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A Comprehensive Evaluation on Korea's ODA to Rwanda's Agriculture Sector and Its Implications for Strategic Approaches

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I. Introduction: Why Comprehensive Evaluation Matters in CPS-based ODA

There has been a growing consensus in the national and international aid architecture that sporadic or scattered aid modality should be avoided, while aiming at CPS-level performance goals, and seeking national-level development assistance that meets the national development strategies of partner countries is recommended. Country Partnership Strategy (CPS) is primarily designed to maximize synergetic effects, thereby enhancing ODA effectiveness through strategic concentration. It could be successfully achieved in the case that interrelated or connected effects among the individual aid activities are established and internalized through strategic consideration from the design phase in building up ODA implementation policies. CPS, as a mid-term-based ODA approach aligned with the national development plans of each partner country, entails an ODA plan attached with budget allocation, priority areas and implementation tools, which requires a follow-up comprehensive evaluation. This evaluation is based on the view that cluster evaluation – grouping projects with similar purposes into clusters and evaluating overall performance by cluster – will enable comparative evaluation of different project sectors and provide meaningful insights in devising strategic plans for development assistance. With the establishment of the CPS, the demand for comprehensive evaluation of aid performance at the industry level or the overall national development level, rather than at the level of each individual project, has been increasing. World Bank also introduces an evaluation using sub-sectors (hereafter "clusters") of ODA as the basic unit in assessing to what extent ODA has been in conformity with national or sectoral development plan of partner countries. Against this backdrop, this study conducts a comprehensive evaluation of Korea's ODA to Rwanda's agriculture sector and seeks ways to enhance its quality from a holistic point of view. The research pursues evaluation in line with CPS-based ODA policy.

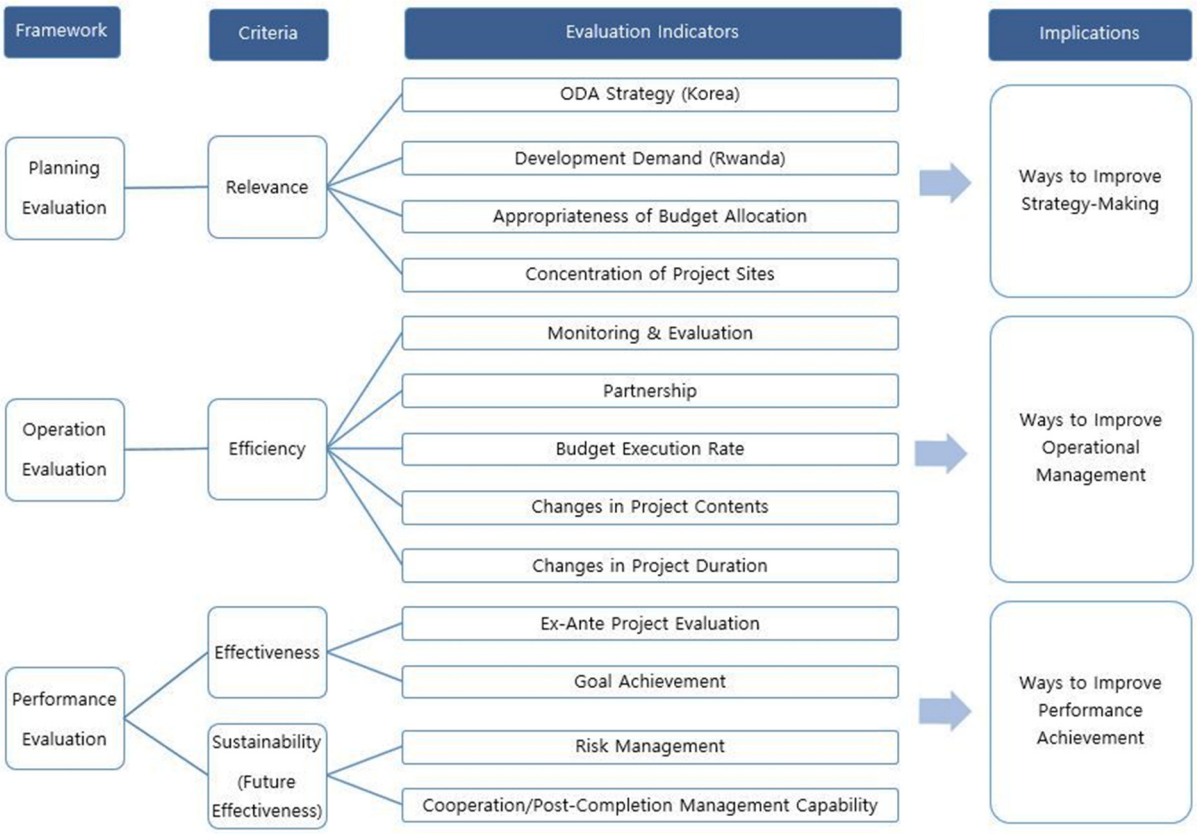
II. A Review of Korean ODA to Rwanda's Agricultural Sector on the Basis of Cluster Classification Criteria

