AFICAT Newsletter (Kenya No. 1)

Issued on May 16, 2023

This newsletter presents the activities of the "Africa Field Innovation Center for Agricultural Technology" (AFICAT). In this first issue, we introduce AFICAT and the activities conducted by the Kenyan government and Japanese companies under the coordination of the AFICAT team from September 2022 to February 2023 in Kenya.

What is AFICAT?

1. Background of AFICAT

AFICAT is officially the "Africa Field Innovation Center for Agricultural Technology", whose establishment was proposed during a public–private business dialogue co-chaired by the late Shinzo Abe, former Prime Minister of Japan (at the time), and Mr. Abdel-Fattah El-Sisi, the Chairperson of the African Union (at the time) (current president of Egypt) at the 7th Tokyo International Conference on African Development (TICAD7) held in August 2019. From 2020 to 2021, the Japan International Cooperation Agency (JICA) conducted a survey on establishing and operating AFICAT in Kenya, which have potential for rice production and collaboration between the public and private sectors by facilitating the participation of the Japanese private sector, which has advanced and excellent technologies and products. A subsequent survey since February 2022, which includes preparatory work for the AFICAT operation and pilot activities for a period of two years, has been conducted.

2. Basic concept

The objective of AFICAT is to improve agricultural productivity and the quality of agricultural products and to empower farmers in Africa through collaboration with the Japanese private sector, which has advanced technologies and products.

The basic concepts are as follows:

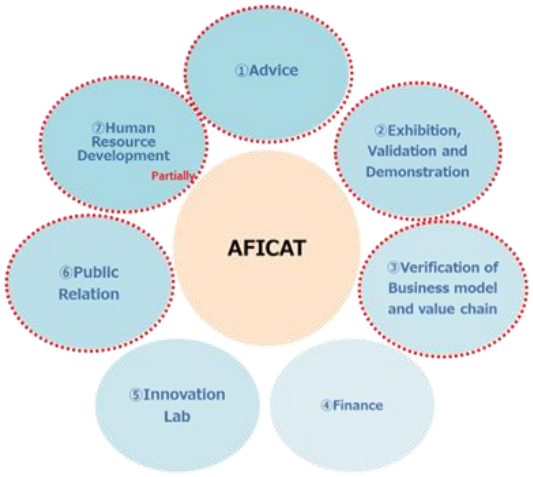
1) AFICAT is operated and managed based on Japan–Africa Public–Private Partnership.

2) Instead of building a new "center," the necessary functions are added to the existing facilities and organizations.

3) AFICAT covers a wide range of agricultural machinery and materials for various agricultural products but mainly focuses on agricultural machinery for rice production and processing during the pilot activity period.

3. Seven functions

AFICAT will have seven functions (as shown in the below figure) directed to the existing facitlies and organizations to promote agricultural mechanization by utilizing the technologies and products of the Japanese companies that may be suitable to the local conditions of the five target countries in Africa. The pilot activity period will focus on agricultural machinery, mainly for rice cultivation, and the following five out of the seven functions will be the main focus: ① Advice; ② Exhibition, Validation, and Demonstration; ③ Verification of Business Model and Value Chain; ⑥ Public Relation; and ⑦ Human Resource Development (partially).



Schematic representing the seven functions that AFICAT uses to support Japanese companies in bringing their products and technologies to African countries

As stated above, pilot activities will be conducted as part of the JICA survey. Based on the experiences and lessons from the pilot activities, the AFICAT team will propose a medium- to long-term implementation policy and an activity plan for agricultural mechanization through private-sector participation.

Activities have started in Kenya!

Photographs of visiting organizations/institutions (top left: KALRO AMRI, top right: ATDC Katumani, bottom left: MIAD, bottom right: rice mill and storage in MRGM).

The AFICAT team conducted its first field activity in Kenya between September and October 2022. They had a discussion with the Engineering Secretary and other members of the Agricultural Engineering Services (AES) under the Ministry of Agriculture and Livestock Development (MoALD) and agreeded to launch AFICAT activities in Kenya with positive consent.

