No. 113 (October 8, 2015)

Performance Management of International Agricultural Development Cooperation Projects in Response to Adoption of Sustainable Development Goals

Lee Daeseob, Choi Minjung, Ha Kyungjin, Kim Donghoon

KREI

▪ "KREI Agricultural Policy Focus" relates to analysis and description of the trend of and policy for agriculture and rural areas.
▪ This is also provided at the KREI website (www.krei.re.kr).

◇ **Abstract** ◇

○ As the Millennium Development Goals (MDGs) came to an end, the Sustainable Development Goals (SDGs) were adopted as the new direction for development cooperation at the UN Sustainable Development Summit held in September.

○ The SDGs are comprised of 17 goals, 169 targets, and 100 global indicators and national indicators.
- Among the 17 goals, those for the agricultural sector are Goal 1 and Goal 2, which are aimed at sustainable development of agriculture and rural areas by ending poverty and strengthening food security.

○ The UN recommends to utilize indicators based on the system of the relevant country for national monitoring, and to recognize the poor system of collecting statistical data in most partner countries and use inofficial data as well as official ones.

○ Among the SDG indicators, those to be applied to the agricultural sector should be selected by considering the type of an agricultural development cooperation project.
- The SDG indicators should be monitored based on governmental statistics, surveys and research by visits.

○ The performance of agricultural development cooperation projects in Korea is measured by using a result-based approach, but this method is short of consistency due to the use of different indicators for each project. The cost-benefit analysis or the cost-effective analysis is also adopted for the feasibility assessment of a project.
- But this method is irrational because indistinguishable costs and benefits obscure the quantification of the feasibility and a number of phenomena that cannot be defined as an effect may occur depending on the characteristics of a project.

○ It is needed to consider to adopt the theory of change, with which it is possible to start from the specific goals set in the beginning of a project and meet step by step the requirements for accomplishing such goals.
- For achieving fundamental goals, the adoption of the theory of change makes it possible to focus on changes in surrounding conditions, such as infrastructure, and design a program-type project that enables to carry out various projects.

○ In the implementation of the development cooperation for the agricultural sector, SDG indicators need to be actively utilized throughout the entire process from the formation of a project to assessment and collection of feedback, thereby contributing to the accomplishment of the SDGs.
- When a project is created, it is desirable to exclude projects that cannot use SDG indicators.

○ It is crucial to establish an efficient performance management system to improve the effectiveness of international agricultural development cooperation projects led by Korea.
- To this end, it is important to connect the goals of a project with the SDGs, set a method for measuring the degree of contribution to the achievement of the SDGs, and actively participate in the new paradigm of international development cooperation adopted by the UN.

1. Adoption of SDGs and a Need for Efficient Performance Management

○ As the New Millenium Development Goals (MDGs) expired, the Sustainable Development Goals (SDGs) were newly adopted as the direction for development cooperation at the UN Sustainable Development Summit held in September.
  - The SDGs are the new paradigm for the common prosperity of the world.
  - The world leaders from 158 countries out of 193 member states, including South Korean President Park Geun-hye, and Pope Francis attended the summit.

○ While the fundamental goal of the MDGs was to cut poverty and hunger around the world by half, that of the SDGs is to completely eradicate poverty and hunger by 2030.
  - The SDGs have been concretely designed by examining and analyzing the outcome of various development cooperation projects and applying what the global society intends to achieve by 2030.

○ The global society presents the indicators for performance measurement to identify the accomplishment degree of the SDGs and aims to enhance sustainability by implementing evidence- and result-based development cooperation projects.
  - In order to improve the effectiveness and sustainability of international aid, the global society has switched its strategy from the input-based performance management to the evidence- and result-based performance management.
  - It is also needed for Korea to participate in the paradigm of the global society based on the SDGs and pursue efficient performance

management for future development cooperation projects by coming up with plans to utilize an evidence- and result-based approach.

