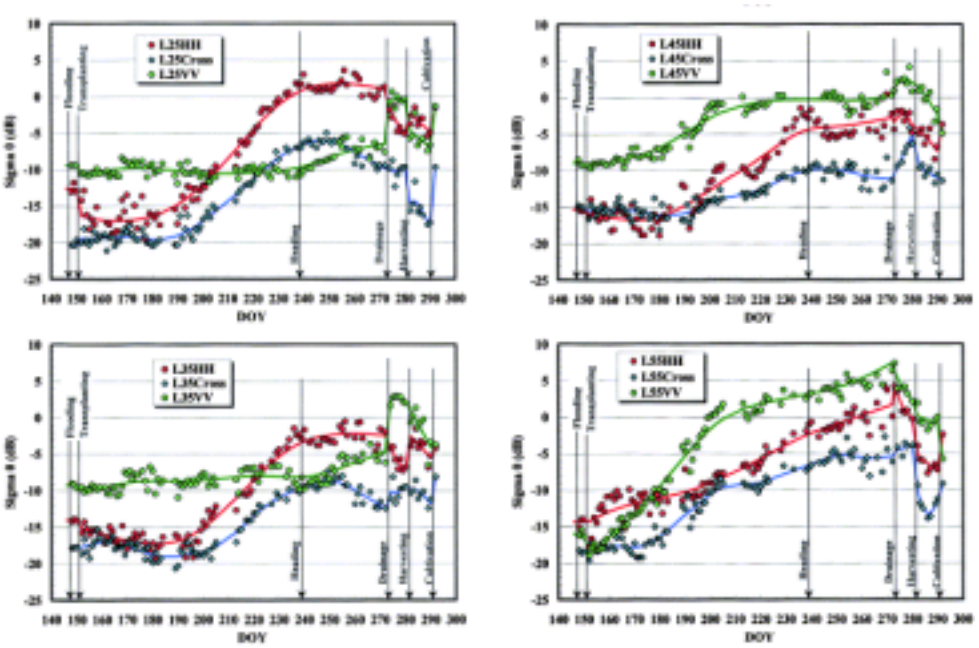
High temporal and spatial variability

- temporal : variation during the cycle due to interaction mechanisms with growing plants

