

GE
SMART
ASIA 2018



Locate
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WHEN

9 – 11 APRIL 2018

WHERE

ADELAIDE, AUSTRALIA

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The use of IFSAR in providing solutions for a water management issue

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Plantation Research Advisory | Rubber, Soils & General Agriculture | Precision Agriculture Unit
SIME DARBY RESEARCH SDN. BHD.



Plantation

- 1. INTRODUCTION**
- 2. APPLICATION OF GEOSPATIAL INFORMATION & TECHNOLOGY IN SIME DARBY PLANTATION**
- 3. WATER MANAGEMENT | Case Study in Johor, Malaysia**

INTRODUCTION

**WORLD'S LARGEST LISTED
OIL PALM PLANTATION
COMPANY (*planted area)**

**525,290 HA (Malaysia,
Indonesia & Liberia)-Oil
Palm**

**8,749 HA (Malaysia &
Liberia)-Rubber**

*Annual Report 2014



Plantation

Geospatial Applications in Sime Darby Plantation

RESEARCH

1. Oil palm yield forecasting
2. Water management/hydrology
3. Oil palm nutrient mapping
4. Palm counting
5. Spectral library (new)
6. BLUEPRINT; Planning of planting point & terraces
7. BLUEPRINT; Planning of roads & drains
8. UAS technology

SUSTAINABILITY

1. Hotspot monitoring
2. HCV/HCS assessment
3. Traceability

ESTATE OPERATION

1. Estate boundary & feature mapping e.g replant
2. Standardizing & synchronizing hectarage statement
3. Mobile application for navigation

