PRELIMINARY STUDY

IRRIGATION MANAGEMENT MODERNIZATION
THAILAND COUNTRY ASSESSMENT

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Outline

1. Thailand Context
2. Water Resource in Thailand
3. Representative Basins : Present and An Assessment
4. Desired Long Term Situation : Future Scenario

Thailand Context

The national baseline in 2012	
Area of the country	51.3 M ha
Cultivated area	21.0 M ha
- Rice	50.22%
- Annual crops	20.76%
Total population	63.88 M
Labor force in Agriculture	44.42%
GDP	$ 353,315 M
GDP Growth	2.6%
Agriculture accounts for GDP	8.7%
Ag GDP growth	2.7%
Water Availability per capita	3,413 Cu.m

http://www.wpmap.org

To the north Thailand borders the Lao PDR and Myanmar; to the east the Lao PDR and Cambodia; to the South Malaysia; and to the west Myanmar

Thailand Agricultural Context

Thailand Agricultural Background

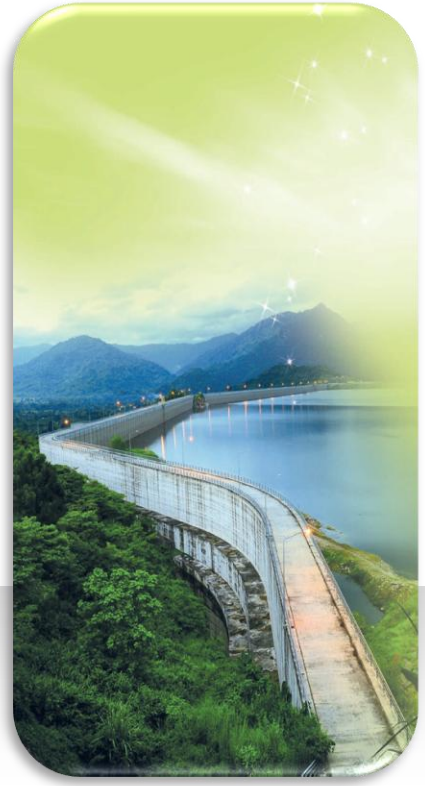
Irrigated area	3.92 M ha
Irrigation ratio	22%
Average farm size	3.4 ha
Average Owned Land	28%
Ag Price Index	169.87
Ag Crop Production Index	113.52
Agricultural HH	5.86 M HH
Poor Ag HH	1.75 M HH (29%)

Thailand Agricultural Background

Top value agriculture products for exp

Rubber Rice
Sugar cane
Fish and shrimp
Fruits Cassava

Ag Gov Budget	3.92%
Ag Research Budget/Ag GDP	0.171%
RID budget/Ag Gov Budget	52.93%

