AGENSI ANGKASA MALAYSIA

THE USED OF SPACE TECHNOLOGY FOR LAND COVER/LANDUSE APPLICATIONS

Virtual via Microsofts Team

27 August 2021

VIRTUAL LAUNCHING CEREMONY ON DEVELOPMENT OF MALAYSIA'S SYSTEM OF ENVIRONMENTAL-ECONOMIC ACCOUNTING (SEEA) LAND ACCOUNT

INTRODUCTION

OBJECTIVE PRESENTATION

To share capability space technology with focus on remote sensing and collaborative efforts by Malaysian Space Agency (MYSA) with users/stake holders utilised satellite images to produce land cover/land use information

PRESENTATION OUTLINE

THE USED OF SPACE TECHNOLOGY

Introduction

Space based technology focus on earth resource observation system – remote sensing

Remote sensing capability

Characteristics, availability and specification of satellite imageries

Analysis and Validity

Example land use /land cover mapping based on satellite imageries in collaboration with users/stake holders

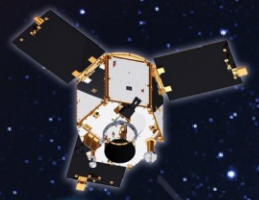
Way Forward

Contribution MOSTI through MYSA to SEEA promoting technology and utilizing expertise

REMOTE SENSING TECHNOLOGY CONCEPT

Energy Source

Electromagnetic Energy
Atmosphere Interaction



REMOTE SENSING APPLICATION SYSTEM
VARIOUS SECTORS

MAIN APPLICATION FIELDS (EXISTING AND NEW)

- AGRICULTURE & FISHERY
- NATURAL RESOURCE & ENVIRONMENT
- LAND MONITORING & DEVELOPMENT
- PROPERTY VALUATION & MANAGEMENT
- ENVIRONMENTAL AUDITING & PHYSICAL DEVELOPMENT
- COMMODITY PLANTATIONS
- ENVIRONMENTAL HEALTH
- DISASTER MANAGEMENT
- NATIONAL SECURITY & DEFENCE

