Agricultural Science–based International Development Cooperation of Rural Development Administration

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Agriculture as a Future Growth Industry

1. Expand and Advance Smart Agriculture
   - Data & Platform, Intelligence & Automation, Field Equipment, Facility/Field Smart Agriculture

2. Convergence of Green Bio
   - Genetic Resources, Digital Breeding, New Material Development Food Tech, Microbiome, Insect resources

Realizing a Sustainable Agricultural Future

2. Securing Food Sovereignty
   - Floury Rice, Wheat, Soybeans, Field Crops, Horticultural Specialties Animal Welfare

3. Climate Action / Carbon Neutrality
   - Climate Action(Prediction/Adaptation/Response), Carbon Neutrality Green/Organic Agriculture

4. The Global Spread of Agricultural Technology
   - International Cooperation, ODA(KOPIA, 3FACI), K-Rice Belt, Export Agriculture

Enabling a vibrant rural

3. Local Agriculture Revitalization/Rural Regeneration
   - Cultivation of Local Specialty Crops, Rural Convergence Collaboration/Cooperation System, Utilization of Local Agricultural Products
   - Rural Space (Data/Planning), Rural Regeneration Model, Agriculture/Rural Values

4. Fostering Young Farmers
   - Stabilization, Technology-Based Farming/Entrepreneurship, Empowerment

Making people happy

4. Promote Healing Farming
   - Anchor Institutions, Professional Training, Business Model Diffusion, Pets

5. Farmworker Safety & Well-Being
   - Farmer Disaster, Farmer Welfare, Women Farmers
International Development Cooperation of RDA

**Philosophy**

- Contributing to the **achieve SDG 1 (No Poverty) and SDG 2 (Zero Hunger)** by sharing knowledge and experience in **agricultural sector** with the world

* SDGs: Sustainable Development Goals

**Goals**

1. To supply **Korea’s Top 100 agricultural technologies** to **one million farmers** in 52 partner countries

2. Improvement food self-sufficiency through the development and dissemination of customized technologies by country

**Principles**

- **Relevance**: aligns with the **policies and national interests** of partner countries
- **Effectiveness**: develops **technologies customized** to partner countries
- **Efficiency**: cooperates with **international organizations/institutions**
- **Impact**: strengthens cooperation with **public & private sectors**
- **Sustainability**: provides **capacity-building training** on agricultural technologies

*SDGs*: Sustainable Development Goals
ODA Platform of RDA

- RDA operates **two tracks** of development cooperation through an innovative ODA Platform: **KOPIA & 3 FACIs**

  * KOPIA: Korea Partnership for Innovation of Agriculture,  
  FACI: Food & Agriculture Cooperation Initiative

**Track 1**

- **Bilateral**
  - Develop locally-adaptable technologies
  - Increase smallholder farmers’ income

**Track 2**

- **Multilateral**
  - Do collaborative research within the continent
  - Address common agricultural challenges

- KOPIA: 23 countries
- 3 FACIs: 49 countries, 7 int’l organizations
KOPIA and Cambodia developed a high-yielding & disease-resistant corn ‘CHM01’, the first F1 hybrid in Cambodia

- Crop breeding
- Cultural practices

F1 Hybrid Corn ‘CHM01’

- High-yielding
- Short growth period
- Resistant to downy mildew

Seed costs reduced by 40% when compared to imported varieties

$6/kg

$3.5/kg

Imported varieties

CHM01

* Production cost $3 + distribution cost $0.5

Replacing 50% of cultivated areas with CHM01 is expected to reduce costs by 1.5 billion USD
(Multilateral) Key Achievement of AFACI

- RDA, AFACI and FAO will establish the 「Soil Atlas of Asia」 with soil information of 15 Asian countries for climate-smart agriculture.
- **Capacity building programs**
  * The study tour of the Ministry of Agriculture of Uzbekistan (2022)
  - Digital soil management tech. for Uzbekistan

- **Knowledge sharing**
  * ‘Open Learning Campus’

* The study tour of Smart-farming tech. for Mexico (2022)
**Key Achievement of KAFACI**

- **RDA, KAFACI and AfricaRice** developed **high-yielding rice varieties** for food security in Africa
  
