

# **GEOSPATIAL WORLD FORUM – (GEOAGRI) 25<sup>TH</sup> -29<sup>TH</sup> MAY 2015 LISBON, PORTUGAL**

## **GIS FOR RICE MANAGEMENT & MONITORING : An Overview Of Geospatial Solution In Malaysian Agriculture**

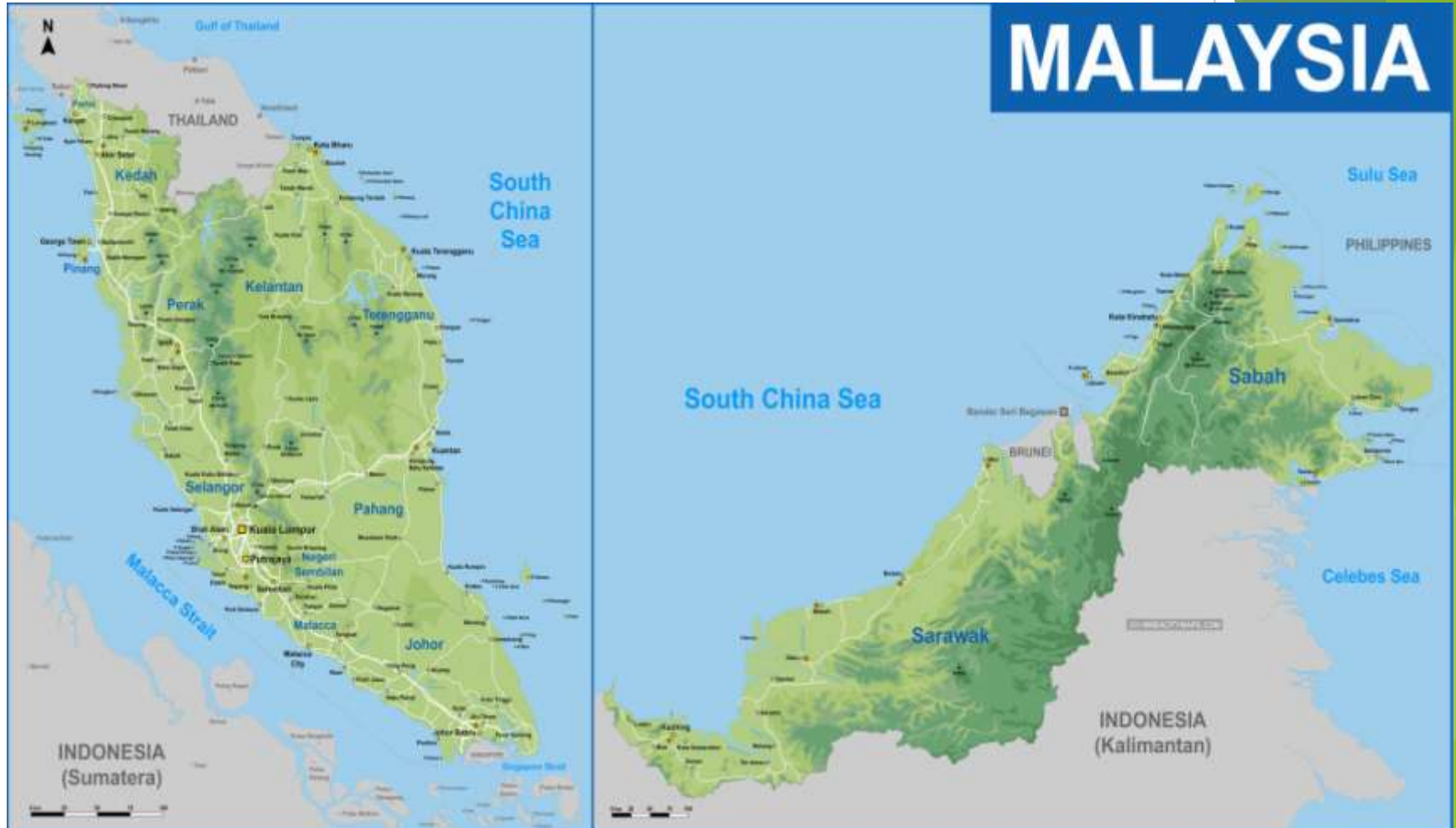


**SUTHA VELOO**  
Assistant Director  
+60388703145  
[sutha@doa.gov.my](mailto:sutha@doa.gov.my)

**Planning & ICT Division (DoA)**  
**MINISTRY OF AGRICULTURE AND AGRO BASED INDUSTRY**



# GEOGRAPHICAL VIEW OF MALAYSIA



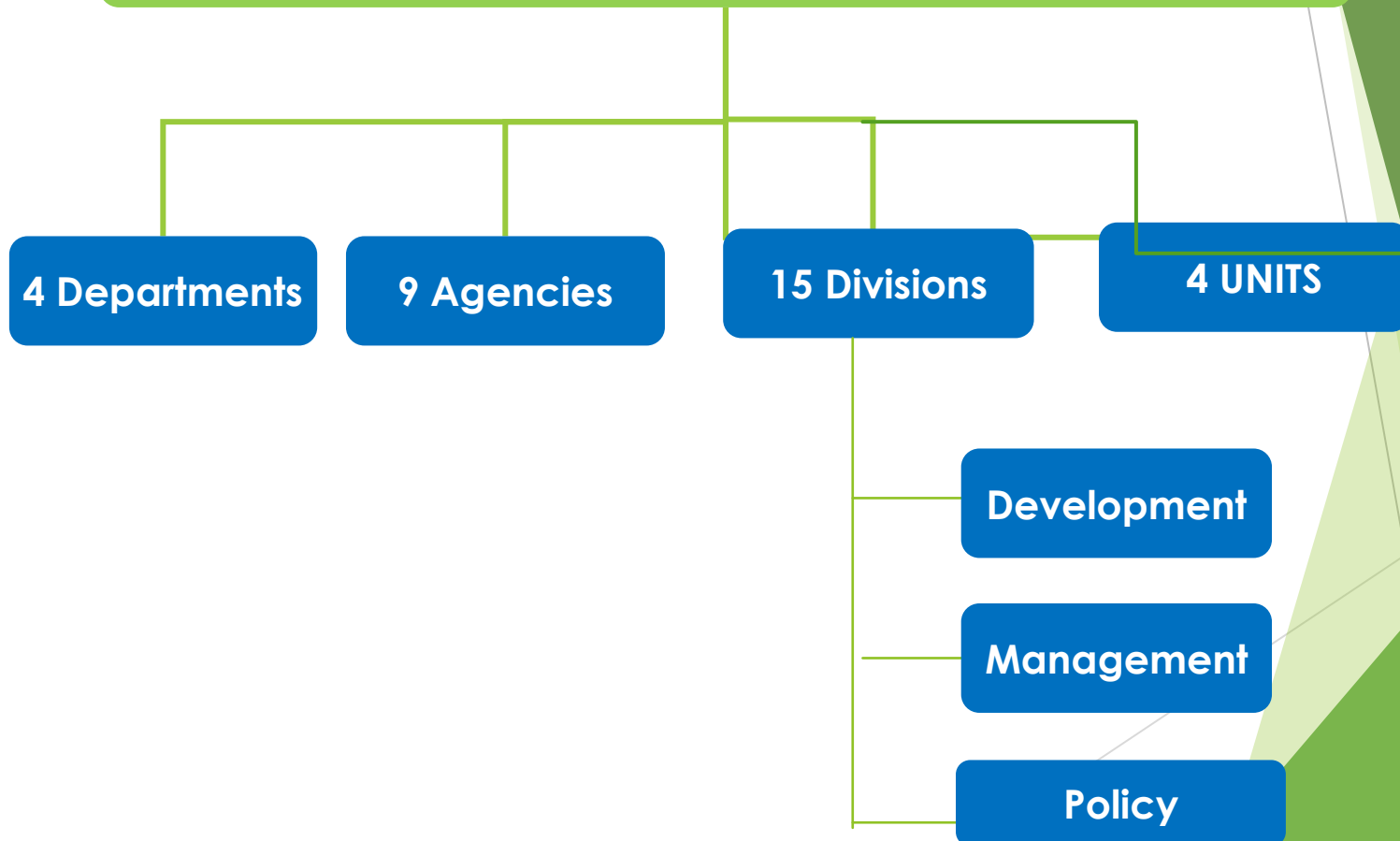
# MALAYSIAN GOVERNMENT AGRICULTURE PROFILE





# ORGANIZATION STRUCTURE

## MINISTRY OF AGRICULTURE AND AGRO-BASED INDUSTRY







# MINISTRY OF AGRICULTURE & AGROBASED INDUSTRY



## 4 DEPARTMENTS



Department of Agriculture



Department of Veterinary Services



Department of Fisheries

Malaysian Quarantine Inspection Services

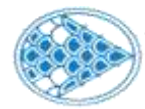
## 9 AGENCIES



Federal Agricultural Marketing Authority(FAMA)



Malaysian Agricultural Research and Development Institute (MARDI)



Fisheries Development Authority of Malaysia (LKIM)



Farmers' Organization Authority Malaysia (LPP)



Malaysia Pineapple Industry Board (LPNM)



National Entrepreneur Economic Fund



Muda Agricultural Development Authority (MADA)



Kemubu Agricultural Development Authority (KADA)



Agriculture Bank

# VISION

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## The Lead for Agriculture Transformation

