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Charles Leyeka Lufumpa
Chief Economist Complex (ECON)
c.lufumpa@afdb.org
+216 7110 2175

Abebe Shimeles
Ag. Director, Development Research Department (EDRE)
a.shimeles@afdb.org
+225 2026 2420

Bernadette Kamgnia
Ag. Director, African Development Institute (EADI)
b.kamgnia@afdb.org
+225 2026 2109

Adeleke Salami
Coordinator, Development Research Department (EDRE)
a.salami@afdb.org
+225 2026 2551

Korean Experiences in Agricultural Development and Policy Proposals for Structural Transformation of African Agriculture and Rural Space (STAARS)

Korea Institute for Rural Development[1]

This article summarizes relevant policies for the structural transformation of African agriculture and rural space based on Korean experiences in agricultural development and transformation through KSP-AfDB joint consulting in 2015. It highlights policy alternatives to support the structural transformation of agriculture and rural space by analyzing the agricultural development status of Tanzania and Uganda among the Sub-Saharan African countries, and by conducting a comparative analysis with Korean agriculture and experiences in rural development. Since 2004, the Ministry of Strategy and Finance in Korea (MoSF) has been conducting the Knowledge Sharing Program (KSP) with a number of developing partner countries. In 2011, the MoSF initiated the joint consulting program as a new type of KSP with international organizations including the AfDB. This article is one of the outcomes jointly realized by Korea Eximbank and AfDB in 2015.

1 | Introduction

Agriculture in Africa is vital to the development of African nations. Africa's agriculture accounts for a high portion of the economies of a number of African nations in terms of GDP, employment, and food security. Despite the significance of agriculture, the agricultural industry is relatively stagnant compared to other industries in Africa. In the case of Sub-Saharan Africa, overall economic growth has recovered since 2000, but the proceeds from growth have not been spread equally, resulting in discrepancies in urban and rural areas and serious poverty among rural populations (AUC, 2014a).

In order for African countries to break out from their stagnant agriculture, overcome the limitation of small-sized subsistence farming, and enhance agricultural productivity, it is necessary for them to carry out strategic

[1] Korea Institute for Rural Development is a prominent institute studying agricultural and rural development in Korea; it has been in consultation with many international programs regarding rural development. For this article, the KSP team was composed of Dr. Park Hwa Soo, Dr. Koh Young Kon, Prof. Yoo Byung Rin and Mr. Lee Kyong Koo.

policies for supporting the structural transformation of African agriculture and rural space (STAARS). In this sense, exploring relevant policies for STAARS will contribute to poverty reduction among rural populations and the national development in Africa.

For both Tanzania and Uganda, the proportion of the rural populations out of their total populations is high, and they rely on small-scale, subsistence farming and suffer from low agricultural productivity and stagnation (Government of Uganda, 2006; Bank of Tanzania, 2011). The causes of agricultural stagnation will be analyzed in terms of: 1) socio-cultural and natural environments related to agricultural and rural development; 2) the input of production factors; 3) the education level, perception of farming improvements and attitudes to technology adoption among farmers as actors in agricultural farming and management; and 4) institutional frameworks and capacities for implementing agricultural improvements.

The causes for the stagnation of Tanzania and Uganda's agricultural and rural development are mixed with socio-cultural and natural factors. In most African countries including, Tanzania and Uganda, the socio-cultural elements that have been created through the historical and cultural living environments, such as families, tribes, and villages, have been reflected in their farming, land systems, heritage, and customs, are affecting agricultural production, and are in part acting as stagnating factors in agricultural and rural development.

In many African countries, communities have been formed by blood ties. Agricultural production is carried out as small-scale, subsistence farming by families or villagers based on their blood ties or region. Therefore, an awareness of cost and profit in farming is relatively low. Although recently, in some areas near the cities, some farms react to market signals, more needs to be done to provide farms with higher profit incentives for farming.
The reality in Tanzania and Uganda is that they lack significant investment in agricultural and rural development (Koh, 2014; Diao et al, 2015). In order for them to effectively utilize limited resources, rather than a dispersed investment, they will have to concentrate their investment in areas with relatively higher productivity. The decentralization of the two countries can be an obstacle to effective concentrated investment. In the future, both countries will have to prioritize areas of investment in order for them to focus their limited resources in areas and regions with relatively higher productivity.