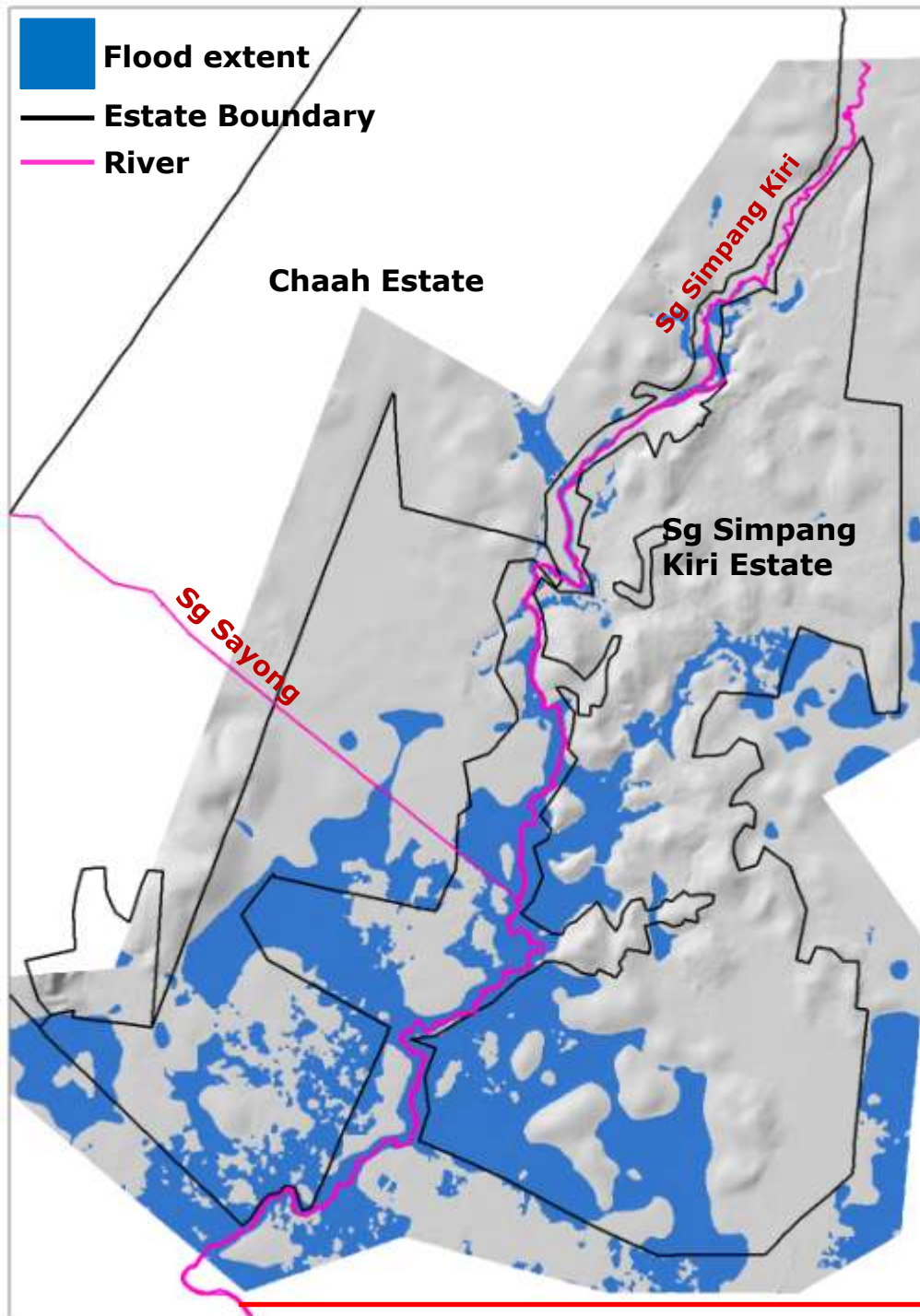
IT/GEODATABASE

1. Integrated geodatabase
2. Estate security system (new)

WATER MANAGEMENT

Case Study in Johor, Malaysia





PROBLEM DEFINITION

1. **When** – Nov to Jan
2. **How long** – stagnant (a month), multiple episode (2-3 weeks)
3. **How many HA affected** – approx. 600 Ha.
4. 3.5 KM downstream, existing JPS weirs and flood retarding embankment.