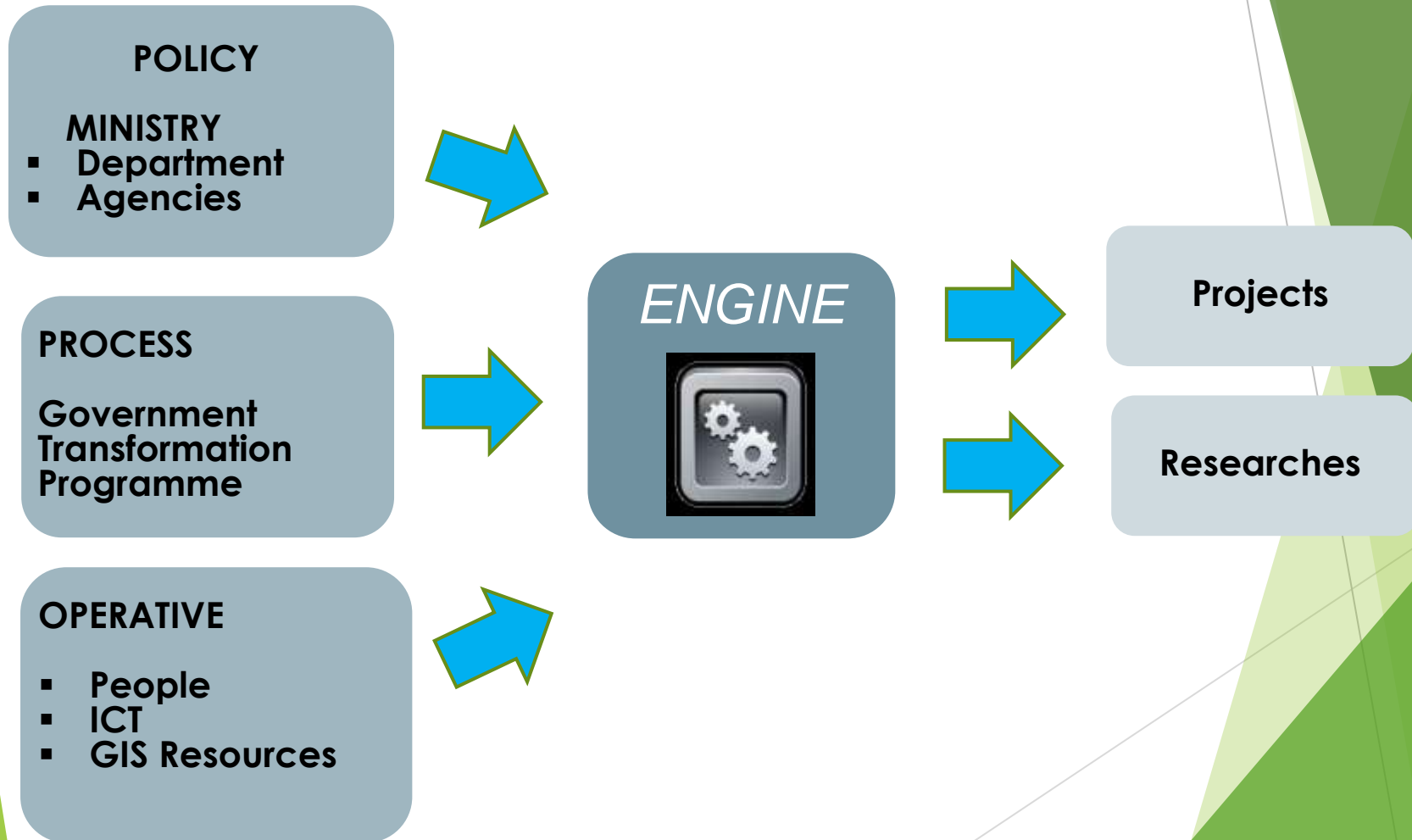


# MoA has crucial roles as the agriculture lead engine in Malaysian Agriculture Industry:

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- **Legislate, plan and implement agriculture, development program's policies and strategies.**
- **Evaluate, coordinate and ensure the implementation of agro-food agriculture development projects/programs.**
- **Conduct R&D and innovation that enhance productivity and competitiveness in the agro-food sector.**
- **Promote foreign and local investment in the agro-food sector.**
- **Structure and implement an effective and efficient agro-food market chain.**

# GEOSPATIAL WORKFLOW





# GEOSPATIAL FOCUS CROP IN MALAYSIA :

## RICE



Staple food crop for Malaysia -growing demand for production

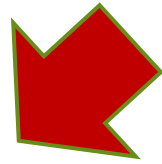


Initiative under the strategic planning of sustaining production for the growing population