There may be many factors for the low land productivity in Tanzania, but one of the main reasons could be that the irrigation facilities are not well developed due to rain-fed agriculture that depends on rainfall. The reason why Tanzania and Uganda do not develop irrigation facilities and improve the quality of soil is that the government and most farmers do not have the capabilities to invest in agricultural infrastructure. Although the initial investment in agricultural infrastructure requires a relatively higher level of investment, as well as support from the government or investment from foreign sources, real investment has not been sufficient.

Major causes of the low productivity in agriculture of both countries include poor farming inputs, insufficient technologies and related extension systems, limited market accessibility due to lack of regional infrastructure, and undeveloped financial systems. Further, the low education level of farmers who are actors in agricultural production and management, and their lack of motivation to improve farming and their negative attitude in the adoption of new technologies can also be among the major causes of stagnated agricultural and rural development.

The input of fertilizers is lacking in enhancing productivity, and the linkage between R&D and its extension is inefficient in Tanzania and Uganda (Shimeles et al, 2015). They have limited infrastructure, such as rural roads and distribution facilities, for agricultural products. The underdeveloped financing system is making it harder for farmers to access agricultural financing (Munyambonera et al, 2012). Tanzania and Uganda's functions to implement agricultural policies are decentralized and market oriented. However, since the functions are carried out by different ministries, there is a lack of consistency in policy implementation and coordination, and in the establishment of a good governance system.

2 | Korean experiences in agricultural development and structural transformation

2.1 Gender differences in employment

The structural transformation of Korea's agriculture was pursued with the rapid growth in Korea's economy and industrialization in the late 1960s, and also through the interaction between the agricultural and manufacturing sectors (Economic Planning Board, 1982, 1994). The acceleration of urbanization due to economic growth led to an increase in the demand for agricultural products, and the farmers awakened witnessing the development of manufacturing and other industrial sectors, and the relevant advanced technologies were spread to the agricultural sector. Investment in social overhead capital such as roads, in the process of economic development, led to easier transportation of agricultural products, and the supply of farming materials such as fertilizers, thanks to the development of industry, contributed to the enhancement of agricultural productivity.

Korea's agricultural and rural development went through a 3-staged development process as seen in Table 1. From the 1960s to 1970s, in the early stage of development during the pursuit of sustainable economic growth, the government directed policy concentrating on food production and self-sufficiency in staple grains to address food shortages and poverty. From the 1980s to mid-1990s, in the latter stage of development, the government focused on the enhancement of agricultural productivity, increasing agricultural household income, and the improvement of the agricultural structure. After 2000, Korea's agriculture entered the 'global era' and faced the new environment of market opening and trade liberalization in agricultural products, and the government had to go through a major transformation in its policies such as reducing subsidies on agricultural products (KDI, 1984; Economic Planning Board, 1994; ISF, 2014).

Korea's agriculture experienced a rural exodus due to rapid economic development in the 1970s, but managed to respond to the reduction in the rural workforce by increasing capital investment (Lee, 1997; Lee, 1999). In other words, without major changes in land input, the government increased the input of intermediary goods along with the input of capital. From 1970 to 2012, total agricultural output increased annually with the slow relative increase rate of output. As result, Korea's actual labour productivity per household in agriculture was KRW 2,465 per hour in 1970 and KRW 13,972 per hour in 2012, showing an increase index with 5.67 times in Table 2.

Recently, Tanzania and Uganda's agricultural productivity has remained at a very low level due to a lack of inputs, technological extension, and so on. The agricultural productivity of sub-Saharan Africa in constant 2005 US dollars had increased from an average of USD 474 to 705. However, in the case of Tanzania and Uganda, it was stagnant at a low level that ranged from USD 275 to 355 in Tanzania and from USD 220 to 217 in Uganda as shown in Table 3 (World Bank, 2015). Over the same period, agricultural productivity in Korea increased from USD 11,116 to 26,415.

Table 1 Agricultural development of Korea by period

	Earlier Development (1960s-1970s)	Later Development (1980s-1990s)	Globalization Era (2000s-)
Economic policy	Poverty reduction Self-reliance economy	Economic growth Industrial development	Economic maturation Knowledge-based society
Goal of agricultural development	Agricultural production Self-sufficiency in staple food-grains	Enhancing agricultural productivity Creating farmers' income	Strengthening agricultural competitiveness Enhancing quality of rural life
Strategy of agricultural development	Seed improvement, Technology development and extension Food production	Fostering commercial farms Increasing off-farm income	Promoting sustainable agriculture Integrated rural development

Source: KSP team based on the literature.

