



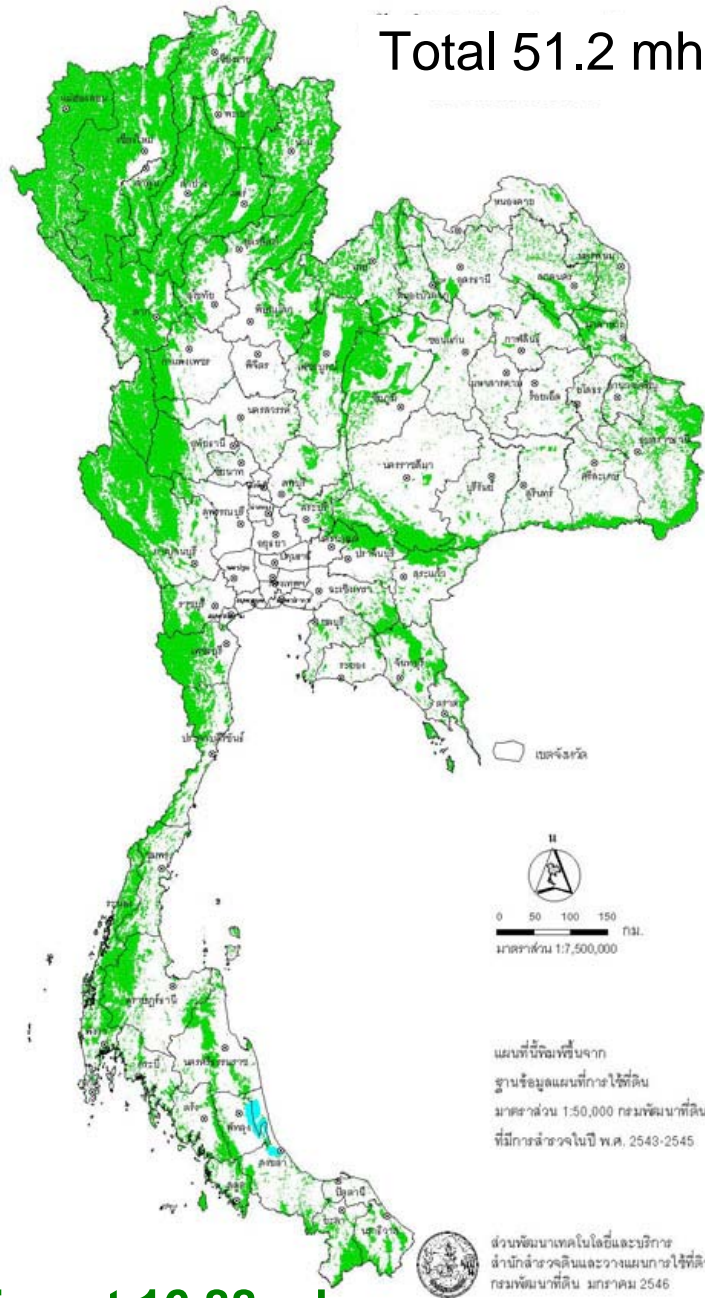
Transition towards Low Carbon Societies in Agricultural Sector

Pitayakon Limtong

Expert in Soil and Water Conservation
Land Development Department
Ministry of Agriculture and Cooperatives

