Muda Area

TERTIARY SYSTEM DEVELOPMENT PROJECT





DEVELOPMENT OF TERTIERY IRRIGATION SYSTEM FOR 128 IRRIGATION BLOCKS = PADDY FIELD AREA 61,569.3 HECTARE.

- **16 IRRIGATION BLOCKS IN PERLIS** STATE = PADDY FIELD AREA 9,801.6 HECTARE (16%)

- **112 IRRIGATION BLOCKS IN KEDAH** STATE (KUBANG PASU; KOTA SETAR; PENDANG; YAN; POKOK SENA) = PADDY FIELD AREA 51,767.7 HECTARE (84%).

1

2 TRANSITION OF RICE FARMING IN MUDA AREA

1970s	1980s	1986	2000s	2011
• Individual Farming • Labour Intensive. • Transplanting Culture. • Paddy Yield at 4.2 ton/ha	• Group Farming • Labour Crisis • Mechanisation • Direct Seeded Culture • Coordination of activities • Paddy Yield at 4.7 ton/ha	• Semi-Estate launched • Credit Facilities • Marketing of rice coordinated by FOs	• Paddy Estate launched • Centralized management • 10-ton technology package • Rice Check • Yield at 6 ton/ha	• NKEA Project launched • Government Support • Commercial Entity • Will involve entire value chain – Paddy Collection Centre
Secondary Infra 11m/ha	Tertiary Infra introduced	Recycling Station Introduced		All tertiary @30m/ha by 2020
				50,,000 ha of paddy estate by 2020

3 FARMERS INVOLVEMENT/PARTICIPATION IN THE WHOLE VALUE CHAIN OF PADDY/RICE INDUSTRY

SEED PRODUCTION

SEEDLING PRODUCTION

MECHANIZATION SERVICES

AGRICULTURE INPUTS DISTRIBUTION

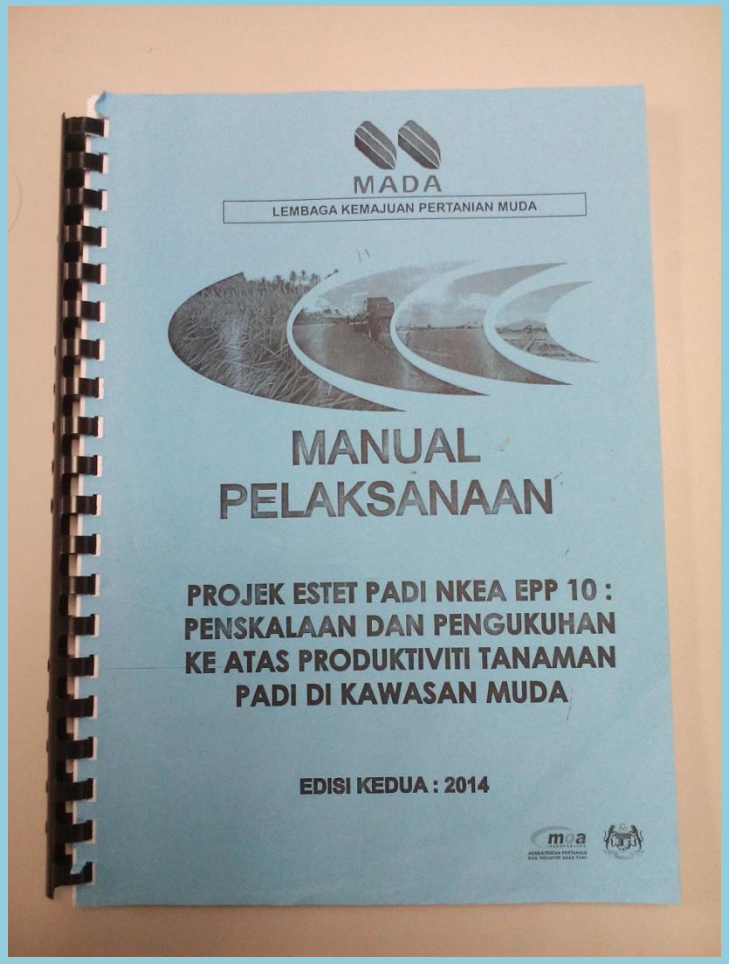
PADDY PRODUCTION

WHITE RICE PRODUCTION

3 schemes to encourage small scale farmers to exit

Scheme	Description	Attractiveness to landowners	Attractiveness to operators
Fixed rental	• Landowners paid fixed rental per season, e.g., RM2,000 in MADA area • Typically paid 5-10 seasons in advance • All revenue and costs go to operator	No risk (e.g., yield / paddy price drop)	Capture all profits from increased productivity
Profit-sharing	• Operator manages the land • All revenue and costs are born by the enterprise, i.e., 50-50 split between landowner and operator • However, landowner guaranteed minimum income equivalent to market rental rate	Risk and gain-sharing	Risk and gain-sharing
Management fee	• Operator manages the land • All revenue and costs go to landowner • Operator earns management fee of RM70 per tonne of net yield harvestedoutput	Captures most of the gain from higher productivity	No risk, e.g., paddy price drops
		Max gain, max risk	*Min gain, min risk*

SOP



- ✓ Reference for operational and financial management
- ✓Main reference to parties involve in EPP 10
  - ✓ MADA staff
  - ✓ AFOs (PPK) staff