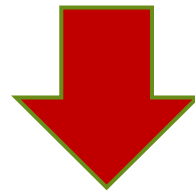


One of the major economic growth engine for agriculture industry

# SITUATIONAL ANALYSIS



**Changes of Paddy Area into Fishing Ponds, Housing Complex and others**



**Large volume of data –availability in non spatial documentation**

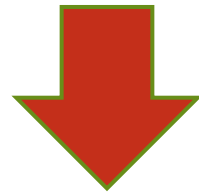


**Conventional method-manpower for field activity monitoring**

# GEOSPATIAL SOLUTION?



# **Integration of GIS Technology & satellite imageries**



## **RICE MAPPING & MONITORING** (Paddy Management System)

# RICE SPATIAL PLANNING





**RADARSAT-2**

**SPOT 6**

**GEOEYE**

**UPDATING DATABASE  
(PADDY)**

**MONITORING RICE  
FIELD ACTIVITIES**

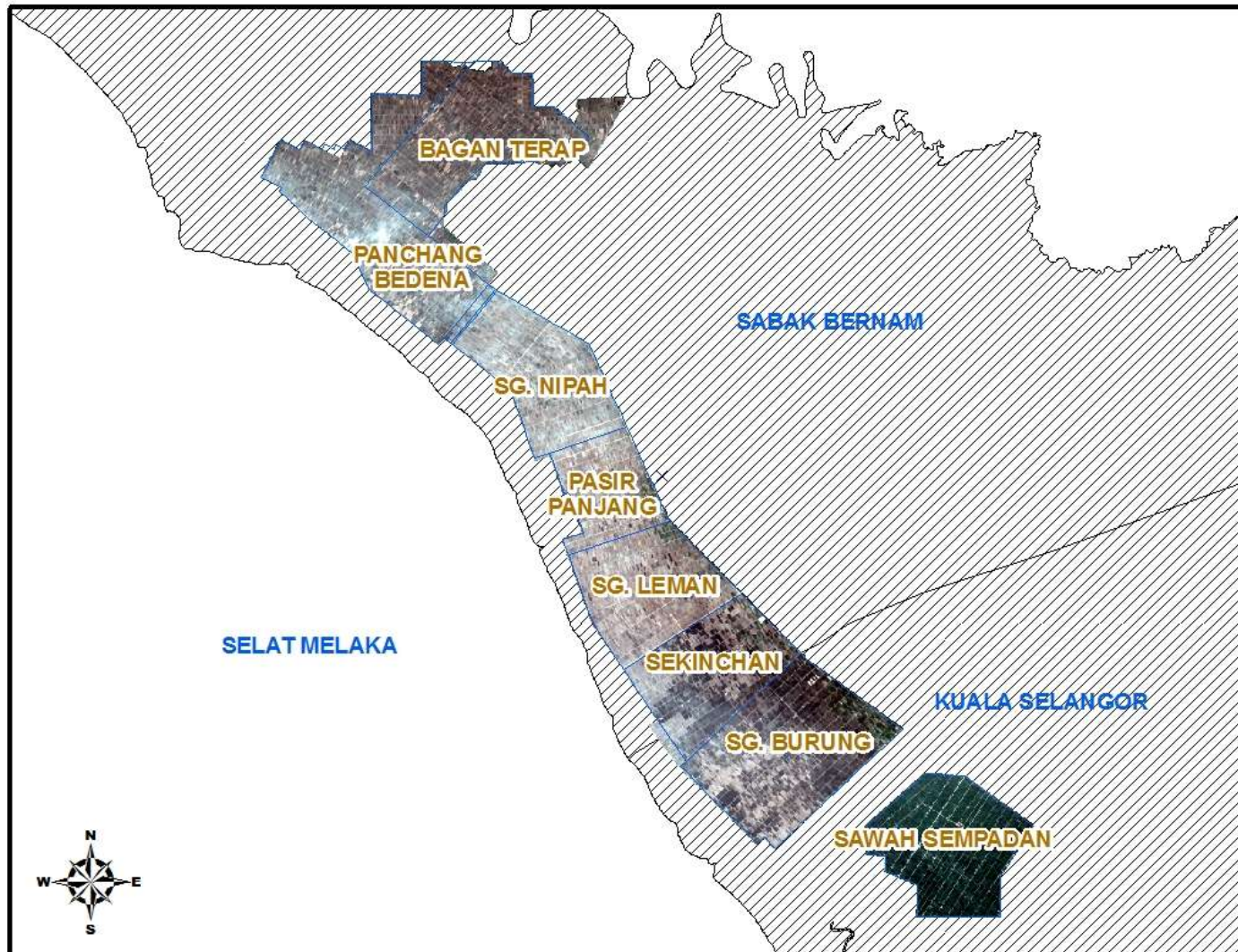
**RICE FIELD  
MAPPING**

- **Non spatial – manually recorded data to spatial data**

- **Image analysis to monitor land preparation, irrigation, planting and harvesting activity**

- **Plotting actual paddy planting area**

# PILOT PROJECT : IADA BARAT LAUT ,SELANGOR ( DOA - ARSM )



Cultivating Area  
Season 2/2011:  
**18,220 Hectare**

# 1. UPDATING (NON SPATIAL TO SPATIAL DATA)

The screenshot shows the FLAT GIS interface. On the left, there is a legend for 'Jelapang Padi' with categories: 'Jalan / Tali Air' (grey), 'Bukan Padi' (pink), 'Padi' (green), and 'Rezab Padi' (orange). Below the legend is a layer visibility control section with a list of layers and checkboxes. A scale bar at the bottom left indicates 0.1 units. The main map area displays a grid of lots with various numbers. A red rectangle highlights a specific lot. An 'Info' window is open over this lot, displaying the following details:

- Lot No lada : 3277
- Lot No Jupem : 26609
- Lot No PTD : N/A
- Blok : J
- Blok Pengairan : Sawah Sempadan
- Luas : 1.23 ha

Below the text in the info window is a table with the following data:

Bil	Nama Pengusaha	Kp Pengusaha	No Telefon
1	Hj. Mustafa Hj. Karim	481220105593	N/A

An inset satellite image is visible in the top right corner of the map area. The bottom of the interface shows the text 'Agensi Remote Sensing Malaysia © 2011'.