○ The goal of this material is to examine the SDGs and the SDG indicators for performance measurement, which were adopted at the UN summit, and to present plans to utilize them in the agricultural sector.
  - It is aimed to suggest efficient performance management schemes by examining the SDGs related to agricultural and rural areas and selecting the relevant SDG indicators with consideration for the changes in the new paradigm of development cooperation.

2. SDGs and SDG Indicators for the Agricultural Sector

□ The goals of the SDGs and the composition of SDG indicators

○ The SDGs consist of 17 goals, 169 targets, and 100 indicators for the performance measurement of projects.

- Among 17 goals, those related to the agricultural sector include Goal 1 and Goal 2, which are aimed at sustainable development of agriculture and rural areas by ending poverty and strengthening food security.

- In Goal 1, the most significant goal among the SDGs, Target 1.1 and 1.2 are related to the agricultural sector, and are intended to end poverty of people living on less than USD 1.25 per day and cut every type of poverty by half by 2030.

- Goal 2, with Target 2.3, 2.4, 2.5 and 2.a included, is in a direct relation with agriculture, and its purpose is to double agricultural productivity and income by establishing a value chain focusing on small-scale farmers－vulnerable groups－including female farmers.

- In particular, major contents of this goal also include the establishment of a sustainable food production system by strengthening measures in response to climate changes and natural disasters; the dissemination and implementation of restorable farming methods and the reinforcement of technical training; and investment in the foundation of gene banks for plants and livestock.

Figure 1. Diagram of National, Regional, Global and Thematic Monitoring
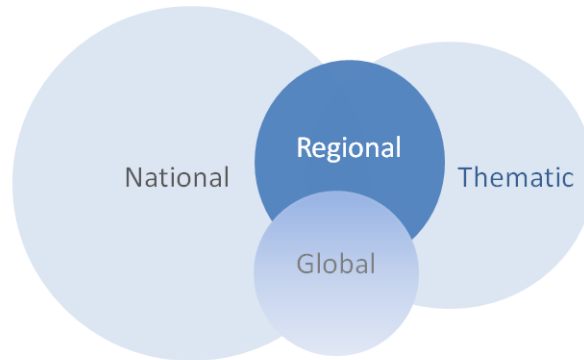
Source: SDSN (2015). Indicators and a Monitoring Framework for the Sustainable Development Goals.

○ The SDG indicators are comprised of 100 global indicators and complementary national indicators, suggested to reinforce the comprehensive management function based on the new development agenda－sustainable development.
  - Global indicators are established in accordance with ten principles, including "simple, single-variable indicators," and "consensus-based indicators in line with international standards."
  - A total of 148 complementary national indicators are presented, but it is recommended that each partner country choose and apply rational indicators for sustainable development.

○ In terms of national monitoring, it is recommended to utilize indicators based on the unique system of the relevant partner country. Although it is important to use official data, it is also encouraged to use unofficial data, considering that most partner countries have a poor system for collecting statistics.
  - For national monitoring, accountability of a partner country works as a crucial factor. The monitoring should be designed with consideration for priorities in national development strategies.

- Partner countries, who would receive cooperation, are recommended to utilize SDG indicators in accord with national development strategies based on the definition and characteristics of such indicators and the timing, methods and disaggregation of data collection.

○ The global monitoring suggested by the UN is implemented mostly based on the collection of official data by applying indicators established in accordance with global standards.
  - Most global indicators can be applied to each country, but some nations may use only part of them according to income level and political and economic situations, while others may utilize them as complementary measures for national monitoring to improve consistency and harmony of aid.
  - The regional monitoring framework can be established by facilitating knowledge-sharing, peer review and reciprocal learning, and regional indicators are comprised of the combination of global and/or national indicators.
  - The thematic monitoring framework can be formed by utilizing the existing indicators set by expert groups. Because every country has a different level of technology and environment for implementation of projects in the agricultural and rural sector, it is needed to concentrate on problems and issues to be improved during the implementation of projects.
  - Therefore, indicators related to agriculture and rural areas should be developed and utilized by experts and researchers who have experience in development cooperation projects, and it is also necessary to consider examining and using indicators that have been previously adopted to evaluate and monitor each type of projects.