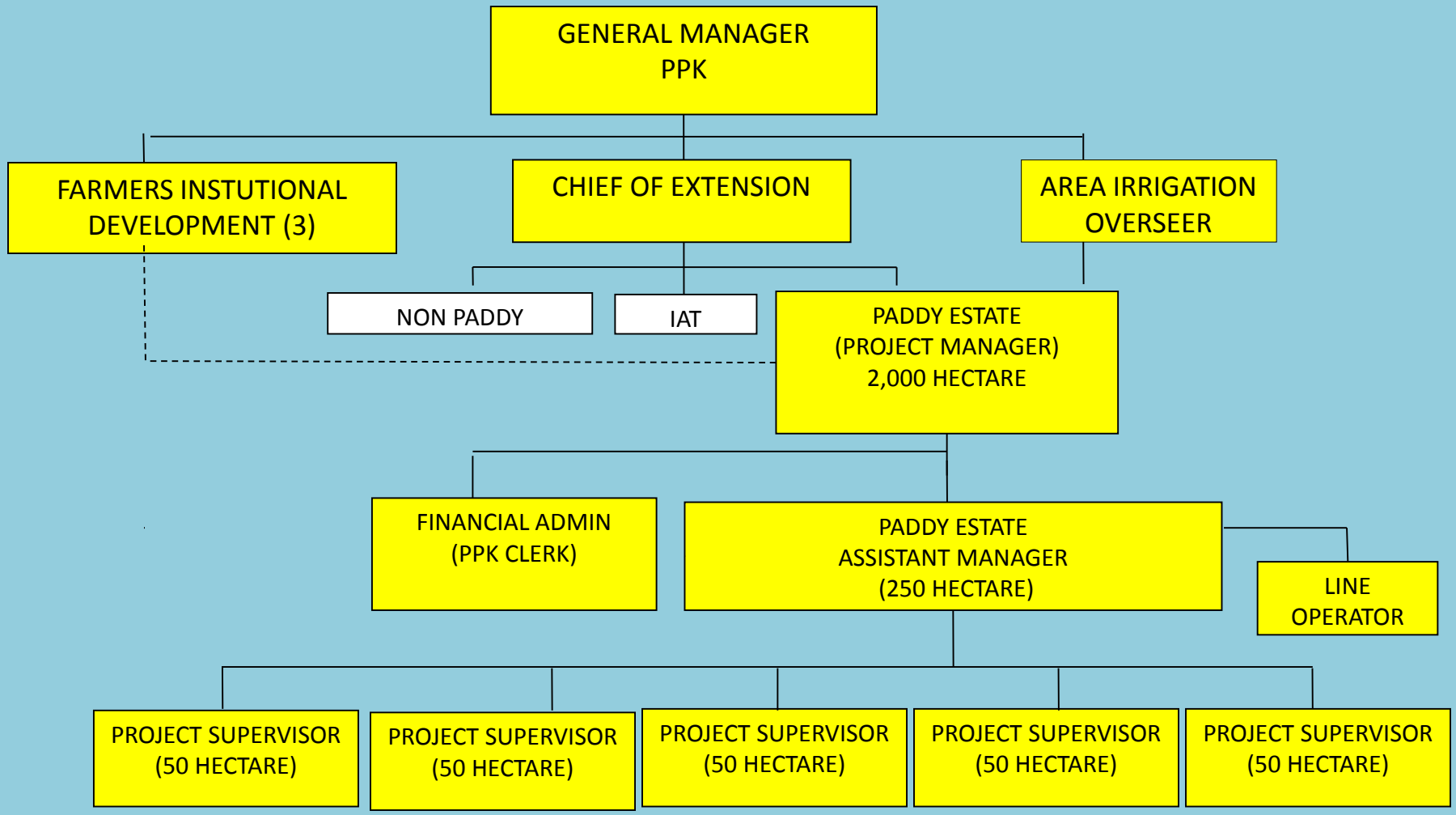
NKEA EPP 10 PROJECT ANNUAL IMPLEMENTATION PLAN

NO	ACTIVITY	JAN				FEB				MAR				APR				MAY				JUN				JUL				AUG				SEPT				OCT				NOV				DEC			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	Identifying areas at the PPK's Location																																															
2	Introduction Campaign / Briefings																																															
3	Application By Farmers																																															
4	Send Proposed Areas To The Region																																															
5	Region Level NKEA Meetings																																															
6	Send Proposed Areas To Headquarters (BPW)																																															
7	Headquarters Level NKEA Meetings																																															
8	Paddy Estate Project Participation Campaign / Briefing																																															
9	Offer to Participants (LOI) / Reception Of Participants (LA)																																															
10	Report LOI & LA Status To the Region																																															
11	Regional party Send Status (LOI / LA) to Headquarters (BPW)																																															
12	Change Name of Kad Daftar Pesawah (KDP) to the General Manager of PPK's Name and Coordination (Screening) Of Application by the PPK																																															
13	Approval of the application by PPK Through Board of Directors Meeting																																															
14	Agreement Between Participants and PPK																																															
15	Signed a Letter of Agreement (Office of the Inland Revenue Board @ LHDN)																																															
16	Region Office Deliver Agreement Letter (Softcopy) To Headquarters (BPW)																																															
17	Establishment Of Project Management Team																																															
18	Preparation Of Incentives Acknowledgment Idocument And Distribution Of Operations Capital (BIP)																																															
19	Distribution of Incentives To Participants																																															
20	Region Deliver The Incentives Acknowledgment Document To Headquarters (BIP)																																															
21	Project Implementation																																															

Nota :

- Headquaters
- Region
- PPK

ORGANIZATIONAL STRUCTURE OF PROJECT IMPLEMENTATION COMMITTEE AT PPK (SUPERVISOR)



