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COUNTIES THAT COUNT – A PILOT PROJECT ON STRENGTHENING CAPACITY FOR EFFECTIVE AGRICULTURE DATA AND KNOWLEDGE MANAGEMENT THROUGH THE KENYA INTEGRATED AGRICULTURE MANAGEMENT INFORMATION SYSTEM (KIAMIS)

June 2022

SDGs:



Country:

Kenya

Project Code:

TCP/KEN/3706

FAO Contribution:

USD 300 000

Duration:

7 November 2019 – 31 December 2021

Contact Info:

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Implementing Partners

Council of Governors (CoG); Ministry of Agriculture, Livestock, Fisheries and Cooperatives (MoALF&C); Ministry of Information Technology; National Treasury; and Kenya National Bureau of Statistics (KNBS).

Beneficiaries

Ministry of Agriculture, Livestock, Fisheries and Cooperatives (MoALF&C), Kenya Agriculture and Livestock Research Organization (KALRO), Ministry of Lands and Physical Planning, Ministry of Finance and Planning, CoG and county governments, KNBS, farmers, county officers and agro-dealers.

Country Programming Framework (CPF) Outputs

CPF Priority 1. Output 1.3: Agriculture statistics, market information systems and knowledge management strengthened.



BACKGROUND

With a rapidly increasing population and stagnating agricultural production, significant questions are being raised as to how Kenya will achieve food security. The majority of Kenya's agricultural harvest is produced by smallholders, whose farms are characterized by high production costs and low yields. In order to boost smallholder production in the past, the country ran large fertilizer subsidy programmes, under which large quantities of fertilizer were purchased and distributed to key warehouses for collection by farmers. The main problems with this system revolved around the following issues: the frequent late arrival of fertilizer, the blanket application of one type of fertilizer for all soil types in the country and the exclusion of the private sector in the provision of fertilizers. In response to these issues, the country committed itself to the development of a nationwide subsidy programme that would enable the registration of farmers and support their access to a wide range of agricultural inputs and extension messages through e-vouchers and short message service messages. Another reason for low production was the lack of access to information. Agricultural data were fragmented, with counties, MoALF&C and KNBS collecting statistics but rarely agreeing on common data collection and publication protocols.

FAO assistance was requested to address these issues. The project would assist the government in designing an agriculture management information system based on the development of common data collection forms (enabling the collection of data at different stages along agricultural value chains), and the compilation and analysis of these data into a single integrated system: the Kenya Integrated Agriculture Management Information System (KIAMIS).

IMPACT

The piloted KIAMIS has proposed a centralized farmer registration platform that can be shared by multiple programmes and projects. In addition, the e-voucher module introduced under the project allows for the continuous and partial redemption of a voucher on a range of inputs. This is a marked improvement on the current system, which requires separate vouchers for each type of input and does not allow partial redemption. These developments will directly benefit farmers and agro-dealers.

ACHIEVEMENT OF RESULTS

The project was successful in piloting KIAMIS. An action plan for the development of KIAMIS was designed and a Steering Committee appointed. The government agreed to the elaboration of two modules, on farmer registration and subsidy management, respectively, as a priority. Farmer registration was piloted in Uasin Gishu and Nyandarua counties, registering around 100 farmers in each county, while e-voucher registration was successfully piloted with 25 farmers in Uasin Gishu County. Training of trainers (ToT) was delivered to 30 key personnel from the state departments of MoALF&C, KALRO, counties and wards. Three elements of the KIAMIS platform (production, training and development) were installed in the KALRO data centre and 130 000 existing farmer registration records were uploaded into a production-ready KIAMIS instance. A series of subject-specific user and technical manuals for the implementation of KIAMIS was prepared and shared. The Ministry also formulated a comprehensive farmer registry across multiple counties using KIAMIS. Hand-over arrangements were initiated with the Agriculture Transformation Office (ATO) of MoALF&C. As a result of delays in pilot testing the development of the national roll-out strategy was ongoing at the end of the project. A fully functioning KIAMIS will be realized when the proposed institutionalization of KIAMIS under the ATO of MoALF&C is concluded.