## 2. PADDY ACTIVITY MONITORING

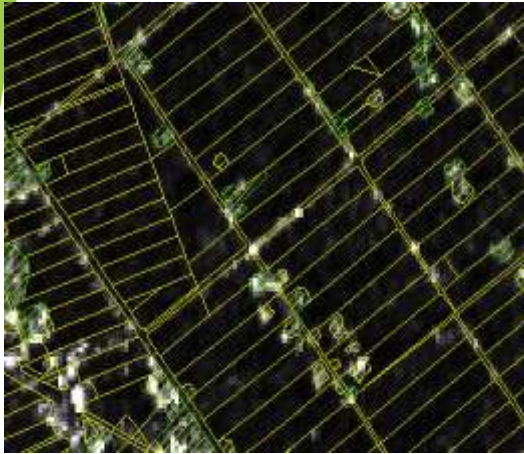
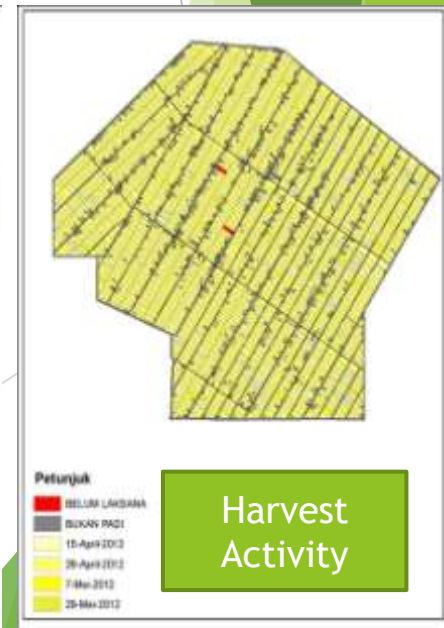
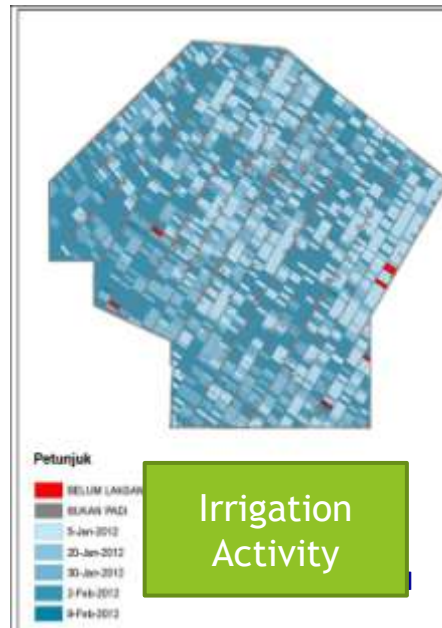