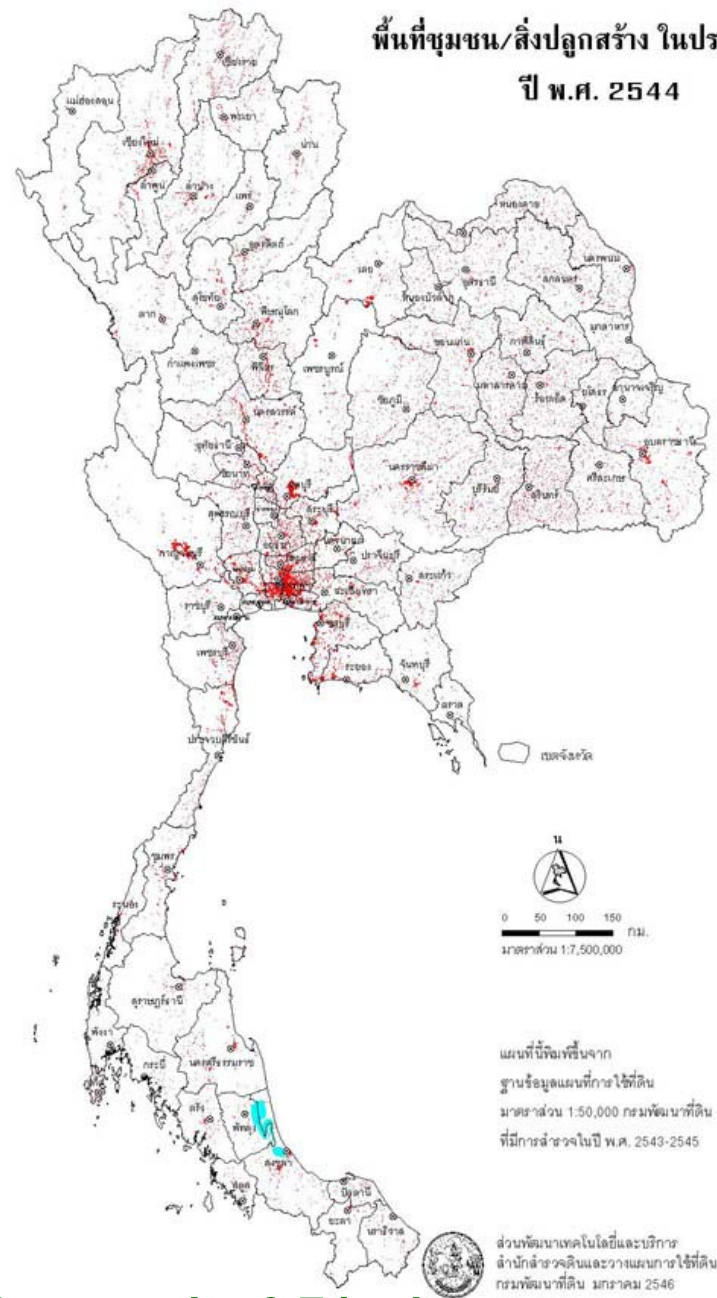


Total 51.2 mha

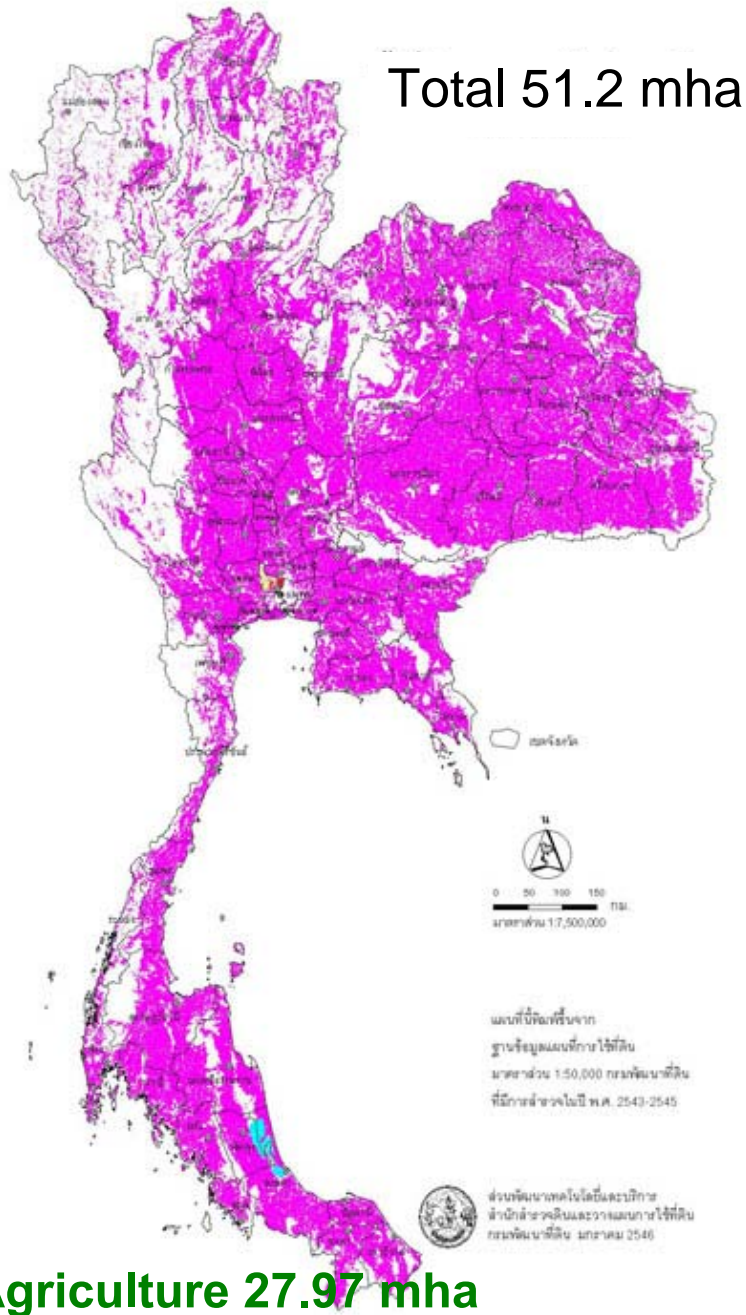


