

# AWG-LCA5 Workshop on Challenges and opportunities for mitigation in the agricultural sector

## Japanese approach to GHG emissions reduction and new possibility in the agricultural sector



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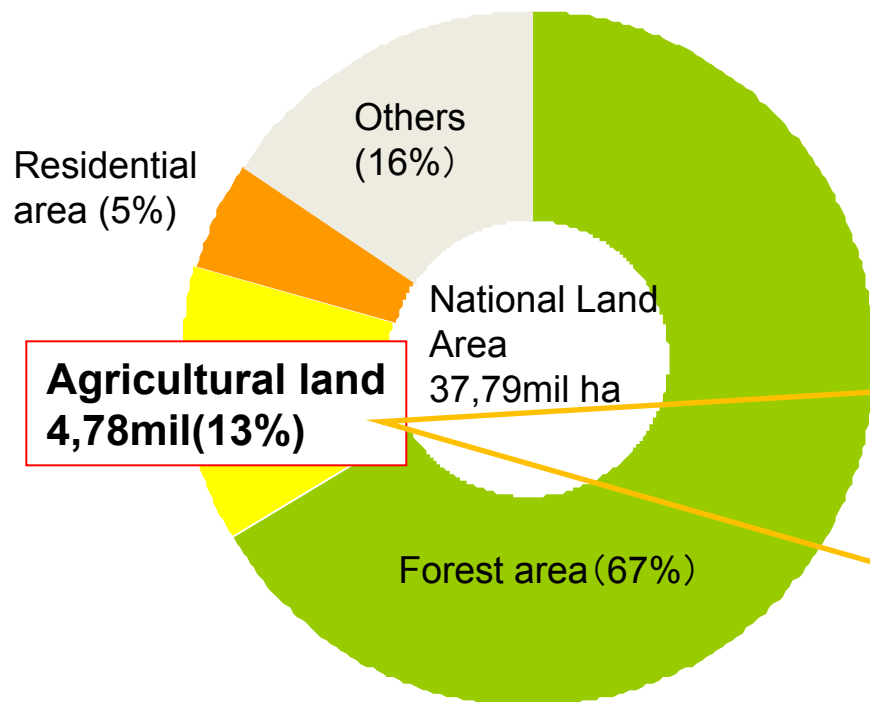
**Ministry of Agriculture, Forestry and Fisheries**

JAPAN

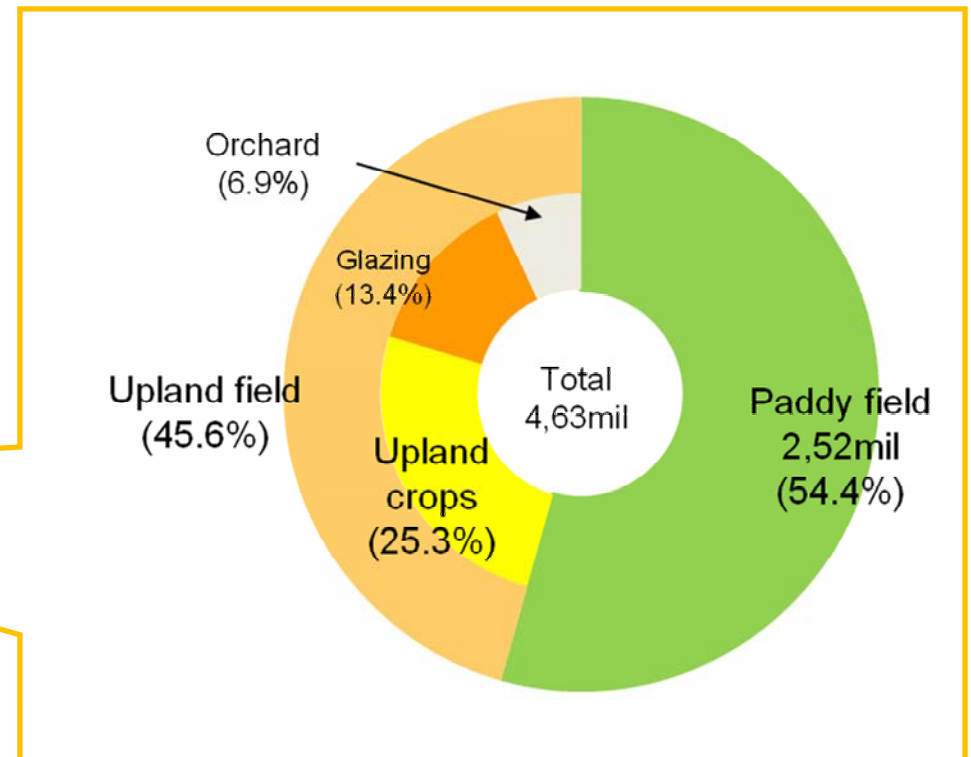
April 2009

# Background

- Japan has a humid monsoon climate. Agricultural area is about 13% of land use in Japan and more than half of the agricultural area are occupied by paddy cultivation.
- The average cultivating scale of Japanese farm household is 1.8ha
- Japan's food self-sufficiency ratio is 40% on calorie basis and is needed to increase for food security.