IMPLEMENTATION OF WORK PLAN AND BUDGET

Project activities experienced periodic delays as they were subject to the schedules of government counterparts, which were often altered to accommodate unforeseen events. Key stakeholders were also frequently too busy to participate in critical design decisions, thus delaying processes and delivery. The project team made every effort to ensure that implementation remained on track. A no-cost extension was requested to allow activities to be completed. This was granted and all activities were implemented well within the envisaged budget. Any risks to the delivery of the project outcome and schedule were reviewed regularly and mitigated by the project team. No environmental or social risks were noted.

FOLLOW-UP FOR GOVERNMENT ATTENTION

It is recommended that the KIAMIS Steering Committee be officially commissioned by MoALF&C in order to cement the functional roles and responsibilities and define access rights. The Steering Committee should then develop the KIAMIS roadmap and assign platform management roles. The technical and administrative requirements for the full scaling-up of the platform should also be defined, in collaboration with the Steering Committee, while additional modules to those already produced should be developed under the guidance of the Steering Committee and with the support of the FAO Digital Villages Initiative. Long-term funding and the engagement of financial partners should be sought to ensure the institutionalization of KIAMIS at MoALF&C. Finally, the Steering Committee should review the available implementation documents and recommend any additional areas that need supplementary documentation.

SUSTAINABILITY

1. Capacity development

In 2019, the Data Protection Act was enacted to improve the policy and legal environment for data management. A digitization strategy and roadmap, and data governance framework have since been created by MoALF&C. A digital transformation committee has also been put in place to drive the digitization roadmap. However, at the time this report was written, the government had not yet provided the financial resources needed for their institutionalization and scaling-up.

The project, with the support of ATO/MoALF&C, was active in pursuing the establishment of organizational structures that will ensure the sustainability of KIAMIS. The project engaged several other potential partners (the World Bank, the Swedish International Development Cooperation Agency and the government itself) with the aim of pooling resources towards the further development of the KIAMIS platform. Responses were positive and further engagement was planned for 2022.

2. Gender equality

All project activities, including decision-making at all levels, were non-discriminatory and allowed equal participation. All data collection instruments ensured the disaggregation of respondents by gender, while reports provided for gender markers. The selection of pilot participants was aimed at ensuring equitable gender representation and benefits.

3. Environmental sustainability

Environmental issues were not directly addressed by the project.

4. Human Rights-based Approach (HRBA) – in particular Right to Food and Decent Work

Human rights issues were not directly addressed by the project.

5. Technological sustainability

Technological sustainability issues were not directly addressed by the project.

6. Economic sustainability

The KIAMIS platform, including facilitation for training, was fully funded by FAO. The platform is expected to be institutionalized by MoALF&C.



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DOCUMENTS AND OUTREACH PRODUCTS

- ❑ **FAO. 2020.** *Harmonized Farmer Registration Form for Ministry of Agriculture.* 31 October 2020.
- ❑ **FAO. 2021.** *Farmer Registration - Admin User Manual.* 31 July 2021.
- ❑ **FAO. 2021.** *Farmer Registration - Ward Agricultural Officer Web Registration User Manual.* 31 July 2021.
- ❑ **FAO. 2021.** *Farmer Registration - Enumerator Android App Registration User Manual.* 31 July 2021.
- ❑ **FAO. 2021.** *E-Voucher Module - Admin User Manual.* 31 July 2021.
- ❑ **FAO. 2021.** *E-Voucher Module - Value Chain Admin E-voucher User Manual.* 31 July 2021.
- ❑ **FAO. 2021.** *E-Voucher Module - Ward Agricultural Officer User Manual.* 31 July 2021.
- ❑ **FAO. 2021.** *E-Voucher Module – Agro-dealer Redeeming App User Manual.* 31 July 2021.
- ❑ **FAO. 2021.** *KIAMIS Technical Documentation and Hosting Requirements.* 31 July 2021.



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- ❑ **FAO. 2021.** *KIAMIS E-voucher Module Specifications.* 31 July 2021.
- ❑ **FAO. 2021.** *KIAMIS Harmonized E-voucher Flow.* 31 July 2021.
- ❑ **FAO. 2021.** *Flow Charts and System Architecture Diagrams.* 31 July 2021.
- ❑ **FAO. 2021.** *Farmer Registration - Admin User Manual.* 31 July 2021.
- ❑ **FAO. 2021.** *Introduction to KIAMIS Presentation.* November 2019, then adapted and updated variously since.
- ❑ **FAO. 2021.** Three newspaper articles on the pilot.
- ❑ **FAO. 2021.** Diaries, pens and bags for High-level Stakeholder Meeting. Eldoret. November 2021.
- ❑ **FAO.** Multiple presentations to donors, and county and national government officials.