Forest 16.88 mha

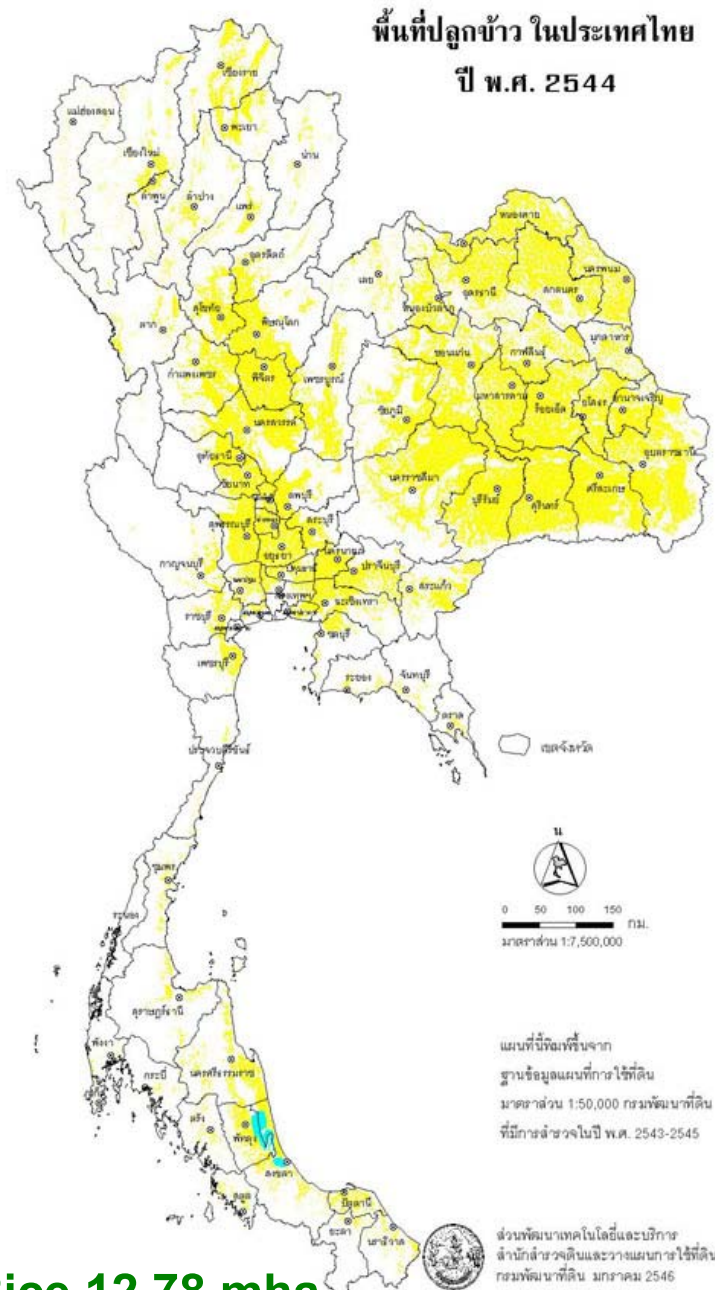
พื้นที่ชุมชน/สิ่งปลูกสร้าง ในประเทศไทย
ปี พ.ศ. 2544