Table 2 Trend of agricultural productivity in Korea

	1970	1980	1994	1995	2000	2010	2012
Labor productivity per household (KRW/hour)	2,465	3,506	10,540	9,593	11,017	15,480	13,972
(index)	(100)	(142)	(427)	(389)	(446)	(628)	(567)

Source: NH Economic Research Institute 2013.

Table 3 Recent agricultural productivity (constant 2005 US dollars)

	2000 (A)	2013 (B)	B/A (%)
World	1,066	1,377	129.2
Sub-Saharan Africa	474	705	148.3
Tanzania	275	355	129.1
Uganda	220	217	98.6
Korea	11,116	26,415	237.6

Source: World Bank, World Development Indicators.

Continuous public investment in agricultural and rural development areas led to support in agricultural development and structural transformation. When formulating budgets, the government strengthened investment in agricultural infrastructure, such as the consolidation of arable land and agricultural irrigation, and conducted a dual pricing system for rice production with the aim of achieving income stability, higher production motivation for farmers, and the stabilization of inflation. In Korea's agricultural development and structural transformation, the improvement and strengthening of agricultural cooperatives' functions led to a nationwide agricultural financing and rural household credit system.

As a result of 40-year-long comprehensive economic and agricultural development projects undertaken since the 1960s, Korea could achieve a remarkable agricultural structural transformation as well as economic development as seen in Table 4 (KDI, 1981). Due to economic growth, the rural population ratio of the total population was reduced from 58.2% in 1960 to 8.6% in 2000, and the agricultural production proportion of GDP was reduced from 36.8% in 1960 to 4.9% in 2000 (World Bank, 2015). Moreover, the agriculture employment ratio was reduced from 63% in 1960 to 10.5% during the same period. Concurrently, due to the restructuring of farmland, cultivation area per agricultural household increased from 0.9 ha per household in 1960 to 1.4 ha per household in 2000 (Whan, 2015).

Compared to other advanced countries, Korea's agriculture went through a relatively drastic structural transformation in a short period of time. The structural transformation was accelerated with market internationalization and opening that started in the 1990s. As seen in Table 5, agricultural structural transformation in advanced countries was achieved gradually over 40 to 70 years; in Korea, however, this was achieved within 25 years along with industrialization. Dramatic growth in Korea's economy enabled rapid structural transformation in agriculture; even though the contribution of agriculture to the nation's economy has decreased dramatically.

Table 4 Korea's economic development and agricultural structural transformation

	Year 1960	Year 1980	Year 2000
Economic growth rate (annual average, %)	2.3	-1.7	8.9
Per capita GDP (USD)	79	1,713	11,951
Proportion of rural population (%)	58.2	28.4	8.6
GDP share of agricultural production (%)	36.8	16.2	4.9
Proportion of employment in agriculture (%)	63.0	34.0	10.5
Cultivated acreage per farm household (ha)	0.9	1.0	1.4

Source: Korea Rural Economy Institute, National Statistics Office, and the Bank of Korea.

Table 5 International comparison of agricultural structure

	GDP portion of agriculture			Employment portion of agriculture		
	Point of 40% time	Point of 7% time	Years taken	Point of 40% time	Point of 16% time	Years taken
United Kingdom	1788	1901	113	1800	1868	68
Netherlands	1800	1965	165	1855	1957	102
United States	1854	1950	96	1897	1950	53
Germany	1866	1958	92	1900	1942	42
Japan	1896	1969	73	1940	19071	31
Korea	1965	1991	26	1977	1991	14

Source: Lee (1997).

2.2 Consideration of Agricultural Policy in Korea

Korea pursued government-led policies to effectively achieve the goals of agricultural development, which were the reduction of poverty and increase of agricultural productivity, responding to potential possibilities or market failure during the early stage of agricultural development (Wharton, 1963; Lee, 1999). In general, agriculture that depends highly on the natural environment is regarded as an infant industry with relatively more possibility of market failure than other industries. The following elements could lead to potential market failures in agricultural development:

- Uncertainties of agricultural economy and imperfect competition
- Unstable prices due to non-elasticity of supply and demand of agriculture
- The nature of public goods of agricultural infrastructure such as irrigation
- Public service taking charge of agricultural R&D and extension
- Disparity of income between agriculture and non-agriculture, urban and rural areas
- Asymmetric information of farmers and the limitations of their bargain power

In the early stages of agricultural development in Korea, agricultural development policies were carried out under the government's initiative in order to achieve the goals of agricultural development in a short period of time and visible progress in agricultural structural transformation, while responding to the abovementioned elements, with the possibilities of market failure. In particular, among the factors above, market functions were ineffective in: 1) building agricultural infrastructure such as irrigation facilities, 2) R&D and extension system of agricultural technologies, and 3) policies to alleviate the income discrepancies between the rural and urban population. For this reason, Korea pursued government-led policies and strengthened public investment for effectively responding to potential market failure.