□ Selection of SDG indicators applicable to the agricultural sector

○ Among SDG indicators, those that can be applied to the agricultural sector should be selected by considering the type of each agricultural development cooperation project.
  - By the type of project, indicators can be classified into indicators related to general status (C), those related to rural development (R), those related to agricultural development (A), and those related to cross-cutting issues (CU).
  - Indicators related to general status (C) are what can be generally measurable when development cooperation projects are implemented in agricultural or other non-agricultural sectors. For example, issues related to primary educational institutions, SDG indicators in the education sector, are not in a direct relation to agriculture and rural areas, but can be applicable in recipient regions of agricultural or rural development projects.
  - Indicators related to rural development (R) are selected considering the relation with improvement of living conditions in rural areas, technical training, and income increase.
  - Indicators related to agriculture (A) are connected to agricultural production activities, agricultural technique training and education, and support for facilities for irrigation and distribution.
  - Indicators related to cross-cutting issues (CU) are connected to gender equality and the environment.

○ Indicators applicable to the agricultural sector can be selected based on the goals and targets of SDGs and classified as described in Table 1.
  - Depending on targets, an SDG indicator can be included in multiple categories.

□ **Details of selected indicators**

Table 1. SDG Indicators Applicable to the Agricultural and Rural Sectors

Goal 1. End Poverty

Target 1.1. By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day		
Indicator	Details	Category
1.	Proportion of population below $1.25 (PPP) per day (MDG Indicator)	C/CU
3.	MPI (Multidimensional Poverty Index)	CU
5.	Percentage of women, men, indigenous peoples, and local communities with secure rights to land, property, and natural resources, measured by (i) percentage with documented or recognized evidence of tenure, and (ii) percentage who perceive their rights are recognized and protected.	C/CU

○ Indicator 1: The proportion of population below $1.25 per day (MDG Indicator) indicates the percentage of people living on daily income less than USD 1.25 below the international poverty line.

- This indicator can be measured through disaggregation by gender, age or area (city, rural areas). If measured through disaggregation by gender, the level of poverty is likely to be serious when a woman is the householder.

- However, it is hard to measure the level of poverty with this indicator because there are people right below or far below the poverty line.

- Nonetheless, it is still possible to some degree to measure the level of poverty by utilizing currently collected data and survey results and to complement it by conducting households income surveys.

○ Indicator 3: It is tough with MPI to measure poverty not attributed to income, so it needs to estimate the level of poverty comprehensively.

- MPI, designed by the Human Development Report office of the UN Development Program, uses three dimensions and ten indicators for measurement.
- It identifies what deprivation each household experiences among three dimensions, including health (child mortality, nutrition), education (years of schooling, enrollment), and living standards (water, sanitation, electricity, cooking fuel, floor, assets), and estimates the level of poverty by counting the number of dimensions in shortage.

○ Indicator 5: The percentage of women, men, indigenous peoples, and local communities with secure rights to land, property, and natural resources may have a significant impact on economic growth and poverty reduction.
  - It is not very common for people in poverty to exercise rights to land, but the percentage of those who have rights to land and property means the proportion of residents who have documents for land ownership or whose rights to property are recognized and protected.
  - The UN considers that it is possible to disaggregate by gender, indigenous people, and local community, and also recommends to do so by region.
  - However, it is difficult to actually measure the poverty in this way due to unclear methods and schemes. In addition, data related to each project or program can be provided by the government of the relevant partner country based on household surveys or administrative data, but they may be unreliable.