*458 FIELD SUPERVISOR

PROJECT SUPERVISORS ACTIVITIES

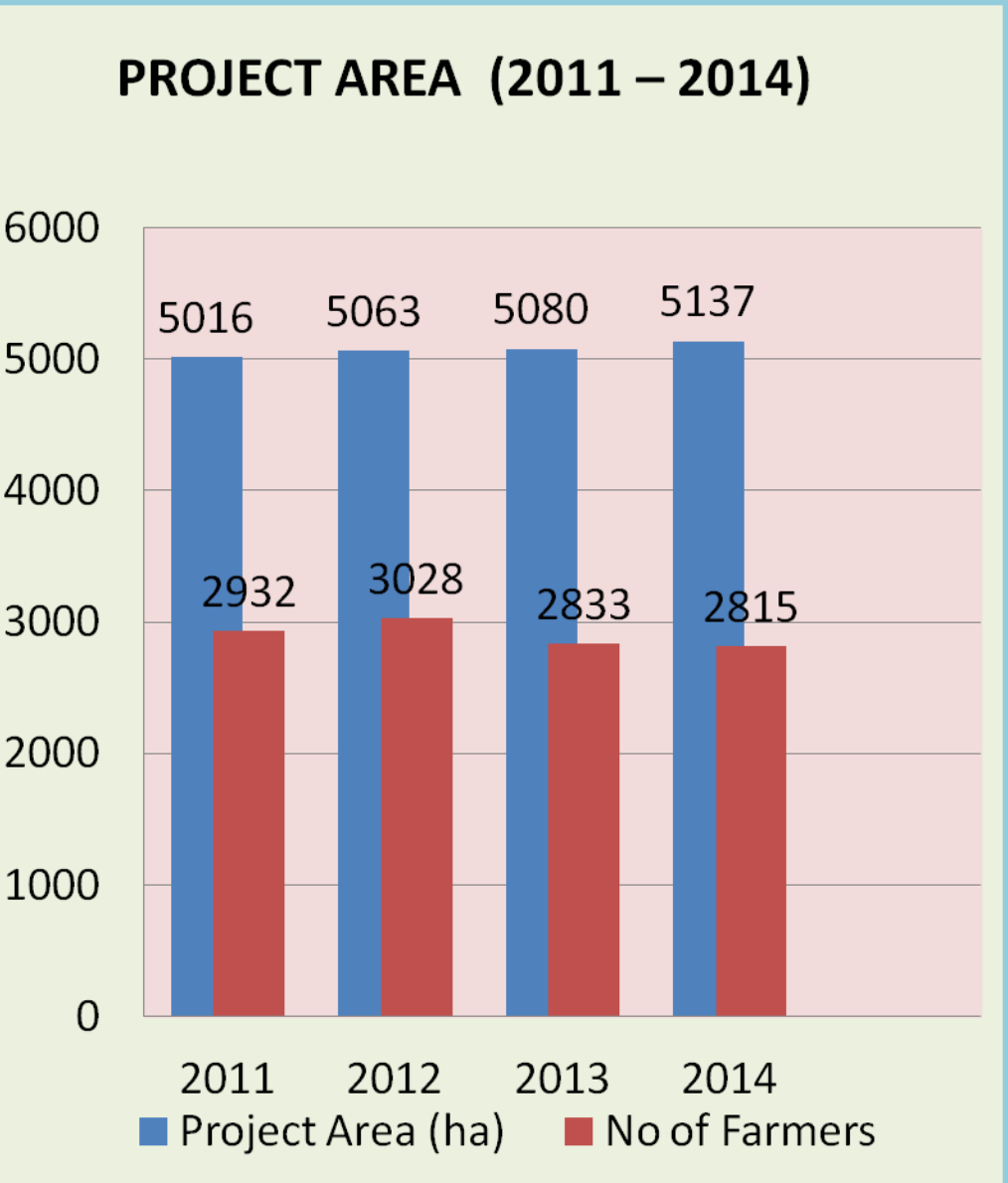
- 458 Field Supervisor appointed by AFOs (PPK)