In parallel, the AFICAT team visited some organizations under MoALD, county government agencies, and agricultural cooperatives to gather basic information on the current situation regarding agricultural mechanization in Kenya and discuss the possibility of their collaboration with AFICAT.

For example, Mwea is the largest rice-production area in the county. The AFICAT team visited the Mwea branch of the Kenya Agricultural and Livestock Research Organization (KALRO), which is an agricultural research institute under MoALD. The AFICAT team also toured the Mwea Irrigation Agriculture Development Centre (MIAD), which manages the development of irrigation facilities and provision of irrigation services in the Mwea region, and a famers' cooperative, Mwea Rice Growers Multipurpose Cooperative (MRGM). In Katumani, the AFICAT team visited the Agricultural Mechanization Research Institute under KALRO (KALRO AMRI), which conducts research and development on agricultural machinery, and one of ten Agricultural Technology Development Centre (ATDC) branches that develop and distribute agricultural machinery and technology nationwide.

The AFICAT team also went to Kisumu, a rice-growing region located near Lake Victoria in western Kenya, to visit organizations such as the Agricultural Mechanization Services (AMS) in Ahero, which provides agricultural-machinery services under the county government, the National Irrigation Authority (NIA) in Ahero, an authority responsible for the development of the Ahero irrigation scheme, and a cooperative in Bunyala.

Through this intensive tour, the AFICAT team engaged in lively discussions with each organization/institution and obtained valuable information about agricultural mechanization. During the exchange of opinions, farmers expressed that the introduction of combine harvesters in the surrounding area in the past few years has rapidly progressed the mechanization of harvesting and contributed to the efficiency in farm work. In the future, further agricultural mechanization is expected to improve agricultural productivity, efficiency, and rice quality in Kenya.

The AFICAT team will continue to explore the possibility of collaboration with the organizaitons/institutions mentioned above and implement initiatives to promote the agricultural mechanization in Kenya.

Organizations/institutions visited near Lake Victoria (top left: AMS Ahero, top right: NIA Ahero, bottom left and right: a cooperative in Bunyala and its own combine harvester).

Introduction of HAKKI AFRICA

Founded in Kenya by Japanese entrepreneurs, HAKKI AFRICA Limited (HAKKI) has been providing financing services to taxi drivers who want to purchase used cars, but cannot obtain loans from financial institutions owing to their lack of credit data. HAKKI has created a unique credit-scoring passport using Fintech that enables the delivery of quick and affordable financial services within fewer hours than traditional financial institutions require.

Currently, HAKKI has a business partnership with KiliMOL Ltd. (see below), a Japanese trading company that exports used Japanese agricultural machinery to African countries, and Karasawa Agricultural Machinery Service Co., Ltd., a Japanese company that sells, repairs, and restores used agricultural machinery, to improve the financial access of farmers in Kenya and promote their purchase of agricultural machinery with financial provisions.

The AFICAT team hopes that HAKKI's business will accelerate the dissemination of agricultural machinery among famers, and we will continue to follow up on its activities and share new information through newsletters and other means (The interview was conducted in September 2022).

Hakki founders (left: Mr. Kobayashi, right: Mr. Tokida).

- HAKKI website: https://hakki-africa.com/en/

Ebara Pumps availability improved in Kenya

Ebara Corporation is the largest pump manufacturer in Japan and has been in the pump industry for more than a century. Last year, Ebara's European subsidiary opened a branch in Nairobi, named Ebara Pumps East Africa, to better serve Kenyan customers.

The purpose of Ebara Pumps East Africa is to sell and provide after sales support for Ebara's standardized water pumps. Ebara was established in Tokyo in 1912 and has been operational in the pump industry since then. Today, Ebara has a global production and supply network. Ebara Pumps Europe S.p.A., Ebara's European subsidiary, annually produces more than 400,000 pumps in factories in Italy. Ebara Pumps East Africa stocks water pumps in Kenya to serve customers in the region of Kenya, Tanzania, Uganda, Rwanda, and Burundi. It offers a wide range of products, from

residential pumps to industrial pumps, both surface and submersible types.