Following the establishment of Korea's CPS for Rwanda in 2013, Korea's ODA to the country has been significantly increasing with volumes more than tripling in 2012–2018. The largest part of the ODA has been concentrated in the agricultural sector, followed by two other priority sectors (education and ICT) in CPS with a wide gap. According to this research, the agricultural sector has been divided into five clusters, and it was observed that Korea has a tendency to disperse aid funds and activities in a more decentralized manner compared to other developed countries. Of the five agricultural clusters, Japan, Belgium and the Netherlands invested nearly 80 percent of their ODA in a single cluster, while Korea positioned its ODA across two clusters (agricultural development and rural development) at 50% and 40% respectively over the same period. In addition, various aid projects of different characteristics were observed within a single cluster, making the fragmentation in Korean aid practice more evident. For example, in the case of the "agricultural development" cluster, three aid agencies have each carried out assistance projects with different characteristics. Aid projects have been executed independently without any link among different clusters. Taking into consideration Korea's relatively small aid scale and insufficient aid capacity, a decentralized resource allocation structure and sporadic aid delivery with a systematic approach such as a selection and concentration strategy are desirable.

III. Cluster Evaluation on Korea's ODA Projects in Rwanda's Agricultural Sector

This study conducted a comprehensive cluster evaluation on Korea's agricultural ODA to Rwanda between 2013 and 2017, with two newly devised indexes: Cluster Performance Index (CPI) and Resource Allocation Index (RAI). Every Korean agricultural ODA project was categorized into five clusters based on each project's purpose code, under the OECD Creditor Reporting System, as well as its actual contents. Subsequently, we numerically evaluated projects in each cluster using criteria widely used in the evaluation of development projects: relevance, efficiency, effectiveness and sustainability. For each criterion, we allocated a weight of 20%, 30%, 20%, and 30%, respectively. Given the difficulty of evaluating the sustainability of capacity training, the weight was adjusted to 30% for relevance, 40% for efficiency, and 30% for effectiveness for training projects in this area. Each project received a score, which was a weighted average of scores it received under each of the four criteria. This evaluation took into account three stages of project cycle: planning, operation and performance. The average score of projects in a cluster then became that cluster's Cluster Performance Index (CPI).

Figure 1. Cluster Evaluation Framework



Source: By author.

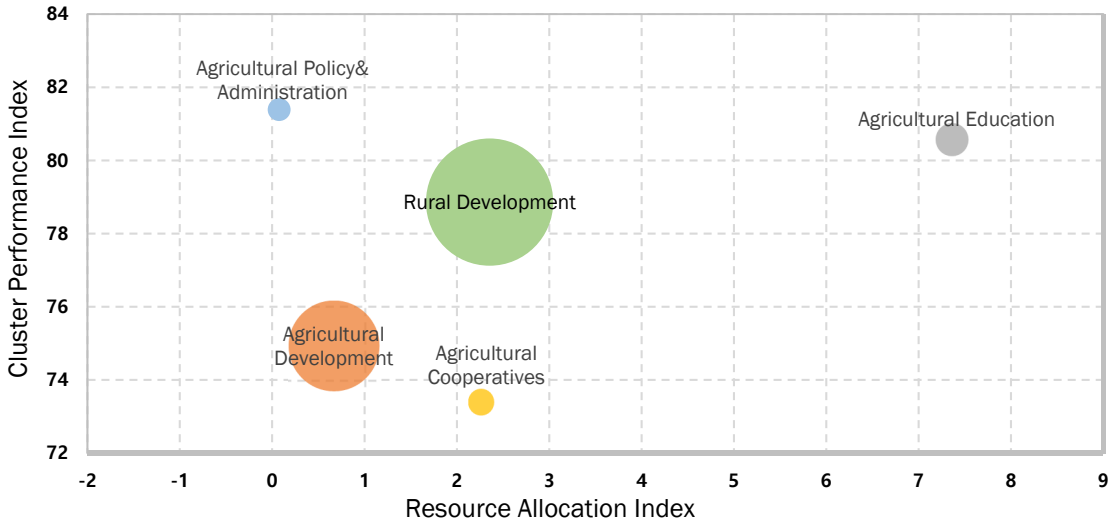
Table 1. Resource Allocation Index of Each Cluster