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ACHIEVEMENT OF RESULTS - LOGICAL FRAMEWORK

Expected Impact	SDG 2.3: By 2030 double the agricultural productivity and incomes of small-scale food producers, in particular 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. Kenya specific: A coordinated agriculture sector managed by informed decisions based on real-time data		
Outcome	A functioning Kenya Integrated Agriculture Management Information System		
	Indicator	KIAMIS is fully developed and adopted by the Kenya Government.	
	Baseline	No single mechanism for managing agricultural data, information and subsidies.	
	End Target	One fully integrated system developed.	
	Comments and follow-up action to be taken	<p>The government agreed to the development of two modules, farmer registration and subsidy management, as a priority.</p> <p>Farmer registration was piloted in Uasin Gishu and Nyandarua counties, registering approximately 100 farmers in each county. E-voucher registration was successfully piloted with 25 farmers in Uasin Gishu County.</p> <p>Registration and redemption mobile applications were successfully piloted.</p> <p>After the limitations and issues with existing e-voucher systems had been reviewed, KIAMIS was designed with better workflows, offering instantaneous agro-dealer payments, e-vouchers that can contain multiple products and that can be redeemed multiple times up to the full value of the voucher.</p> <p>A ToT course was delivered to 30 key personnel, including information and communications technology officers from the four state departments of MoALF&C, KALRO, counties and wards. Three instances of the KIAMIS platform (production, training and development) were installed in the KALRO data centre.</p> <p>A total of 130 000 existing farmer registration records was uploaded into a production-ready KIAMIS instance.</p> <p>Hand-over arrangements were started with ATO/MoALF&C.</p> <p>A comprehensive farmer registry across multiple counties was formulated by MoALF&C using KIAMIS.</p> <p>Vendor changes to the integrated mobile payment platform (Safaricom M-PESA) introduced new issues in the payment workflow; these need to be resolved before the e-voucher module can be scaled up for national programmes.</p>	
Output 1	Road map, defining agreed responsibilities for the establishment of the KIAMIS developed		
	Indicators	Target	Achieved
	An action plan for the development of KIAMIS.	An action plan with clear timelines, roles and responsibilities.	Yes
Baseline	0		
Comments	<p>A Steering Committee and technical working groups were formed under the leadership of ATO. Regular and ad-hoc meetings were held to drive and design decisions and actions.</p> <p>Key stakeholders were often unavailable, delaying key designs. Long delays were also experienced in reaching a consensus on registration form components. The leadership and coordination of ATO, with technical input from FAO, were instrumental in reaching a final design of the form that was subsequently adopted.</p> <p>Building a dedicated mobile registration application should be reconsidered in future, as each change requires recoding. The use of open-source tools (e.g. Kobo collect) should be considered as an alternative.</p> <p>A more targeted shorter registration form may be considered in future, with additional farmer data collected only as part of separate data collection exercises.</p> <p>A more dynamic data collection mechanism should be considered for the KIAMIS database to allow additional fields to be added dynamically, removing the need to recodify KIAMIS when different data collection is required.</p>		
Activity 1.1	Definition of the scope of the KIAMIS		
	Achieved	Yes	
	Comments	<p>Defining and maintaining the pilot scope of KIAMIS was extremely challenging, as MoALF&C continually wished to expand the scope of the pilot in line with changing national priorities. However, a small proof-of-concept pilot for both registration and e-voucher testing was eventually agreed on and maintained.</p> <p>A definition of scope and end-goal need to be agreed on before a service provider is engaged. The KIAMIS roadmap should be developed by the Steering Committee.</p>	