- spatial : variation among fields due to non uniformity of cultural practices

Mapping method based on temporal change

ALOS polarisation and incidence



PALSAR polarisation and incidence

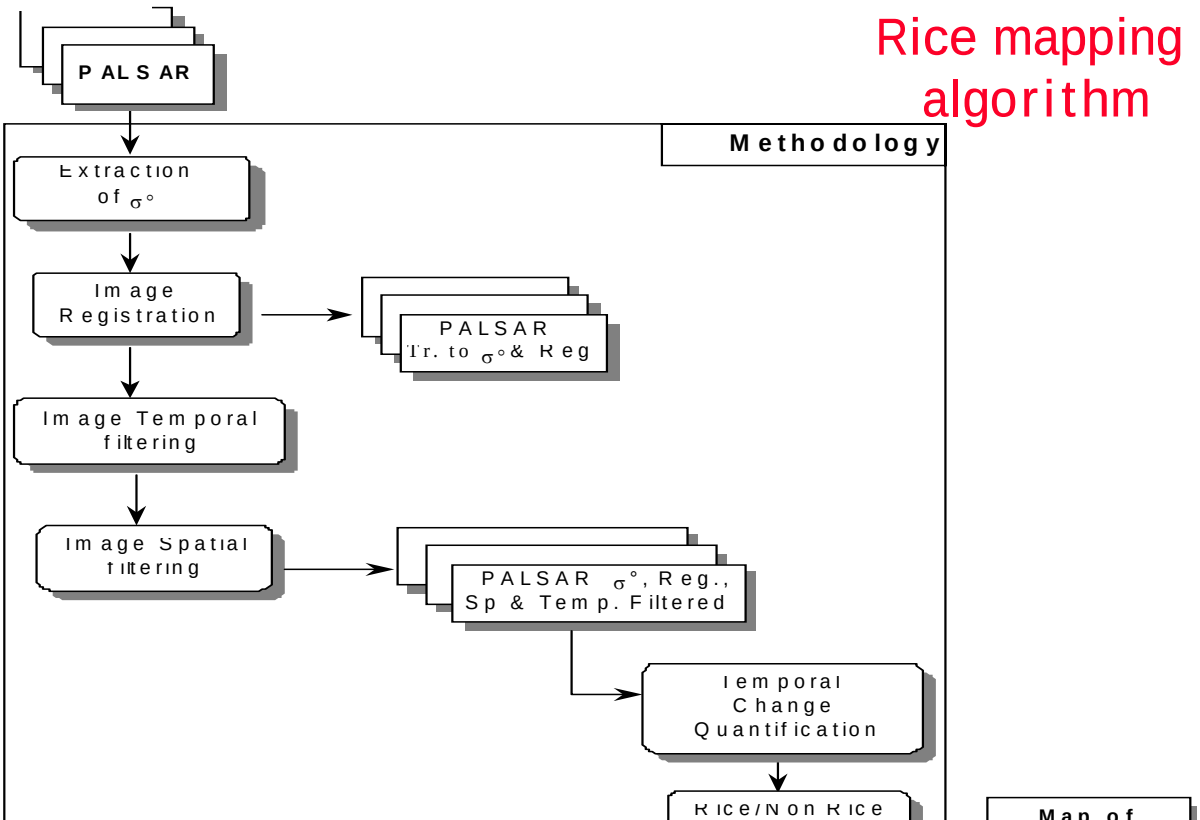
- Scansar HH 5 beams

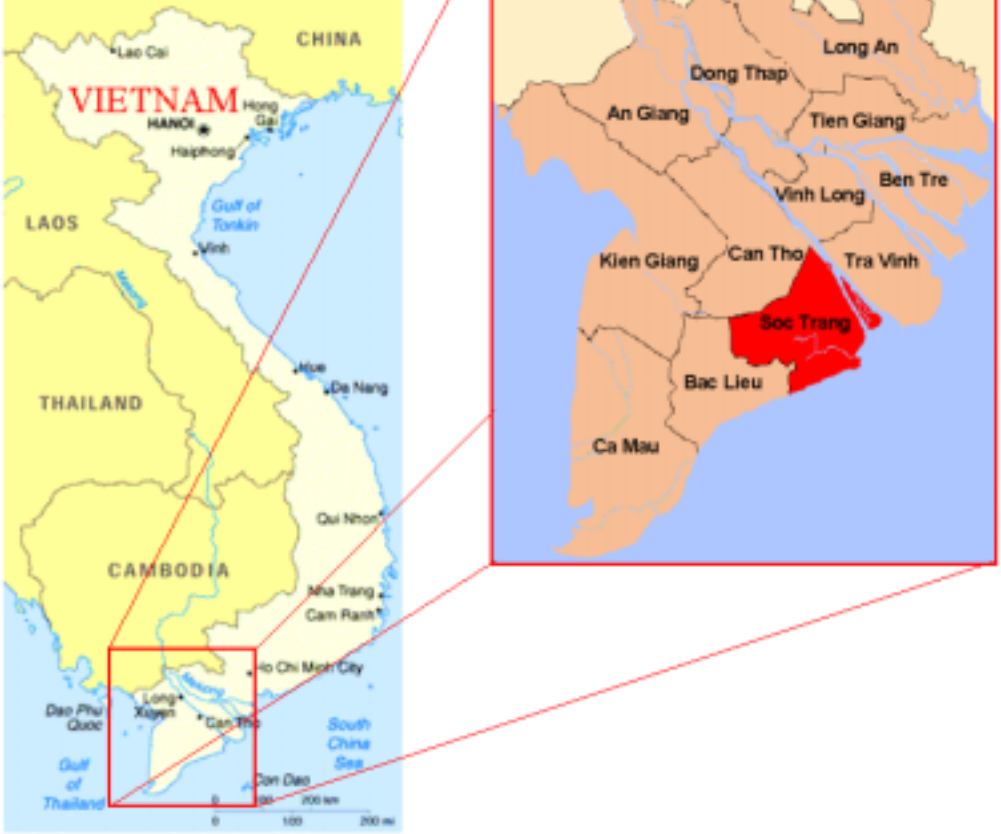
Sufficient temporal change 25° to 55°

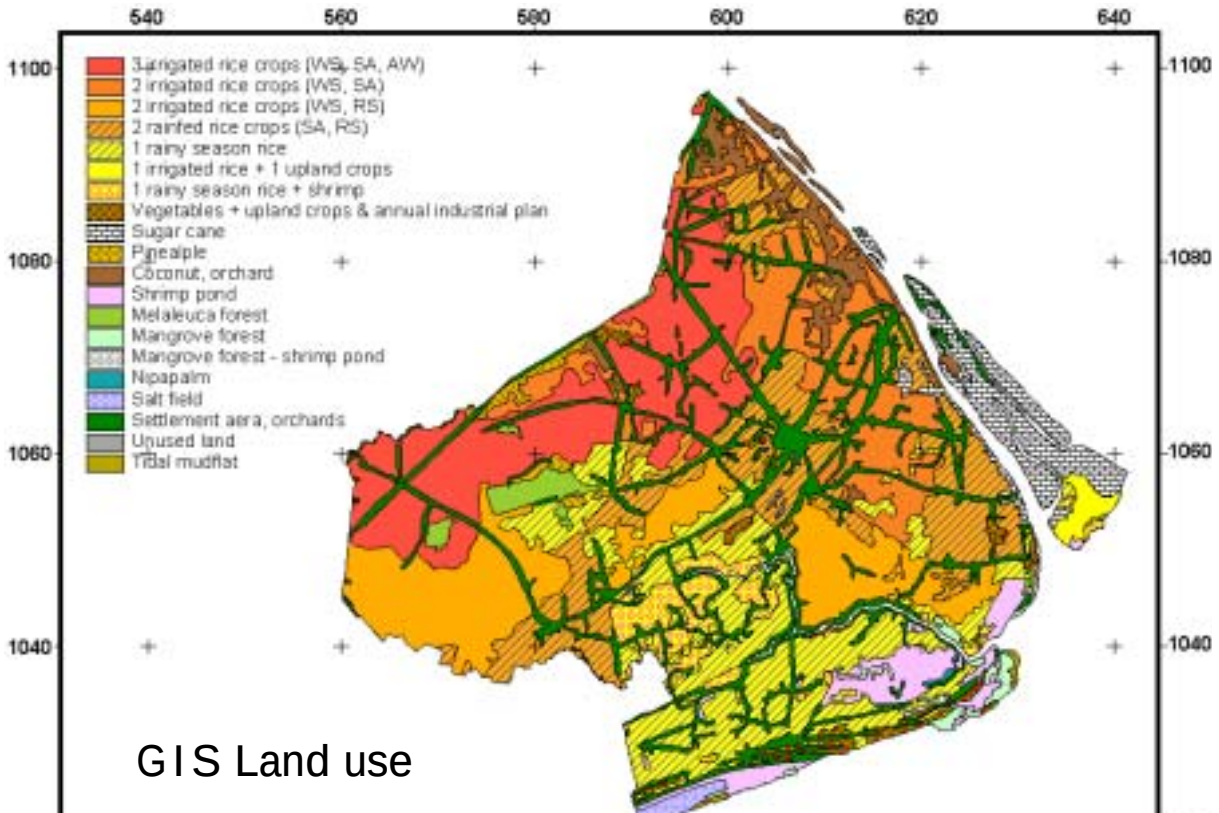
- PALSAR dual pol

HH & HV, 34° better than 45°

Rice mapping algorithm