The agricultural development policy was, in part, consistent with the government-led national development strategy to overcome poverty and achieve sustainable growth in a short period of time. However, in terms of overall economic or agricultural development policies, Korea did not focus only on government-led policies. In the early stages of development, Korea had scarce resources to work with, the domestic markets were small, and purchasing power was low due to low income levels. In order to overcome these limitations, the Korean government carried out government-led policies to enhance efficiency in resource allocation responding to potential market failure. Finally, Korea's economic policy, including agricultural policy, could be defined as a mixed-economy policy, tuning and harmonizing market functions in certain areas when required.

The agricultural development strategy in developing countries is a debate of whether to promote market-oriented policy with emphasis on market mechanisms or to pursue governmental-led policy. In many African countries including Tanzania and Uganda, there is a tendency to pursue market-oriented policies in accordance with neo-liberal economic principles in agricultural development strategies. That tendency, however, is not always applicable. This is because agriculture has relatively more possibilities of market failure than any other industry, and because market-oriented or government-led policies have to be managed and operated appropriately so as to reflect the agricultural and economic circumstances of a nation.

The KSP team's recommendation for the agricultural development policies in Tanzania and Uganda is to maintain the basic policy direction as market-oriented, and to apply government-led policies in certain fields to improve efficiency in resource allocation and to respond to some risks of market failure. However, public intervention based on government-led policy cannot completely replace market principles. The premise for government intervention should be transparency in policy execution. If there is no transparency, it could lead to more serious side effects from government intervention than from market failure. Therefore, government intervention should predict the cost and benefit of regulation so that government failure does not exceed market failure.

Korea achieved the goals of agricultural development, the increase of agricultural productivity and the self-reliance of staple food, through government–led agricultural policy during the early stage of development. However, it experienced several cases of price distortion and the impact of fiscal deficit where the government intervened in agricultural policies. Examples of price distortion brought about by governmental intervention can be found in subsidies for agricultural inputs such as fertilizer and machinery (Shimeles et al, 2015). The Korean government supported a subsidy of approximately 20% for fertilizer in 1970s, which resulted in a great increase of agricultural productivity through the increased input of fertilizer. The subsidy policy, however, also brought about a shortage of financing and inevitable borrowing of currency from the Central Bank.

Whether the government pursues market–oriented policy or the government-led policy in agricultural development is an issue of policy choice and harmonization for achieving the goals of development. The policy choice does not seem to be an issue of

mutual confrontation. It requires a consideration of the agricultural situation, the seriousness of problem that the government faces, and the goals of agricultural development that the government desires to reach.

In this regard, Korea pursued government-led policy to achieve the goal of agricultural policy; to increase agricultural productivity and to release the food shortage, even though it allowed side effects to some extent, such as price distortion and the impact of fiscal deficit from government intervention. These experiences in Korea will provide useful implications for agricultural policy implementation in Tanzania and Uganda. Thus, Tanzania and Uganda are required to principally keep current market-oriented policy in terms of macro direction. However, they are recommended to implement government-led policy with selection and harmonization for increasing agricultural productivity and sustaining structural transformation, while considering the serious stagnation of agricultural and rural development in certain sectors.

3 | Comparative analysis of both countries' agriculture and Korea's experiences

When comparing the current status of agriculture and rural space in Tanzania and Uganda to Korea in the past, the high proportion of agricultural population out of the total population, small-sized subsistence farming, and low productivity are quite similar as seen in Table 6 (KDI, 1981; Jun, 2002). Korea also suffered from food shortages in the early stages of development, just like today's Tanzania, and had low market accessibility due to a lack of regional infrastructure.

The difference between Tanzania and Uganda's current agricultural status and that of Korea's is that the two African countries' major crops are sorghum and other farm products, whereas Korea's major crop is rice. One of the most important factors to enhance productivity in crops and rice is the input amount of agricultural materials such as fertilizers. The two African countries have huge limitations in production capabilities and input distribution systems since they rely on imports for their fertilizers, whereas Korea could easily undertake distribution by producing the inputs such as fertilizers by itself, showing a huge difference in terms of the input of production factors to enhance productivity (Table 5).