Target 1.2. By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions		
Indicator	Details	Category
2.	Proportion of population living below national poverty line, by urban/rural (modified MDG Indicator)	CU
3.	MPI (Multidimensional Poverty Index)	CU

○ Indicator 2: The proportion of population living below national poverty line, by urban/rural, is a complemented version of the relevant MDG indicator, indicating that the percentage of people living on daily consumption (or income) less than particular sum of money below the national poverty line.

- The national poverty line is differently applied to each of urban and rural areas with consideration for differences in living expenses between urban and rural communities.

- It is possible with this indicator to disaggregate by gender, age, and urban/rural, and according to this indicator, a large number of households whose householder is female and children under 18 are included in population in extreme poverty.

Goal 2. End hunger, achieve food security and improved nutrition, and promote sustainable agriculture

Target 2.3.		
By 2030 double the agricultural productivity and the incomes of small-scale food producers, particularly women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment		
Indicator	Details	Category
5.	Percentage of women, men, indigenous peoples, and local communities with secure rights to land, property, and natural resources, measured by (i) percentage with documented or recognized evidence of tenure, and (ii) percentage who perceive their rights are recognized and protected.	CU
13.	Crop yield gap (actual yield as % of attainable yield)	A/CU
14.	Number of agricultural extension workers per 1,000 farmers [or share of farmers covered by agricultural extension programs and services]	A/CU
15.	Nitrogen use efficiency in food systems (output/nitrogen input)	A/CU
2.4.	Cereal yield growth rate (% p.a.)	A/CU
2.5.	Livestock yield gap (actual yield as % of attainable yield)	A/CU
2.6.	Phosphoric acid use efficiency in food systems	A/CU
2.9.	Access to drying, storage and processing facilities	A/CU
2.11.	Indicator on irrigation access gap (to be developed)	A/CU
2.12.	Farmers with nationally appropriate crop insurance (%) (to be developed)	A/CU

○ Indicator 13: The crop yield gap is an indicator to measure the output of major agricultural products, comparing the amount of current and potential outputs.
  - Potential output can be accurately estimated only when a proper management system is established with consideration for sustainable water use and climate conditions.
  - The crop yield gap can be disaggregated by type of crop managed in priority by the government or by cultivation area at various levels from the village level to the global level.

○ Indicator 14: The number of agricultural extension workers per 1,000 farmers is a major indicator related to increasing agricultural productivity and income.
  - If the agricultural extension system does not work properly, it is impossible to consistently increase agricultural output.
  - This indicator was developed by the UN Food and Agriculture Organization (FAO) to identify the number of agricultural experts competent in various fields.

○ Indicator 15: The nitrogen use efficiency can be utilized as an indicator since nitrogen plays an important role in productivity of crops, sustainability, environmental impacts and the livestock production system. A detailed indicator for measurement will be developed soon.

○ Indicator 2.4: The cereal yield growth rate is used to measure the long-term increase rate in cereal output, which is an important factor in satisfying the demand for food in the future.

○ Indicator 2.5: The livestock yield can be expressed by the proportion of actual output compared to the target figure, indicating the gap between major livestock outputs (milk, eggs, meat, etc.) with consideration for specific conditions, such as climate, diseases, water use and feed supply.

○ Indicator 2.6: Phosphoric acid use efficiency needs to be measured since phosphoric acid is a major nutrient and affects the environment, but a specific indicator for measurement will be developed later.

○ Indicator 2.9: The indicator on the access to drying, storage and processing facilities will be developed later.
  - Drying and storage facilities are key infrastructure to reduce damage caused by mycotoxin, insects and food spoilage, and they can also increase income of producers by enabling them to distribute their products at proper prices and timing.

○ Indicator 2.11: The indicator on irrigation access gap will be developed later.
  - Since the use of water for irrigation in agricultural production is a basic infrastructure for increasing productivity, it is needed to develop an indicator to measure the improvement of productivity with the use of irrigation facilities.

○ Indicator 2.12: By the proportion of farmers with nationally appropriate crop insurance, it is possible to measure the resilience of the agricultural system against typhoon, flood, drought and damage by diseases and harmful insects.