IKONOS | 16 Aug 2009

14 Jan 2015

1



2



3

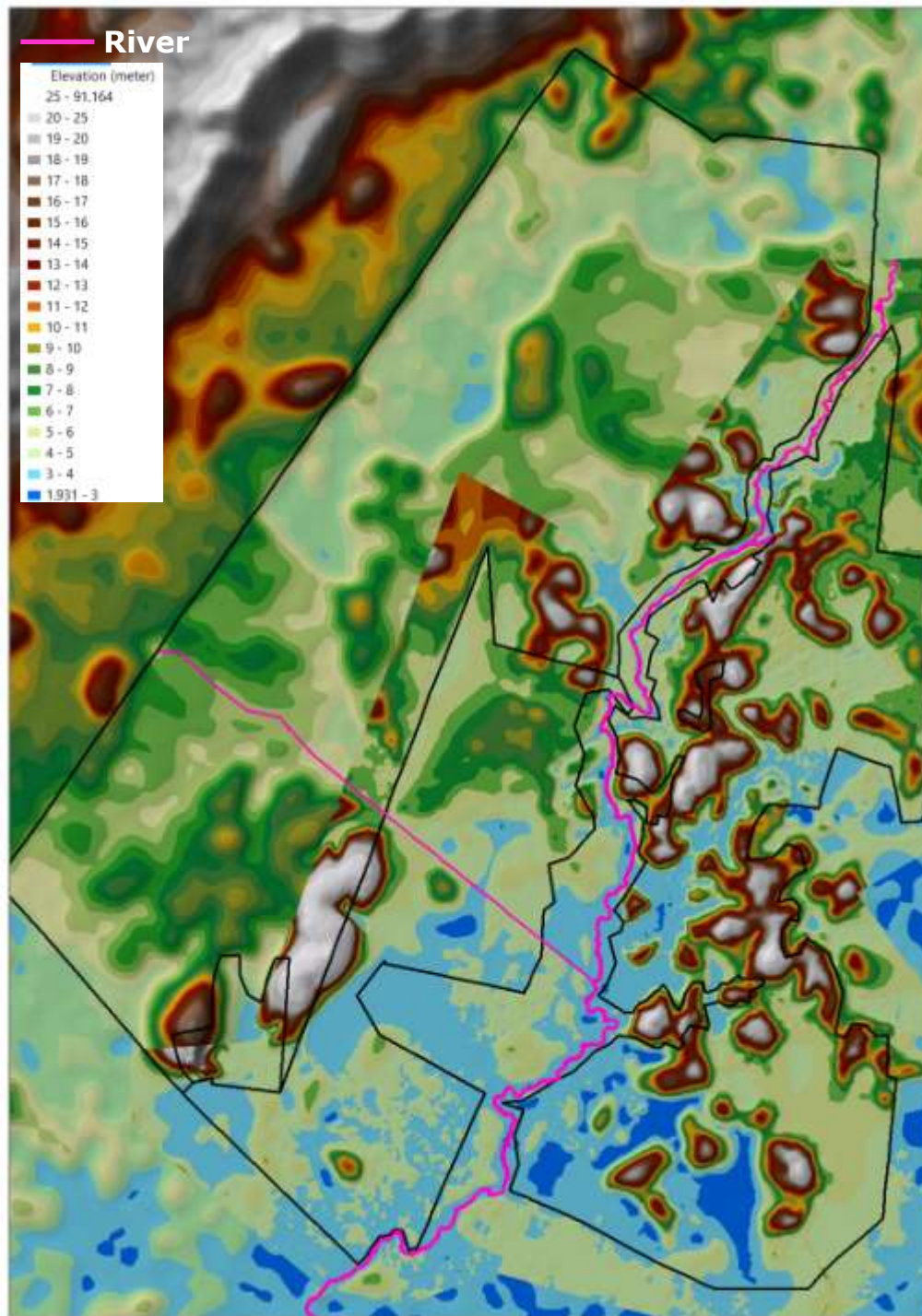


IKONOS | 16 Aug 2009

River

Elevation (meter)

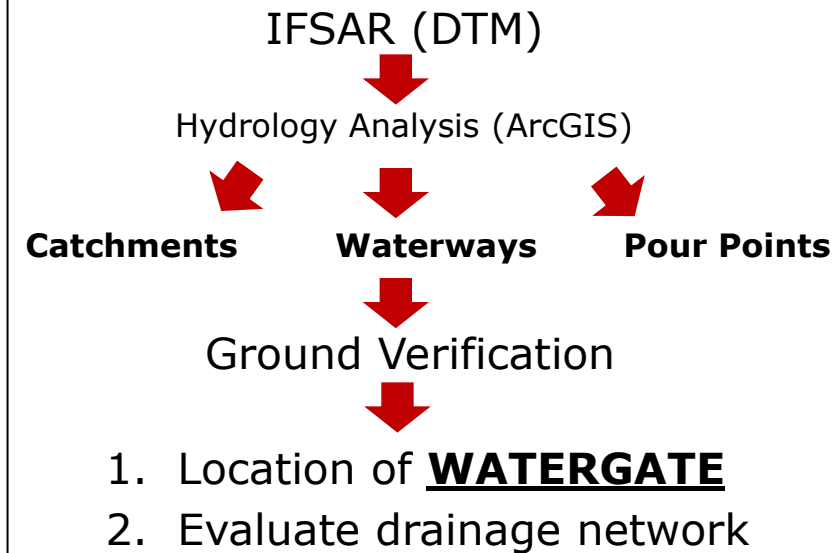
25 - 91.164
20 - 25
19 - 20
18 - 19
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15 - 16
14 - 15
13 - 14
12 - 13
11 - 12
10 - 11
9 - 10
8 - 9
7 - 8
6 - 7
5 - 6
4 - 5
3 - 4
1.931 - 3