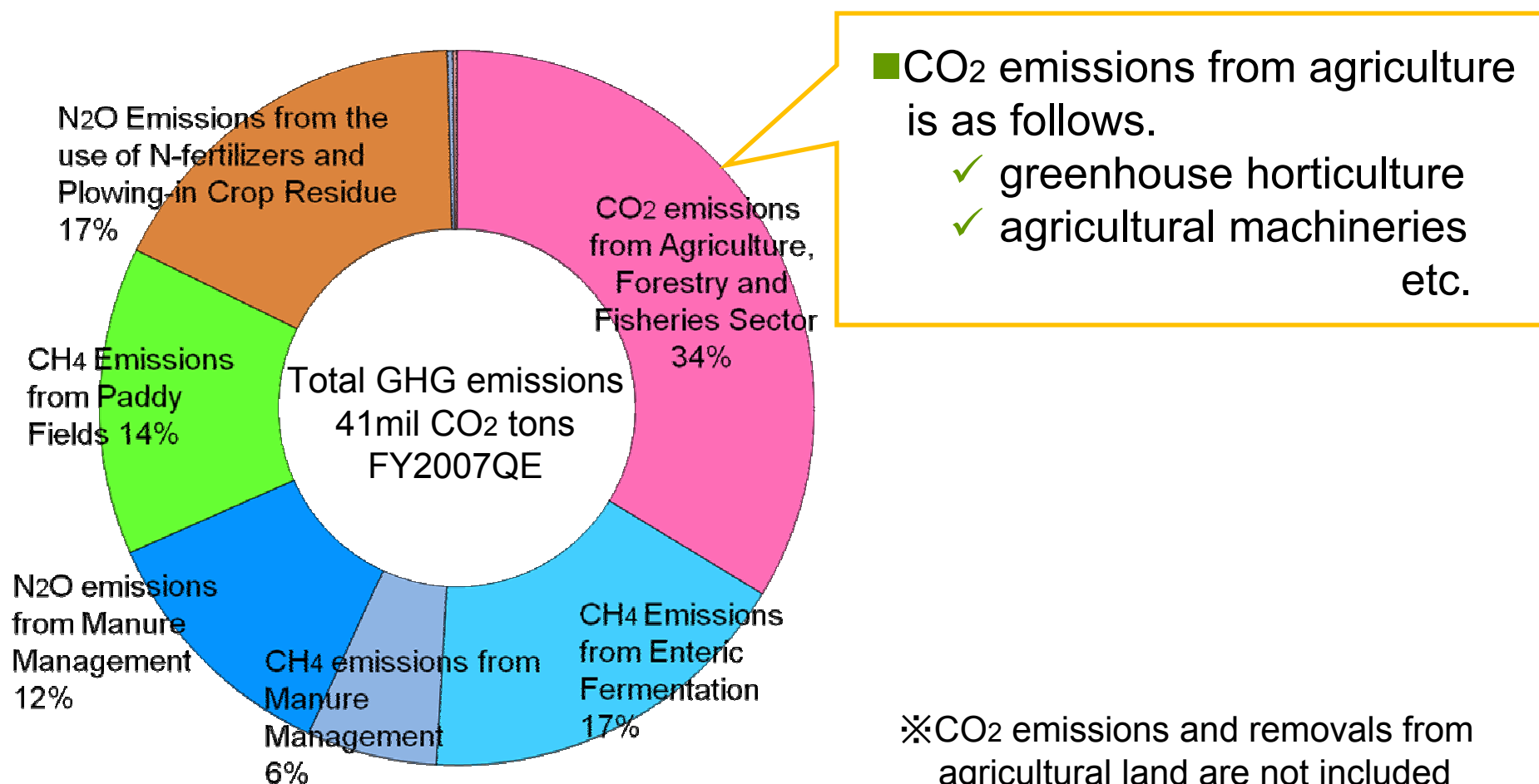


Source; Ministry of Land, Infrastructure Transport, MAFF(2005)



Source; MAFF(2008)

# The situation of GHG emissions from agriculture in Japan



The Sources of Total GHG emissions of Agriculture, Forestry and Fisheries sector

Source : GHG Inventory Office HP

<http://www-gio.nies.go.jp/index-j.html>

# Policies and Measures

- Cycle usage of biomass resources
- GHG reduction measures for greenhouse horticulture and agricultural machineries
- CH<sub>4</sub> reduction by improving manure management in local basis (e.g. utilizing manure for energy source by carbonization /methane fermentation facilities)
- Expanding the use of rice straw as feed from burning it on the farm
- CH<sub>4</sub> reduction by prolonged mid-season drainage in rice cultivation
- N<sub>2</sub>O reduction through reduced fertilizer inputs
- Monitoring system in carbon sequestration in the agricultural soil

(The Japanese Comprehensive Strategy of the measures against Global Warming in the Sector of Agriculture, Forestry and Fisheries)



# Topic of the mitigation measures in the Agricultural sector

## ■ Energy saving technology for agricultural machineries



← Heat pump system in green house



→ High speed puddling machine in paddy field

## ■ Efforts of Livestock Farming



← Carbonization facilities of livestock excretion

## ■ Reduction of fertilizer Inputs

### ■ CH<sub>4</sub> emissions reduction from rice cultivation -Prolonged Mid-Season Drainage



## ■ Diffusion of Biomass Town Concept — Capacity building In East Asian Countries



← Study tour to composting facilities

→ Biogas energy scooter



## Conclusion and New Possibility

### ■ Conclusion

In the agricultural sector, various measures and technologies are needed among countries for mitigation based on the difference of production system, crops' varieties by nation or regions, due to climate and land conditions.

### ■ New Possibility – Carbon sequestration in the Agricultural soils

- ✓ About 89 per cent of technical mitigation potential of agriculture can be achieved by soil carbon sequestration. (IPCC AR4)

### ■ Effective Agricultural Soil Management to Mitigate GHG Emissions

- ✓ Inputs of organic matters such as compost and green manure
- ✓ Controlling the dissolution of organic matter in soil through no-tillage or reduced-tillage cultivation
- ✓ Application of soil improvement materials
- ✓ Increasing inputs of organic matters through promotion of multiple cropping

Source; The Global Environment Subcommittee of the Council of Food, Agriculture and Rural Area Policies, MAFF, Japan(March,2008)