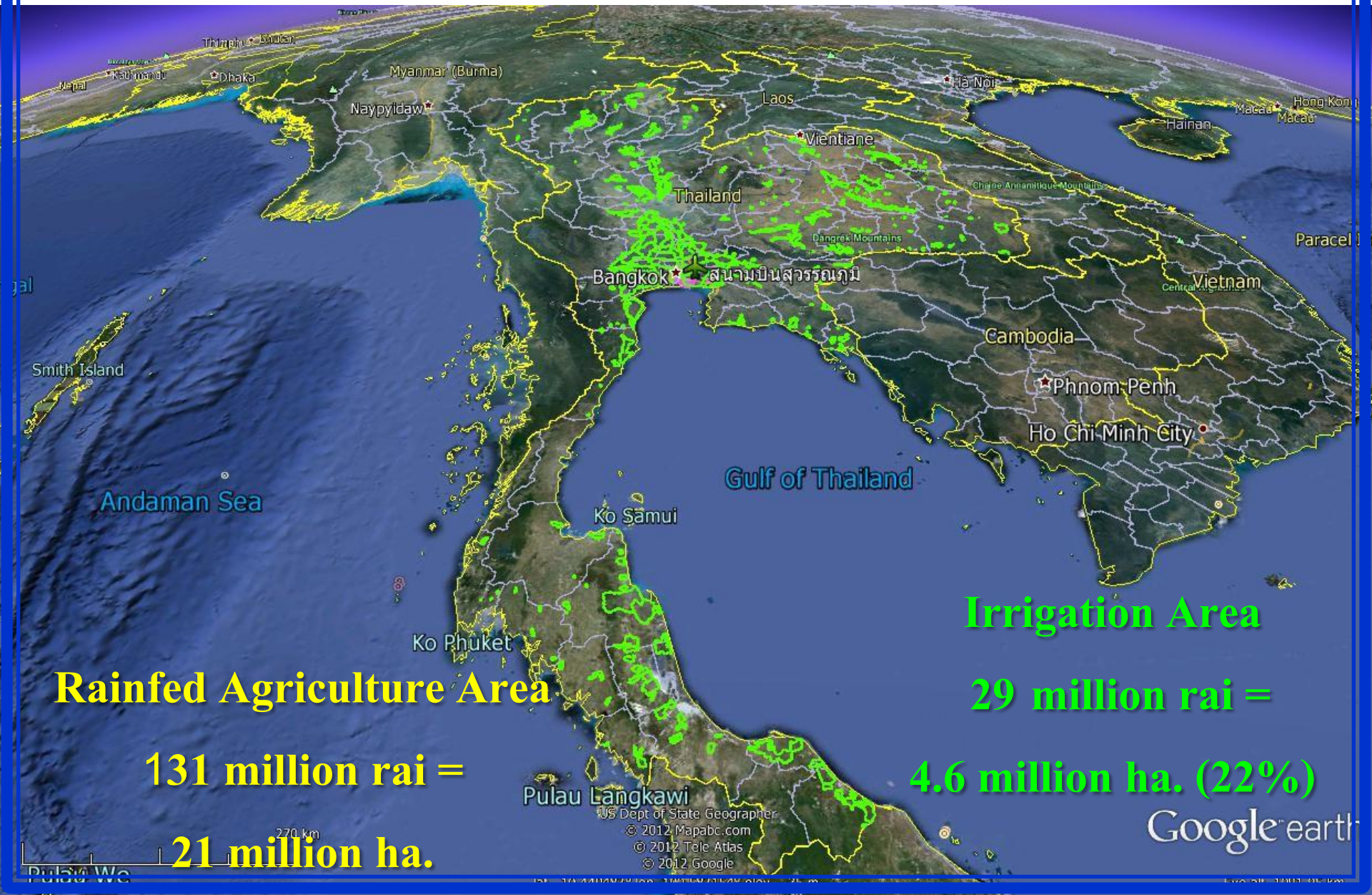


www.rid.go.th

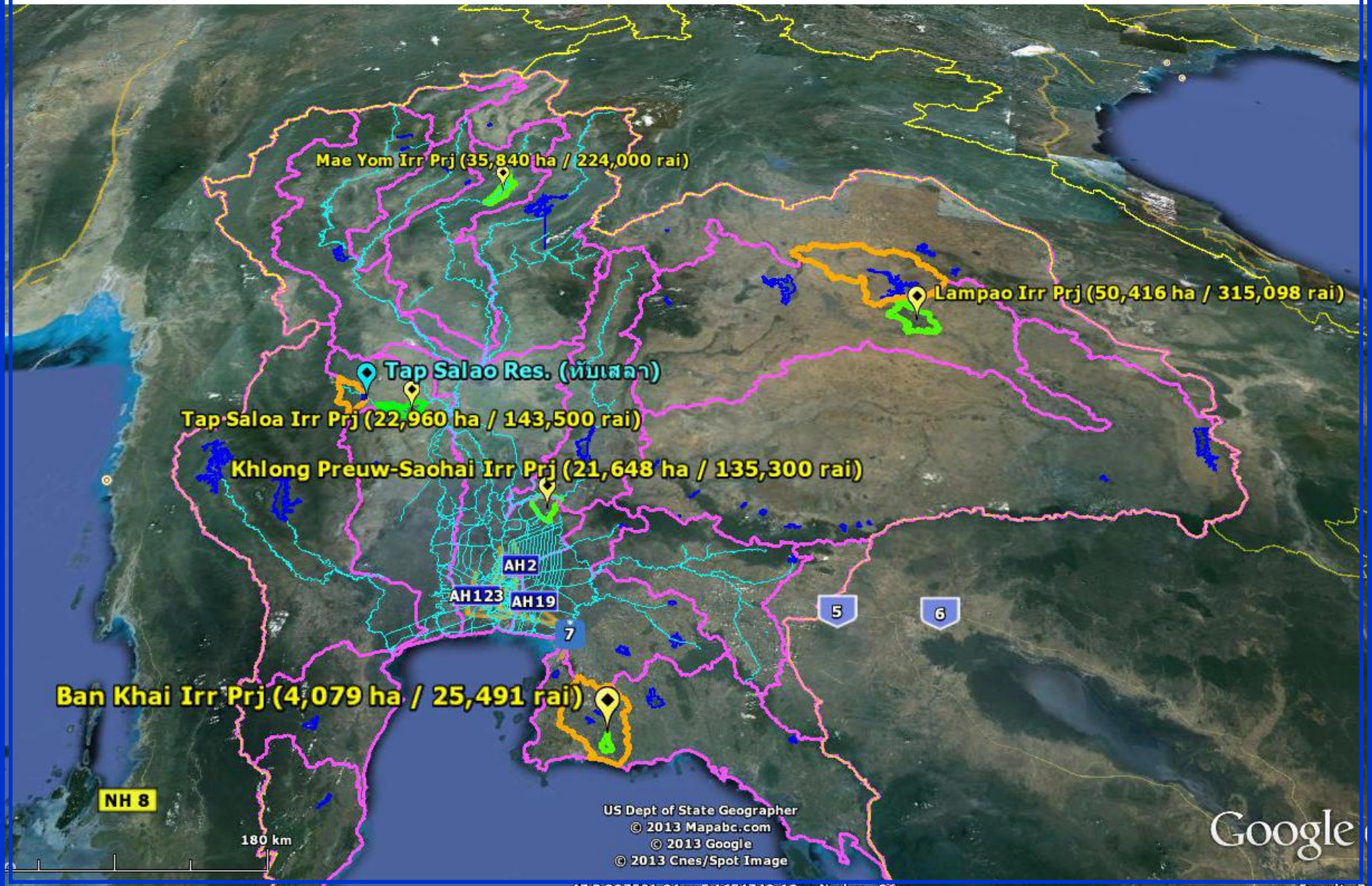
Water Resource in Thailand

Water Source and Use	
Surface water resources	25 river basins 254 sub river basin
The average annual rainfall	1,574 mm
Total water supply	213,424 M cu.m
Reservoir	74%
Natural Stream	20%
Ground water	4%
Pond and Irrigated canal	2%
Annual water availability per capita	3,413 cu.m
Total water demand	152,151 M cu.m
for Agriculture	65%
for Domestic use	33.3%
for Industrial	1.6%