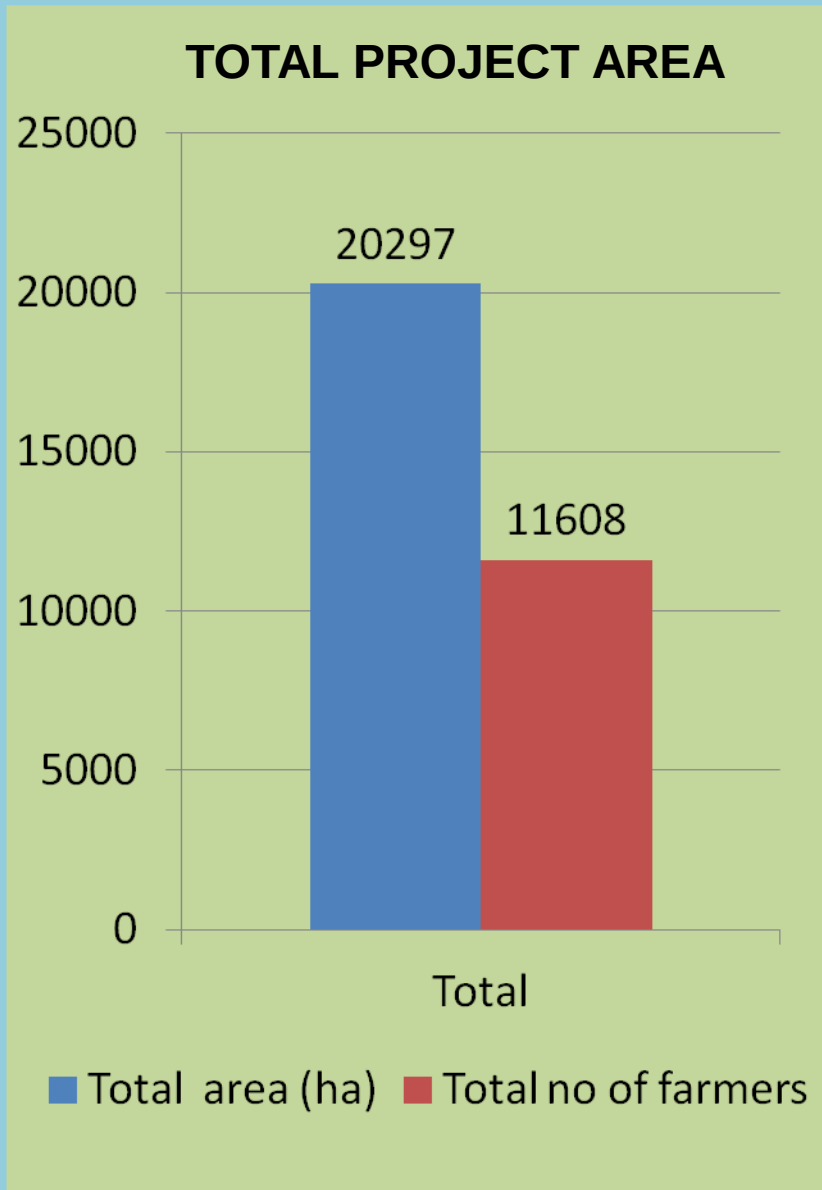
EPP 10: PROMOTIONAL CAMPAIGN

- ✓ **Extension activities to explain and convince farmers to participate in the EPP 10 program**

- ✓ **Extension activities to farmers and field supervisors**

ACHIEVEMENT



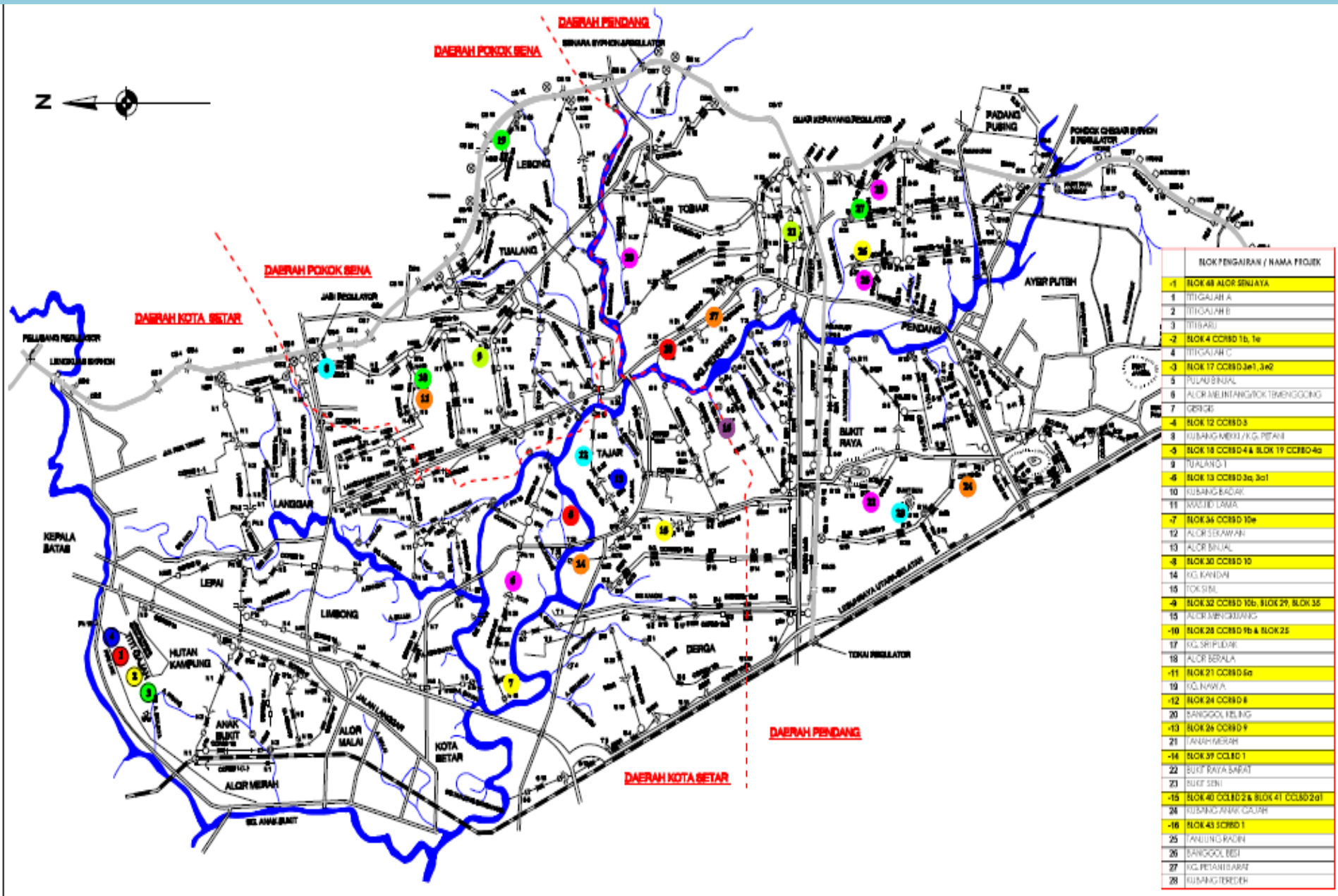


ACHIEVEMENT: NKEA EPP 10 PROJECT STATUS (2011 -2014)

REGION	2011 (BATCH A)		2012 (BATCH B)		2013 (BATCH C)		2014 (BATCH D)*		TOTAL	
	AREA (Ha)	NO. OF PARTICIPANT	AREA (Ha)	NO. OF PARTICIPANT	AREA (Ha)	NO. OF PARTICIPANT	AREA (Ha)	NO. OF PARTICIPANT	AREA (Ha)	NO. OF PARTICIPANT
I	1,101.443	724	951.151	655	1,023.020	707	926.900	632	4,002.514	2,718
II	1,479.695	851	1,674.191	920	1,915.593	998	1,815.509	999	6,884.988	3,768
III	1,124.559	697	1,116.000	629	834.306	422	1,237.478	599	4,312.343	2,347
IV	1,310.688	660	1,321.390	824	1,307.094	706	1,157.602	585	5,096.774	2,775
Total	5,016.385	2,932	5,062.732	3,028	5,080.013	2,833	5,137.489	2,815	20,296.619	11,608

