

# GLOBAL RESEARCH ALLIANCE

ON AGRICULTURAL GREENHOUSE GASES

## CROPLANDS RESEARCH GROUP: [South Korea]Country Update

CRG representatives: Sun-Il Lee

National Institute of Agricultural Sciences, RDA, South Korea

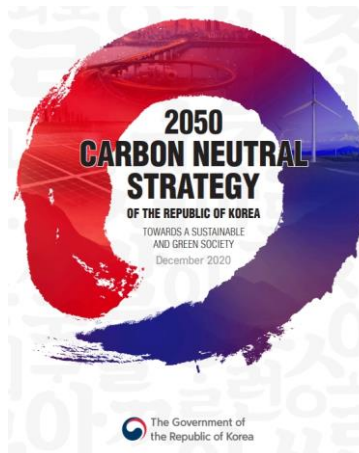


Rural Development  
Administration

# Activities/Accomplishment since last meeting

## ■ Country Update

### 1. Declared Carbon Neutral (December, 2020)



### 2. Mitigation Plan of LEDS in Agricultural Sector 2050



**[Smart Farm]** Extending for smart farm and corral using 4th industrial technology



**[Low carbon Agricultural Technology]** Sustainable research for intermediate irrigation, development of low methane feed emitted, low input agricultural technology, and soil carbon sequestration



**[Eco-friendly energy]** Biogas production using swine waste, supplement of solar energy, heating pump using underground energy, and light of LED



**[Consumer participant for policy]** Mitigation efforts of greenhouse emissions as reducing food waste through improvement of daily life



Development of sustainable GHG reduction technology considering the current agricultural environment and conventional farming methods

# Activities/Accomplishment since last meeting

## ■ Country Update

### 3. Event: 2021 P4G Seoul Summit (May, 2021)



#### **“Agricultural Technology Innovation for Carbon Neutrality by 2050” International Symposium**

25 May 2021, 16:00 - 18:00 KST

#### Presentation Session



**Innovative R&D on Reducing Food Losses and Waste along the Agri-food Value Chain**

**Toine Timmermans**

Program Manager,  
Circular Economy in Food, Wageningen University & Research, Netherlands



**Innovative R&D technologies for GHG reduction in the agricultural sector of New Zealand**

**William Aitkenhead**

Senior Analyst (GRA Research Investment lead),  
Ministry for Primary Industries, New Zealand



**Practical Cases for Mitigation of Greenhouse Gas (GHG) Emissions and Carbon Sequestration for Agricultural Sector in Korea**

**Shin JoungDu**

Senior Researcher,  
Rural Development Administration, Republic of Korea

### 4. New Carbon Neutrality Law in S. Korea (September, 2021)



**The Korea Herald**

National

### 5. Join Global Methane Pledge (October, 2021)

**Korea becomes 14th in world to legislate carbon neutrality act**

- Reduce the amount by 30 percent by 2030 compared to 2020 level



# Activities/Accomplishment since last meeting

## ■ Country Update

### 6. Stronger 2030 NDC target to 40% (October, 2021)

- National GHG emission : 727.6 MT(2018) → 436.6 MT(2030)
- Agricultural sector GHG emission : 24.7 MT(2018) → 18.0 MT(2030)
  - . Practices of water management technology in paddy
  - . Reduction of nitrogen fertilizer use in cropland
  - . Practice of biochar by carbon sequestration in cropland

### \* Technology applied with voluntary mitigation projects : 7 research projects

#### ✓ Reducing the use of nitrogen fertilizers(3)



<green manure crop>



<slow-release fertilizer>



<use of by-product fertilizers>

#### ✓ Mitigation methods in cropland(4)



<conservation tillage>



<water management>



<conversion of field use>  
(mitigation of methane)



<biochar>

# Research and Capability Priorities

- Research Opportunities:

1. Agricultural climate change response project has implemented from 2020 to 2027(\$ 170 million).
2. Collaboration possibility : Biochar, GHG modeling, Water management(paddy) etc.

- Capability Opportunities:

1. 8<sup>th</sup> International Symposium on Soil Organic Matter
  - June 26 - 30 2022, Seoul, South Korea  
(depends on COVID-19 situation)
2. RDA accepts international internship



# Research and Capability Priorities

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## ■ Capability Opportunities:

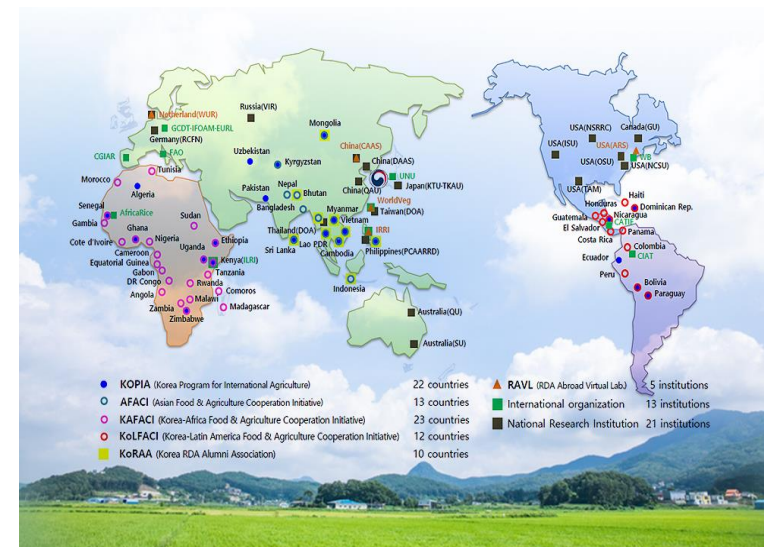
### 3. ODA(Official Development Assistance) of RDA : 3FACIs + KOPIA

- 3FACIs : R&D network dealing with continent-specific issues that are currently faced

1) AFACI(Asian Food & Agriculture Cooperation Initiative,  
13 countries, [www.afaci.org](http://www.afaci.org))

2) KAFACI(Korea-Africa Food & Agriculture Cooperation  
Initiative, 23 countries, [www.kafaci.org](http://www.kafaci.org))

3) KoLFACI(Korea-Latin America Food & Agriculture  
Cooperation Initiative, 12 countries, [www.kolfaci.org](http://www.kolfaci.org))



- KOPIA : Bilateral cooperation program to develop agricultural technologies adapted to country-specific context