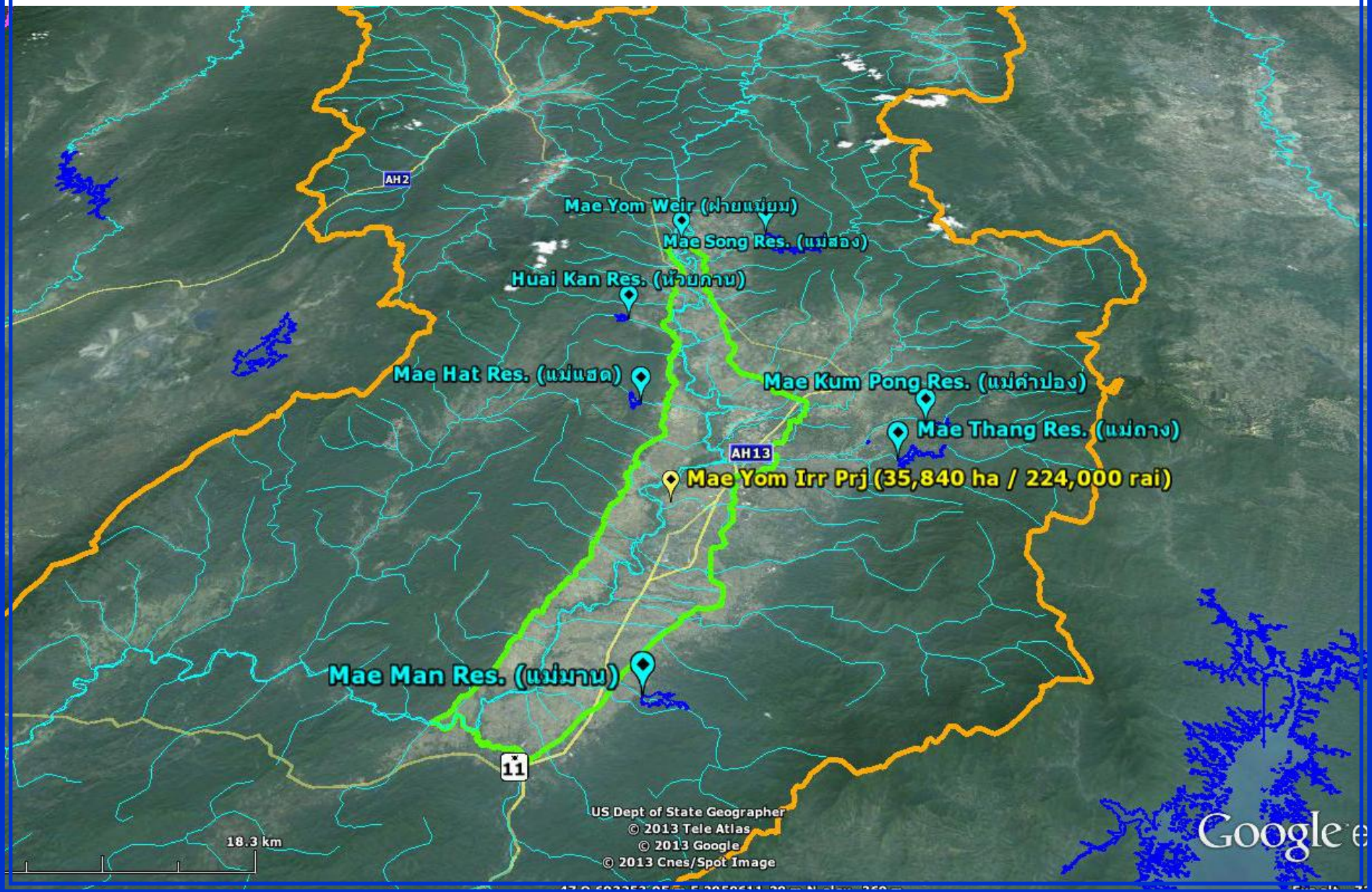
Irrigation Area in Thailand



5 Representative Basins



Mae Yom Irrigation Project (35,840 ha / 224,000 rai)