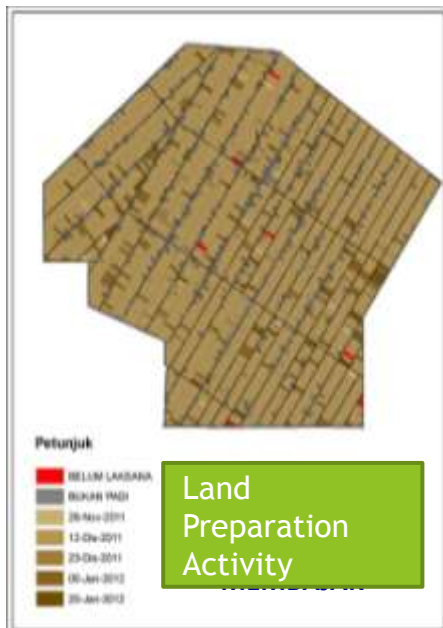
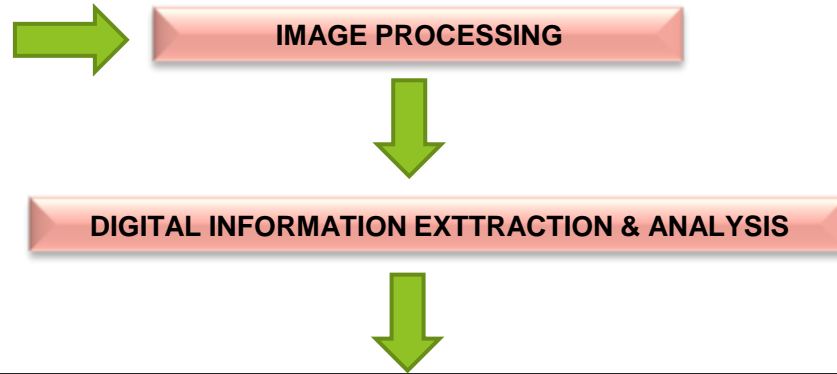
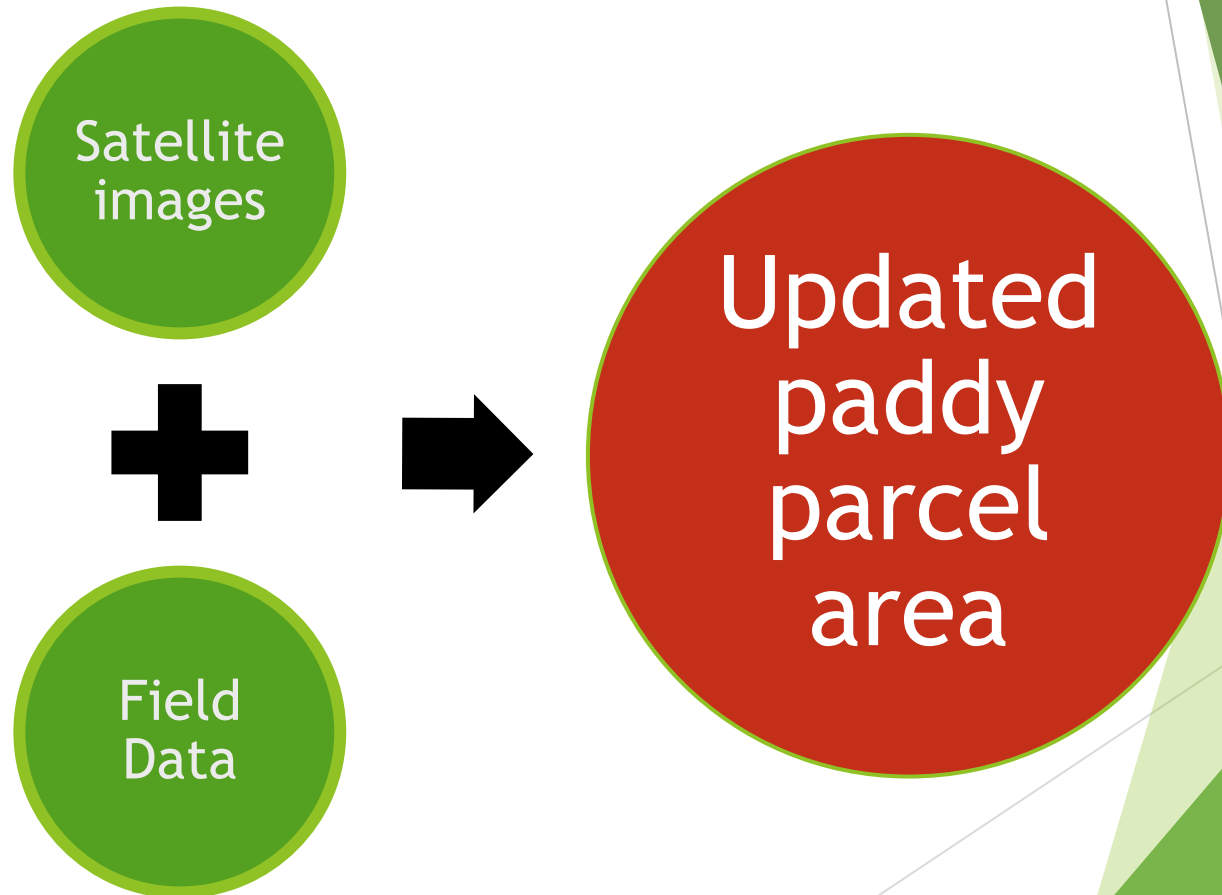