Community 0.74 mha

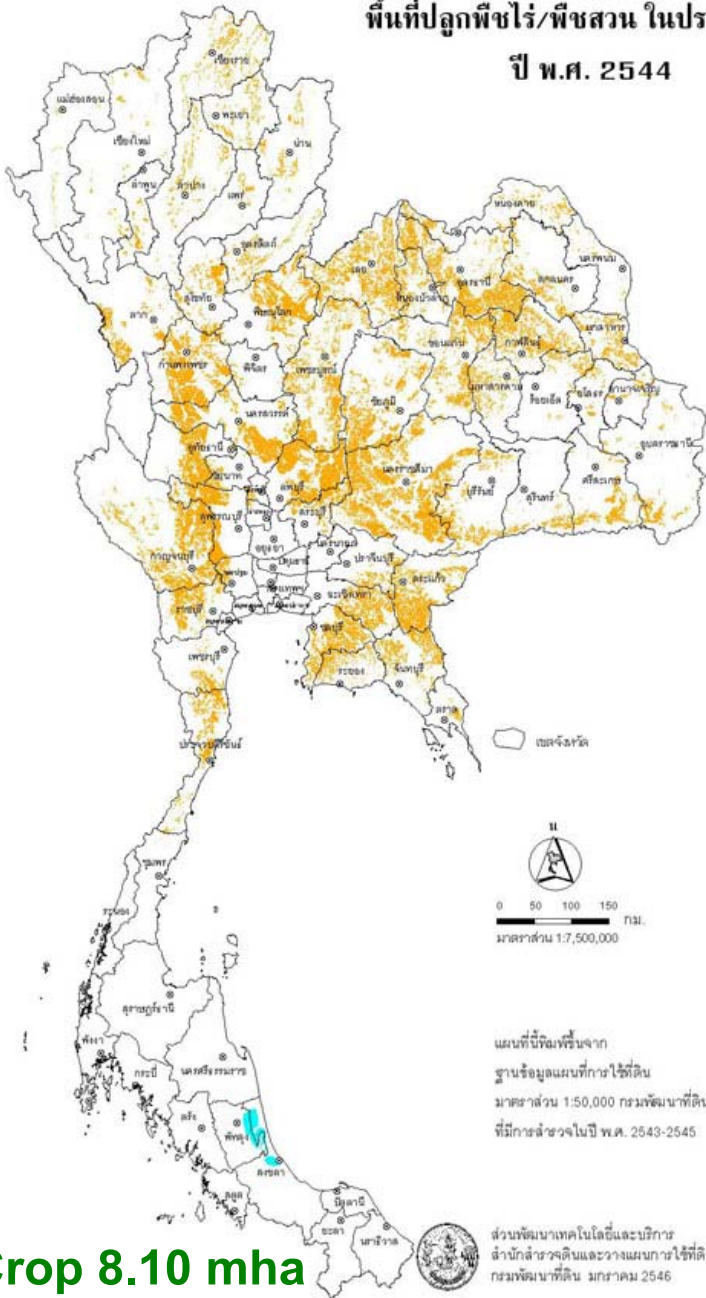


Agriculture 27.97 mha



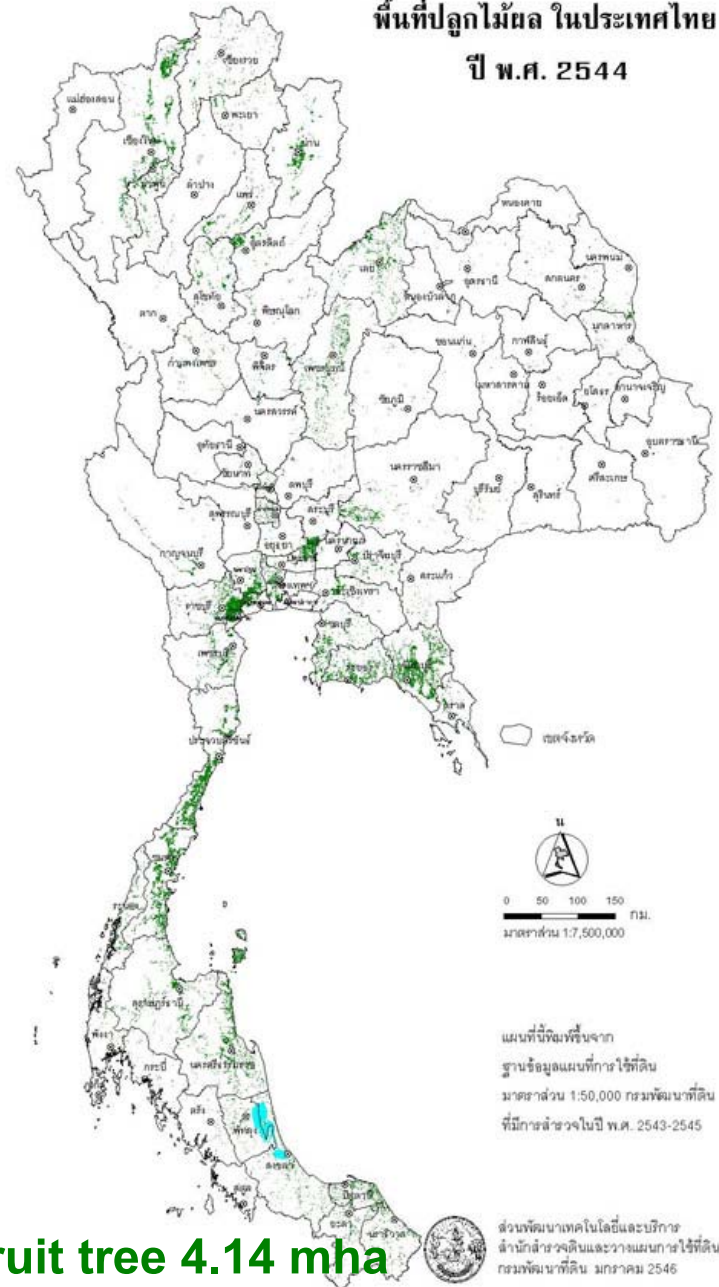
Rice 12.78 mha

พื้นที่ปลูกพืชไร่/พืชสวน ในประเทศไทย
ปี พ.ศ. 2544



Crop 8.10 mha

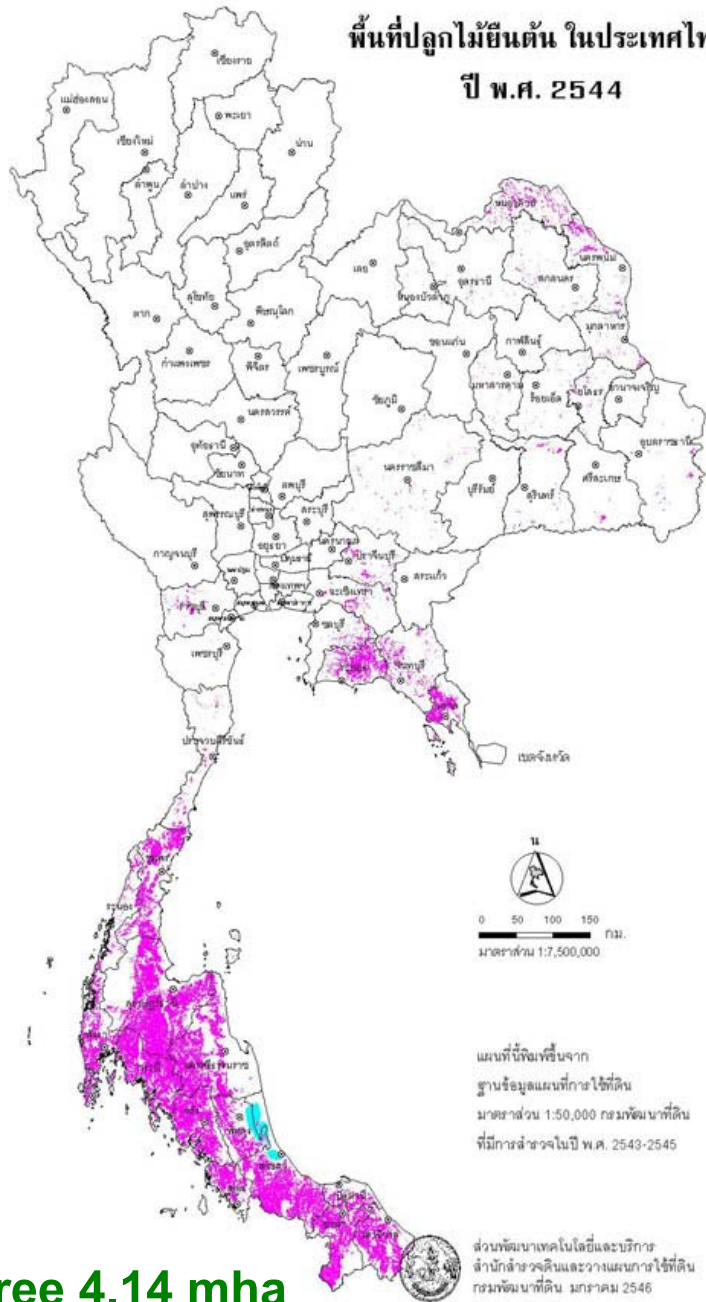
พื้นที่ปลูกไม้ผล ในประเทศไทย
ปี พ.ศ. 2544