  * AfricaRice: Africa Rice Center

**Rice varieties developed by cooperation**

* 11 varieties in 5 countries during 2017~2022

<table>
<thead>
<tr>
<th>Country</th>
<th>Variety</th>
<th>Yield (ton/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senegal</td>
<td>ISRIZ-6</td>
<td>7.2</td>
</tr>
<tr>
<td></td>
<td>ISRIZ-7</td>
<td>7.5</td>
</tr>
<tr>
<td>Mali</td>
<td>KAFACI 1</td>
<td>7.0</td>
</tr>
<tr>
<td></td>
<td>KAFACI 2</td>
<td>5~6</td>
</tr>
<tr>
<td></td>
<td>KAFACI 3</td>
<td>6~7</td>
</tr>
<tr>
<td>Malawi</td>
<td>MAKAFACI</td>
<td>6.9</td>
</tr>
<tr>
<td></td>
<td>WCHANGU</td>
<td>6.8</td>
</tr>
<tr>
<td>Tanzania</td>
<td>TARI-RIC3</td>
<td>7.5</td>
</tr>
<tr>
<td>Rwanda</td>
<td>KATETA 21-1</td>
<td>7.3</td>
</tr>
<tr>
<td></td>
<td>KATETA 21-2</td>
<td>7.6</td>
</tr>
<tr>
<td></td>
<td>KATETA 21-3</td>
<td>6.5</td>
</tr>
</tbody>
</table>

**ISRIZ-6 and ISRIZ-7 in Senegal**

- **Yield**: ISRIZ-6 > ISRIZ-7
- **Sales Price**: ISRIZ-6 > ISRIZ-7

<table>
<thead>
<tr>
<th>Sales Price</th>
<th>Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>350 CFA per Kg</td>
<td>ISRIZ-6</td>
</tr>
<tr>
<td>400 CFA per Kg</td>
<td>ISRIZ-7</td>
</tr>
</tbody>
</table>
(Food Security) Cases of cooperation with WB

- Future Alternative Food Research
  * Edible insect research in RDA

Registered Edible Insect

- 3 sp. (Previous)
- 7 sp. (2016)
+ α (Super Mealworm) (2020, temporarily registered)

Current Status of Insect-Rearing Farms

- No. of insect farms
  - 2015: 724
  - 2016: 1,235
  - 2017: 2,318
  - 2018: 2,535
  - 2019:

- Capacity building programs
  * Co-field trip with WB for understanding the Zimbabwe’s situation (2023)
(Multilateral) Key Achievement of KoLFA CI

- **RDA, KoLFA CI and CIAT** developed drought-tolerant Frijol lines for food security against climate change

* CIAT: Centro Internacional de Agricultura Tropical

### Activities for development of drought-tolerant frijol varieties

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of lines (evaluated/selected)</th>
<th>Capacity building (Number of farmers/technicians)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colombia</td>
<td>344 / 25</td>
<td>538</td>
</tr>
<tr>
<td>Nicaragua</td>
<td>216 / 30</td>
<td>160</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>201 / 56</td>
<td>663</td>
</tr>
<tr>
<td>Bolivia</td>
<td>235 / 28</td>
<td>70</td>
</tr>
<tr>
<td>El Salvador</td>
<td>800 / 62</td>
<td>780</td>
</tr>
<tr>
<td>Guatemala</td>
<td>290 / 17</td>
<td>326</td>
</tr>
<tr>
<td>Honduras</td>
<td>160 / 64</td>
<td>296</td>
</tr>
</tbody>
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### Frijol research in Colombia

- **344 lines tested**
- **25 lines selected**
- **Field screening**
- **Greenhouse evaluation**
- **Laboratory works**
  - Physiology
  - Rhizobium
  - Genetic analysis
Future Collaboration

• Work in line with SDG framework focusing on No Poverty & Zero Hunger
• Focus on agricultural technologies to improve global food security and mitigate climate change
  ✓ Abiotic stress-tolerant crop varieties and cultural practices to improve productivity
  ✓ Technologies to mitigate climate change in agricultural sector
  ✓ Technologies for digital agriculture

(Replication) The developed technology is diffused to other regions within a country or countries with similar environmental conditions or policies

• Strengthen triangular cooperation with international organizations
  ✓ Knowledge-sharing and capacity-building for sustainability
  ✓ Production and sharing of global big data in agricultural sector
Thank you for your attention!