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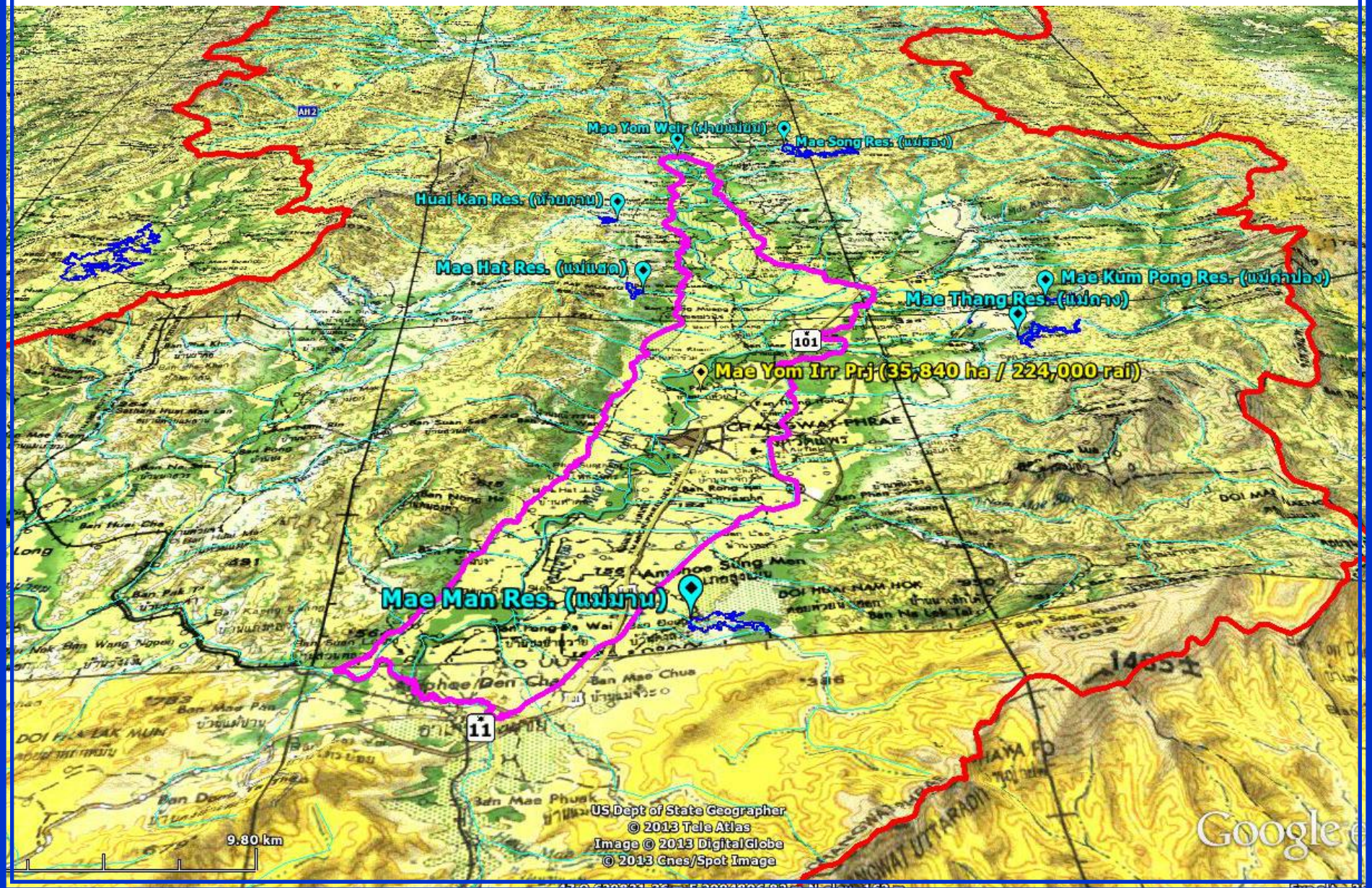