One implication when trying to reflect Korea's experience in agricultural development for Tanzania and Uganda's structural transformation is how to overcome small-scale and self-sufficient farming with the purpose of survival (Deininger and Ali, 2008; Ravnborg et al, 2013; Bhargava, 2015). The fact that Korea overcame the limitations of small-scale and self-sufficient farming by increasing the percentage of cash income through the specialization and commercialization of farming and increasing non-agricultural income can be a clear implication to the partner countries.

The structural transformation of Korea, from subsistence to commercial farmer, and from labor intensive to capital and technology intensive farming despite maintaining small-scale farming, offers significant implications (Lee, 1999). The answer lies in the specialization of agricultural production. Specialization enables an increase in the number of specialized products without any changes to the total size of farming. The farmers can focus on improving the production technologies of a few specialized products; when the number of farmers producing the same kind

Table 6 Comparison of agricultural status between both countries and Korea

Index		Tanzania	Uganda	Korea	
		(2000s)	(2000s)	(1970s)	(2000s)
Rural population	% of total population	75	62	42-27	8-5
Share of agriculture	% of GDP	32	25	29-13	4-2
Farming scale	ha/household	2.2	1.9	1.5	2.1
Inputs	fertilizer kg/ha	44	8.6(2009)	162	233
Market access	accessibility	hard	hard	a little hard	easy
Irrigation	water control	poor	poor	poor	well
Financing	lend for farmers	hard	hard	a little hard	easy
R&D / extension	function	separated	separated	single	single
Agricultural policy	basic direction	market oriented	market oriented	government led	transfer to market oriented
Investment resources	financial resources	very lack	very lack	a little lack	no lack

Source: KSP team based on agricultural data of Tanzania and Uganda.

of products in a certain region increase, that region becomes the main production cluster for those certain products.

The fact that specialization by farms played a decisive role in Korea's agricultural structural transformation should be kept in mind. The specialization of production and creation of production complexes are based on a high-level agricultural distribution system. Smooth distribution should be a prerequisite, and information on distribution and supportive financial systems must be developed. That said, for the structural transformation of Tanzania and Uganda, commercialization through the specialization of agricultural production will have to be carried out gradually together with the development of transportation, communication, and financial systems.

Agricultural financing is a major policy means to facilitate increased productivity by supporting the farmers with capital to purchase agricultural materials and other capital goods. However, Tanzania and Uganda have underdeveloped financial systems and no exclusive institutions for agricultural financing. Agricultural financing is only provided to large-scale agricultural producers or processors limitedly, and small-scale farms rarely have access to it (Munyambonera et al, 2012). In Korea, however, agricultural financing and the supply of agricultural materials is carried out by the agricultural cooperative, an exclusive institution for agricultural financing (KDI, 1981; KDI School, 2013; ISF, 2014). Therefore, in terms of a mid to long-term perspective, Tanzania and Uganda will have to establish new agricultural finance systems.

The two African countries have very few investment resources for the agricultural sector, whereas Korea could cover the resources needed to invest in agricultural and rural development with the domestic tax revenue thanks to economic growth. Therefore, the partner countries will have to focus on policies that can mobilize investment resources when carrying out their agricultural policies. To increase agricultural productivity and accelerate structural transformation, the development and extension of appropriate technologies plays a very important role (Mosher, 1966). In the 1960s to 1970s, Korea focused on technological development to alleviate food shortage issues. In the 1970s, due to economic growth, the consumption of rice and other agricultural products increased drastically, so Korea faced a chronic food shortage problem. Therefore, the government focused the development and extension of technologies on high-yield varieties that could increase production dramatically.

In the 1980s, agricultural policies changed to increase agricultural household income and the government focused on technologies that could reduce the labor force and increase agricultural household income. In particular, in producing rice, machinery technologies were developed to reduce the labor force and to decrease production costs drastically. In the late 1980s, due to the increase in national income, dietary patterns changed with increased consumption of meat, vegetables, and fruits. Accordingly, agricultural technological development also focused on developing fresh vegetables to meet the changes in demand. In 2000, the increasing import of agricultural products due to higher agricultural production and the opening of the market with an excess in agricultural products led to price drops, and the food preferences of consumers changed to safer, high quality food, leading to a focus on developing agricultural technologies for safer products and the better health of customers.

Korea's agricultural technology's extension system is unique because R&D in agricultural technologies and the extension function are undertaken by a single governmental body, the Rural Development Administration. Compared to other countries, Korea's system sees the government spearhead technological development in agriculture and extend these technologies to farming sites.