Activity 1.2	Definition of roles and responsibilities	
	Achieved	Yes
	Comments	Owing to personnel changes in government, the initial definition of roles and responsibilities had to be revised, requiring the formulation of new technical and steering committees under the leadership of ATO and guided by FAO.
Activity 1.3	Establishment of a design team	
	Achieved	Yes
	Comments	Late in the process smaller, focused ad-hoc technical working groups were formed to push through decisions. Key stakeholders were often too busy to participate in critical design decisions, delaying overall processes and delivery. The KIAMIS Steering Committee should develop a comprehensive roadmap.
Activity 1.4	Establishment of a Steering Committee	
	Achieved	Yes
	Comments	The need to have an all-encompassing membership of the Steering Committee was essential in promoting “buy-in” and ownership. However, this resulted in meetings that included too many diverse stakeholders, which diluted agendas and reduced focus in achieving goals. The KIAMIS Steering Committee should be officially commissioned by MoALF&C.
Activity 1.5	Detailed review of different systems (KIAMIS, Kenya Cereal Enhancement Programme - Climate Resilient. Agricultural Livelihoods Window)	
	Achieved	Yes
	Comments	Following a review of the limitations of, and issues with, existing e-voucher systems, KIAMIS was designed with better workflows and instantaneous agro-dealer payments, as well as e-vouchers containing multiple products that can be redeemed multiple times up to the full value of the voucher. Further optimization of KIAMIS workflows, based on feedback from the pilot, is recommended.
Activity 1.6	Development of a roadmap for KIAMIS roll-out	
	Achieved	Partially
	Comments	A pilot testing roadmap was formulated early in the process. As a result of multiple delays in the pilot testing, a hand-over and national roll-out strategy was never fully developed. The process was ongoing at the end of the project. As the project generated interest at national and county level, it was expected that institutionalization of KIAMIS would proceed. A full KIAMIS national roll-out roadmap should be developed by the Steering Committee.
Activity 1.7	Identify hosting modalities	
	Achieved	Yes
	Comments	Three instances of KIAMIS - a fully functional production system, a testing environment and a development environment, where ongoing changes are tested - were installed at KALRO. The KIAMIS Platform Backup hosting options should be evaluated.

Output 2	Tools and systems designed and agreed with stakeholders		
	Indicators	Target	Achieved
	Number of modules operationalized.	4	Partially
Baseline	0		
Comments	<p>After discussion with the government and in view of the funds available, it was agreed to develop two modules: registration and subsidy management.</p> <p>The National Value Chain Support Programme (NVCSP), under MoALF&C, provided the liaison between the pilot and the county, agro-dealers and national stakeholders. The programme provided funds and support for the e-voucher pilot. Overall guidance to the process linking FAO to the many stakeholders involved was provided by ATO/MoALF&C, which finalized registration forms and ensured that government stakeholders provided input when required.</p> <p>The two selected modules were piloted in counties proposed by the NVCSP (Uasin Gishu and Nyandarua). The registration module and related mobile registration application were used to register over 200 farmers, 100 from each county. The subsidy module was tested with 25 farmers from Uasin Gishu.</p> <p>A pilot with a larger number of farmers was hampered by Nyandarua county not linking the pilot to the correct agro-dealers, and by subsequently having insufficient time to train new agro-dealers in the redemption process. Commitment from the counties was high, as was interest in moving beyond a pilot and using KIAMIS for county-wide registration. The NVCSP is eager to adopt KIAMIS for its de facto subsidy management tool.</p> <p>A post-pilot high-level meeting was held in Uasin Gishu, at which farmers and county staff praised the platform for its ease of use, multi-redemption facility and quick repayment of agro-dealers.</p> <p>The original developer of the platform was identified as the most suitable vendor for adapting the system to the Kenyan environment. Challenges were encountered while securing the vendor under FAO procurement rules which will need to be addressed if FAO Kenya wishes to use the same vendor in future.</p> <p>The platform and related tools and roadmap should be reviewed jointly with stakeholders.</p>		
Activity 2.1	Modules agreed		
	Achieved	Yes	
	Comments	Stakeholders agreed to focus on the farmer registration and e-voucher subsidy modules for the pilot of KIAMIS. The functionality of each module was agreed before being coded by the platform developer and incorporated into the platform.	
Activity 2.2	Responsibilities and access rights agreed		
	Achieved	Yes	
	Comments	Despite the lack of a definitive institutional “home” for KIAMIS at MoALF&C, functional roles and responsibilities were defined by the project team and tentative assignees nominated. The KIAMIS Steering Committee will be officially commissioned by MoALF&C to cement functional roles and responsibilities, and define access rights.	
Activity 2.3	Module Development: Registration, Land Tenure, Subsidy, Mechanization, Credit, Early Warning, E-Extension, M&E/Audit		
	Achieved	Partially	
	Comments	Through consultation with the NVCSP and the government, two modules , farmer registration and subsidy management, were deemed most urgent and as such were the two modules developed under the pilot. The NVCSP required a functional subsidy programme to replace the existing system and KIAMIS fitted its requirements. As such, the NVCSP provided significant support and guidance in the piloting process. Additional modules will be developed under the guidance of the KIAMIS Steering Committee and with the support of the FAO Digital Villages Initiative.	
Activity 2.4	System development		
	Achieved	Yes	
	Comments	Mackphilisa Computer Systems (MCS) was proposed as the most suitable developer for the project because of its experience in adapting the system in other countries. As a result of FAO procurement challenges, delays were encountered when issuing a contract, which delayed the start of the project by four months. To ensure ongoing support for and development of the system, MoALF&C needs to formulate a contract with MCS.	