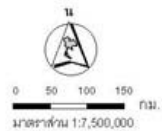
Fruit tree 4.14 mha

พื้นที่ปลูกไม้ยืนต้น ในประเทศไทย

ปี พ.ศ. 2544



Tree 4.14 mha

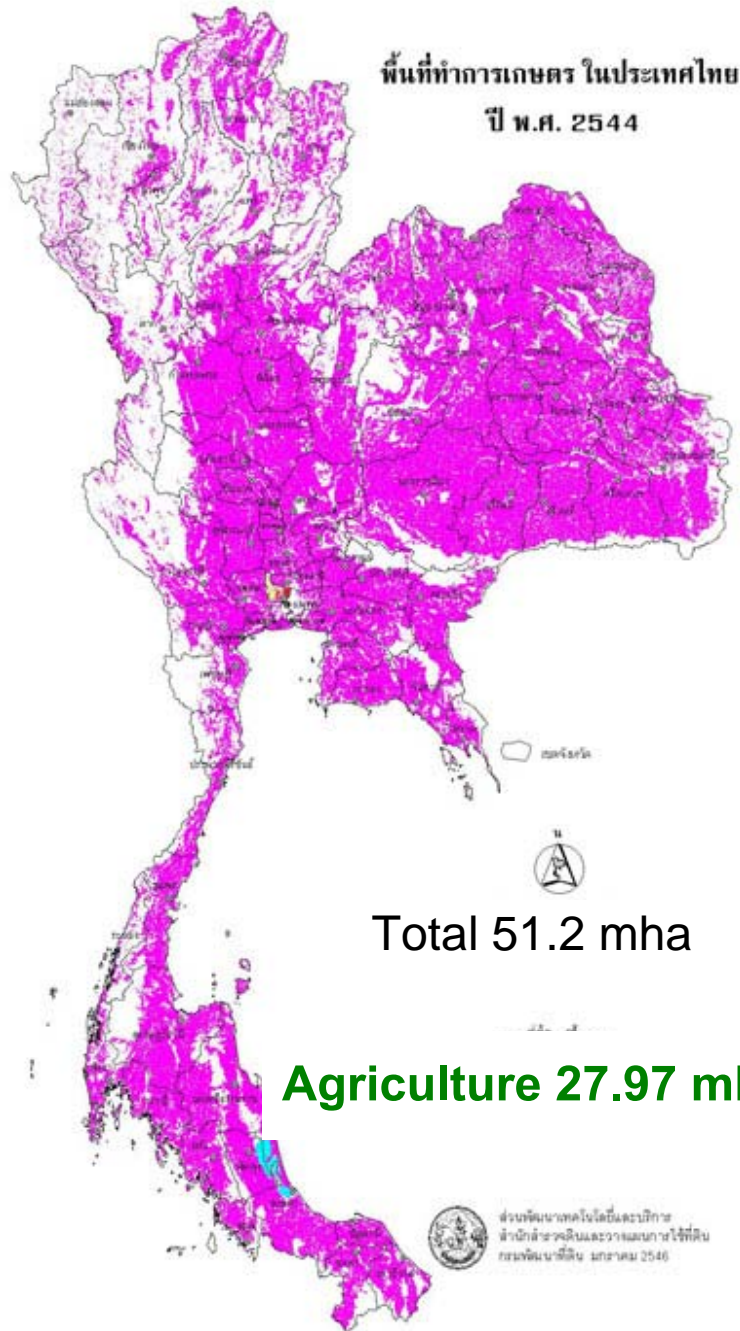


แผนที่นี้จัดทำขึ้นจาก
ฐานข้อมูลแผนที่การใช้ที่ดิน
มาตราส่วน 1:50,000 ครอบคลุมพื้นที่ดิน
ที่มีการสำรวจในปี พ.ศ. 2543-2545

ส่วนพัฒนาเทคโนโลยีและบริการ
สำนักสำรวจดินและวางแผนการใช้ที่ดิน
กรมพัฒนาที่ดิน มกราคม 2546