DATA CATALOGING SYSTEM
http://rsdc.mysa.gov.my/rsdc

ADVANTAGES OF SPACE TECHNOLOGY

01 LARGE AREA COVERAGE

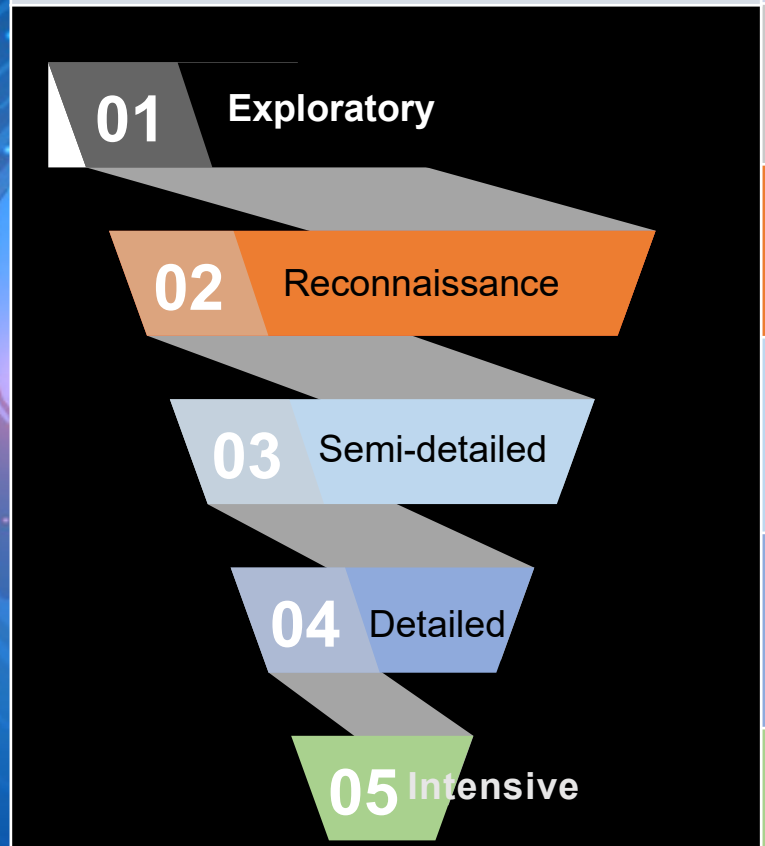
02 REPETITIVE COVERAGE

03 DIGITAL FORMAT

04 COST SAVING

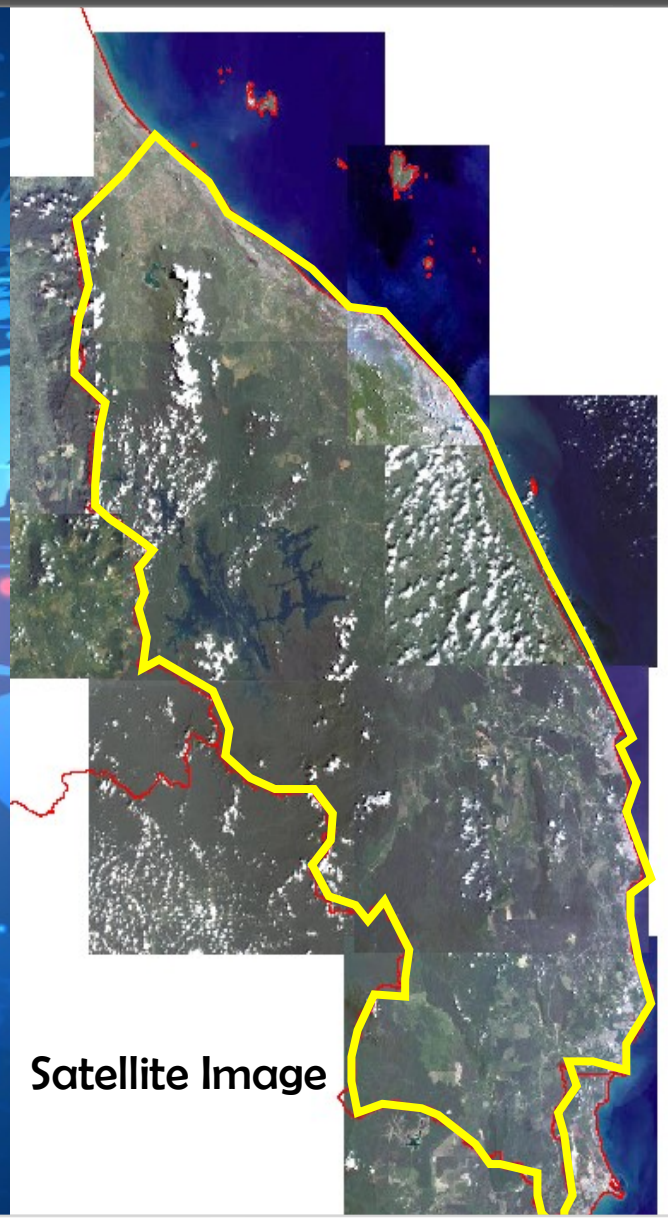
05 TIME SAVING

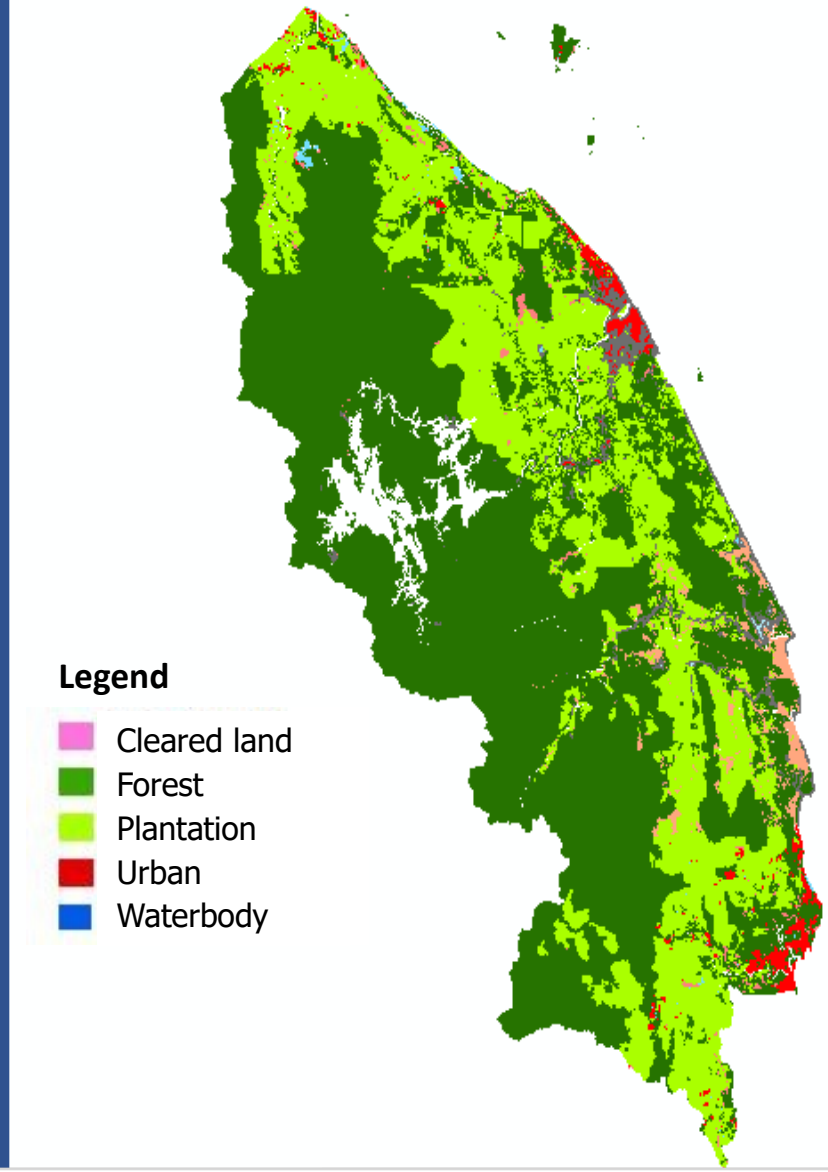
Mapping Scale vs Resolution

Mapping			Remote Sensing			User's Application Level
Category	Thematic	Standard	Class	Resolution (m)	Satelllite	
	1: 1,000,000	-	Very coarse	> 100	MODIS, AVHRR	Country
	1: 100,000 – 500,000	1:250,000	Coarse	50 -100	Resourcesat – AWiFS	State
	1:25,000 – 1:100,000	1:50,000	Medium	10 - 50	LANDSAT, Aster, SPOT	District
	1:10,000 – 1:25,000	1:25,00	Fine	5 - 10	Worldview, Quickbird, SPOT	Sub-district, Mukim,
	1:10,000 – 1:5,000 or more	1:5,000	Very Fine	< 5	IKONOS, Pleiades, SPOT 6/7	Local Authority, Village, farm, etc