IMAGE : RADARSAT-2

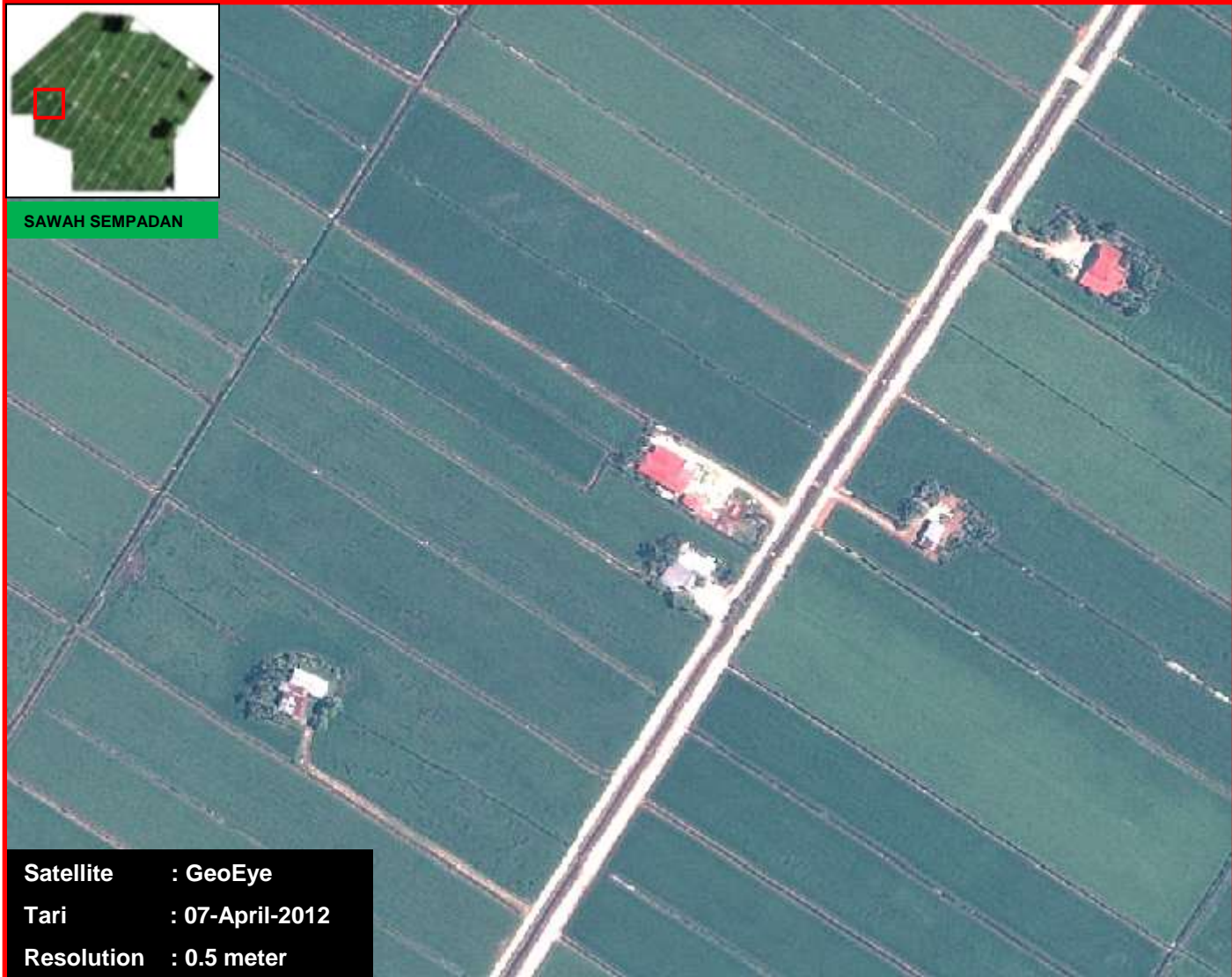


### 3. FIELD DATA MAPPING





# UPDATING PADDY AREA

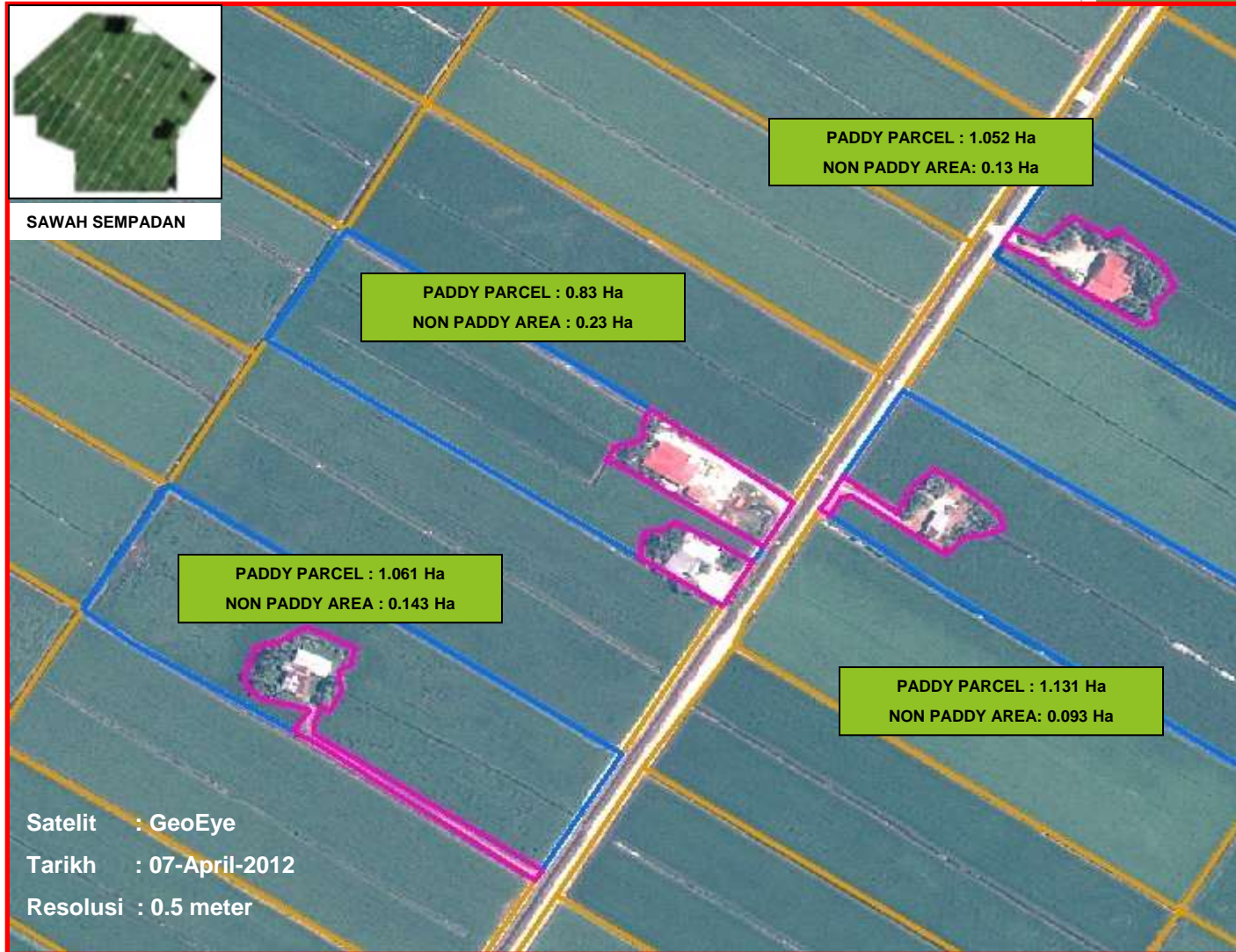


# UPDATING PADDY AREA ( CONTINUE.. )





# UPDATING PADDY AREA ( CONTINUE.. )



Updating Paddy Area - Using High Resolution Image

# ANALYSIS : QUERIES AND REPORTS



# QUERY : LOCATING FARMER'S LOT

Menu Utama - Padi

apps2.remotesensing.gov.my/BS/vis/GIS/gis/mip2.php

YAHOO! Search LIVE

## SISTEM PENGURUSAN TANAMAN PADI

Petunjuk Carian Uloaran

Lot Pengusaha

Blok Pengairan SG BURUNG

Nama Pengusaha AZMI BIN EHSAN

Cari

Jumlah Lot = 8

Lot IADA	Blok	Blok Pengairan
7229	C2	SG BURUNG
7223	C2	SG BURUNG
7211	C2	SG BURUNG
7218	C2	SG BURUNG
7222	C2	SG BURUNG
7216	C2	SG BURUNG
7226	C2	SG BURUNG
7231	C2	SG BURUNG

Kad Pengenalan

Luas Kawasan

Bilangan Lot

Agensi Remote Sensing Malaysia © 2011



# QUERY: PADDY & NON PADDY

apps2.remotesensing.gov.my/bis/ncgms/gis/map2.php

Search the web (Babydon)

Yahoo! Search

SYSTEM PEMBINAAN SITI MINTI TERBUKA PADI

Petunjuk Carian

Petunjuk Peta  
Jelajah Padi

Barat Laut Selangor

- Jalan / Tali Air
- Bukan Padi
- Padi
- Rezab Padi

Paparan Peta  
Klik untuk memaparkan lapisan peta

Peta Asas

- Barat\_Laut\_Selangor
- Kawasan Pengembangan
- Blok Pengairan
- Blok
- Barat Laut Selangor