The other mission of Ebara Pumps East Africa is to develop a new business that captures the needs of the local market. Specifically, it plans to start a leasing business for solar drip-irrigation equipment. The advantage of this business is that the client (farmer) can benefit from highly efficient irrigation systems without considerable initial investment. Ebara plans to lease irrigation equipment to a client and support the increase in the farm's productivity. The client pays the lease fee for a maximum of three years. Ebara Pumps East Africa plans to launch this new business during 2023.

If you are interested in Ebara products, please contact the branch manager Mr. Samuel Kibet (Phone: +254 722913119 Email: info.epea@ebara.com).

KiliMOL sells used Japanese agricultural machinery in Kenya

KiliMOL Ltd. (KiliMOL) is a Japanese venture company that is 100% owned by Mitsui O.S.K. Lines, which is one of the largest shipping companies worldwide.

KiliMOL has been verifying the feasibility of a small-scale rice-milling business model with the support of the Ministry of Agriculture, Forestry, and Fisheries of Japan. In December 2022, KiliMOL in collaboration with another Japanese company called Karasawa Agricultural Machinery Service Co., Ltd. (Karasawa), introduced Japanese rice mills equipped with destoners manufactured by Kanryu Industry to small-scale local millers within rural villages in Mwea. Since then, KiliMOL has been surveying the profitability of the milling service provided by the local millers. The AFICA team visited the mills in February 2023 and observed the milling services provided by the machinery that can mill both long and short rice. The business model is still at the verification stage; however, the farmers were excited about having rice mills in their village. The thoughts of one of the farmers is shared in the box below.

A Farmer's Voice

We can obtain added value by milling and selling paddy rice. Ultimately, this will improve our livelihood. The selling price of paddy rice is KSH82 /kg, whereas rice is KSH170/kg, according to the farmer.

A small-scale miller is processing rice using a Kanryu rice mill equipped with a destoner.

This initiative is unique because the millers process not only local rice varieties but also one of Japan's famous varieties, "Koshihikari." Good-quality seeds of Koshihikari were previously introduced through a JICA project and then passed on to a local farmer. Now, Mr. Kai Fukui, who runs a Japanese restaurant called "KAI – The Sushi Bar-" in Nairobi, and the farmer work together to grow Koshihikari. Mr. Fukui serves it at his restaurant and sells it to other restaurants. He is now planning to sell the rice to retailers utilizing Kanryu's rice mills because they strictly prevent the mixture of the rice with other varieties.

Thus, KiliMOL is trying to improve the region's rice-milling technology, increase farmers' income, and strengthen the rice value chain by introducing and selling Japanese machines.

Sushi made from Koshihikari rice served at KAI, a Japanese restaurant in Nairobi (bottom right).

One of KiliMOL's businesses is to import and sell used Japanese agricultural machinery via its online marketplace[1]. In June 2021, KiliMOL partnered with Karasawa and has been procuring used Japanese machines from them since then. KiliMOL also showcases and sells the machines at their office space located within the National Irrigation Authority (NIA) Mwea Office. Mr. Mikio Oyama, the KiliMOL CEO, has said that the KiliMOL business has been gaining a good reputation within the country and has attracted many customers that have travelled from far areas.

KiliMOL's other plan is to focus on selling rice transplanters and providing guidance on preparing rice seedlings for the machines, which is crucial for successful rice cultivation. With the right equipment and knowledge, local farmers can improve their yields and profitability, which will contribute to the growth of the agricultural sector in the region. In February 2023, a KiliMOL – Karasawa jointly-proposed project was adopted by JICA's SMEs/SDGs business-support program. Through this project, the two companies will develop a system to produce seedbeds and improve the productivity of rice cultivation through the diffusion of rice transplanters[2].