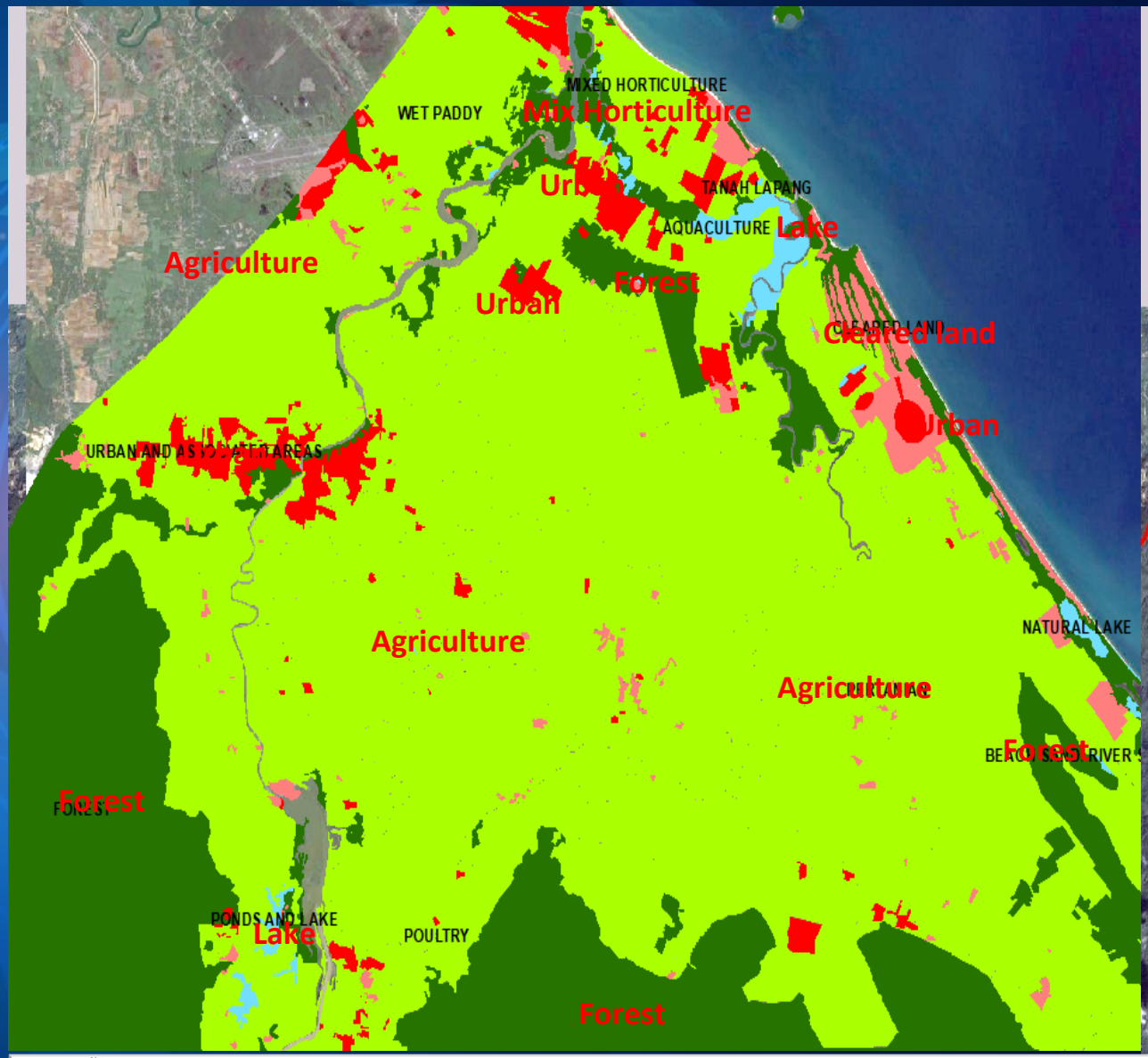
Capability of using satellite images for land use/land cover classification

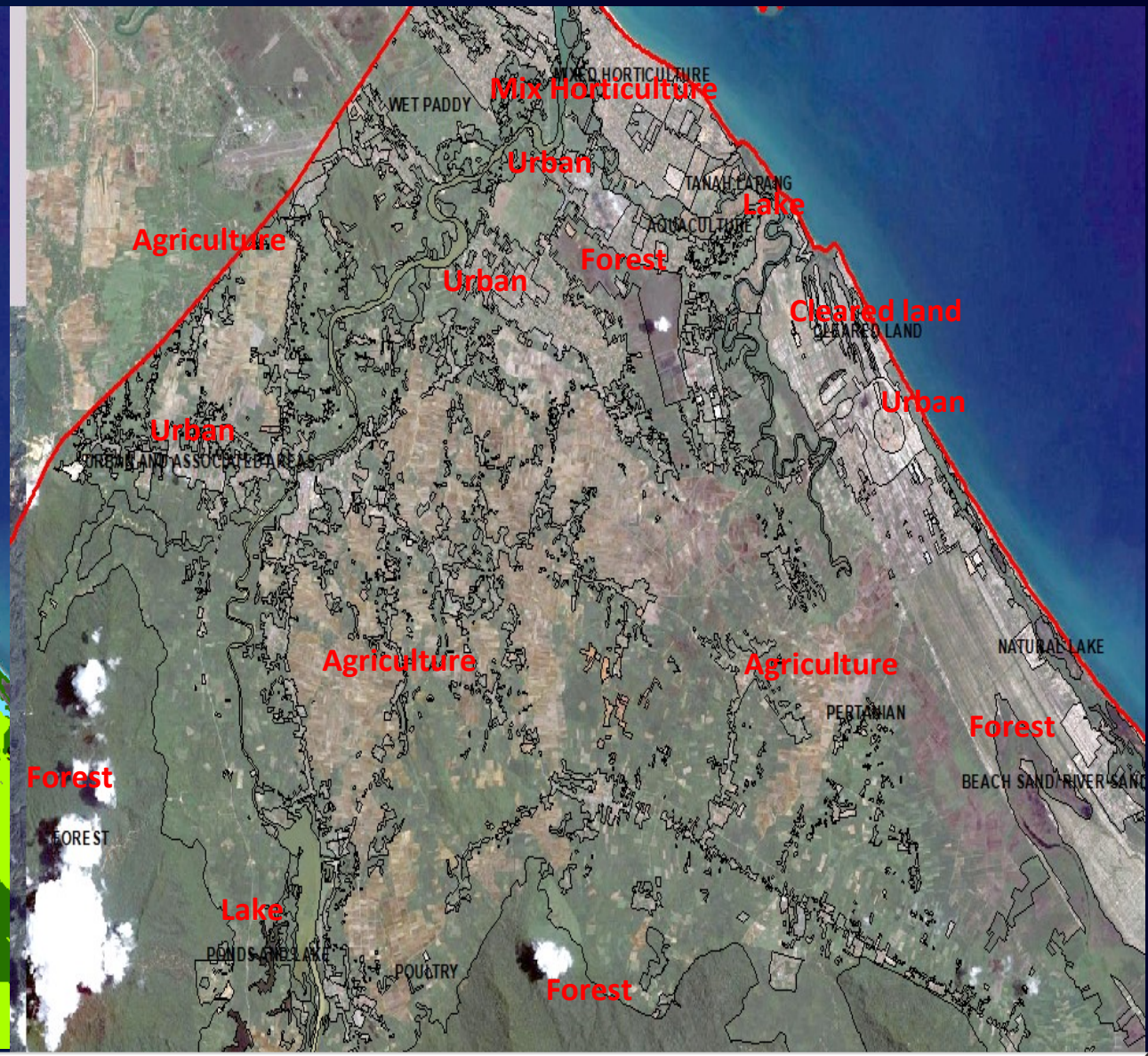
Mapping of Land use/Land cover classes in reconnaissance category