พื้นที่ทำการเกษตร ในประเทศไทย

ปี พ.ศ. 2544



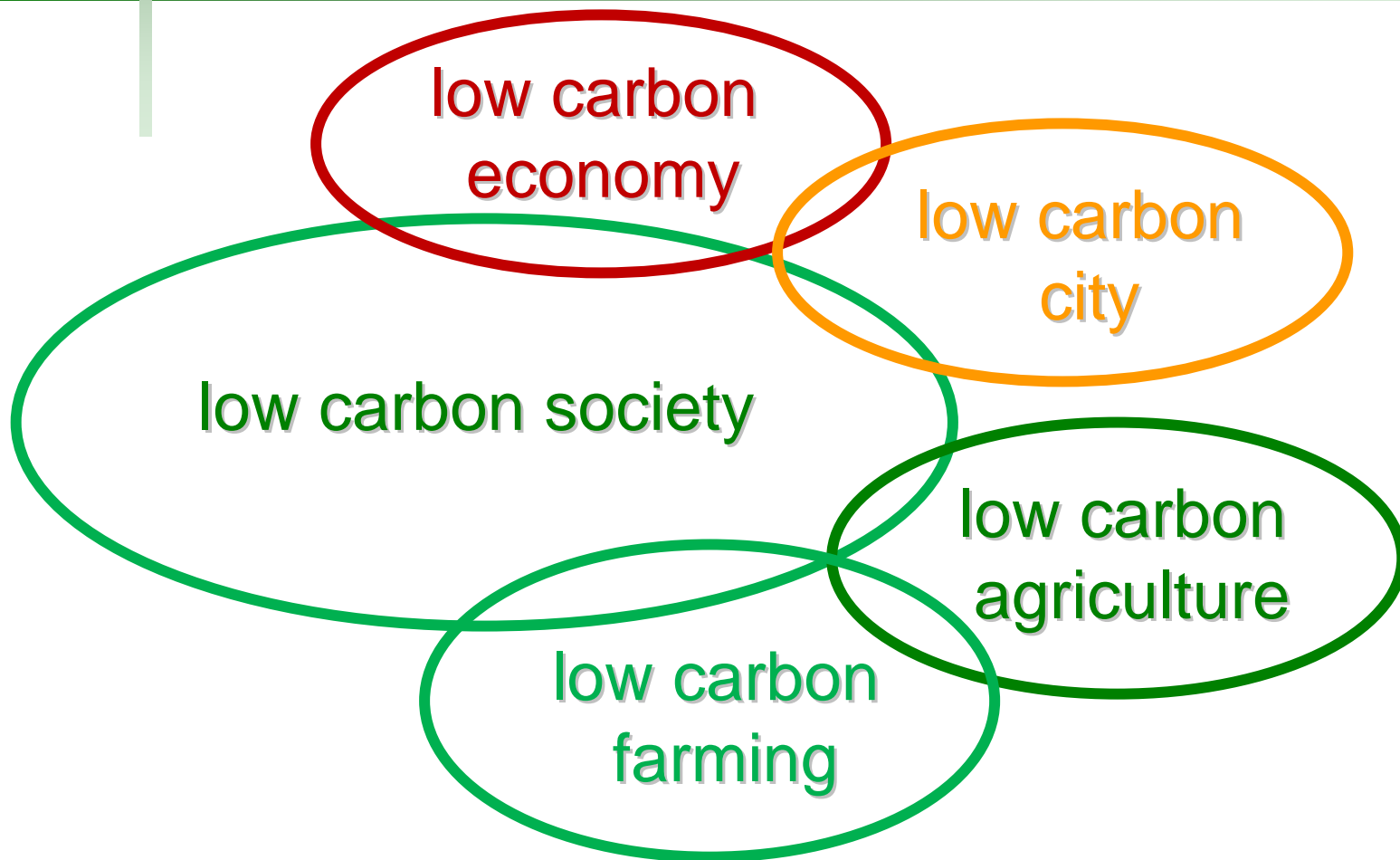
Total 51.2 mha

Agriculture 27.97 mha



ส่วนพัฒนาเทคโนโลยีและบริการ
สำนักสำรวจดินและวางแผนการใช้ที่ดิน
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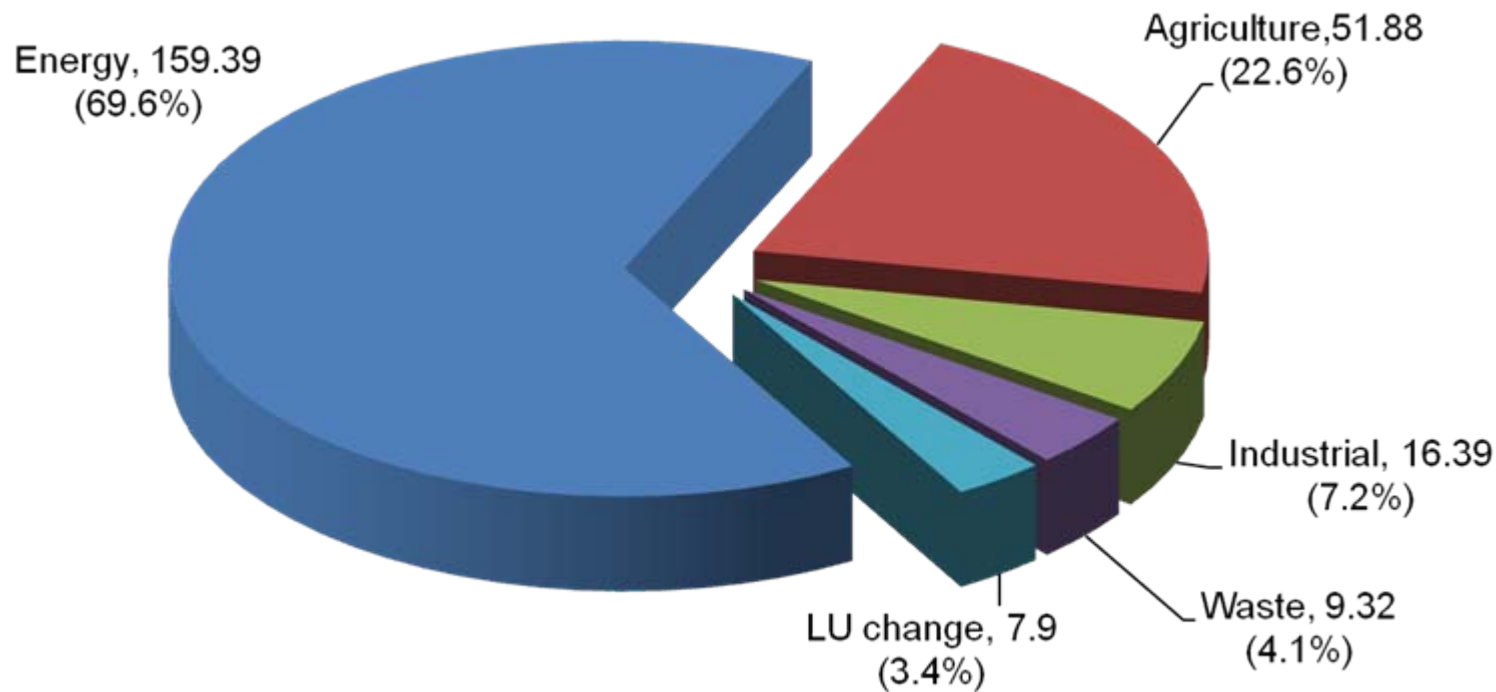
Mitigation of GHG emission in agriculture 2000