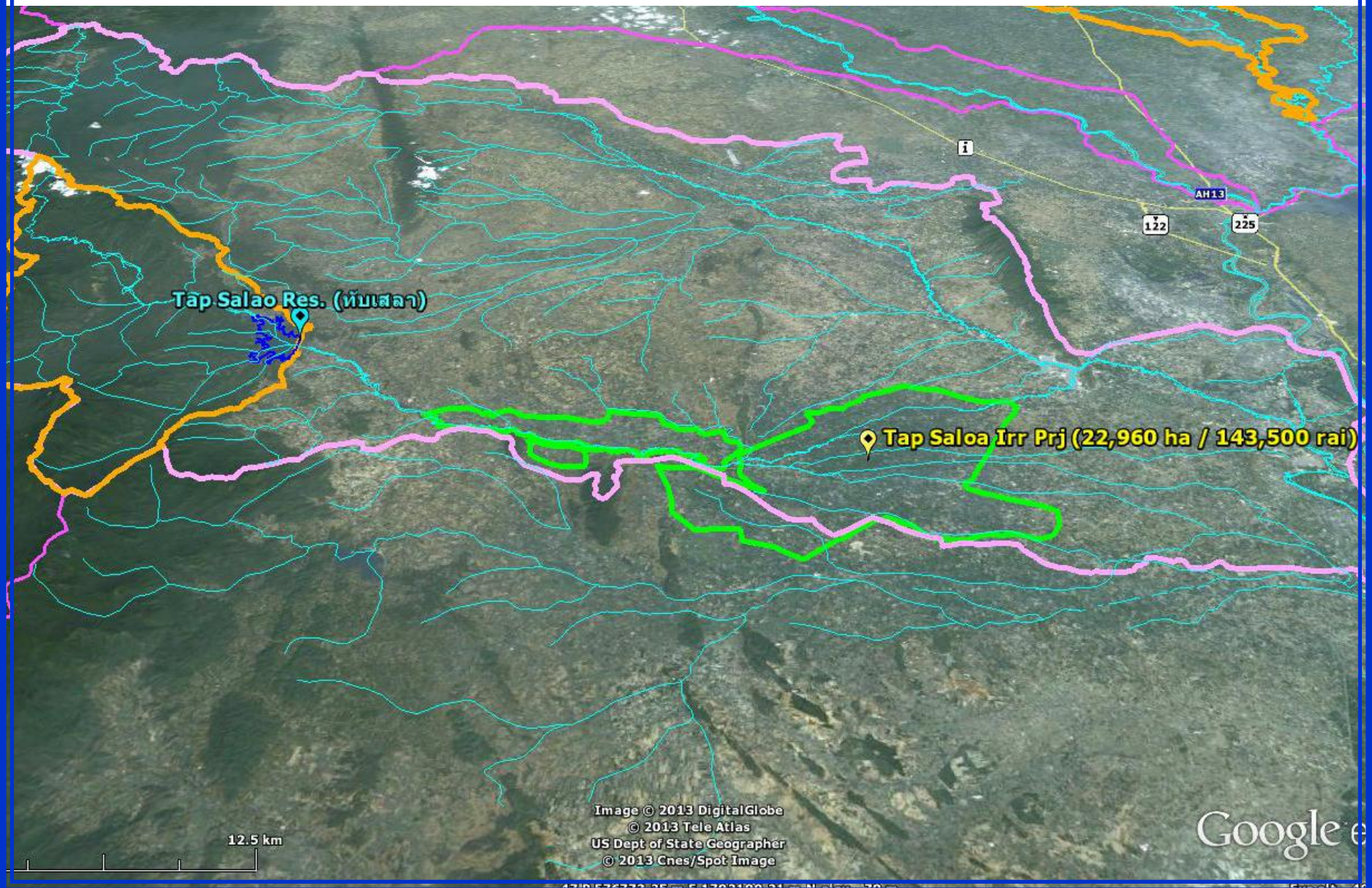
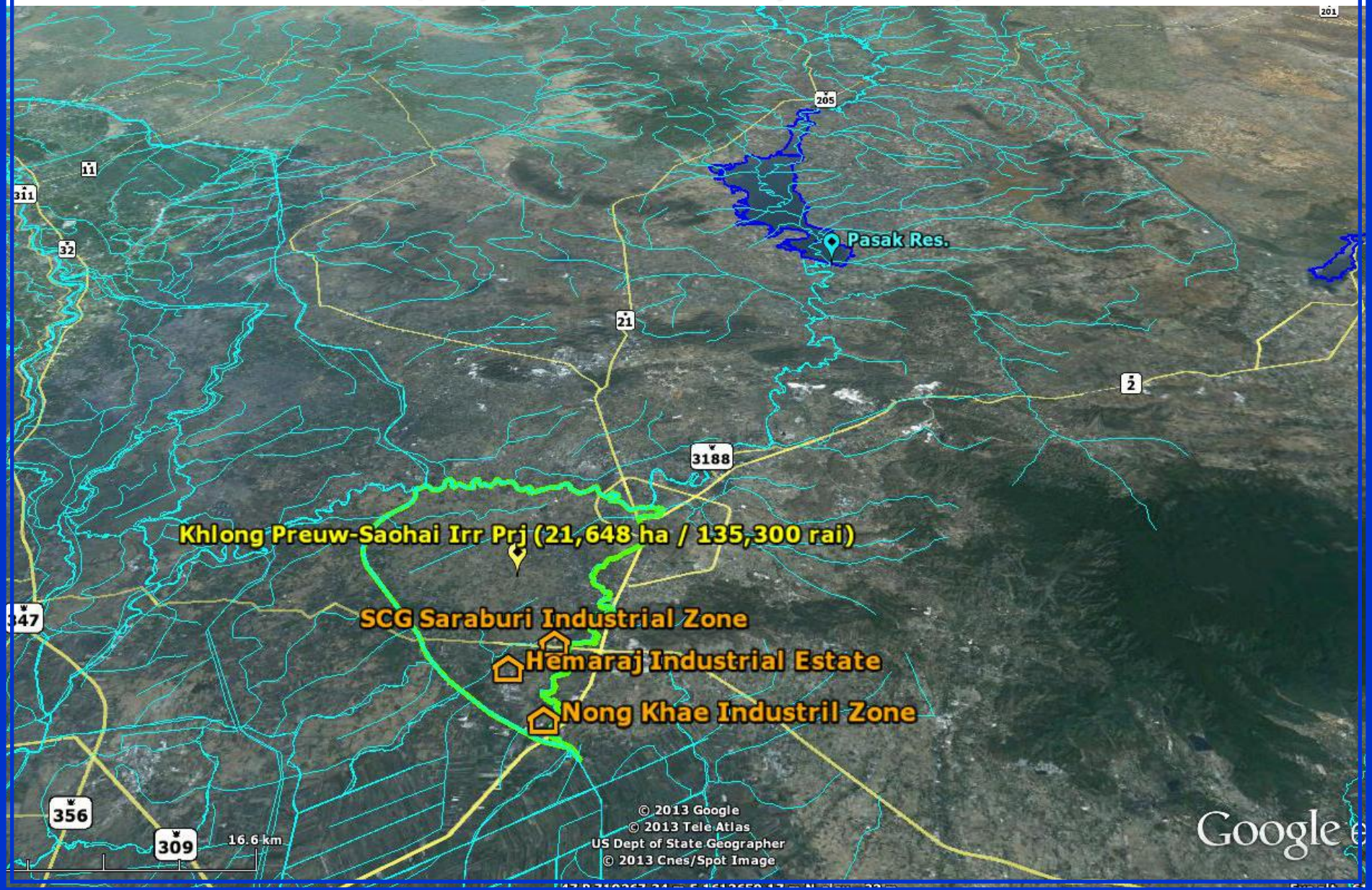