Mapping of Land use/Land cover classes in semi-detailed category

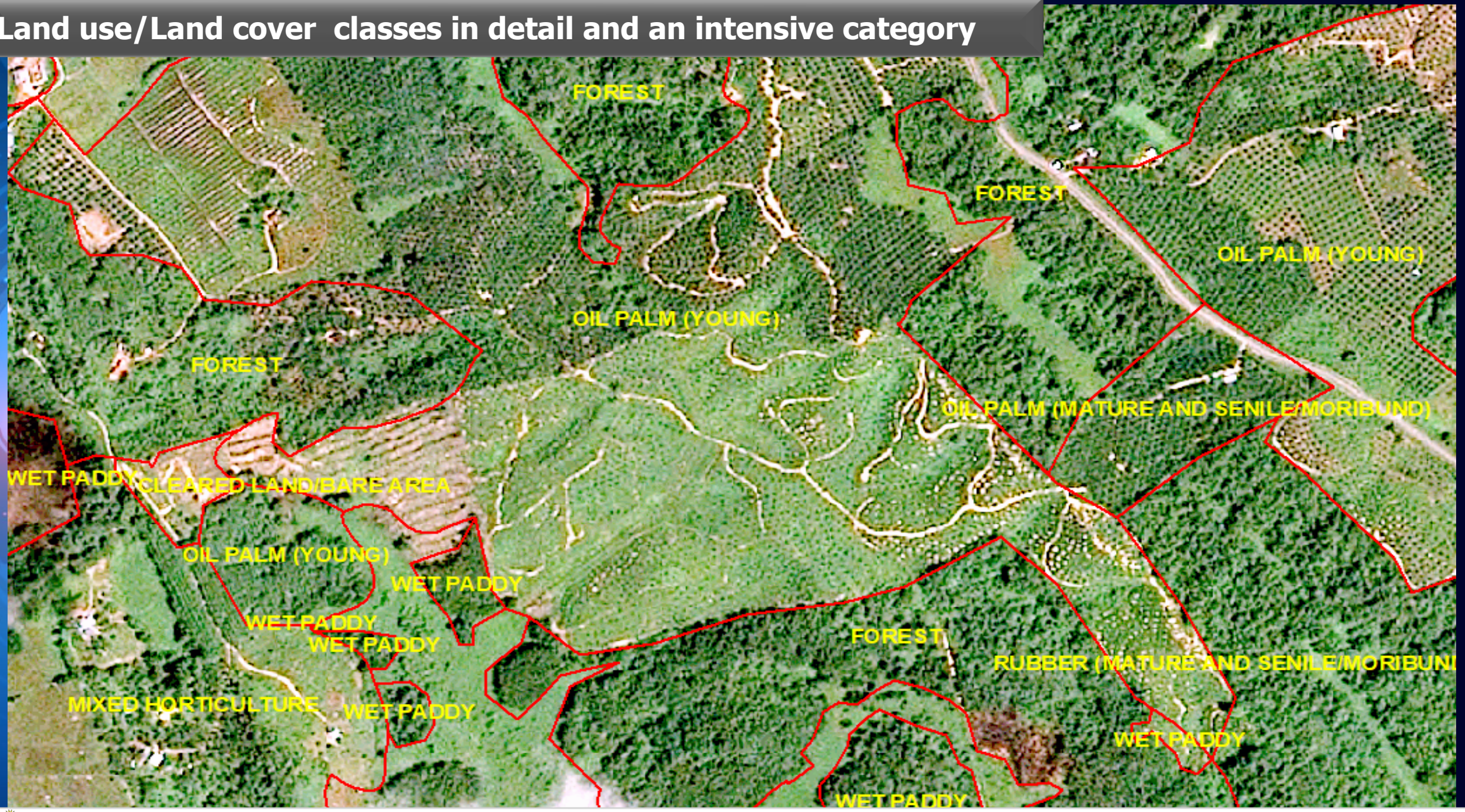




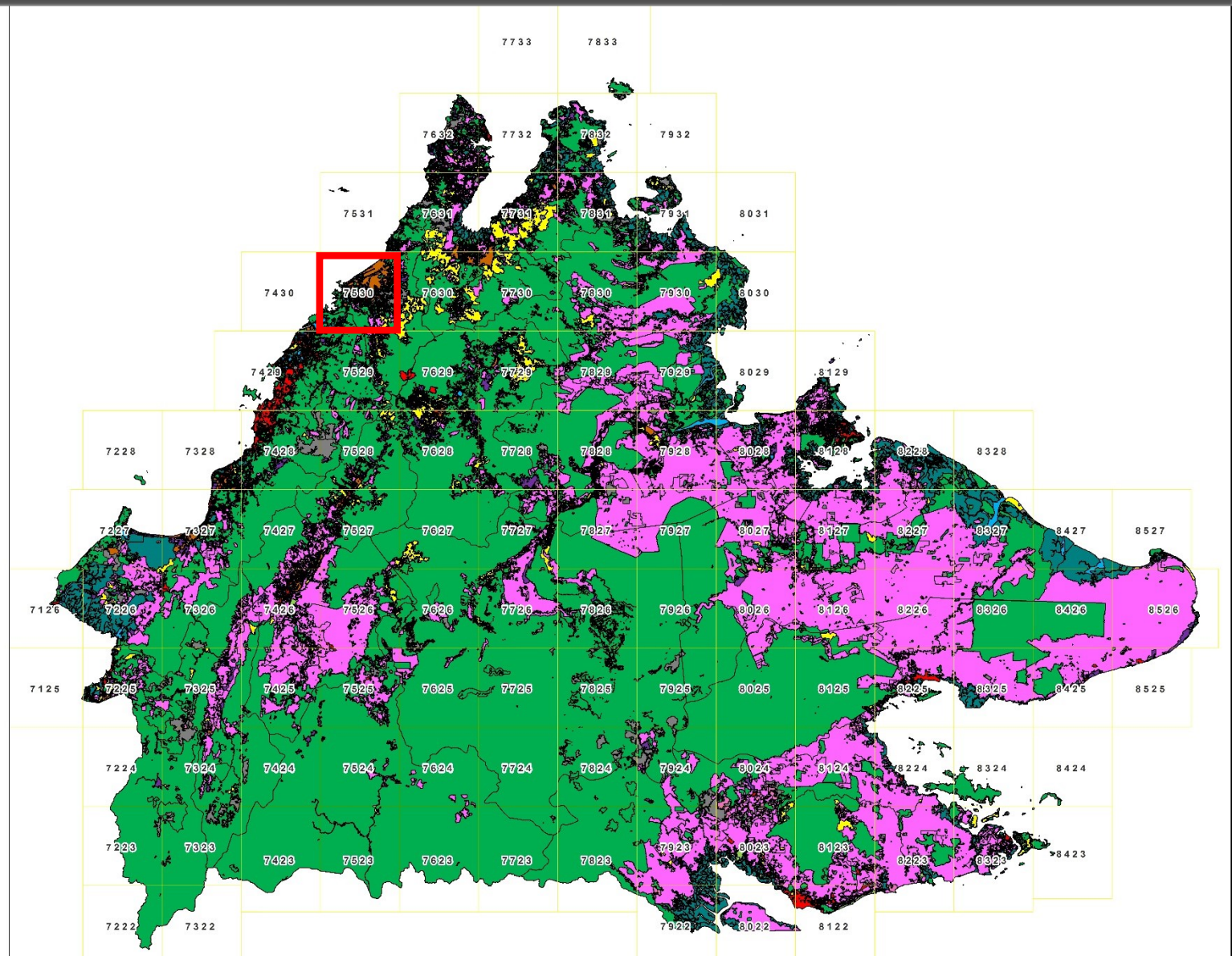
Land use/Land cover classes in detail and an intensive category

Plantation
Cleared Land
Cleared Land
Ponds
Settlements
Plantation

Land use/Land cover classes in detail and an intensive category



Land use/Land cover map



LEGEND

- Urban and Associated Area
- Recreational and Associated Area
- Mixed Horticulture
- Coconut (Matured and Senile)
- Rubber (Young)
- Rubber (Matured and Senile)
- Rubber with Scrub Forest
- Oil Palm (Young)
- Oil Palm (Matured and Senile)
- Wet Paddy
- Hill Paddy
- Aquaculture
- Grassland
- Bush\Scrub
- Forest
- Swamp Forest/ Mangrove
- Peat Swamp
- River
- Lake/Pond/Reservoir
- Beach/ River Bank
- Cleared Land