Cluster \ RAI	ODA to each cluster		ODA to agricultural sector		RAI
	Korea	DAC	Korea	DAC	
C1. Agricultural Policy and Administration	0.66	112.48	33.66	430.08	0.08
C2. Agricultural Development	10.25	195.49			0.67
C3. Agricultural Education and Extension	1.32	2.29			7.36
C4. Agricultural Cooperatives	0.80	4.52			2.26
C5. Rural Development	20.57	111.63			2.35
Uncategorized	0.06	3.66			-

Note: The amounts are 2013–17 bilateral ODA gross disbursement based on 2017 constant USD (million dollars).
Source: OECD Statistics, Creditor Reporting System DB (Accessed on December 21, 2019).

While CPI appraised each cluster's performance in absolute terms, the Resource Allocation Index (RAI) was formulated to assess Korea's presence in the Rwandan agriculture ODA sector, where a number of international actors competitively provide aid, in relative terms. The RAI compared Korean ODA in a specific cluster relative to that of OECD DAC members with Korean ODA to the entire agricultural sector (all five clusters) relative to that of OECD DAC members. Compared with DAC members' ODA practices, Korea relatively allocated more resources to Agricultural Education but less of them to Agricultural Policy and Administration. Out of the two highly-invested clusters, Agricultural Development and Rural development, Korea's presence was higher in Rural Development. The CPI and RAI were then mapped in quadrants to visualize each cluster's performance compared to the amount of funds injected. The key findings of the cluster evaluation are as follows.

Figure 2. Cluster Positioning



Note: Each sector's circle size is proportional to its budget.
Source: By author.

Firstly, in terms of planning or strategy-making, it appears that projects are mostly planned appropriately, but in some clusters, large amounts of the budget have been invested in poorly planned projects. Project sites being dispersed across multiple provinces was also an issue. Although Rwanda's small land area reduces inconveniences caused by such dispersion of sites, it would still be advisable to carry out similar or related projects in neighboring areas and to strategically implement projects in the same cluster within the same district or cell through aid harmonization. Such strategic planning would promote efficiency in project management and lead to synergy between projects.

Regarding operational management, there was considerable room for improvement in all clusters. Particularly, in the Monitoring and Evaluation (M&E) category, all clusters scored below average. The number of monitoring sessions should be increased and the quality of monitoring also needs to be improved. While it is important to build partnerships with aid agencies in the recipient countries in order to increase efficiency of project implementation, all clusters scored only moderately in this category. In terms of budget execution versus budget commitment, most clusters implemented their budgets efficiently as planned. While there were few cases of project periods being extended, there were several cases of modifications being made to the project contents. Considering that project planning cannot be perfect due to the shortage of professional ODA consulting agencies in Korea, this study avoided lowering CPI scores entirely based on the number of changes made. Instead, the background and gravity of each change were carefully reviewed in the evaluation. Nevertheless, some projects had made significant changes that could undermine project efficiency, indicating some improvements would be necessary in terms of the efficiency of project operations.

Concerning performance evaluation, all clusters scored relatively high in effectiveness. Albeit relatively lower than effectiveness scores, clusters received fairly high scores in the sustainability category. Within the effectiveness category, scores were particularly high in goal achievement with many projects exceeding the planned goals. On the other hand, some inadequacies were revealed in ex-ante evaluations of the project implementation environment. While it is important to achieve planned goals, it is also crucial to improve effectiveness by reckoning with the characteristics of the project site. Rwanda's distinctive project environment characterized by a high percentage of unschooled farmers and multiple official languages also necessitates improvement in communication through strengthening the capacities of local coordinators and interpreters, or having dispatched Korean workers learn the local languages.