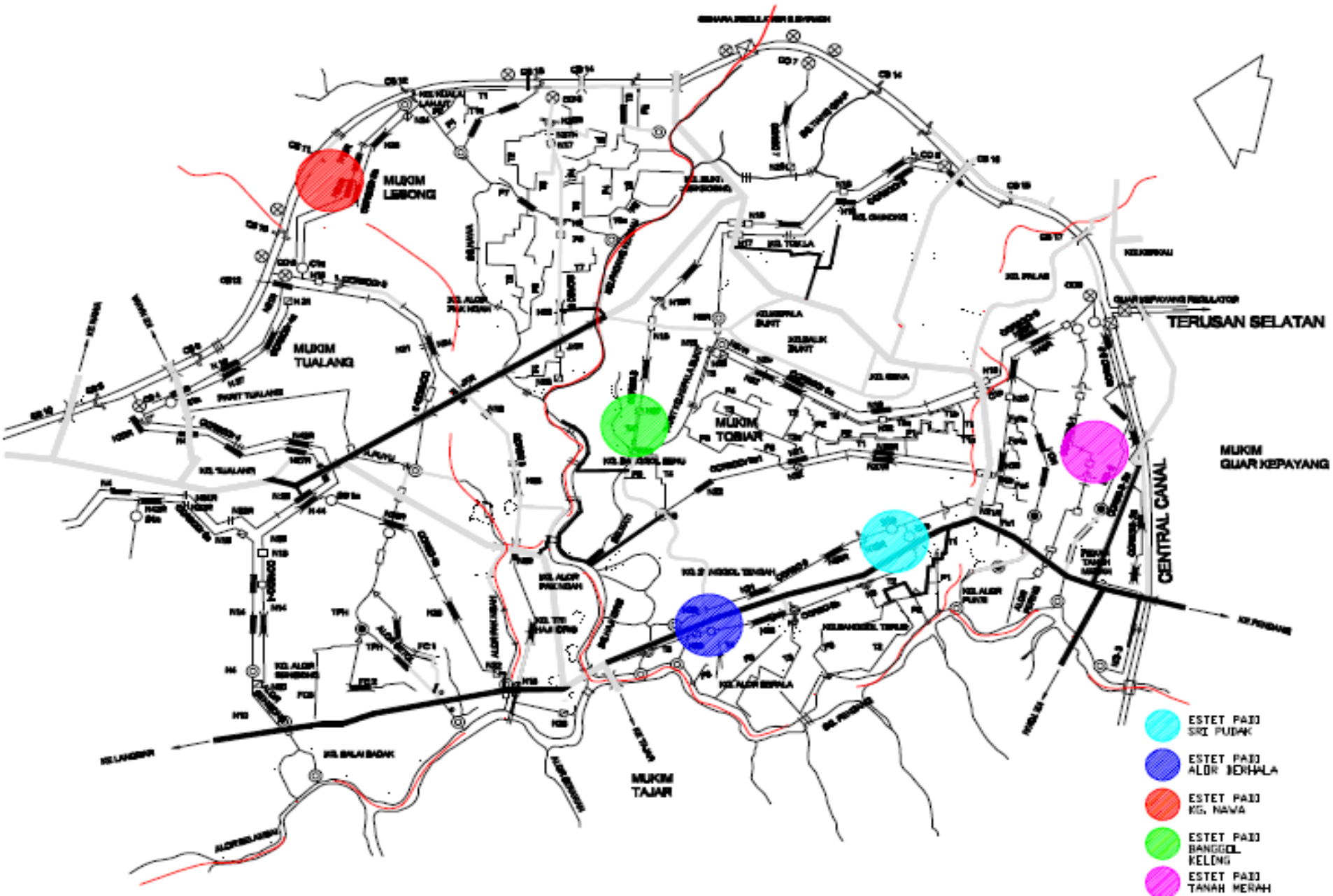
* The establishment of the Group D in the season 2/2014 is based on two types of land management model Management Fee Model covers 5,111.457 hectares and Rental/Lease Model covering 26,032 hectares.

REGION III - PENDANG



	BLOK PENGAIRAN / NAMA PROJEK
-1	BLOK 48 ALOR SENJAYA
1	TITI GAJAH A
2	TITI GAJAH B
3	TITI ARU
-2	BLOK 4 CCRBD 1b, 1e
4	TITI GAJAH C
-3	BLOK 17 CCRBD 3e1, 3e2
5	PULAU BINJAL
6	ALOR MELINTANG/BOK TIMENGGONG
7	GERIGIS
-4	BLOK 12 CCRBD 3
8	KUBANG MEKU / K.G. PETANI
-5	BLOK 18 CCRBD 4 & BLOK 19 CCRBD 4a
9	TUALANG 1
-6	BLOK 13 CCRBD 3a, 3a1
10	KUBANG BADAK
11	MASJID LAMA
-7	BLOK 36 CCRBD 10e
12	ALOR SEKAWAN
13	ALOR BINJAL
-8	BLOK 30 CCRBD 10
14	KG KANDAI
15	TOK SIM
-9	BLOK 32 CCRBD 10b, BLOK 29, BLOK 35
15	ALOR MENGKUANG
-10	BLOK 28 CCRBD 9b & BLOK 25
17	KG SRI PUDAK
18	ALOR BERALA
-11	BLOK 21 CCRBD 6a
19	KG NAWA
-12	BLOK 24 CCRBD 8
20	BANGGOL KELING
-13	BLOK 26 CCRBD 9
21	TANAH MERAH
-14	BLOK 39 CCLBD 1
22	BUKIT RAYA BARAT
23	BUKIT SENI
-15	BLOK 40 CCLBD 2 & BLOK 41 CCLBD 2a1
24	KUBANG ANAK GAJAH
-16	BLOK 43 SCRBD 1
25	TANJUNG RADIN
26	BANGGOL BESI
27	KG PETANI BARAT
28	KUBANG TERDEH