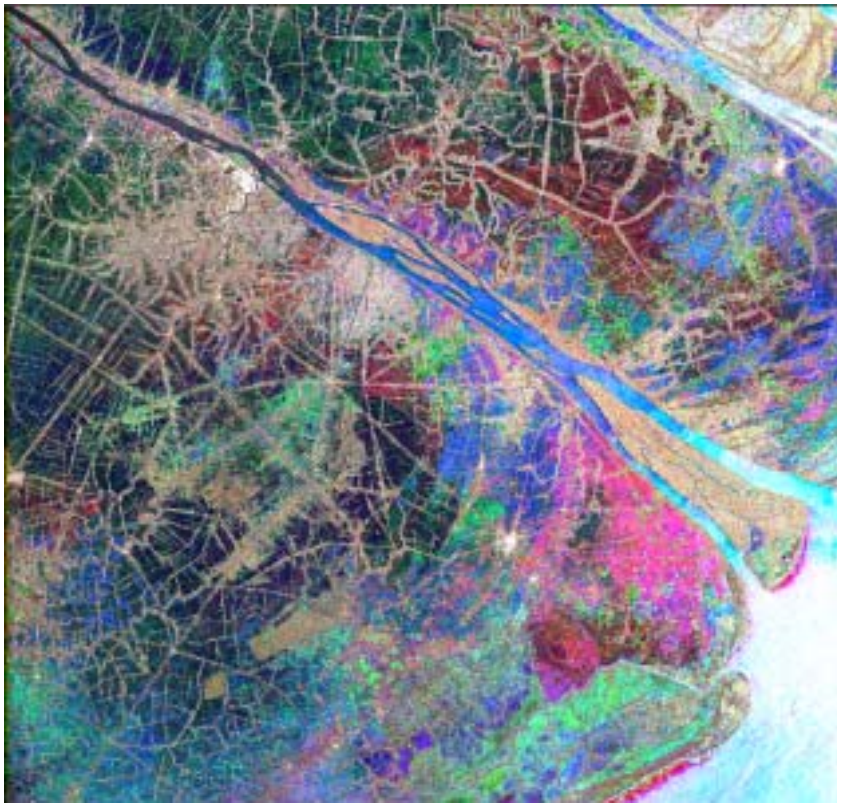



CHINA
VIETNAM
Lao Cai
HANOI
Hong Gai
Haiphong
Gulf of Tonkin
LAOS
Vinh
Hue
Da Nang
THAILAND
Qui Nhon
CAMBODIA
Nha Trang
Cam Ranh
Ho Chi Minh City
Long Xuyen
Can Tho
Dao Phu Quoc
Gulf of Thailand
South China Sea
Con Dao
Long An
Dong Thap
An Giang
Tien Giang
Ben Tre
Vinh Long
Kien Giang
Can Tho
Tra Vinh
Soc Trang
Bac Lieu
Ca Mau

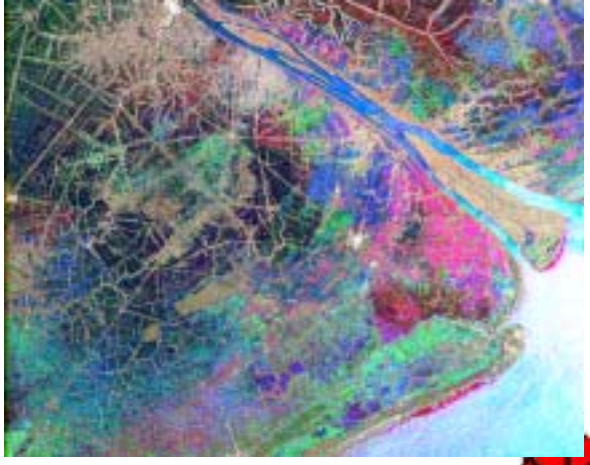

540
560
580
600
620
640
1100
1080
1060
1040
3 irrigated rice crops (WS, SA, AW)
2 irrigated rice crops (WS, SA)
2 irrigated rice crops (WS, RS)
2 rainfed rice crops (SA, RS)
1 rainy season rice
1 irrigated rice + 1 upland crops
1 rainy season rice + shrimp
Vegetables + upland crops & annual industrial plan
Sugar cane
Pineaiple
Coconut, orchard
Shrimp pond
Melaleuca forest
Mangrove forest
Mangrove forest - shrimp pond
Nipapalm
Salt field
Settlement aera, orchards
Unused land
Tidal mudflat