APPROACH

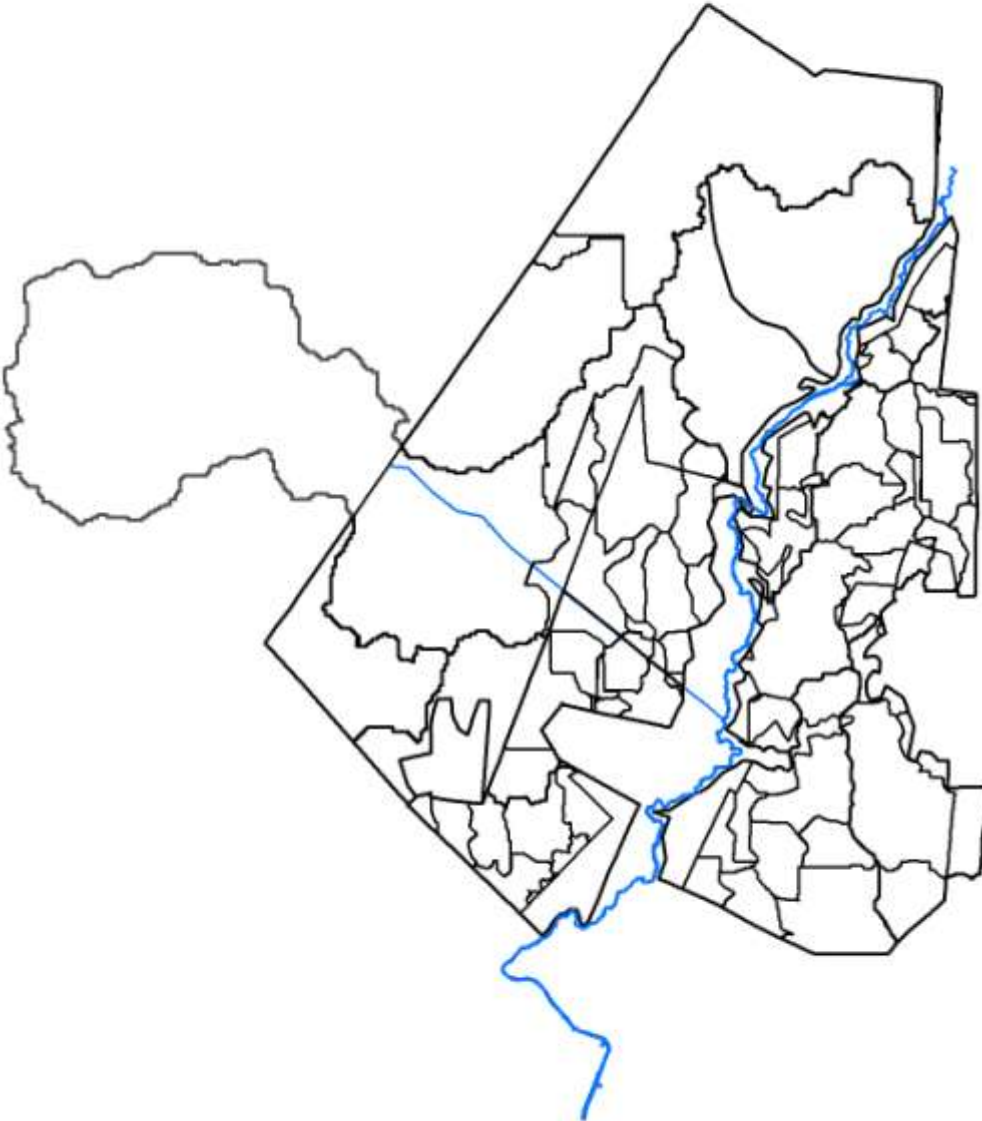
Involve multiple disciplinary decision makers; estate management, engineering, agronomy & precision agriculture.