Target 2.4.		
By 2030 ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters, and that progressively improve land and soil quality		
Indicator	Details	Category
6.	Losses from natural disasters, by climate and non-climate-related events	CU
13.	Crop yield gap (actual yield as % of attainable yield)	A/CU
15.	Nitrogen use efficiency in food systems (output/nitrogen input)	A/CU
83.	Annual change in forest area and land under cultivation (modified MDG Indicator)	A/CU

Target 2.4. By 2030 ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters, and that progressively improve land and soil quality		
Indicator	Details	Category
85.	Annual change in degraded or desertified arable land (% or ha)	A/CU
2.4.	Cereal yield growth rate (% p.a.)	A/CU
2.5.	Livestock yield gap (actual yield as % of attainable yield)	A/CU
2.6.	Phosphoric acid use efficiency in food systems	A/CU
2.11.	Indicator on irrigation access gap (to be developed)	CU
2.12.	Farmers with nationally appropriate crop insurance (%) (to be developed)	A/CU
2.13.	Public and private R&D expenditure on agriculture and rural development (% of GNI)	CU

○ Indicator 6: Losses from natural disasters, by climate and non-climate-related events are used as an indicator to measure loss of life and economic damage caused in rural areas due to natural disasters. Such disasters are divided into climate-related disasters (typhoon, flood, inundation, drought, abnormal climate, etc.) and non-climate-related disasters (earthquake, volcanic eruptions, tsunami, infectious diseases, etc.).

○ Indicator 83: This indicator is expressed by an annual rate of change in forest and cultivation areas, measuring changes in forest and natural ecosystems and the expansion of farmland.

○ Indicator 85: In terms of the indicator on annual change in degraded or desertified arable land (% or ha), any progress in degradation and desertification is defined as deterioration of land that affects the provision of goods and services in relation to ecosystems. Degradation and desertification include salinization, erosion, loss of nutrients in soil, and dune erosion.

○ Indicator 2.13: The indicator on public and private R&D expenditure on agriculture and rural development (% of GNI) is expressed by the proportion of public and private resources used for agricultural and rural development in the GNI.

Target 2.5.		
By 2020 maintain genetic diversity of seeds, cultivated plants, farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at national, regional and international levels, and ensure access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge as internationally agreed		
Indicator	Details	Category
14.	Number of agricultural extension workers per 1,000 farmers [or share of farmers covered by agricultural extension programs and services]	A/CU

Target 2.a.		
Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development, and plant and livestock gene banks to enhance agricultural productive capacity in developing countries, in particular in least developed countries		
Indicator	Details	Category
14.	Number of agricultural extension workers per 1,000 farmers [or share of farmers covered by agricultural extension programs and services]	A/CU
59.	Mobile broadband subscriptions per 100 inhabitants, by urban/rural	C/CU
96.	Official development assistance and net private grants as percent of GNI	CU
2.13.	Public and private R&D expenditure on agriculture and rural development (% of GNI)	CU

1) CU: Cross-cutting indicators; 2) R: Rural development indicators; 3) A: Agriculture indicators;
   4) C: General status indicators

○ Indicator 59: The proportion of mobile broadband subscriptions by urban/rural is measured by calculating the number of subscriptions per 100 inhabitants.
  - This is selected as a global indicator because it is possible to achieve economic and medical benefits and participation of citizens through a broadband approach.

- It is possible to measure with this indicator by urban/rural, gender and age, but the result can be different from the actual proportion of population with mobile broadband subscriptions because a person can subscribe two or more types of broadband.