N

0 20 40 80

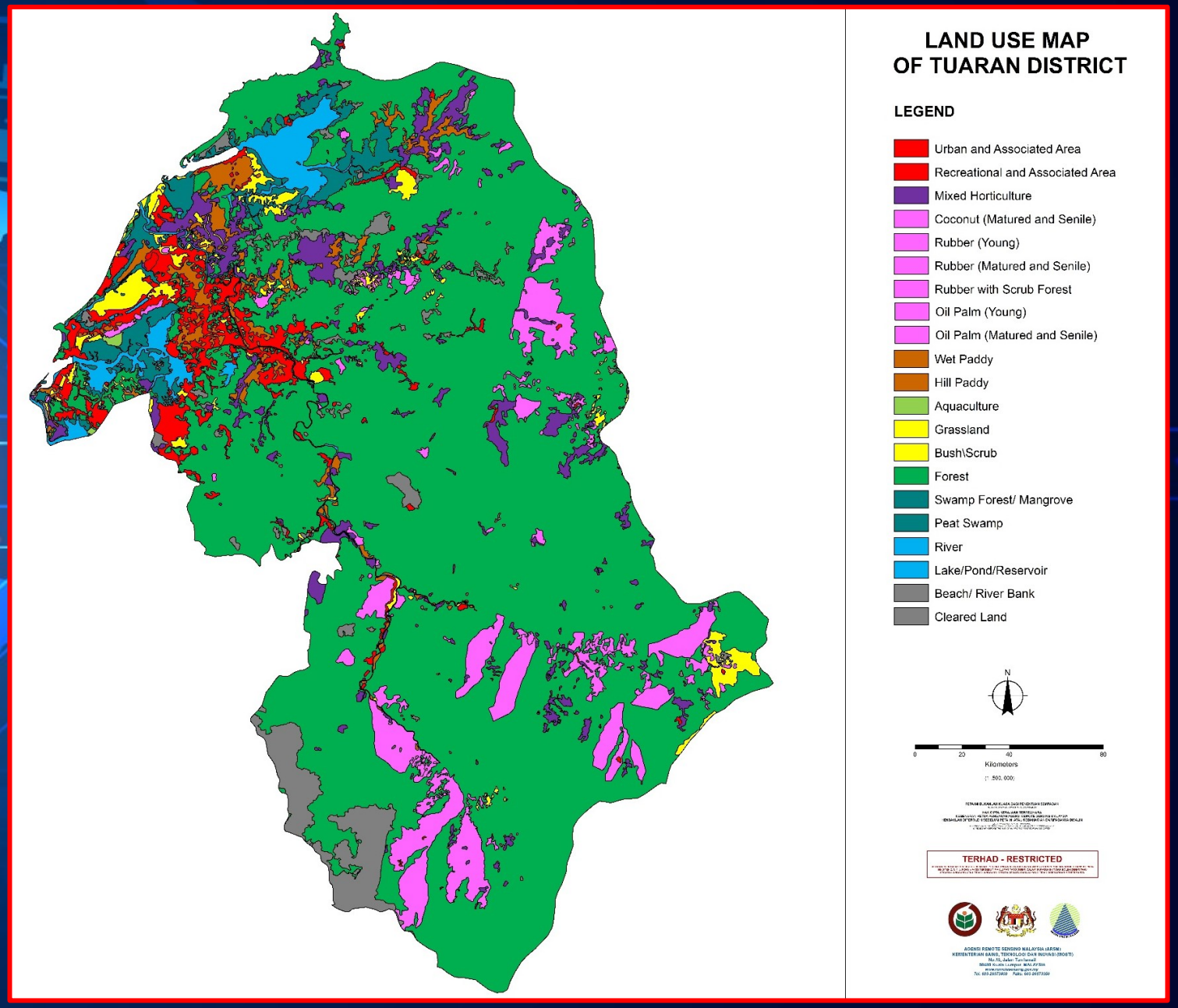
Kilometers

(1:500,000)