Used Japanese agricultural machinery displayed and sold in Mwea (from left to right, a Yanmar walking-type transplanter, Mitsubishi walking-type transplanter, Kubota tractor, and Yanmar tractor).

Kubota tractor users' voice

Kubota Corporation (Kubota) is the largest agricultural-machine manufacturer in Japan and ranks third globally considering sales volume.

Given that the Mwea region is known for rice cultivation, there is a significant amount of activity among agricultural-machinery service providers

[1] https://kilimol.net/collections/stocks-in-kenya

[2] https://www.mol.co.jp/en/pr/2023/23019.html

who specialize in tractor cultivation. With this in mind, we conducted an interview with users of Kubota tractors, specifically the L4508, MU5501, and M7040 models. Among these models, the L4508 is the most stuitable for use in paddy fields and has the potential to greatly improve work efficiency. We would like to share some of the farmers' comments below.

Kubota Tractor Users' Voice

"I first came across Kubota tractors when I attended a demonstration held by NIA and was impressed by their high operation performance. After confirming their performance, I purchased two more tractors. The outstanding features are (1) the durability of the machine, (2) the engine, and (3) the lightness of the tires. The durability of the tractors is particularly impressive. I have been using them for about three years and have had no major problems with them. The depth and spacing of the L4508's tire treads are suitable for paddy fields, making it easier to drive than other tractors."

Kubota tractor owners and operators.

Kubota products are sold at its local distributor, Car & General. If you want to learn more about Kubota's business in Africa, please read the article in its web magazine, "Kubota Press," which you can acess through the URL below:

- Kubota website: https://www.kubota.com/
- Kubora Press "Empowering Africa through Paddy Farming and Japan's Rice-Cultivation Technologies": https://www.kubota.com/kubotapressjp/africanrice/index.html

Fujita's innovative potato storage

Fujita Corporation (Fujita) is one of the leading construction companies in Japan. Among its various strong fields and technologies, Fujita has also gained a reputation in building potato-storage facilities. Fujita entered the Kenyan market in 2018. Since then, Fujita has been expanding its business with a geographical focus on rural areas. Fujita's latest initiative involves the enhancement of the potato value chain (VC) by constructing innovative potato-storage facilities that enable the storing of potatoes for longer periods. Fujita is currently constructing one storage facility in Nyandarua in collaboration with a local investment cooperative, Muki Investment Cooperative Society.

During our visit to the storage facility, the AFICAT team learned that the facility incorporates a passive design that harnesses the power of nature to keep the internal temperature at an optimal range of 12–15 °C without requiring electricity. Fujita has rigorously tested prototypes and incorporated innovative features such as a double roof to prevent solar radiation from heating up the storage as well as a cyclone ventilator to regulate the carbon dioxide produced by potato respiration. This versatile storage facility can also be used to store other crops, which provides farmers with a valuable asset that will benefit them for the next 30–40 years. Therefore, Muki Investment may find this to be an attractive investment opportunity because the construction funds can be paid back in 10–20 years.

During our discussions, Muki Investment mentioned the importance of controlling the volume of potato distribution and maintaining stable prices through proper storage, given that potatoes are a staple product in the region. They also expressed interest in exploring the possibility

of offering machinery-rental services to farmers. The AFICAT team was deeply impressed by Fujita's enthusiasm to solve such value-chain challenges and promote the growth of the agriculture sector in the region in cooperation with Muki Investment and other local stakeholders.

Fujita will construct more storage facilities in the surrounding areas. The project is expected to start this year. If you are interested in Fujita's potato-storage facilities or any other services, please contact Fujita Corporation Kenya Branch: Mr. Kimura, kiyoyoshi.kimura@fujita.co.jp, +254-20 513 8543).

Potato-storage facility exterior (up) and interior (down).

Discussions among Fujita, Muki Investment, and AFICAT Team.