Pemantauan Imej

- Status\_Imej\_M1
- Status\_Imej\_M2

Imej Satelit

- imej\_Radar
- imej\_Optikal

Pilih Peta:

Ubah Keceharian Peta:

Agensi Remote Sensing Malaysia © 2011

# REPORT

## YIELD REPORT ACCORDING TO SEASON



### SISTEM PEMANTAUAN AKTIVITI TANAMAN PADI



LAPORAN HASIL MUSIM 2 BAGI SETIAP BLOK PENGAIRAN

TAHUN 2011

BLOK PENGAIRAN	HASIL (TAN)	LUAS PADI	KURANG 4 TAN	4 - 55 TAN	56 - 75 TAN	76 - 10 TAN	LEBIH 10 TAN	PURATA
SG BURUNG	9.024.473	1.399.368	48	72	368	616	74	6.449
BAGAN TERAP	435.468	137.96	68	34	15	1	0	3.156
SAWAH SEMPADAN	9.596.112	2.127.948	510	383	646	212	10	4.511

# REPORT

## NUMBER OF FARMERS ACCORDING TO LOT



SISTEM PEMANTAUAN AKTIVITI TANAMAN PADI

LAPORAN BILANGAN PENGUSAHA MENGIKUT JUMLAH LOT



BLOK PENGAIRAN	BILANGAN PENGUSAHA	1 LOT	2 LOT	3 LOT	4 LOT	LEBIH 4 LOT
SAWAH SEMPADAN	1,133	682	242	98	42	69
SG BURUNG	1,631	987	422	118	46	58
SEKINCHAN	829	404	217	105	45	58
SG LEMAN	1,441	823	349	124	69	76
PASIR PANJANG	902	408	245	108	65	76
SG NIPAH	948	500	233	111	50	54
PANCHANG BEDENA	1,716	754	464	241	132	125
BAGAN TERAP	1,268	432	377	214	111	134

# OUTCOME

- ▶ The field monitoring activity is more efficient  
- on time reports
- ▶ Improved data keeping / resources for paddy database
- ▶ Widen the scope of analysis - more analysis options







**THANK YOU**