METHODOLOGY

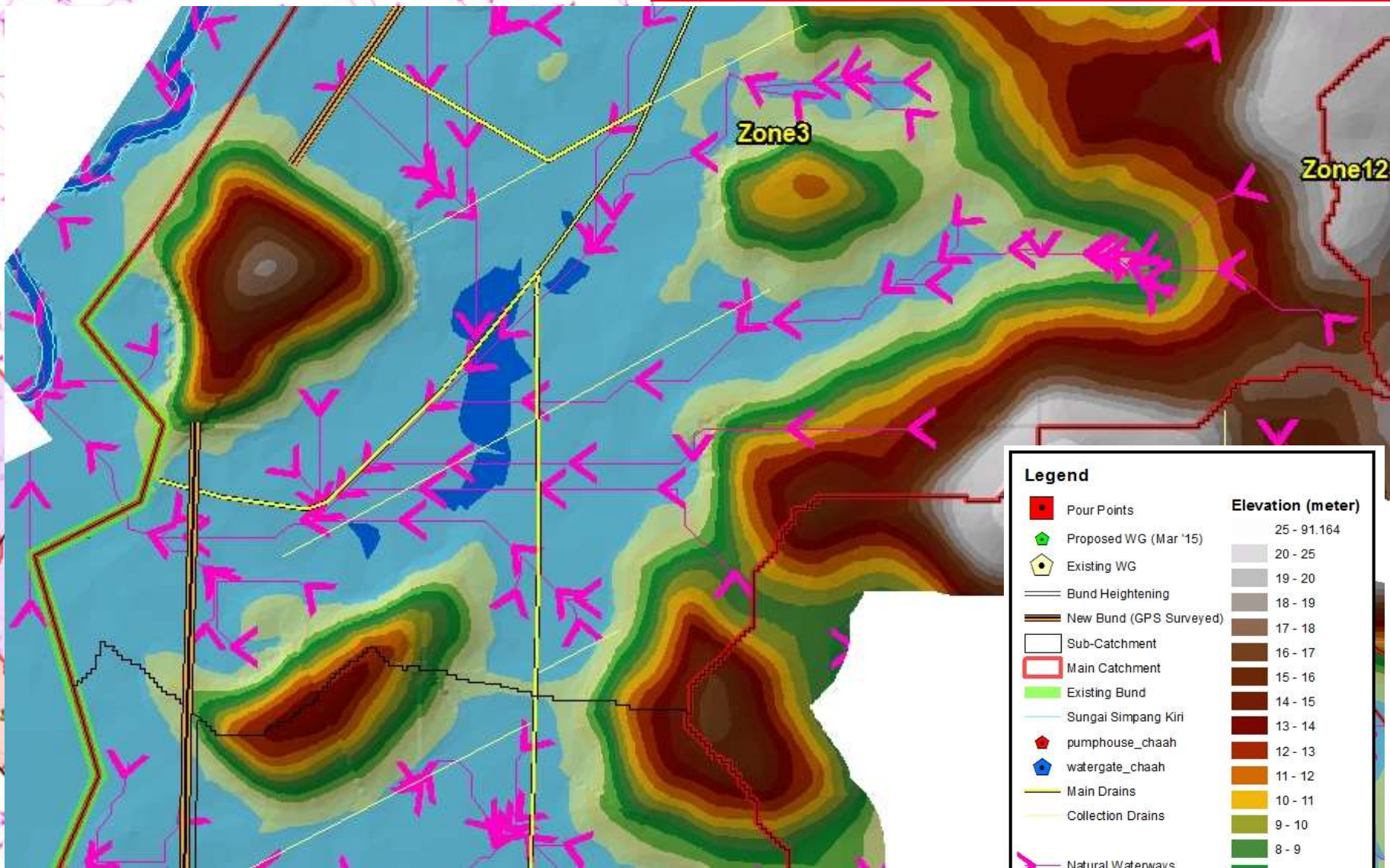


Plantation

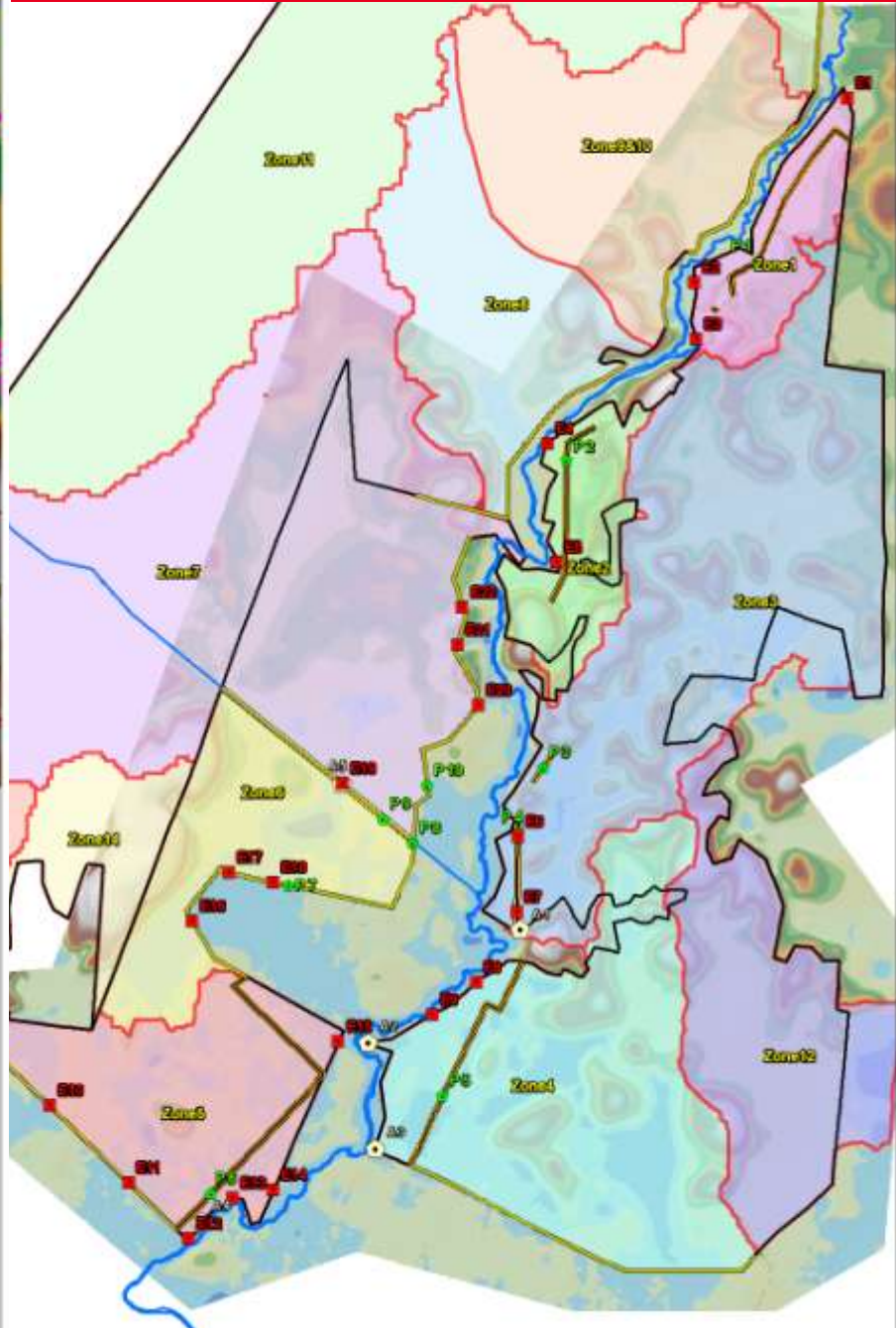
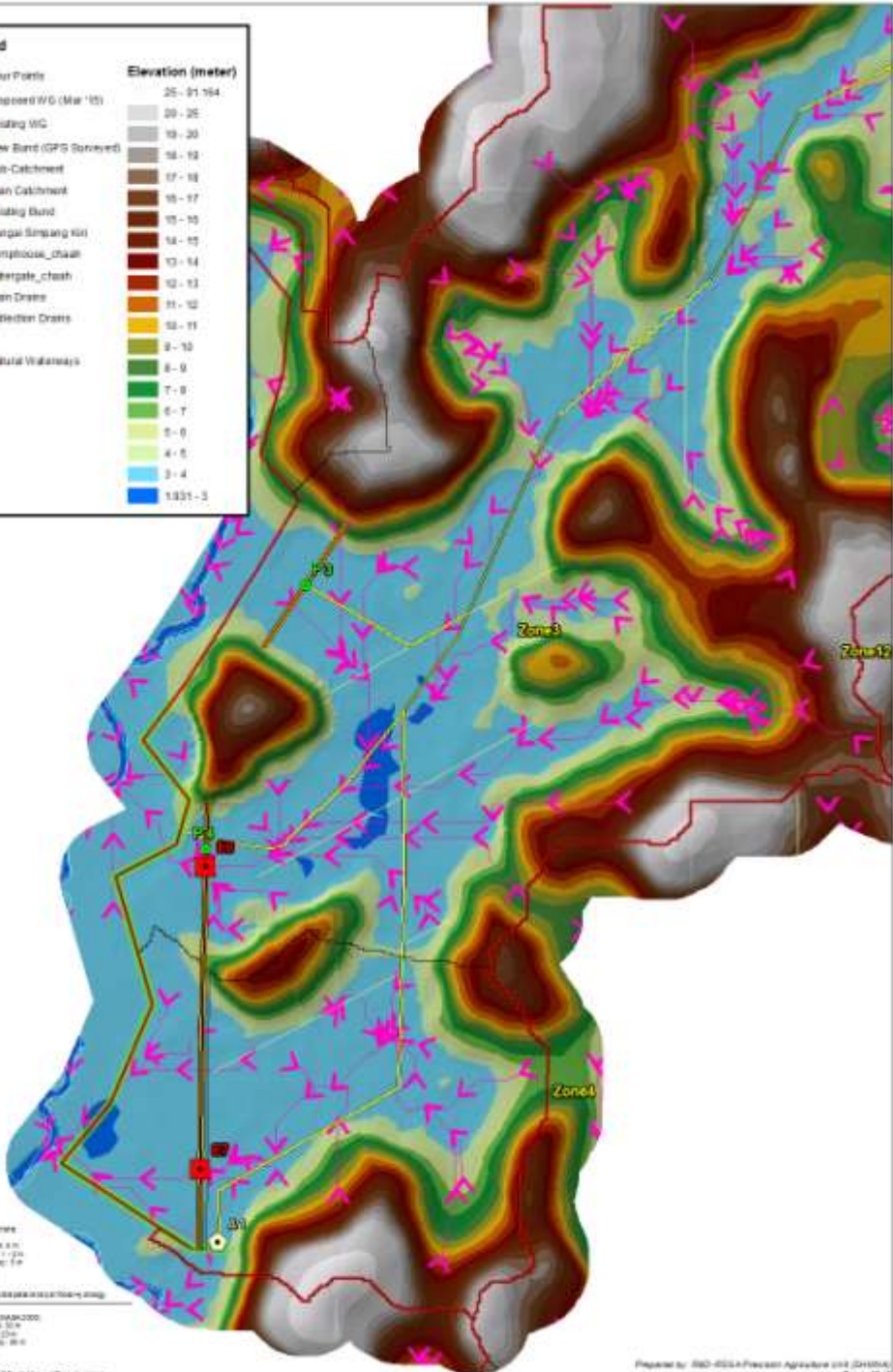
1. From sub-catchments combined to become major catchment
2. Combine IfSAR & SRTM to obtain overall catchment area.



APPROACH | Waterways



APPROACH | Pour Points



DO NOT SCALE THIS MAP
 Scale: 1:50,000
 Contour interval: 5m
 Datum: WGS 84
 Projection: UTM
 Zone: 48N
 Spheroid: Everest
 Datum: 1954
 Datum shift: 100m
 Projection: UTM
 Zone: 48N
 Spheroid: Everest
 Datum: 1954
 Datum shift: 100m

CONCLUSION

- Was IFSAR useful for the intended purpose? **YES**
- Under what condition? **INLAND**
- Ground checking is a **MUST**