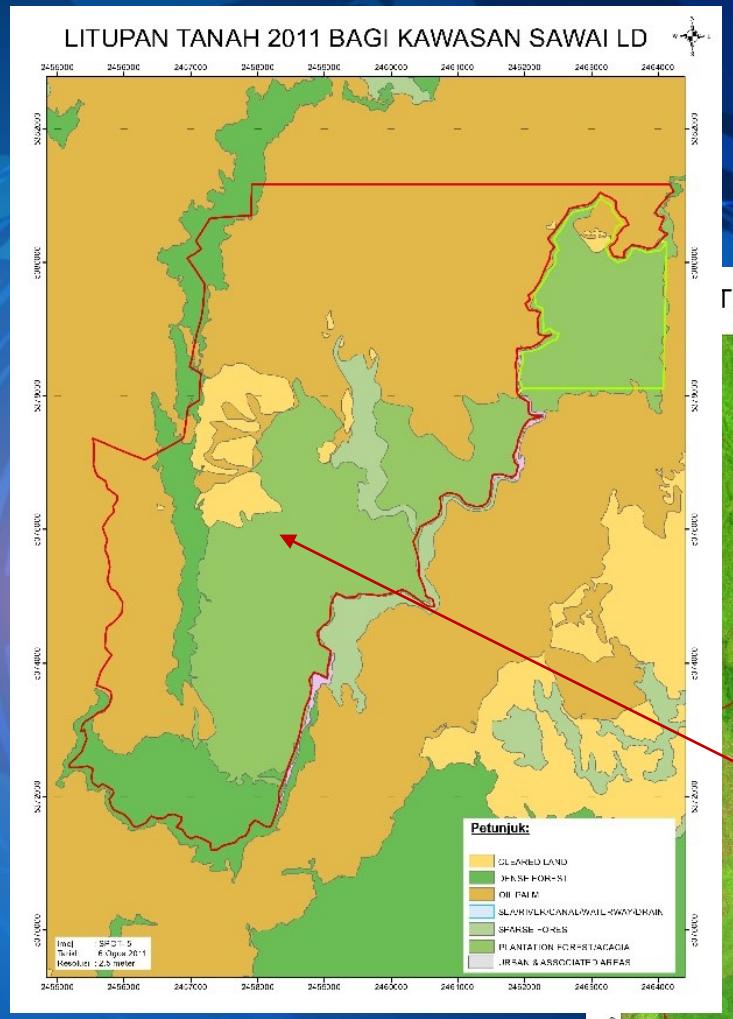
TERHAD - RESTRICTED

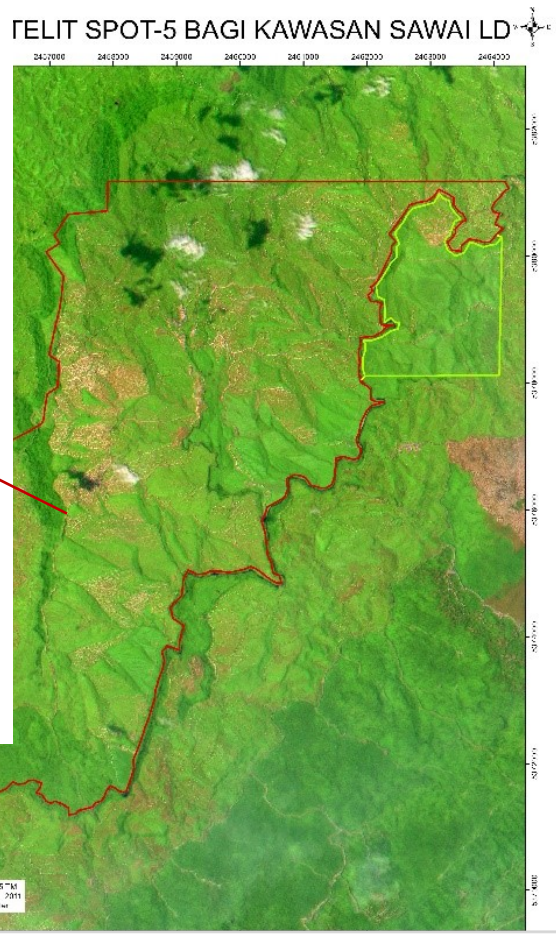
AGENSI REMOTE SENSING MALAYSIA (ARSM)
KEMENTERIAN SAINS, TEKNOLOGI DAN INOVASI (MOSTI)