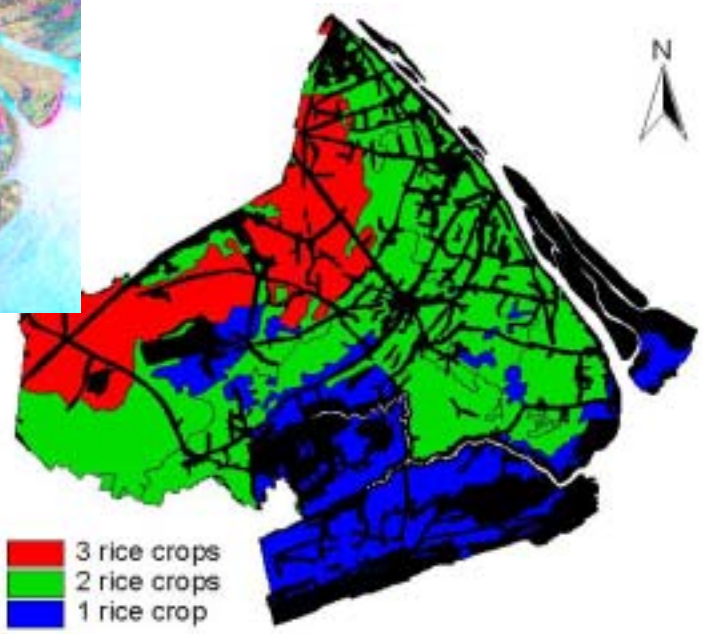
GIS Land use

Rice Crop	Local Name	Variety	Planting Method	Planting	Harvest
Winter – Spring	Dong Xuan (DX)	Modern	Direct seeding	Nov / Dec	Feb / Mar
Summer – Autumn	He Thu (HT)	Modern	Direct seeding	May / June	Aug / Sept
Rainy Season	Mua (M)	Traditional	Transplanting	Jul / Aug	Dec / Jan
	Thu Dong (TG)	Modern	Direct seeding or transplanting	Sept / Oct	Nov / Dec



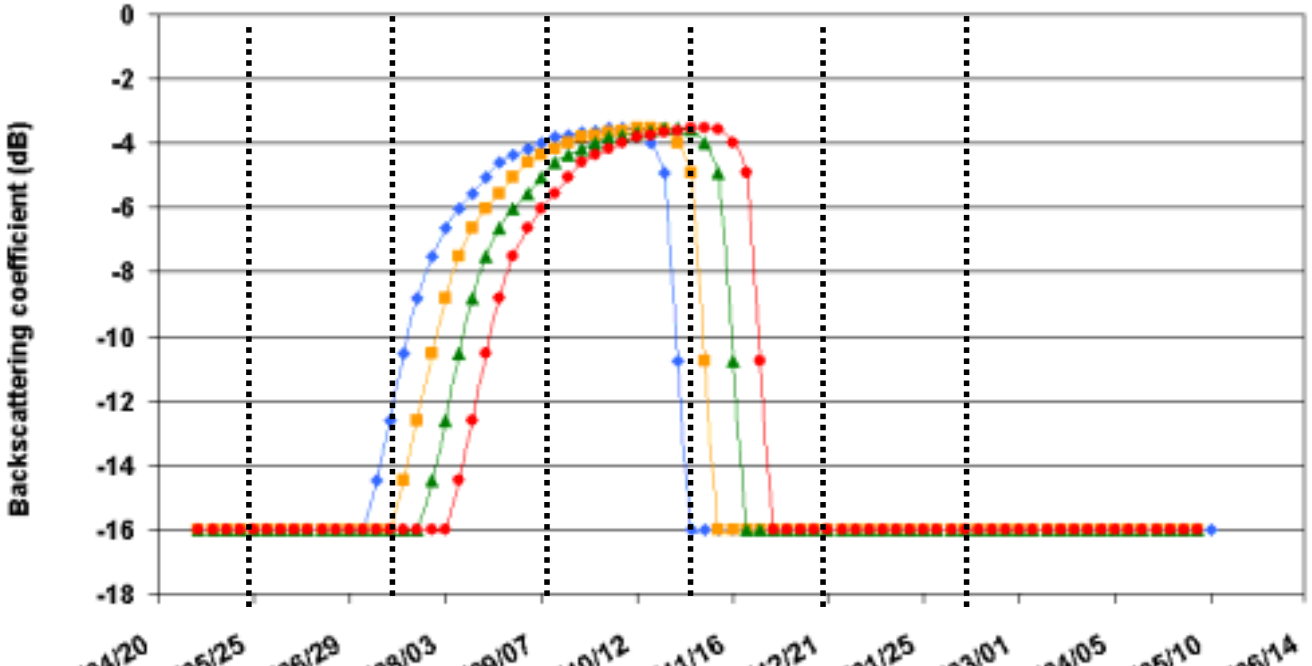
Red: October 1997
Green: December 1997
Blue: January 1998