Tap Saloa Irrigation Project (22,960 ha / 143,500 rai)

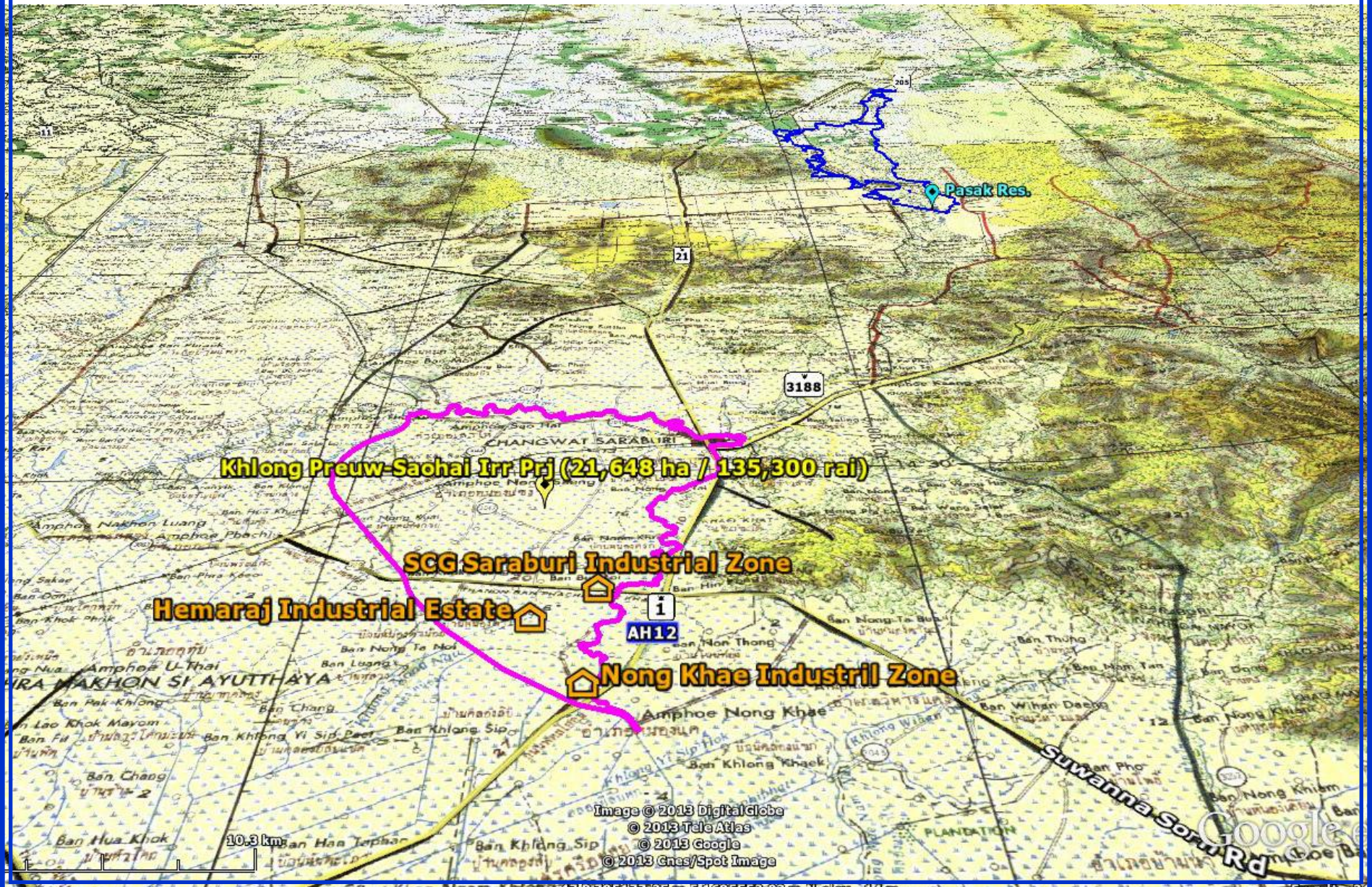


Tap Saloa Irrigation Project (22,960 ha / 143,500 rai)