○ Indicator 96: This indicator represents the proportion of official development assistance and net private grants (by NGOs) in GNI.
  - For recipient countries registered in the list of OECD/DAC, this indicator represents the proportion of ODA in GNI, and this is connected with MDGs.
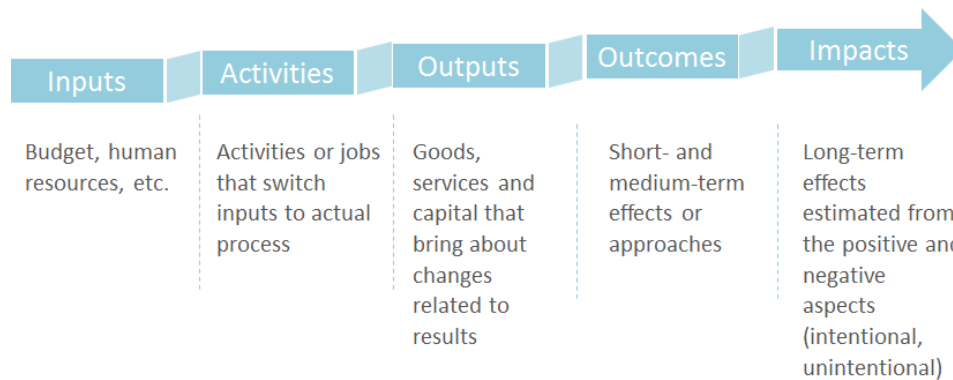
3. Plans for Utilizing SDG Indicators for the Agricultural Sector

☐ Measurement method of existing performances

○ (Formation of a project) To date, performances of international agricultural development cooperation projects have been measured by developing indicators for each project, and the cost-benefit analysis or the cost-effective analysis has been also adopted for the feasibility assessment of a project in the phase of project formation.

- An analysis of benefits of a project does not reflect all benefits, so the economic feasibility may be estimated lower than the actual value. In terms of projects related to construction and infrastructure, in particular, immeasurable social benefits are not properly evaluated at national and regional level.

- Accordingly, in an analysis of economic feasibility in the method of cost-benefit analysis, it is important to classify cost and benefits into detailed categories and quantify them, but it is still hard to measure them due to unclassifiable types of cost and benefits.

- In the implementation of development cooperation projects, a number of phenomena that cannot be defined as the effect of projects may occur, so it is hard to quantify benefits and effects compared to cost and determine the feasibility of projects. Moreover, the cost-effective analysis is controversial since the unit of costs and effects can be different all the time, so it is irrational to use the result of this type of analysis to decide whether to carry out projects.

○ (Performance management) The previous performance management method was the input-based approach, and this has been recently switched to the result-based approach.

- The result-based approach, used for a feasibility study, implementation, monitoring, assessment and post management, can be established by using input resources compared to expected targets and cause-and-effect relationship related to the implementation plans for a project, as illustrated in the results chain in Figure 2.
- The results chain is a causal connection of a development cooperation project, which is comprised of inputs, activities, outputs, outcomes and impacts to show performances required for accomplishing goals, and obtains feedback by assessment.

Figure 2. Results Chain

Inputs	Activities	Outputs	Outcomes	Impacts
Budget, human resources, etc.	Activities or jobs that switch inputs to actual process	Goods, services and capital that bring about changes related to results	Short- and medium-term effects or approaches	Long-term effects estimated from the positive and negative aspects (intentional, unintentional)

Source: Reorganized data based on OECD (2013), "Development Results, an Overview of Results Measurement and Management."

□ Utilization of Theory of Change

○ The theory of change, recommended by the global society, is a theoretical framework to avoid stand-alone projects and rather pursue program-type projects that include various sub-projects. With this theory, it is possible to form projects in a more rational way compared to the cost-benefit or the cost-effective analysis.

○ Definition and components
  - The theory of change helps start from the specific goals set in the beginning of an international agricultural development project and

meet step by step the requirements for accomplishing such goals, focusing on changes in conditions including infrastructure required for achieving fundamental goals.

- It consists of a pathway of change, development cooperation projects (intervention), creation of conditions for achieving goals (precondition), indicators, fundamental goals (outcome), and assumption, as described in Figure 3.