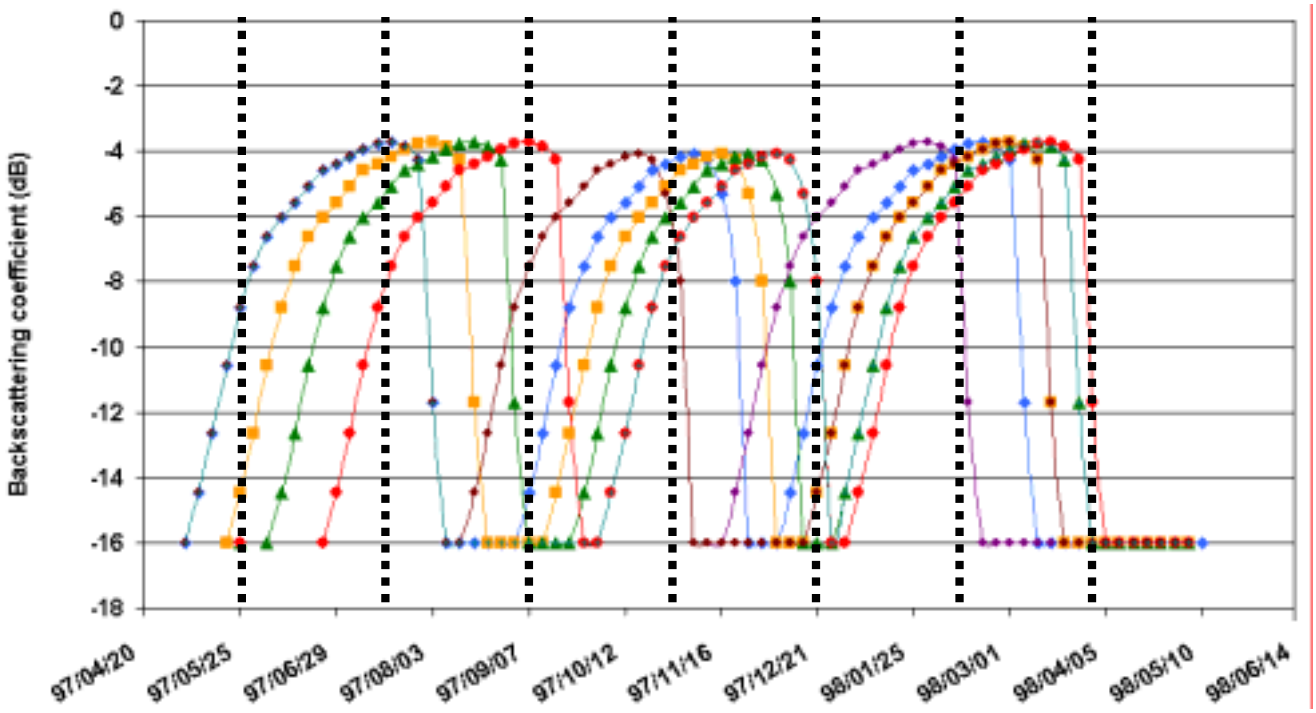




Rice cropping systems

Simulation of backscatter temporal change

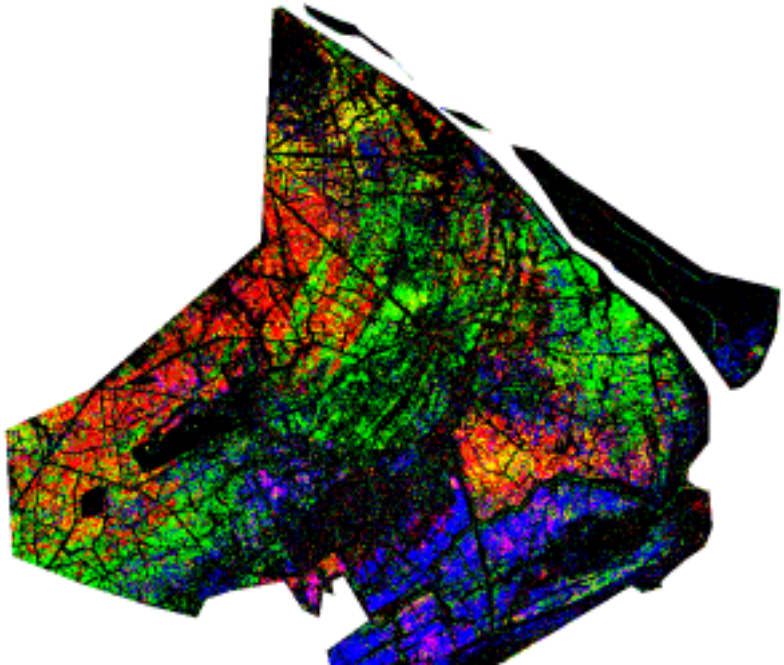


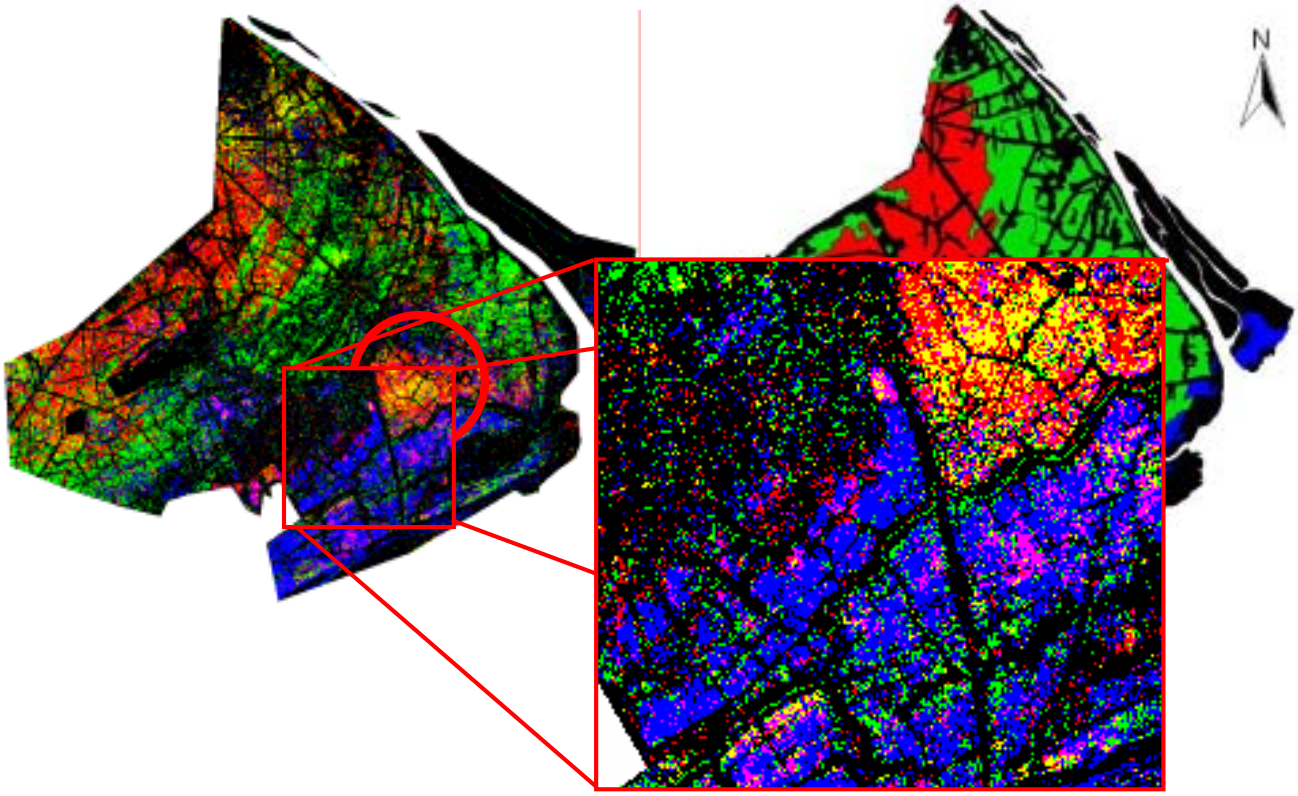


Triple crop rice - ALOS every 46 days

Rice cropping systems

Result





ORGANISATION

- Network of observations/ ground data collection for method development and validation
  - ✓ China
  - ✓ India
  - ✓ SE Asia peninsular
  - ✓ SE Asia insular
- Algorithm development team
- Data exploitation team

- Algorithm development using muti temporal Scansar data (single, double, triple crop)
- Validation using ground data
- Generation of map of rice, cropping system and flood duration at regions
- Validate the product
- Delivery of final product