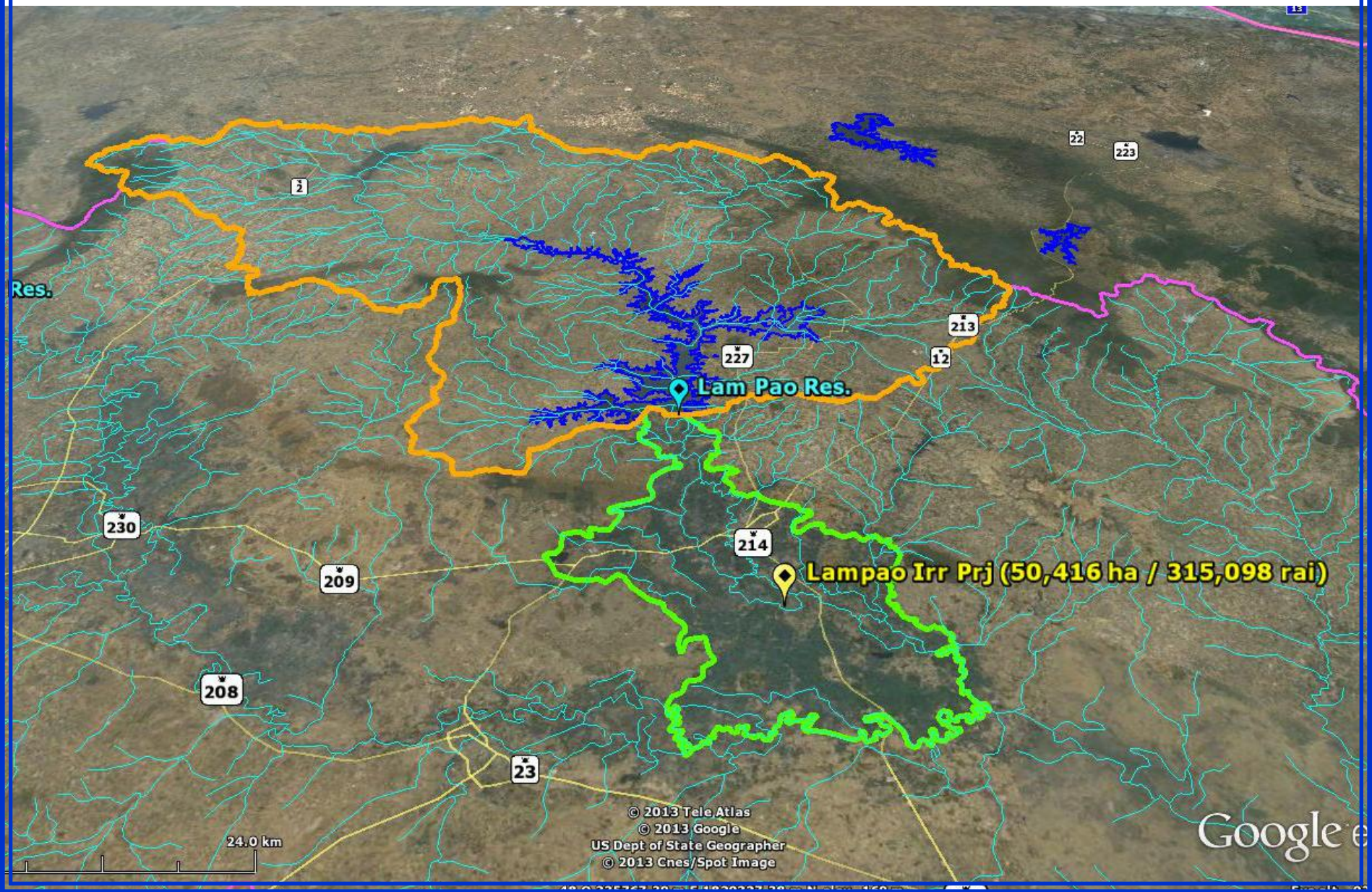
Khlong Preuw-Saohai Irrigation Project (21,648 ha / 135,300 rai)



Khlong Preuw-Saohai Irrigation Project (21,648 ha / 135,300 rai)



Lampao Irrigation Project (50,416 ha / 315,098 rai)



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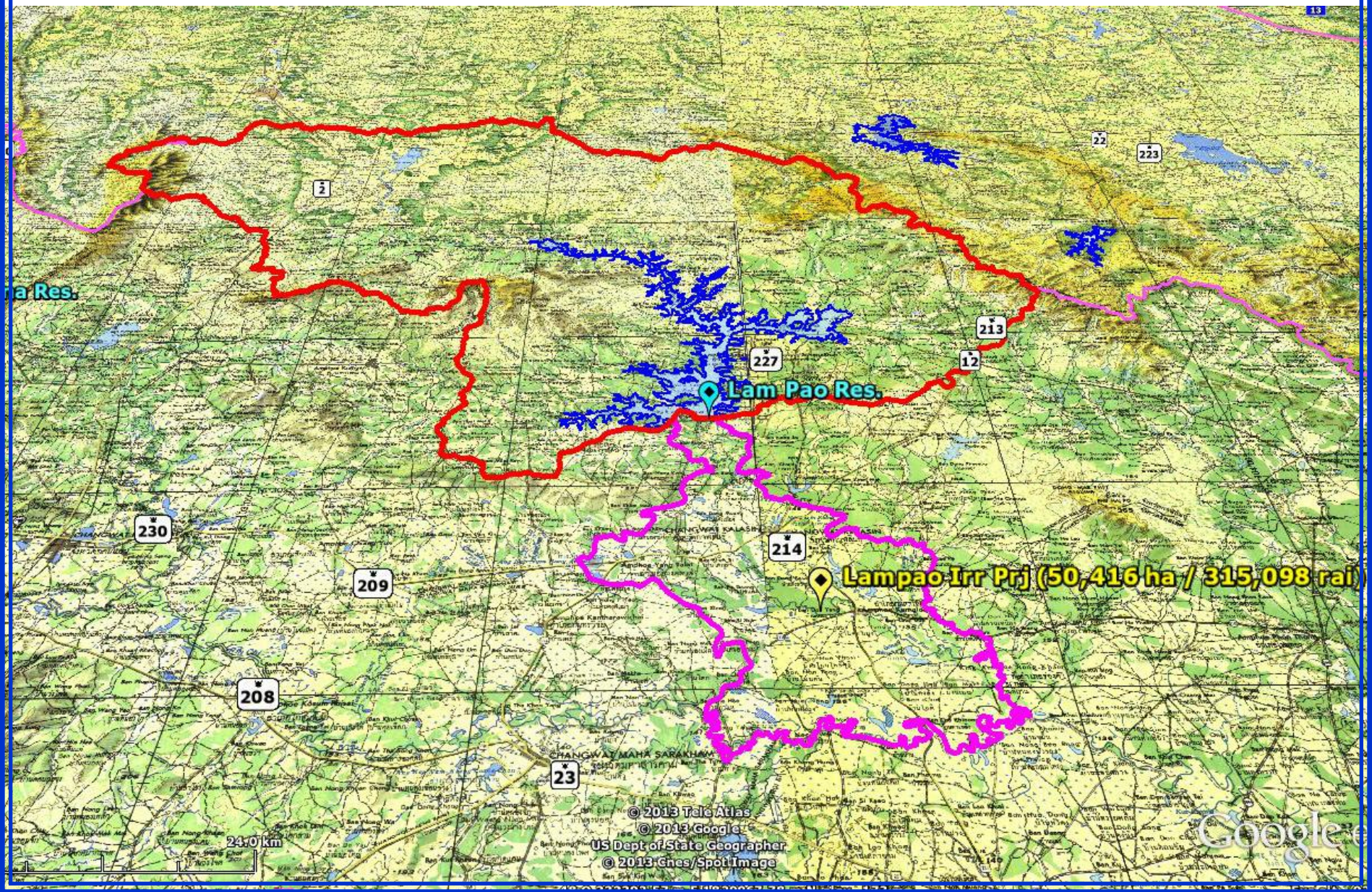