PPK B-III, ALOR SENIBONG



STATUS PENCAPAIAN HASIL ROJEK MUSIM 1

BEFORE PROJECT (Average yield of Year 2006-2010 For season 1)	AFTER PROJECT		
	Season 1/2012	Season 1/2013	Season 1/2014
5.90	6.12	6.58	5.99

* Note :
* Note :

1. Average yield of Project is based on CCS.
2. Average farm size is 2.12 ha

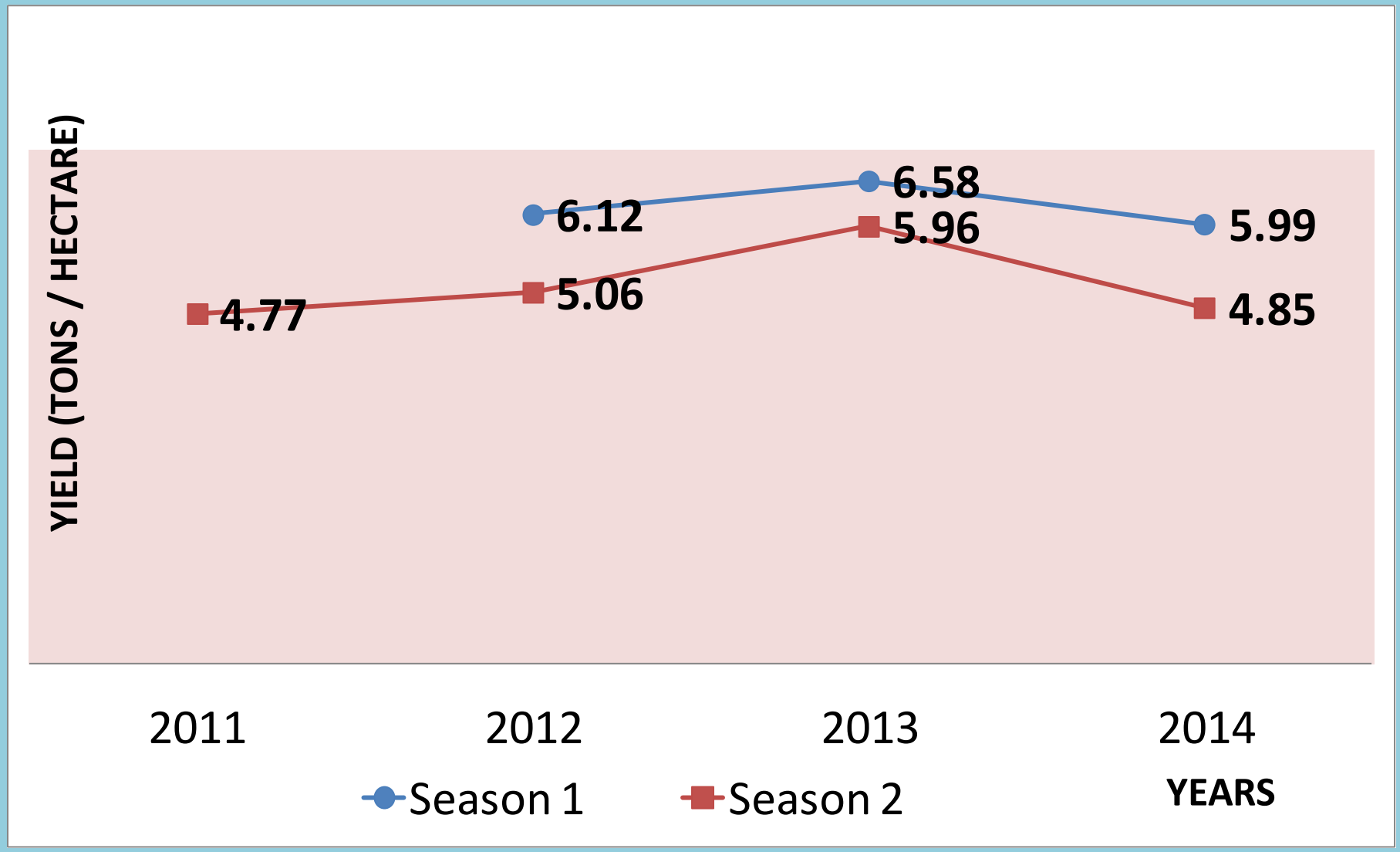
AVERAGE YIELD OF PROJECT FOR SEASONS 2

BEFORE PROJECT (Average yield of Year 2006-2010 For season 2)	AFTER PROJECT			
	Season 2/2011	Season 2/2012	Season 2/2013	season 2/2014
5.30	4.77*	5.06	5.96	4.85*

* Note :