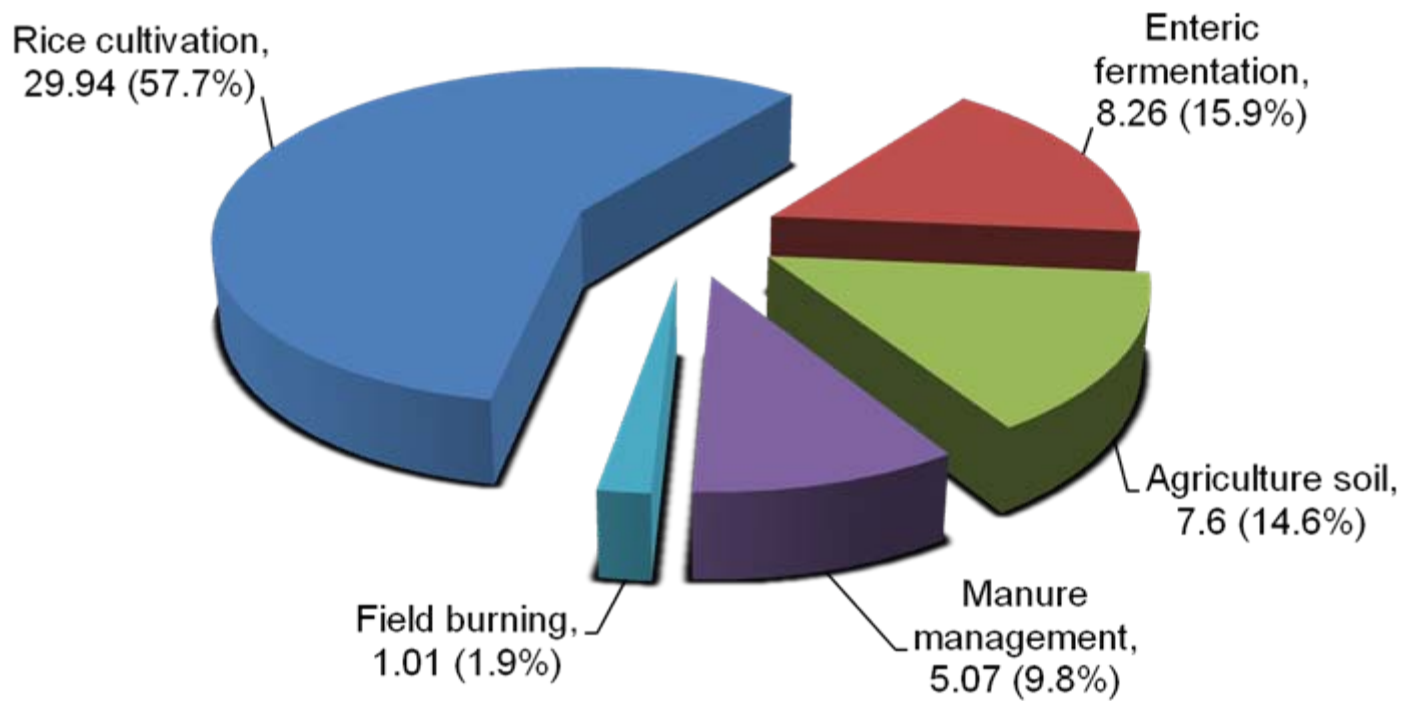


Risk of farmer in Thailand (agriculture sector)

1. Uncertain of climate
2. Epidemic of pest and pathogen
3. Degradation in soil and natural resources
4. Pollution in soil, water and air
5. Limitation of natural resources



**GHG emission in 2000 by sector
(Tg CO₂eq, %)**



**GHG emission in 2000 by Agriculture sector
(Tg CO₂eq, %)**



GHG emission in agriculture (in year 2000)

Changes of GHG emission
In 2000 – 2004

not more than 1.0%

Increase of fertilizer application
Increase of animal population



Master plan on global warming mitigation, MOAC (2008-2011)

Objective:

- * Research on GHS emission, sequestration and adaptation in agriculture areas
- * Develop efficient database, knowledgebase and warning system
- * Identify activities and areas to improve cropping system and mitigate
- * Capacity building for relevant organization, staffs, and cooperation system



Master plan on global warming mitigation, MOAC (2008-2011)

Strategies:

- Knowledgebase management
- Mitigation and adaptation
- Capacity building and public dissemination