The partner countries lack fiscal resources for agricultural investment, whereas Korea could secure the resources needed for agricultural and rural investment with domestic revenues. The partner countries have decentralized and market-oriented agricultural policies, whereas Korea in the past carried out government-led policies to respond to potential possibilities for market failure in the early stages of agricultural development. Further, Tanzania and Uganda have different ministries and agencies implementing the agricultural policies, whereas in Korea those policies were led by mainly the Ministry of Agriculture.

4 | Policy proposals for STAARS

4.1 Policy directions for supporting STAARS

The structural transformation of agricultural and rural areas is the process of the agricultural development becoming more advanced in terms of national economy through sustainable and inclusive development in agriculture and rural spaces. The KSP research team, based on the comparative study of Tanzania and Uganda's agricultural status and Korea's experiences, suggests the basic policy direction for the STAARS as seen in Figure 1: 1) commercialization of farming, 2) regional comprehensive development applying Korea's Saemaul Undong, and 3) development of new agricultural finance system.

To accelerate the commercialization of farming, 1) the development and extension of appropriate technologies, 2) the

input of farming materials such as fertilizers and pesticides at the appropriate time, 3) the improvement of market access and distribution, and 4) the promotion of exports are proposed. Appropriate technologies mean technologies that are suitable for farming including seed improvement and distribution, as well as post-cultivation management and processing of agricultural products. Tanzania and Uganda need to develop these appropriate technologies at the appropriate time in accordance with farmer demand, and disseminate them effectively at the farming sites.

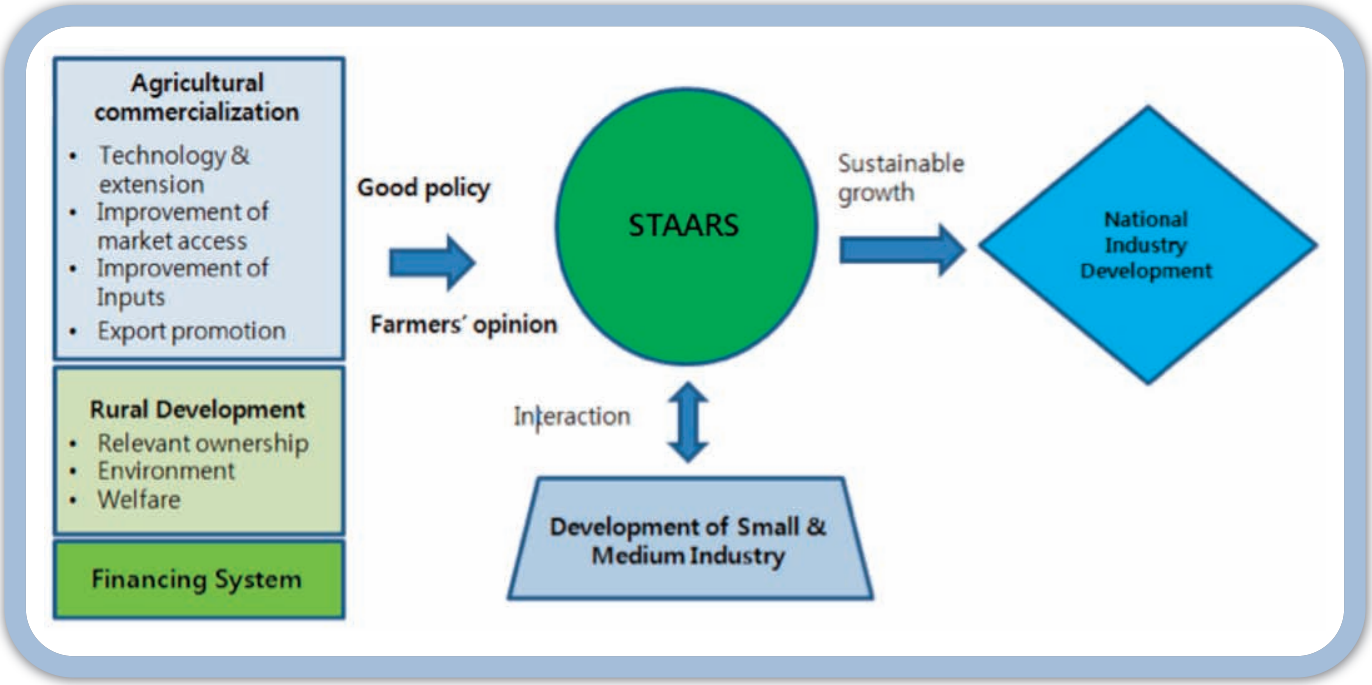
One of the major obstacles to the enhancement of agricultural productivity in Tanzania and Uganda is the lack of input of agricultural materials such as fertilizers (Shimeless, 2015; Bachewe, 2015). In order to overcome this limitation, the countries will have to reduce extra expenses added to the import price of the agricultural materials that the two countries rely upon, and also improve the supply system of the agricultural materials by gradually developing agricultural finance institutions such as the agricultural cooperatives to take charge of the work.

