What approach should agriculture take for climate change?

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1. Greenhouse gas emissions in Japan

Total emissions in entire Japan in FY2017
1,292 million t-CO₂

Total emissions in the agricultural, forestry and fishery industries in FY2017
51.54 million t-CO₂

Source: Greenhouse Gas Inventory Office of Japan
2. GHG emission reduction by 2050

Target based on the current global warming response plan
Reduce emissions by 3.04 million t-CO\(_2\) eq from FY 2013

In the case where new measures are taken for a decarbonized society

Significant reduction such as by strict energy saving and innovation toward a decarbonized society

Contribution to emission reduction in regions other than agricultural, forestry and fishing villages, other industries, other countries, etc., and crediting

FY 2013

FY 2030

FY 2050
3. Current conditions of emission reduction measures (CO₂)

Energy-saving measures

- Greenhouse horticulture
- Agricultural machinery
- Recycling of disposed agricultural materials

New warming system that efficiently utilizes unused natural heat sources (solar thermal, earth thermal, etc.)

Heat pump, Woody biomass warming devices, Multi-layered covering equipment, etc

Promotion of the use of energy-saving machines

Solar thermal

Heat storage

Earth thermal
3. Current conditions of emission reduction

Reduction of CH\textsubscript{4} emissions

- Trench digging for mid-summer drainage

Reduction of N\textsubscript{2}O emissions

- Mid-summer drainage
  - Approx. 40% reduction of GHG, while maintaining productivity
  - Reduction of N\textsubscript{2}O associated with fertilization

GHG (gCO\textsubscript{2}-equivalent) in livestock excrement management

- 40% reduction

Source: National Agriculture and Food Research Organization

Proper fertilization based on soil diagnosis
4. Current conditions of absorption

Agricultural soil
- Use of compost
- Zero tillage

Forests
- Thinning
- Reforestation

【Carbon balance model for the soil of agricultural lands and grasslands】

**CO₂**

Respiration

Photosynthesis

Return of crop residues to agricultural lands

Promotion of eco-friendly agriculture

Soil organic carbon less subject to microbial decomposition

= Soil carbon storage

Promotion of application of green manure and compost

Organic carbon in the soil

Organic constituents derived from plant residues and compost

Decomposition by soil microorganisms

Agricultural soil

Forests

4. Current conditions of absorption

**CO₂**
Chapter 1: Basic ideas

- **Ambitious vision**: Upholding “decarbonized society” as an ultimate goal, try to ambitiously achieve the goal as soon as possible in the latter half of this century and work toward 80% reduction by 2050.
- **Basic view of policies**: In order to achieve the vision, realize a “**virtuous cycle of environment and growth**” through business-driven **drastic innovation**, promptly make necessary efforts, **contribute to the world**, and create a picture of a **bright society that generates hope for the future** and take action.

Chapter 2: Long-term vision of respective sectors and direction of countermeasures, measures and policies toward the vision

- **Section 1**: Countermeasures, measures and policies for reducing emissions (energies, industries, transportation, community/life)
- **Section 2**: Measures for sinks

Chapter 3: Cross-sectional measures and policies to be focused on

- **Section 1**: Promotion of innovation
- **Section 2**: Promotion of green finance
- **Section 3**: Business-driven international expansion, international cooperation

Chapter 4: Direction of other cross-sectional measures and policies

Chapter 5: Review and practice of long-term strategy