Lastly, in terms of sustainability, risk management was found to be relatively inadequate in all clusters. Stakeholders, in the interviews, tended to perceive potential risks as relatively less important than other factors. Feasibility study reports also had very little content related to risk analysis, and in-depth analyses were scarce. In some cases, project sustainability was jeopardized due to poor responses to risks. Further efforts should be made to analyze risks at the planning stage, and to enhance risk management capacities. Sharing cases of risk occurrence and successful risk management practices among stakeholders can help. In terms of post-completion management, all clusters scored average. Post-completion project maintenance largely depends on the cooperation with the recipient country as well as the administration capacity of the local government in the project site. For the cases of agricultural projects examined in this study, as projects are mainly carried out

in areas with high poverty rates, the local governments tend to lack capacity. While Korean ODA agencies can do little about the local governments' capacity, they can make efforts to strengthen cooperation with the recipient country to ensure project sustainability. The better the partnership is, the more willing the recipient government will be to maintain completed projects. Overall, in terms of cluster average scores, projects did best in the area of effectiveness, followed by relevance and sustainability, and scored lowest in efficiency.

Figure 3. Cluster Performance Index of Each Cluster

Source: By author.

IV. A Contribution Analysis on Korea's ODA to Rwanda's Agricultural Sector

This research comprehensively analyzed Korea's ODA to Rwanda's agriculture sector through network analysis and contribution analysis. Firstly, the "consistency" of Korea's ODA with regard to the goals presented in the Rwandan national development strategy and the CPS of the Korean government was measured through network analysis. Considering that Korea's CPS is based on the development needs of the recipient country, it could be said that the CPS and Rwanda's national development strategy share common goals, but this study assumes that in reality they could have different priorities and examines both sides independently when measuring the degree of relevance of Korea's agricultural ODA with regard to them. Secondly, using System Dynamics Simulation, this study estimated the contribution of Korea's agricultural ODA to Rwanda's GDP and its employment inducement effect. The contribution of Korean ODA to Rwanda's GDP was analyzed by industry, and the contribution of the agricultural sector relative to that of other sectors was subsequently calculated in proportion. Quantitative measurement of the consistency of Korean project-type ODA with respect to Rwanda's national development needs showed the highest consistency with the goal of expanding agricultural productivity, while there was little consistency with other objectives such as good governance, economic integration, etc. Combined analysis of project-type ODA and training-type ODA showed links, albeit weak, to development goals in fields other than agriculture. Moreover, contribution analysis showed that Korea's agricultural ODA to Rwanda contributed approximately $100 million to Rwanda's GDP in 2016. Agricultural ODA contributed more to Rwanda's GDP than ODA in any other field. This implies that Korea should continue to prioritize the agricultural sector in its ODA to Rwanda. Furthermore, it was estimated that Korea's agricultural ODA has led to an average of about 4,000 jobs being created per year over the analysis period.

V. Policy Recommendations for Improving Korea's ODA Quality

This research draws suggestions and lessons from the aforementioned observations and analysis results and presents several measures to improve ODA quality, summarized as follows.

1) Strategic Planning: Optimizing Budget Allocation

Budget allocation optimization was presented as a means of better strategic planning. Strategic allocation of ODA resources is an important issue to be addressed at the planning stage, given that it is directly related to efficiency and goal achievement. Rwanda is one of Korea's 24 priority partner countries.

ODA budget allocation is becoming more complex as aid sectors in agriculture and aid modalities grow diverse as well as participating entities increase. In turn, strategically deciding how much resources, within a given budget, are to be invested in which sector through systematic analysis has emerged as an important issue. This study seeks ways to optimize budget allocation by applying cluster performance index (CPI) and resource allocation index (RAI) values to Fiedler's Contingency Theory Model. According to the analysis, resource allocation efficiency would be improved if ODA is expanded significantly in the Agricultural Education cluster (C3), gradually expanded in the Agricultural Policy and Administration cluster (C1) and Rural Development cluster (C5), and gradually reduced in the Agricultural Development (C2) and Agricultural Cooperatives (C4) clusters.