In order to facilitate the commercialization of farming, infrastructure such as regional roads will have to be improved for better market accessibility (AfDB, 2013; Wondemu, 2015). Further, by pursuing the specialization of the production of agricultural products, the countries will have to build distribution facilities such as collection stations and drying storage facilities in the production area, while also endeavoring to create small-scale markets in areas that are close to cities. Moreover, in order to increase added value and promote the export of cash crops being produced in Tanzania and Uganda, they will have to enhance the quality of the products through advanced processing technologies and upgrading brand names for the exporting products.

In Korea, the income gap between cities and rural areas was quite significant in the 1960s when national economy was developed and industrialized; the government encouraged Saemaul Undong to overcome this phenomenon. Through this movement, Korea could reduce the income gap and improve the overall welfare of the people. Based on the success seen in this movement, it is recommended that Tanzania and Uganda pursue the more comprehensive development of their rural areas. Taking Korea's experience in Saemaul Undong as a rural development model, a form of Saemaul Undong project in the partner countries would be feasible as shown in Figure 2.

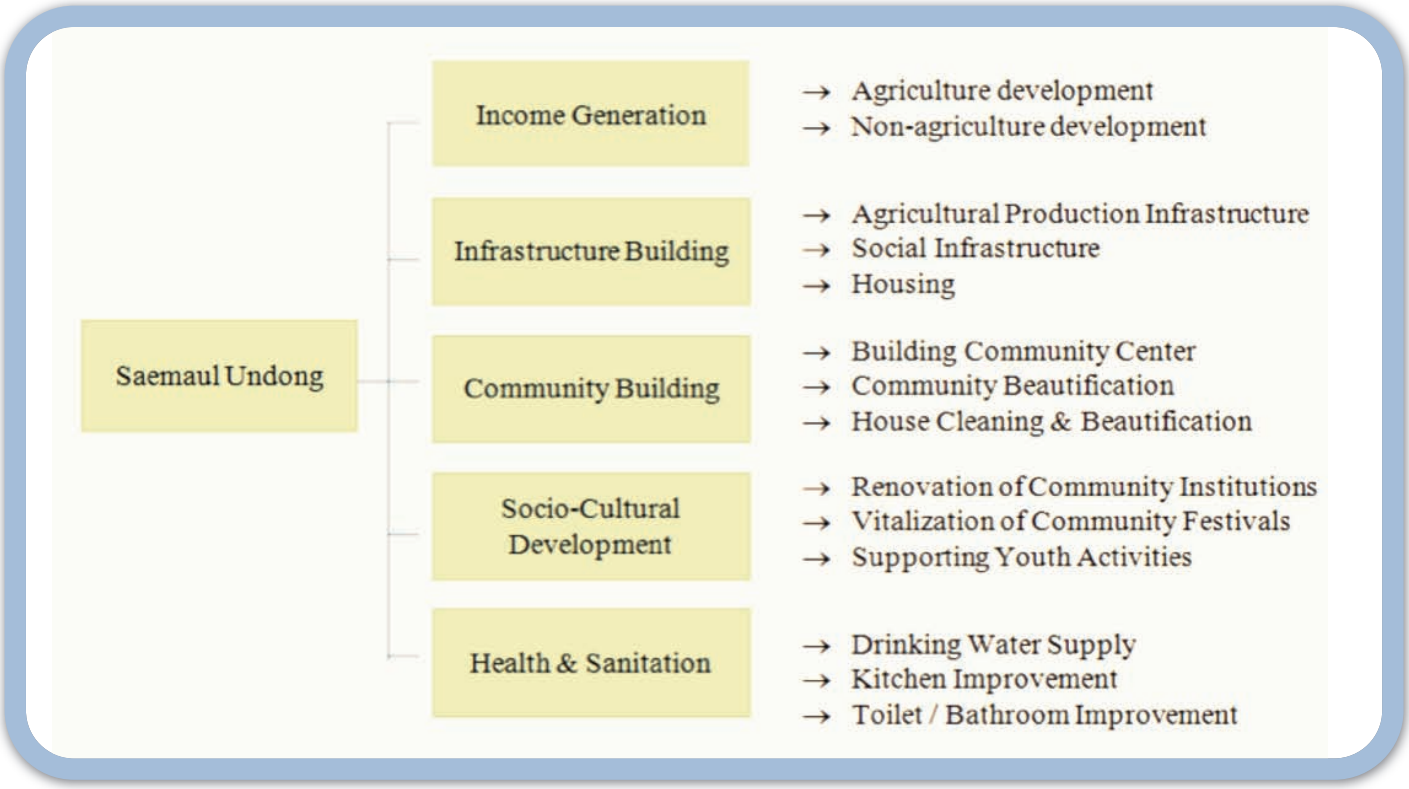
The development of new agricultural financing systems in the two African countries is a very important basic task to support mid to long-term agricultural and rural structural transformation. Korea's experience of developing both agricultural financing and the supply system of agricultural inputs through the agricultural cooperatives provides effective implications for the two partner countries. The KSP team proposes that the two countries