Ban Khai Irrigation Project (4,079 ha / 25,491 rai)

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Country Assessment Report

The whole country situation

- The national baseline
- Assessment of the present situation
- Assessment of the desired Long Term Situation
- Assessment of the short-term Actions
- Summary and Conclusions

→ **ABCEDF Framework**

Country Assessment Report

ABCDEF Framework :

- Country
- Basin
  - ⇕ Service Interface Basin – Main Irrigation System
- Main Irrigation System
  - ⇕ Service Interface Main Irrigation – Sub Irrigation System (e.g. irrigation Agency federated)WUAs)
- Sub Irrigation System
  - ⇕ Service Interface WUAF-WUA
- WUA-Sub System (tertiary units)
  - ⇕ Service Interface WUA-Farmer
- Farmer

Country Assessment Report

Some questions….

- **What level of data should we use for water accounting (A)? Monthly, or only wet and dry seasons?**
- **How can we use Bargaining (B), Codification (C), and Delegation (D) to develop long-term plans?**
- **Are there any examples of this framework for some region or country?**

Anticipated Future of Thai Agriculture Scenario

In next two decades, Thailand will have continued to experience slow transition from an agriculture-based society to a knowledge-based society

The image of agricultural farms in the future would be distributed into two dimensions; small scale farm and large scale farm

Anticipated Future of Thai Agriculture Scenario

The farmer income level would increase:

Small scale farm : sell high quality goods (niche products) and are distinct from ordinary products

Large scale farm: produce mass goods with higher efficiency product system and with lower production cost

Anticipated Future of Thai Agriculture Scenario

Overall of agricultural production value

60 % from large scale farm

40 % from small scale farm

3 types of next generation farmers

1. Traditional farmers and their lineage
2. Entrepreneur and business farmers
3. New blood farmers

Anticipated Future of Thai Agriculture Scenario

Small scale farm

Smaller in size

Specialization in productivity improvement

Produce variety of crops on farm

Emphasize on quality and safety

Focus on sustainable production

Sufficient invest in technology

More capital investment for efficiency of land and water management on farm

Large scale farm

The entrepreneur own larger farm area

Significant increase in gross production and yields of major food and energy crops

Exceedingly invested in farm technology, agricultural machines, and modernized infrastructure on farm

Efficient farm management, receive perfect information, have economy of scale, and have efficient use of land and water to achieve maximum return on farm

Anticipated Future of Thai Agriculture Scenario

Agriculture account for about 10 percent of the country's GDP

The average annual growth of the agricultural GDP should be growth at least 5 percent per year

Employ about 30 percent of the labour force in the country

Anticipated Future of Thai Agriculture Scenario

Rice, cassava, sugar cane, maize and beans are major crops

Rubber, fruits and palm are major permanent crops

The overall yield per hectare of crops is improved

Anticipated Future of Thai Agriculture Scenario

The agricultural land use is estimated to be constant at 132 million Rai (21.12 million Hectares).

Of all the agricultural land use,

7 million Hectares consist of land for rice

7 million Hectares consist of land for annual crops

The potential of irrigated area has been estimated at 9.72 million Hectares that cover 46 percent of agricultural land use

Anticipated Future of Thai Agriculture Scenario

Direct subsidies will decrease and price subsidies will be discontinued

Government may have direct subsidies for agricultural zoning in order to reduce conflicts between food and energy crops

Water would be saved not only by engineering design but also enhancing in irrigation efficiency, improving the water supply service and realizing irrigation modernization

Key challenges for the transition implication

efficiently and effectively manage Thailand water resources

public awareness in water resources management

appropriate water policies

integrated river basin management

How can we achieve the IMM in our future scenario?

The Desired Irrigation Management Modernization: the transition Implication ABCDEF Framework

Institutions

Human Resources

Service Provision

Asset Management

Financing Arrangement

Complementary Research