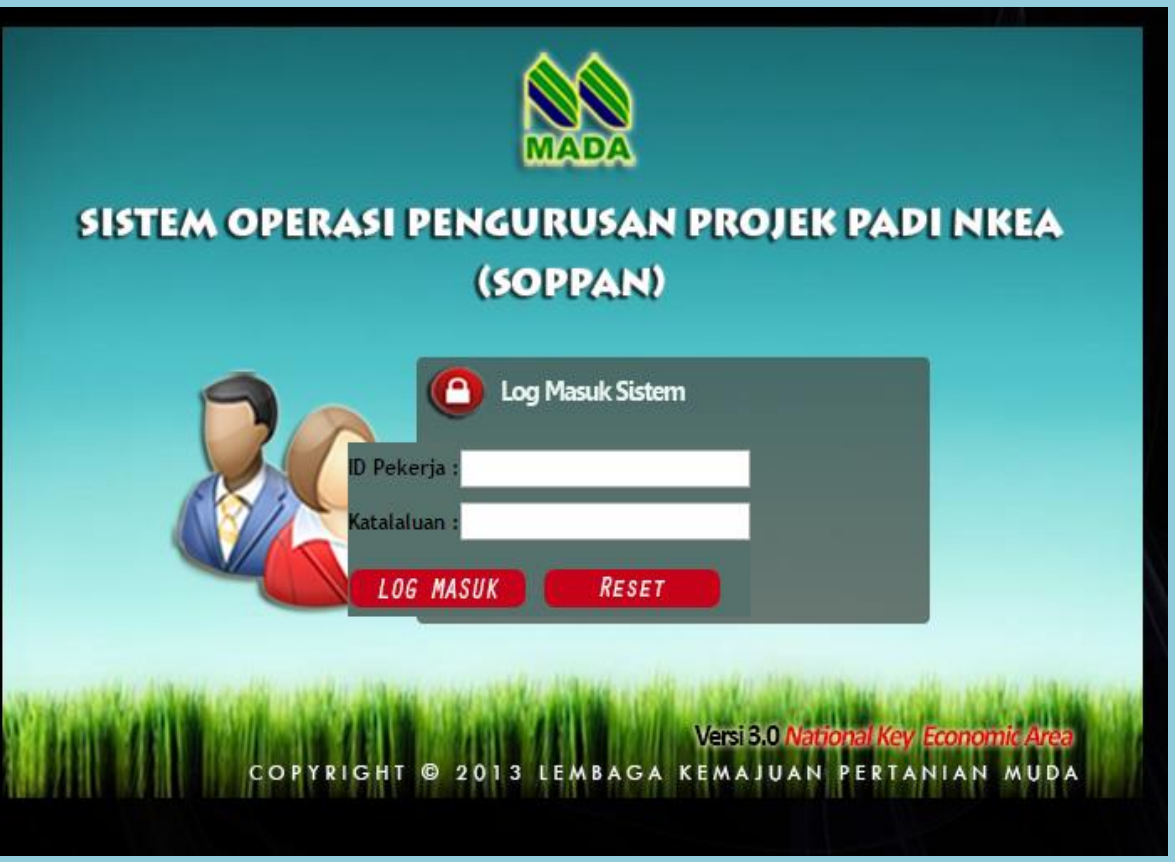
1. Average yield of Project is based on CCS.
2. Average farm size is 2.12 ha
3. Due to severe blast and BLB

YIELD TRENDS IN PROJECT AREA



IMPROVEMENT TOWARDS BETTER PROJECT MANAGEMENT

OPERATIONAL MANAGEMENT SYSTEM OF NKEA PADI PROJECT (SOPPAN)



- ✓ SOPPAN **web-based** system and internally developed
- ✓ Main purpose:
  - **to improve the financial management** of the PPK which involved with NKEA EPP 10 Project