First event: Online seminar by Kett

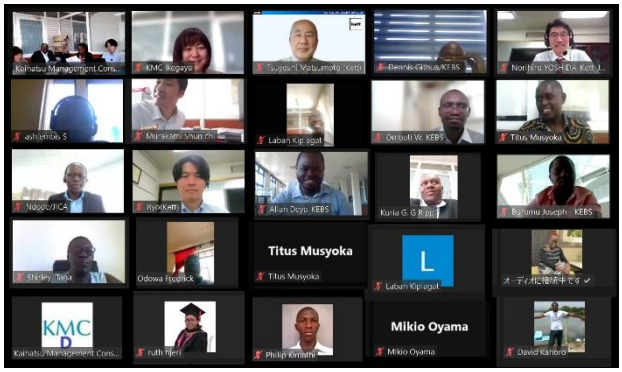
The first pilot activity conducted by the AFICAT team in Kenya was an online seminar on the importance of grain-moisture measurements presented by Kett Electric Laboratory Co., Ltd. (Kett). Kett is a Japanese manufacturer of measurement instruments, such as moisture testers for grains, wood, paper, and other materials. Appropriate control of the moisture content of crops via accurate measurements is a crucial factor for quality control. Kett's products are characterized by their ease of use and their accurate measurement of the moisture content of a wide variety of grains including rice, coffee, and tea.

On February 16, 2023, an online seminar was held via Zoom, connecting a total of approximately 40 participants, including officers of the MoALD, Kenya Bureau of Standards (KEBS), and other Kenyan government organizations. During this seminar, Kett presented topics such as the "importance of grain moisture" and "accuracy and traceability of grain-moisture measurement." Kett also introduced their products, such as different types of grain-moisture testers, a rice-whiteness tester, portable paddy husker, and rice polisher.

During the seminar, many questions were raised, particularly from the KEBS officers, regarding the measurement standard for moisture testers. These questions demonstrated their serious attitude toward the accurate measurement of grain-moisture content. MoALD officers also showed their interests in receiving more technical training from Kett.

The follow-up seminar by Kett will be conducted within a few months in Nairobi and will offer participants an opportunity to use Kett products. The AFICAT team will continue to support these activities in collaboration with MoALD to enable Kenyan stakeholders to access these products and technologies for accurate grain-moisture measurement provided by Japanese companies.

Images of Kett's products from the seminar material, such as grain-moisture testers and a rice-whiteness tester.



Approximately 40 participants attended the seminar and exchanged opinions via Zoom.

If you are interested in Kett products, please contact Mr. Ryosuke Takahashi (International Sales Department, +81-3-3776-1121, ry-takahashi@kett.co.jp). Kett is now looking for customers and local dealers that distribute Kett products in the Kenyan market. This company is expecting your inquiries.

- Kett Website: https://www.kett.co.jp/english/
- Kett Corporate Profile Video on YouTube: https://www.youtube.com/watch?v=-SPsCofmOiI

Collaboration with JKUAT for verifying Japanese machinery and technologies

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY
Setting Trends in Higher Education, Research, Innovation and Entrepreneurship

Jomo Kenyatta University of Agriculture and Technology (JKUAT) is one of the best universities in Kenya and has a good reputation for its agricultural and engineering programs. The Japanese government has long been providing various types of assistance to JKUAT. Currently, a technical cooperation project called "African Union -African Innovation - JKUAT AND PAUSTI Network Project (Phase 2)" or "AFRICA -ai- JAPAN" is being implemented, through which several Japanese professors have been dispatched to and are teaching at the university. In addition, many professors visited and studied in Japan. This may be why JKUAT is also working on the verification and demonstration of Japanese products as a part of its studies. Until now, JKUAT has conducted field tests on the technologies of three Japanese companies: WAGO (quality agricultural products), KJS Company Ltd (e-learning), and Tobe-Shoji Co., Ltd (plastic-bottle recycling).

A JKUAT Building.