2) Strategic Operational Management: Improving Monitoring Efficiency

This research presents measures to improve monitoring efficiency in terms of strategic operational management. Cluster evaluation results showed low overall efficiency scores across all clusters. Among efficiency assessment indicators, scores were particularly low in M&E. Based on stakeholder interviews, this study proposes that considering the distinct features of agricultural ODA projects, agencies could dispatch Korean or local employees in the vicinity of the project site to frequently monitor projects in order to enhance efficiency. Moreover, with projects conducted by multiple agencies, monitoring quality could be improved by enabling monitoring experts to obtain necessary information through direct communication with the recipient government and project beneficiaries, rather than by relying on project implementation agencies. In addition, our findings indicate that project efficiency and performance can only be assessed properly with a thorough baseline survey to refer to. A solid baseline study will help evaluating project progress and performance against project plan. Furthermore, this study emphasizes the necessity to supplement inaccurate survey data through qualitative assessment, given the risk of data collected from surveying farmers lacking accuracy. Lastly, the results of this research suggest that establishing feedback measures for monitoring results warrants more attention and effort.

3) Creating Synergistic Effects Through Cluster Linkage

This research proposes enhancing synergic effects in ODA through cluster integration. Among its five East African priority partner countries, Korea provides the largest amount of agricultural ODA to Rwanda. Compared to other advanced donor countries, Korea's agricultural aid to Rwanda is characterized by decentralized investment of aid funds. Differences in the allocation of funds could be due to

each donor country's unique aid policies or comparative advantages, so it is not an issue to be simply judged right or wrong. However, such dispersed allocation is not desirable considering Korea's limited aid capacity and the "selection and concentration" ODA strategy. This study proposes a creation of inter-cluster linkage or convergence as a strategy to enhance ODA effectiveness. We must seek measures to combine individual projects currently implemented and build a meaningful program. Combining multiple projects and forming a program targeting a single purpose can reduce the administrative burden caused by fragmentation and enhance aid effectiveness. However, since it would be difficult to create a "convergence program" simply by tying existing projects without a framework established at the planning stage, we would need an approach where a core cluster is selected as the backbone and other clusters are linked around it or reinforced with future projects.

4) Developing Agricultural Value Chain Program

Lastly, this research presents the agricultural value chain program approach. Rwanda's agricultural development strategy aims to shift away from its subsistence-level agriculture and transform into a market-led structure, while Korea's CPS is aimed at increasing agricultural productivity and increasing farmers' income by strengthening self-help capacity in rural communities. Considering Rwanda's development goals and Korea's aid objectives, Korea's ODA approach needs to expand beyond the current individual project level to a higher program level supporting the value chain. Given Korea's limited aid capacity and experience, it is likely that Korea will only be able to plan "narrow-range" value chain projects in the initial stage, and it would first need to seek connection and convergence between the agricultural sector and other key areas such as education and ICT. This is also presented as an important strategy in Korea's CPS. Rwanda is a country with underdeveloped agriculture which has been pushing for transformation in its agricultural structure through value-added agricultural products, with demand expected to surge in the agricultural industry; in turn, Korea should include areas such as agro-processing, packaging, and quality control technologies in vocational education and training projects to seek synergy in ODA. Projects that connect agriculture with ICT should also be actively promoted. ICT can provide solutions for improving access to technical information (cultivation techniques), spreading market information on agricultural products (trading volume and price), and increasing financial accessibility (mobile microfinance and payments). In Rwanda, the proportion of people who own mobile phones has surged from 6% in 2006 to 71% in 2017.

To successfully lead Rwanda's agricultural ODA, efficient operation (implementation) management must be emphasized along with systematic planning (strategic) management. Many of the improvement measures presented in this study regard planning and management. As most agricultural ODA projects are carried out in rural areas with poor conditions, problems such as additional expenses due to unexpected logistical costs and delays in project schedules are occasionally inevitable. Considering such realities, giving suggestions on strengthening the planning capacity may be more constructive than repeatedly pointing out similar problems that recur in operational management. For instance, rigorous feasibility studies and basic design studies (BDS) based on sufficient information can lead to better project plans. Budget allocation at the planning stage is also important in terms of efficient strategy-making because funds should be allocated appropriately to each cluster early on for ODA predictability and effectiveness to be enhanced. Enhanced aid predictability helps improve the stability of project operations, which can lead to higher aid quality. Rational allocation of aid funds is also in line with the policy demand calling for a top-down approach. Without proper planning and adequate resource allocation corresponding to each cluster's respective potential aid effectiveness, there will be limits to achieving goals no matter how much effort and time is spent on operation and management. While it is important to increase the overall quantity of aid, in terms of achieving objectives, it is essential that given budgets are strategically allocated and efficiently executed. KIEP