SOPPAN

Main Menu

Sub Menu

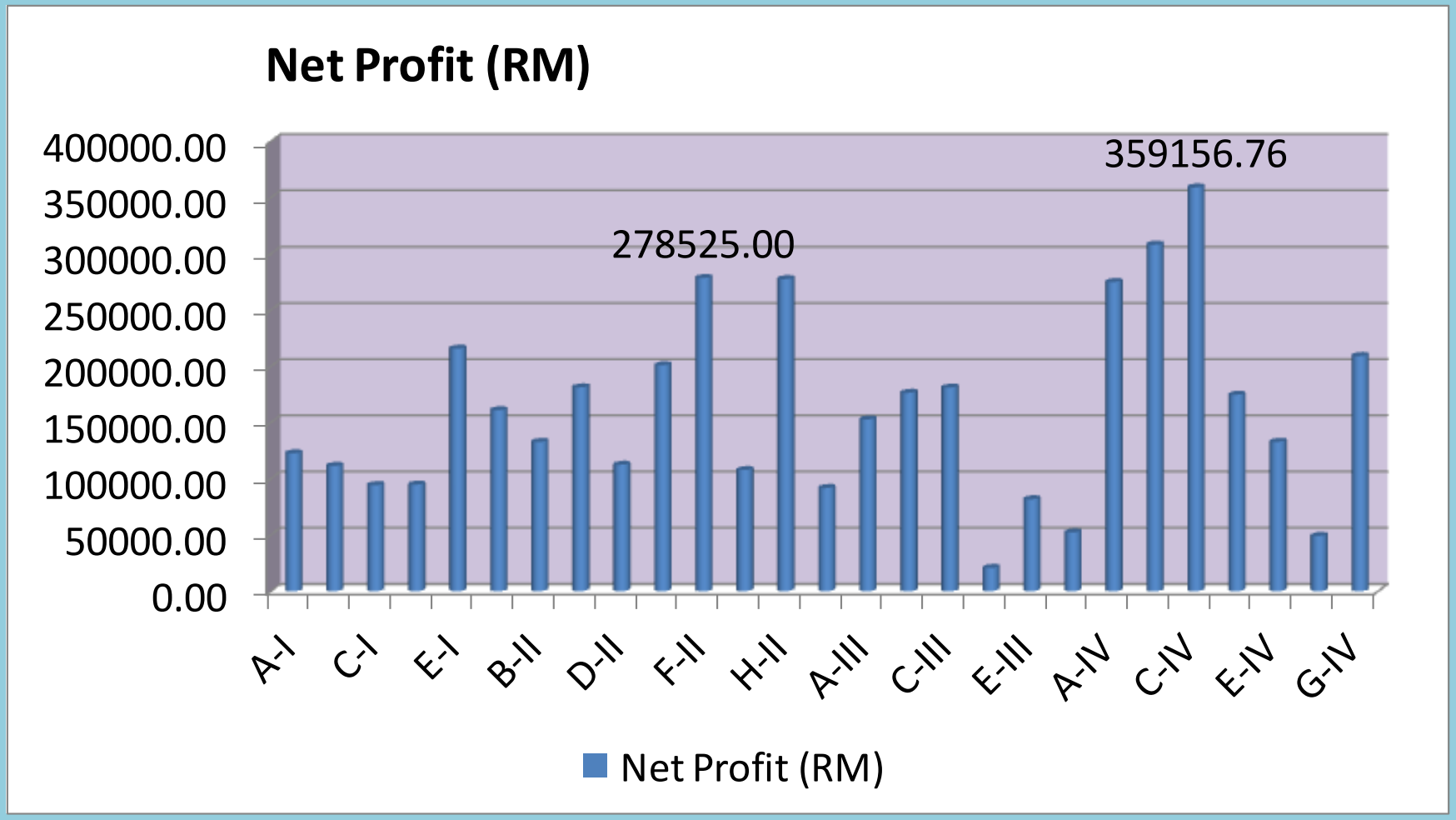
PADDY COLLECTION CENTRE

- **Paddy Collection Centre connected on-line to AFO (PPK)**

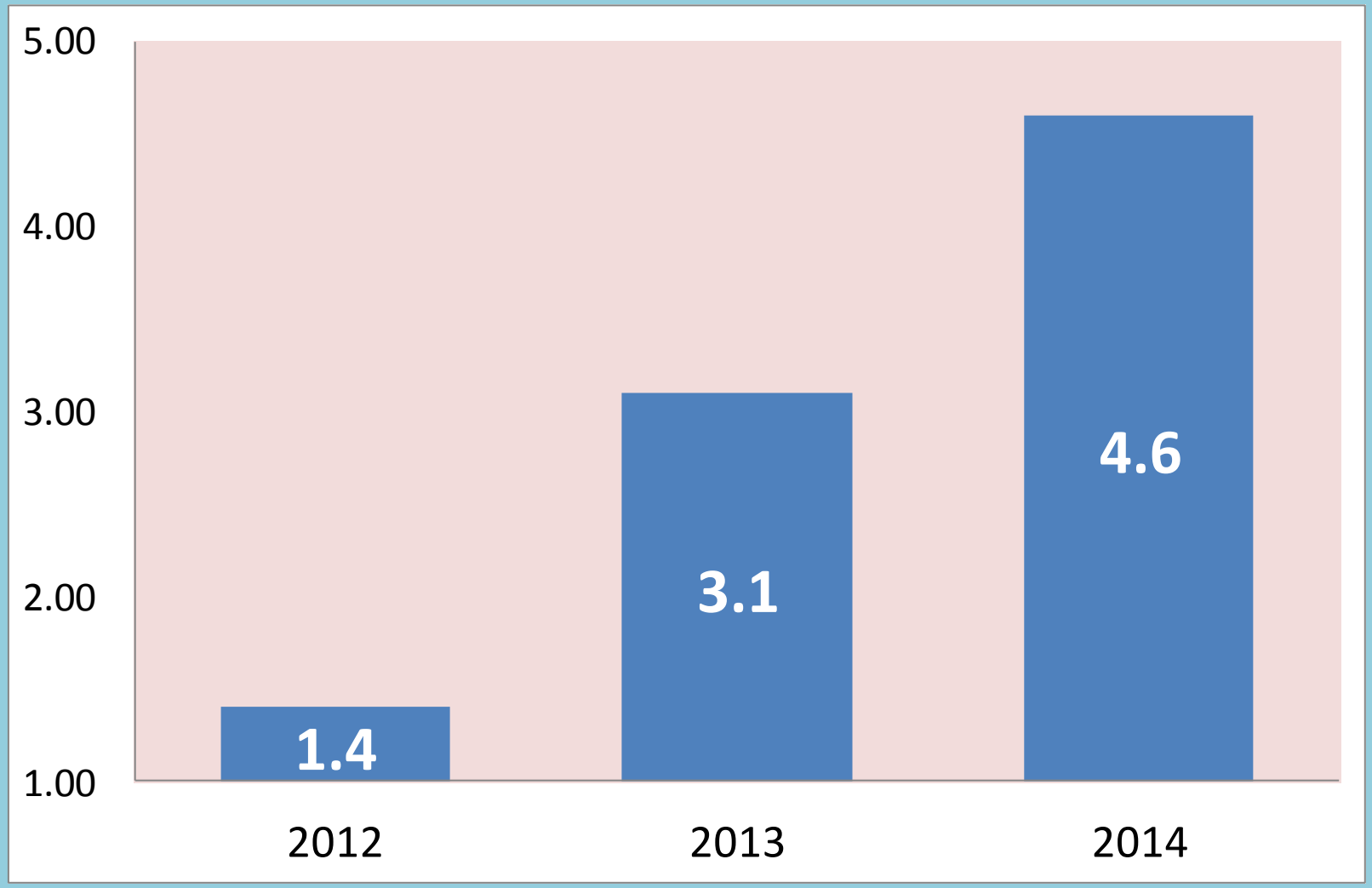
BENEFITS TO FARMERS

- ✓ Lower cost of production – e.g land preparation, crop protection, harvesting and transportation of produce
- ✓ Rebate – end of the seasons
- ✓ Seed grant provided by FOs
- ✓ Dividends for FOs members

BENEFIT TO FOs (2014)



PROFIT OF PROJECT TO AFOs



Challenges

- ✓ Farmers' attitude towards the project– "Wait and see"
- ✓ Resistant of brokers/machineries operators
- ✓ Resistant from tenants
- ✓ Developing or forming personnel at FOs level
- ✓ Human resources development e.g training of Field Supervisors

Conclusion

- NKEA Agriculture: EPP 10 Program is one of the ways to improve the farm productivity and efficiency towards national target of 100% Self Sufficiency Level.
- The program is proven to solve the issues of ageing farmers and uneconomic farm size
- It is a way forward for farmers to involve in the whole value chain of paddy/rice industry


TERIMA KASIH