○ Procedure of using the theory of change
- First, in the phase of concretization of long-term outcome, all concepts that mention "outcome (performance)" are specified before applying the theory of change.
- Second, in the phase of developing the pathway of change as the core of the progress of change, all preconditions (detailed projects) related to performance and outcome are classified and specified in detail as a method or a plan to bring about consistent and continuous changes for the long-term outcome.
- Third, in the phase of measuring outcome, it is needed to enable the measurement of result after completing the map of the pathway of change, and provide basic answers about what precondition and evidence can help accomplish the change.
- Fourth, in the phase of defining development cooperation projects and activities (intervention), it is crucial to distinguish achievable and unachievable outcome, thereby deciding what strategies in the map can be actually utilized and ensuring rational management of performance based on expected results.
- Fifth, in the phase of clarifying assumptions, it is particularly important to make it clear why each precondition is important for accomplishing goals and whether such a precondition is sufficient to achieve the long-term outcomes.

Figure 3. Components and Plans of Pathway of Change
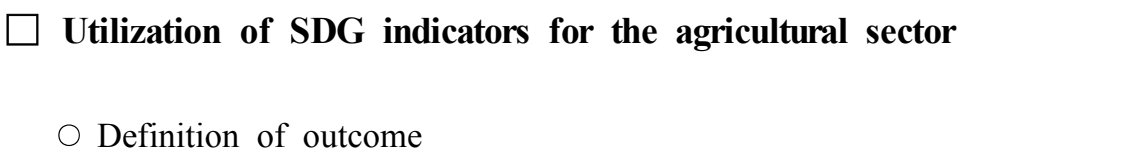
☐ Utilization of SDG indicators for the agricultural sector

○ Definition of outcome

Figure 4. Definition of Outcome
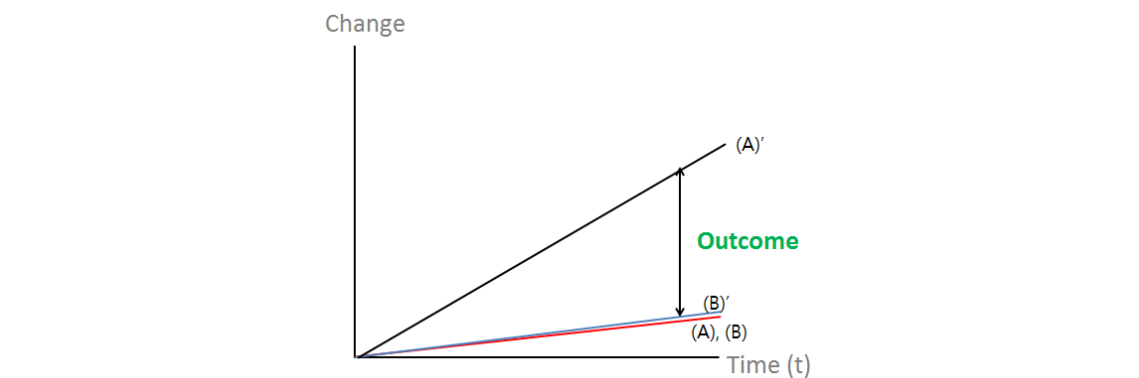
○ Outcome can be measured by selecting Region (A), a target region of the project, and Region (B), a region in similar conditions including population, income, living environment and income sources, and applying the same base-line survey method.

- Conduct monitoring on Region (A) and (B) every year at the same timing.
- Data from monitoring need to be reported by quantifying the level of contribution to the SDGs.
- Conduct a study for indicators related to production by considering the sowing and harvesting seasons.

○ The SDG indicators are the first priority among all utilized indicators, and other indicators should be compatible with SDG indicators.
- For indicators, for which it is impossible to collect relevant data on an annual basis, annual data can be formed by measuring and estimating based on the rate of change or gaps of data of two or three years of period.