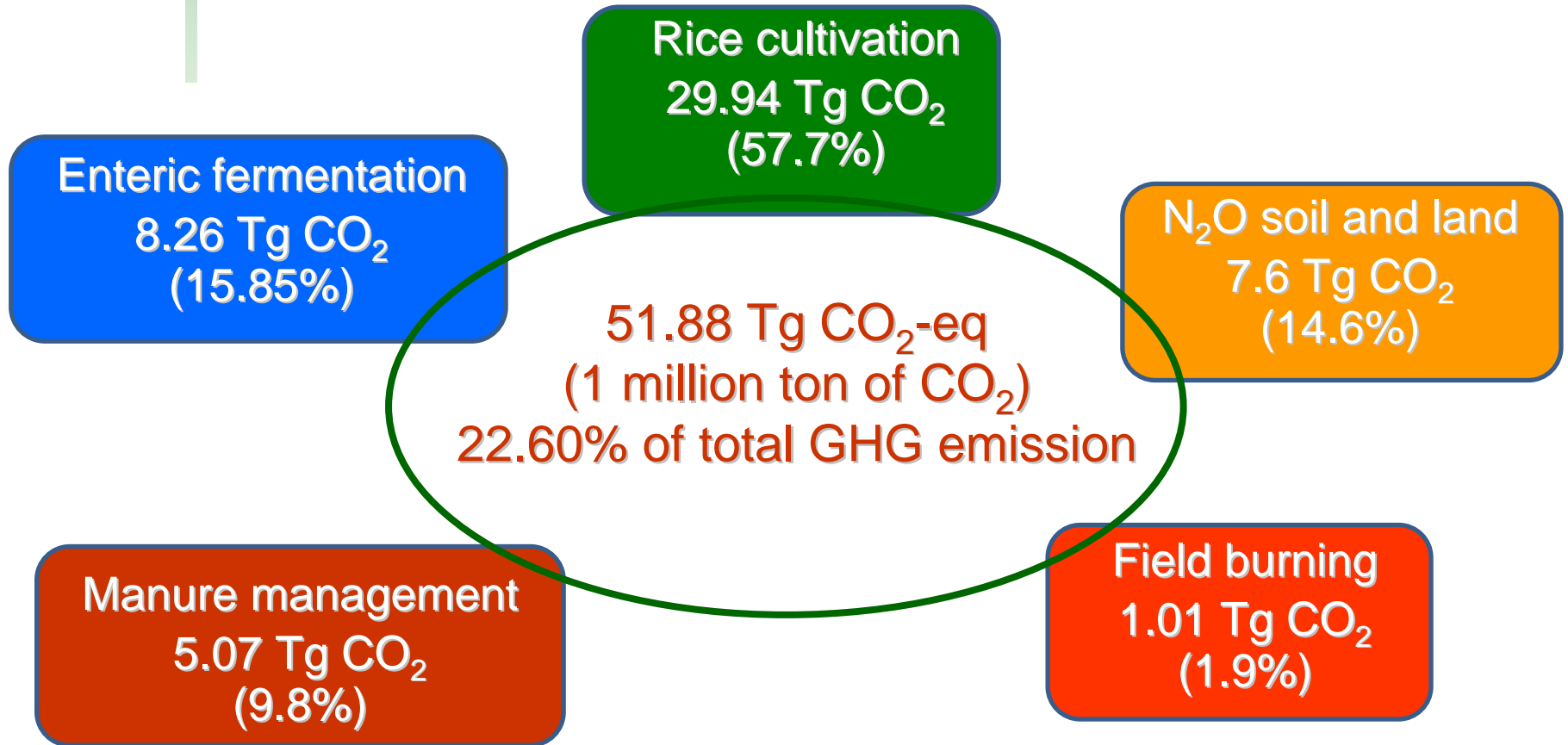
Master plan on global warming mitigation, MOAC (2008-2011)

Implementation plan:

1. Plant sector
2. Soil sector
3. Water sector
4. Livestock and fishery
5. Climate change with agriculture



GHG emission in agriculture (in year 2000)





Rice cultivation
29.94 Tg CO₂
(57.7%)

- Best practices
- Adaptation of irrigation system
- Improvement of rice variety
(aerobic rice)
- Incorporate rice straw into soil
- Fertilizer recommendation
(N fertilizer application)



N_2O soil and land
7.6 Tg CO_2
(14.6%)

- Best practices
- Precision data / agriculture
- Fertilizer recommendation
(N fertilizer application)
- Anaerobic digestion



Enteric fermentation
8.26 Tg CO₂
(15.85%)

- Improvement of animal breeds
- Improvement of animal nutrition
- Improvement of animal fertility
- CH₄ capture system



Manure management

5.07 Tg CO₂
(9.8%)

- Best practices
- Fertilizer recommendation
(organic fertilizer application)
- Anaerobic digestion
- Organic farming



Field burning
1.01 Tg CO₂
(1.9%)

- Best practices as mulching
- Incorporate rice straw into soil
- Compost production
- Sustainable farming



Research and knowledge base system

1. Increase in crop yield and animal production
 - soil and water management
 - plant and animal variety
 - kind and application of fertilizer
(organic/inorganic fertilizer)
2. Study on appropriated technology to mitigate GHG from agricultural area
3. Biotechnology development to increase soil fertility and productivity



Research and knowledge base system

4. Improvement of microbial activities to decomposition of agricultural residue and waste
5. Plant variety improvement to tolerant on climate change (rice, crop and fruit tree)
6. Improvement of plant and animal variety tolerant to pest and pathogen epidemics



Research and knowledge base system

7. Study on carbon cycling mechanism and balance in agricultural sector
8. Enhance the process of technology and knowledge transfer to farmers



Mitigation of GHG in agriculture

1. Enhance farmers to improve cultivation system, emphasize on utilization of natural resources
2. Reduction of chemical fertilizer and material utilization
3. Development of low carbon emission
 - rice cultivation
 - animal feed
 - waste management



Mitigation of GHG in agriculture

4. Enhance to development of animal feed quality
5. Biogas production and CH₄ capture system
6. Control of field burning (incentives and regulation)
7. Adoption of stakeholders



Transition towards Low Carbon Societies in Agricultural Sector

Pitayakon Limtong

**Land Development Department
Ministry of Agriculture and Cooperatives**