Figure 1 Policy Model for supporting STAARS



Source: KSP team based on the literature.

Figure 2 Example of rural development project by Saemaul Undong



Source: Whan (2015).

reorganize existing agricultural cooperatives into one that has special purposes legally, and newly develop the cooperative as a comprehensive financial institution that concurrently carries out agricultural financing and the supply of agricultural materials.

Regarding agricultural policy direction, Tanzania and Uganda are required to principally keep the current market-oriented policy in terms of a macro perspective. However, it is recommended that they implement government-led policy with selection and harmonization for increasing agricultural productivity and sustaining the structural transformation, while considering the serious stagnation of agricultural and rural development in certain sectors.

4.2 Risks and responses in implementing suggested policies

The policies presented in this report to support the STAARS of Tanzania and Uganda, in fact, face significant risks. A very basic task for the structural transformation in Africa is how to interact with the manufacturing sector from a macro perspective. In pursuing structural transformation, there are limitations to pursuing independent and endogenous development in just agriculture and rural space, especially excluding the development of a small and medium- sized manufacturing industry. However, since many African countries are economically vulnerable in terms of social infrastructure, capital, and technologies that can develop the manufacturing sector, the countries are required to prioritize STAARS in their national development strategy and to pursue the development of the small and medium -sized manufacturing sector gradually.

To support the STAARS, public investment needs to be continuously strengthened. Without the increase of actual investment in the agricultural infrastructure, through the government's budget each year, it will be difficult to facilitate structural transformation. The government will have to increase the ratio of available revenue by reducing the spending of current expenditure and increase the investment in agricultural infrastructure. Further, they need to put efforts into inducing more ODA from the donor countries as well as to take out and wisely use loans from international institutions.

In pursuing the commercialization of farming, urbanization that leads to an increase in agricultural product demand has to be undertaken, but it is highly infeasible to expect urbanization in a short period of time in Tanzania and Uganda. Further, in terms of the supply aspect, the transformation has to be supported with

collection and storage facilities at production sites and delivery and distribution facilities connecting the products to the city of consumption, but investing in these facilities will take time and investment resources.

Also, in applying Korea's Saemaul Undong experience to the rural development projects in Tanzania and Uganda, since the social circumstances and regional distribution differ between the two parties, Korea's experiences should be modified and customized to fit Africa's situation. In order to modify Korea's experiences, 1) the project system will have to be transparent and effective,2) the regional development projects will have to be appropriate for the region's circumstances, 3) the pursuit of this regional comprehensive development project should be well balanced between the top-down strategies of the central government and bottom-up strategies based on the participation of the villagers, and 4) the regions selected for the project should reflect the opinions of the villagers as much as possible.

To support STAARS in Tanzania and Uganda, the establishment of new finance institutions is required. However, there are many risks such as securing a legal foundation, building systems, mobilizing capital, and ensuring institutional sustainability. In order to respond to these risks, the governments will have to raise public awareness regarding the need for agricultural finance, have close cooperation with institutions related to agricultural financing and NGOs, show strong willingness to mobilize initial capital, and engage in continuous negotiation with international organizations and donor countries.

When pursuing structural transformation in agriculture and rural space, it is very important to listen to the farmers' opinions and reflect them in the policies. It will take considerable time and effort to gather and reflect the farmers' opinions in policy formulation. Therefore, the process of reflecting the farmers' opinion into actual policies should be improved.

For the STAARS of Tanzania and Uganda, the real implementation, not just the building of policy and talking for its own sake, is important. In order to effectively implement the policies, the two partner countries will have to improve their transparency, reorganize the structures and functions relevant to agriculture policies and the extension of agricultural technologies, and establish good governance among the those functions.

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