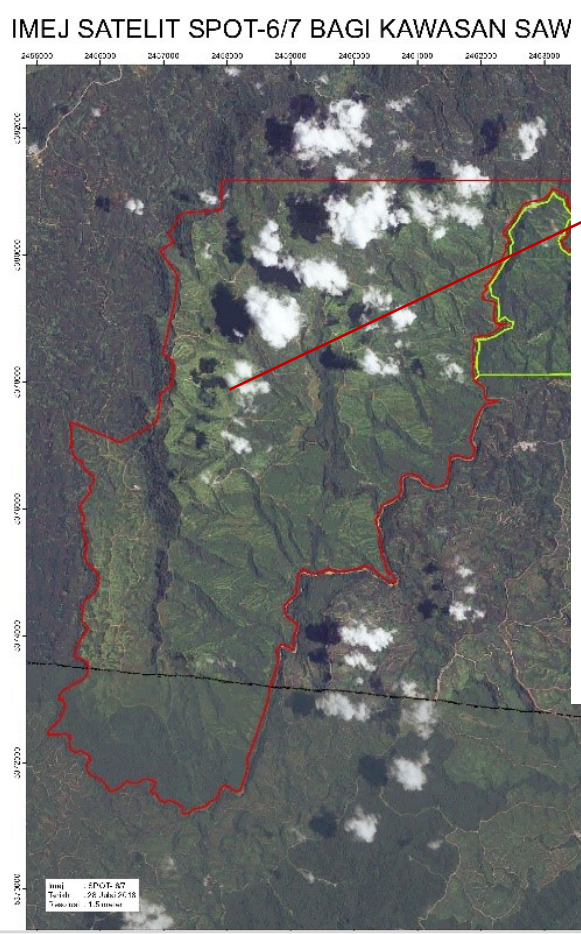
Land use/Land cover map

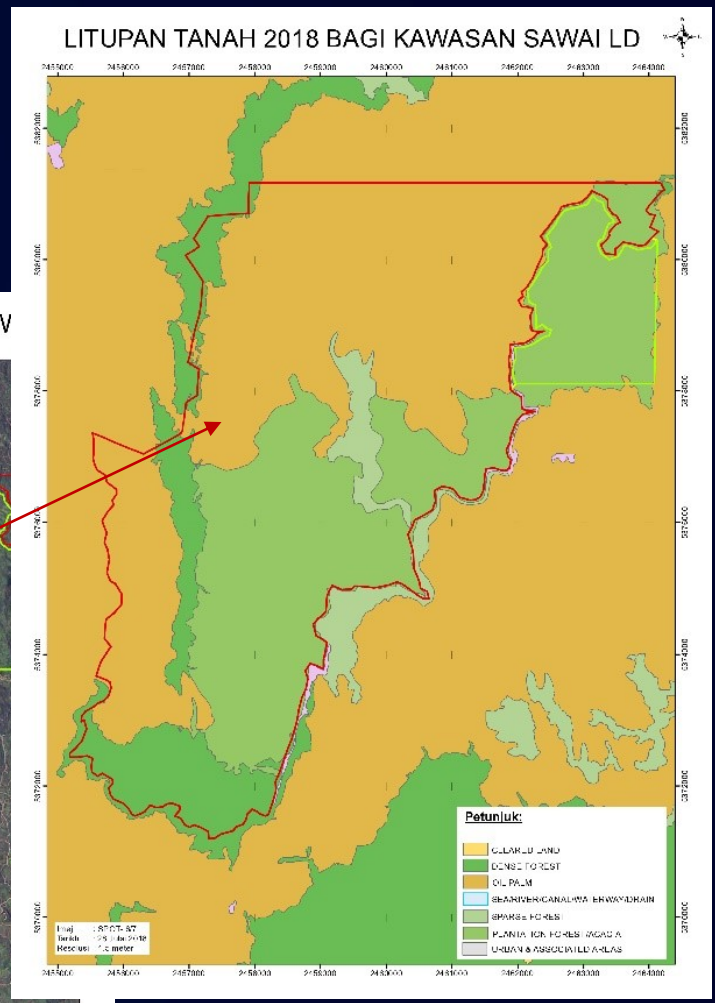


Land use/Land cover classes monitoring

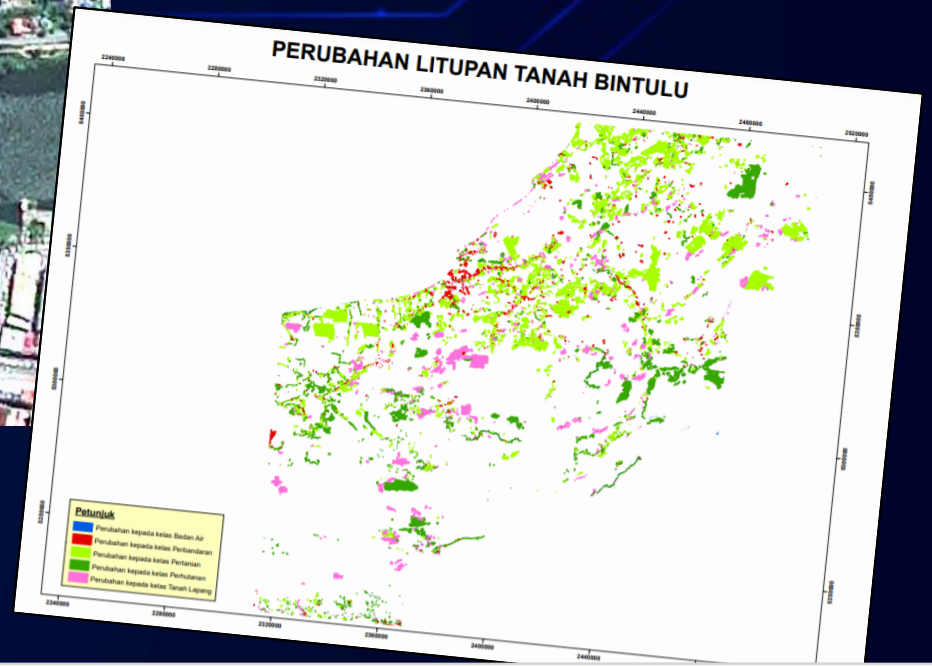






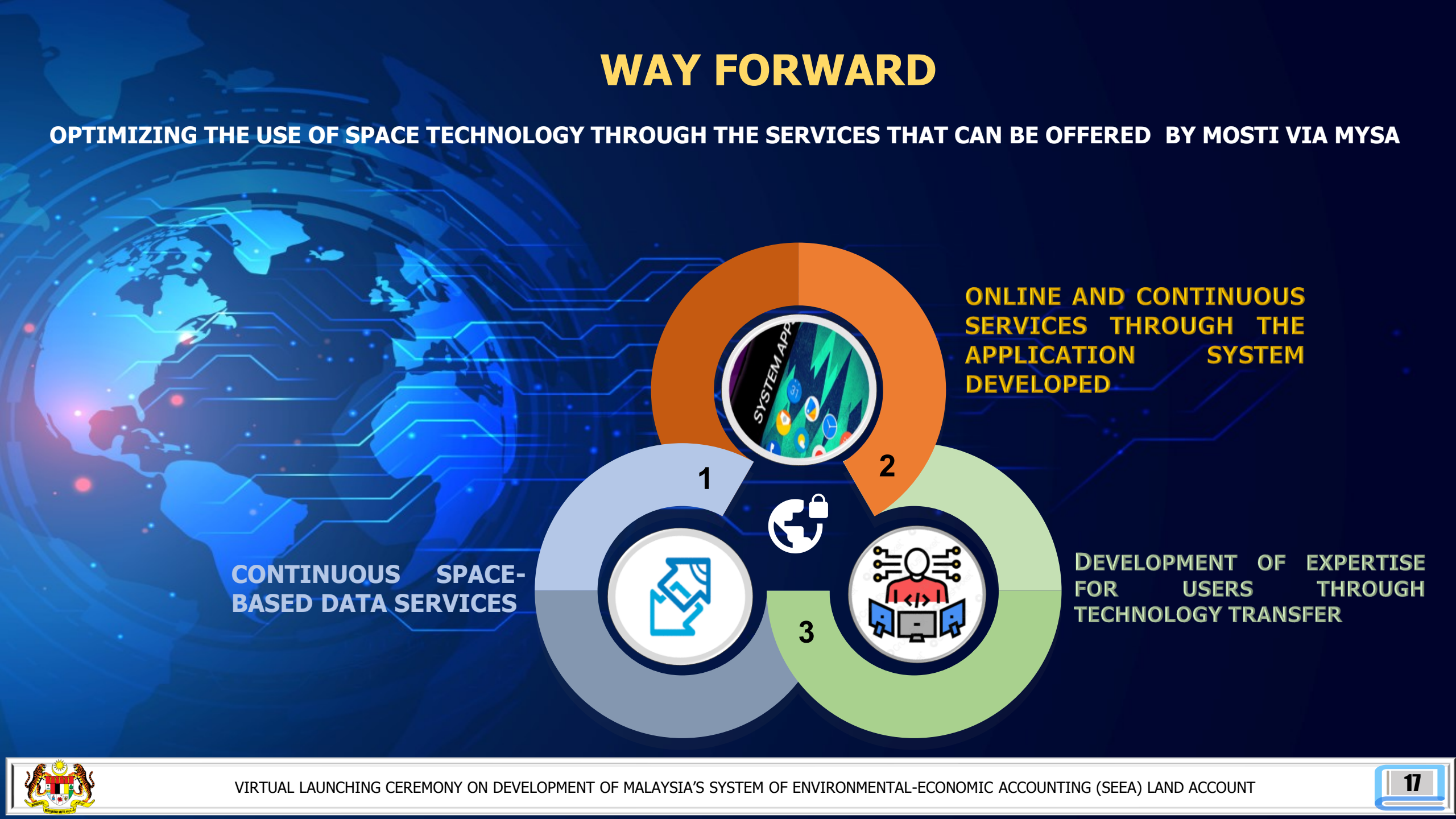


Land use/Land cover changes



WAY FORWARD

OPTIMIZING THE USE OF SPACE TECHNOLOGY THROUGH THE SERVICES THAT CAN BE OFFERED BY MOSTI VIA MYSA



CONTINUOUS SPACE-BASED DATA SERVICES

ONLINE AND CONTINUOUS SERVICES THROUGH THE APPLICATION SYSTEM DEVELOPED

DEVELOPMENT OF EXPERTISE FOR USERS THROUGH TECHNOLOGY TRANSFER

THANK
YOU