Performance Evaluation of Agriculture R&D Programs in Korea

Hoi Jong Jung
Office of National R&D Evaluation & Coordination

KISTEP
1. Introduction
Agriculture R&D Programs in Korea

Features

- Long-Term Investment
- High-Risk, High-Return
- Scale Economy in a Global Way

Organization

Public sector carries most of the research, and an amount invested of agricultural private sector is only 0.58% in an amount invested of total private sector

- Public sector
  - Ministry of Agriculture and Forest (MAF)
  - Rural Development Administration (RDA)
  - Korea Forest Service (KFS)

It is important to evaluate agriculture R&D programs of public sector in Korea
The status of agriculture R&D programs

The part of **agriculture** is getting **reduced**
when the R&D support of the government is increased
National plan - National Technology Roadmap

Improving national safety and prestige

Direction of development
- Food security and preservation of national resources

Strategic products and functions
- Establishment of **food self-sufficiency**
- Establishment of **bio-resources self-sufficiency**

Key Technologies
- High quality and yield crops
- BT-based highly profitable agriculture products
- Development, processing and preservation of high functional foods
- Bio-resources preservation and utilization technology
Portfolio analysis of strategic products and functions

The need of **industrialization** has been increased in agriculture

- Establishment of food self-sufficiency
- Establishment of bio-resources self-sufficiency

**Agriculture S&T**
- Mid, long-term plan
- Income increase
- Export expansion
- Higher value added product

**Economic impact**
- Very High
- High
- Middle
- Low
- Very Low

**Strategic importance**
- Very High
- High
- Middle
- Low
- Very Low

**Potential for success**
- Very High
- High
- Middle
- Low
- Very Low

- Agricultural S&T mid, long-term plan
2. Motivation and Objective
**Motivation**

- To move toward **high value added agriculture**, as well as establishment food self-sufficiency

- To change the system of agriculture R&D programs into **a growth driven source** in no support of budget

**Objective**

- To **control the overlap** of research fields in agriculture

- To suggest the direction of the programs by **changing performance indices** into the high value added agriculture

- To drive the qualitative performance index
Approach

Performance-based evaluation

- Analysis of research fields
- Identification of the commonly known performance indices
- 11 fields
- 6 performance indices
- Comparison with performance in each field
- Government plans and action plans
- Organization and system

Suggestion of the properly direction of programs and performance indices
3. Application
In 11 fields and 6 performance indices, the strength and weakness of MAF and RDA has been appeared.
## Government plans and action plans

### Overlapping of program aims

<table>
<thead>
<tr>
<th>Program</th>
<th>Ministry of Agriculture and Forestry (MAF)</th>
<th>Rural Development Administration (RDA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core strategy technology development</td>
<td>☐ Key technology (BT)</td>
<td>Technology development in RDA’s own research field</td>
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<td>☐ High technology</td>
<td>Technology development to improve a value added product and safety</td>
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<tr>
<td>Technology development in the field</td>
<td>☐ Solving the problem of the farm householder</td>
<td>Incorporating the new high technology into agriculture</td>
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<td>☐ Executing the project joined the farmer</td>
<td>Solving the problem of the farm householder</td>
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<td>☐ High technology for agriculture technology innovation</td>
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<tr>
<td>Agro-industry technology development</td>
<td>☐ Promoting the technology development of agro-industry</td>
<td>Development a new species(high value added, a new function)</td>
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<td>Future promising technology</td>
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<td>Promoting agro-biotechnology</td>
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</tbody>
</table>

The program aims of MAF and RDA are overlapped.
### Organization and System

#### Overlapping of the key function

<table>
<thead>
<tr>
<th>RDA(11)</th>
<th>Key function</th>
<th>MAF(2)</th>
<th>KFS(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Institute of Agriculture Science /&amp; Technology</td>
<td>Agriculture environment, Agrichemicals, Safety, Basic research</td>
<td>Agricultural R&amp;D Promotion Center</td>
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<tr>
<td>National Institute of Agriculture Engineering</td>
<td>Farm machine research, Quality control</td>
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<tr>
<td>National Horticultural Research Institute</td>
<td>Vegetables, Floriculture, Preservation and Processing research</td>
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<tr>
<td>National Institute of Animal Science</td>
<td>Livestock and veterinary research and feed</td>
<td>National Veterinary Research Quarantine Service</td>
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<tr>
<td>National Institute of Agricultural Biotechnology</td>
<td>Biotechnology basic research</td>
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<td></td>
</tr>
<tr>
<td>National Institute of Crop Science</td>
<td>Rice, Cereals, Crop for a special purpose</td>
<td>Agricultural R&amp;D Promotion Center</td>
<td></td>
</tr>
<tr>
<td>National Institute of Highland Agriculture</td>
<td>Highland vegetables, Potato research</td>
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<tr>
<td>National Institute of Subtropical Agriculture</td>
<td>Livestock farming, Horticulture research</td>
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<tr>
<td></td>
<td>Forestry research</td>
<td>Agricultural R&amp;D Promotion Center</td>
<td>Korea Forestry Research Institute</td>
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</tbody>
</table>
Before : In 11 fields, the research area of MAF, RDA, KFS are overlapped
Present : Considering performances, key function, organization and system,
MAF focuses on technical development on industrialization
RDA carries out technical development on basic, applied research, and solving problems of the farmer
KFS develops technology on forestry
4. Effect
Before providing the direction of each ministry and office concerned, several index are only used in inspection of programs.

After changing the structure, **variety of indices are used**, and especially **the feature of agriculture** could be expressed.
By the role of each ministry and office concerned, concerned projects are transferred into other programs. Therefore the budget of MAF was temporarily reduced.

But the obvious role is easy to make a budget, the total budget is increased consequently.
Thank you very much