The AFICAT team visited Prof. Hiroshi Koaze, the Chief Advisor of AFRICA -ai- JAPAN, and requested a collaboration between JKUAT and AFICAT to verify or conduct field tests on Japanese agricultural machines and materials. Prof. Koaze shared past achievements on the collaboration between JKUAT and Japanese companies and agreed to support the AFICAT team and Japanese companies to collaborate with Kenyan professors who have appropriate expertise on the demands of Japanese companies on their products and target

crops. The AFICAT team believes that the empirical data that will be obtained at JUKAT will help Japanese companies promote their products in the Kenyan market. The AFICAT team is now facilitating communication between JKUAT and Japanese companies to conduct the first field test at JKUAT.

Interview with JICA experts in Kenya was published in Japanese newspaper

The AFICAT team has been closely working with two JICA experts, namely Mr. Shunichi Murakami, who is working as an agricultural-mechanization advisor, and Ms. Meri Fukai, who is working as a Northern Corridor advisor to MoALD, because they have extensive knowledge and a good network among major stakeholders of the agriculture sector in Kenya.

The AFICAT team introduced the JICA experts to a Japanese newspaper called Nokei-simpo, which is an industry newspaper in the field of agriculture in Japan. Nokei-simpo was interested in conducting an interview with the two Japanese experts and writing an article focused on the Kenyan agriculture sector. The article was published on January 2, 2023 as a part of the New Year special issue, which presented the outline, market needs, and potential of the agriculture sector and agricultural mechanization in Kenya. The article is expected to enhance further interest in Japanese companies and expand their activity in Kenya.

Although the article was written in Japanese only, the relevant data is available on the AFICAT website linked below.

- The article on the AFICAT website: https://www.jica.go.jp/activities/issues/agricul/aficat/glkrjk00000063oo-att/20230102.pdf


アフリカの農業機械化を進める

新春インタビュー

我が国の長年の支援が花開く
日本企業の出番に

稲作の機械化は急速に進展

ケニアの農業と農業機械化

The article in the newspaper issued by Nokei-shimpo (issued on January 2, 2023).

Seminar on Kenyan agriculture sector was held in Japan in January 2023

The JICA Platform for Food and Agriculture (JiPFA) was established in 2019 by JICA to provide an opportunity for stakeholders from the private sector, government, and academia to share information and experience on agriculture, forestry, fisheries, food, and nutrition in developing countries as well as enable various joint activities toward achieving the Sustainable Development Goals (SDGs). When the AFICAT team concluded their first field activity in Kenya, the AFICAT team planned to organize a seminar using JiPFA in collaboration with Japanese stakeholders in Kenya to allow Japanese companies and other stakeholders to learn more about Kenya and enhance their activity in Kenya.

The seminar was held online as the 4th Africa Agriculture Subcommittee of JiPFA on January 25, 2023. Six speakers, including the AFICAT team, JICA experts, Japan External Trade Organization (JETRO), and a Japanese company, gave presentations about the current situation and their activities in Kenya. The topics covered political and economic overviews, the current state of agriculture and agricultural mechanization, and activities of the private company in Kenya. Approximately 70 participants joined the event,

which provided a good opportunity to convey the potential of agricultural mechanization and conducting business in the field of agriculture in Kenya to Japanese companies that are interested in Kenyan development and the market.

Similarly, the AFICAT team will continue to promote the agriculture sector in Kenya by promoting awareness and the interests of Japanese companies. We will invite Japanese companies to come to Kenya through disseminating information, conducting seminars, publishing our own newsletters, and collaborating with Japanese media.

The presentation materials, minutes, and video are available on the JiPFA website (in Japanese only).

- JiPFA Africa Agriculture Subcommittee website: https://www.jica.go.jp/activities/issues/agricul/jipfa/africa_agri/20230125.html

_Editors' postscript

We hope that you have enjoyed our first newsletter for Kenya. We are preparing the next issue, which will present the future activities of AFICAT. We hope that you will continue to read our future newsletters.

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