○ An example of performance measurement based on SDG indicators
- In case of an agricultural development project for income increase, living condition improvement, and infrastructure establishment in rural areas, select relevant SDG indicators and those related to technical training and education for residents and teachers and students at educational institutions, and utilize them for measuring outcome as described in Table 2.

Table 2. Selection of SDG Indicators Applicable to Rural Development Projects (Plan)

Category	Details
Identifying general status	1. Proportion of population below $1.25 (PPP) per day (MDG Indicator) 2. Proportion of population living below national poverty line, by urban/rural (modified MDG Indicator) 5. Percentage of women, men, indigenous peoples, and local communities with secure rights to land, property, and natural resources, measured by (i) percentage with documented or recognized evidence of tenure, and (ii) percentage who perceive their rights are recognized and protected. 33. Primary completion rates for girls and boys 35. Secondary completion rates for girls and boys 40. Percentage of women aged 20-24 who were married or in a union by age 18

Category	Details
Increasing income	13. Crop yield gap (actual yield as % of attainable yield) 14. Number of agricultural extension workers per 1,000 farmers [or share of farmers covered by agricultural extension programs and services] 2.4. Cereal yield growth rate (% p.a.) 2.5. Livestock yield gap (actual yield as % of attainable yield) 2.9. Access to drying, storage and processing facilities 2.13. Public and private R&D expenditure on agriculture and rural development (% of GNI) 42. Average number of hours spent on paid and unpaid work combined (total work burden), by sex 5.3. Percentage of women without incomes of their own
Improving living environment	45. Percentage of population using safely managed water services, by urban/rural 47. Percentage of wastewater flows treated to national standards [and reused] – to be developed 6.2. Percentage of population with basic hand washing facilities with soap and water at home 6.5. Percentage of beneficiaries using hospitals, health centers and clinics providing basic drinking water, adequate sanitation, and adequate hygiene 50. Share of the population using modern cooking solutions, by urban/rural
Creating rural infrastructure	16. [Crop water productivity (tons of harvested product per unit irrigation water)] – to be developed 2.9. Access to drying, storage and processing facilities – to be developed

○ It is needed to quantify the result of measurement of SDG indicators to calculate a project's contribution to accomplishing SDGs of the relevant partner country based on the rate or unit of change.

○ In terms of selecting general status indicators, in particular, it is important to consider the characteristics of a project and collect relevant data by utilizing SDG indicators to identify general status.

4. Implications for Performance Management

○ Korea should actively utilize SDG indicators in the whole process of international agricultural development cooperation from the formation of a project to the collection of feedback, thereby contributing to achieving the goals of SDGs.

- In the formation of a project, it is necessary to avoid sub-projects to which SDG indicators cannot be applied. In case such projects should be implemented due to the strong demand from the partner country, it is desirable to develop new indicators compatible with SDG indicators to enable the country to measure outcome.

- In the implementation of agricultural development cooperation projects, it is desirable to consult with the government of the partner country and design assumptions for basic statistics required to analyze the project's contribution to SDGs.

- For the assessment and feedback of the project, it is needed to calculate the level of contribution to SDGs based on measured outcome and quantify the results.

○ It is crucial to adopt and apply the theory of change, rather than a simple causal relationship between input and outcome, to utilize various preconditions (detailed projects) required to accomplish fundamental goals of projects and measure the level of accomplishment of the projects based on quantified indicators.

○ In particular, it is needed to create an efficient outcome management framework and strengthen the capacity of staff.

- Korean agricultural development cooperation projects are implemented by the Ministry of Agriculture, Food and Rural Affairs (MAFRA), relevant institutions and the Korea international Cooperation Agency (KOICA), but each of these relevant institutions implements the

projects in individual strategies, causing the lack of consistency in the performance management system.

○ In the future, the goals of Korea's international agricultural development cooperation projects should be connected with SDGs, and it is important to design plans to measure outcome based on SDG indicators and calculate the level of contribution to SDGs, thereby actively participating in the new paradigm for international development cooperation agreed at the UN summit.