Output 3	Change management processes in place to enable the effective operationalization of the system in two counties		
	Indicators	Target	Achieved
	KIAMIS is piloted.	Two counties.	Partially
Baseline	0		
Comments	<p>In collaboration with ATO/MoALF&C and other stakeholders, the KIAMIS team successfully undertook a pilot of the system in two selected counties – Nyandarua and Uasin Gishu.</p> <p>The main issue encountered, and resolved by consensus, was definition and agreement on the scope of the pilot. Once settled, the pilot was successfully undertaken for two modules – farmer registration and e-voucher subsidies. The second part of the pilot (e-voucher) could, however, only be conducted in one county owing to an issue with the selected agro-dealers in the other county; as such only 25 farmers participated. A technical limitation with the mobile money payment platform also restricted the redemption of vouchers to one method. In collaboration with the KIAMIS Steering Committee, the technical and administrative requirements for a full scaling-up of the platform should be defined and agreed on.</p>		
Activity 3.1	Define Terms of Reference (ToRs)		
	Achieved	Yes	
	Comments	<p>The ToRs for the platform developer and project team were well defined. However, many key stakeholders from the government struggled to provide sufficient time for the project as a result of conflicting priorities and duties.</p> <p>The KIAMIS Steering Committee should define further ToRs.</p>	
Activity 3.2	Provision of training and capacity		
	Achieved	Yes	
	Comments	<p>Major training in the farmer registration module and the e-Voucher module was delivered to a selection of national government and county officials. Additional debriefings were provided as part of routine meetings. Because of a lack of clarity on the owners and operators of KIAMIS, much of the training will need to be repeated when roles and responsibilities are clarified. The KIAMIS Steering Committee should nominate persons for detailed training on KIAMIS at national level as a ToT activity, followed by cascade training to counties.</p>	
Activity 3.3	Awareness-raising through a media campaign		
	Achieved	Partially	
	Comments	<p>Several articles were published in local newspapers and via county communication channels, in collaboration with the project. The FAO Representative delivered various KIAMIS-related communications and held a number of media engagements.</p> <p>Increased media engagement will be required in the post-pilot phase.</p>	
Activity 3.4	Management of costs		
	Achieved	Yes	
	Comments	<p>Project expenditures did not exceed budgets. Funding will be needed to support the scaling-up and institutionalization of KIAMIS.</p>	
Activity 3.5	Budgeting subsidies		
	Achieved	Partially	
	Comments	<p>No specific funds were available in budgets to support farmer subsidies. This remains the responsibility of MoALF&C and its projects and programmes.</p> <p>The KIAMIS e-Voucher platform should be prepared for full scaling-up.</p>	
Activity 3.6	Sustainability model – long-term funding		
	Achieved	Partially	
	Comments	<p>FAO and NVCSP/MoALF&C jointly funded the KIAMIS pilot. The further development and utilization of the platform will depend on its institutionalization by MoALF&C and the establishment of relevant structures and budget lines to ensure sustainability.</p> <p>Long-term funding and the engagement of financial partners should be sought for the Institutionalization of KIAMIS at MoALF&C.</p>	
Activity 3.7	Managing transparency		
	Achieved	Partially	
	Comments	<p>All project decisions were made in a participatory manner, documented and communicated in the minutes of meetings.</p>	
Activity 3.8	Pilot test the system in two counties		
	Achieved	Yes	
	Comments	<p>The pilot of KIAMIS in the two selected counties achieved all envisaged objectives.</p> <p>A major complaint from farmers and county staff was the delay in paying allowances (travel and accommodation). The KIAMIS team needs to identify way to expedite payment mechanisms.</p>	

Output 4	System is scaled up nationally		
	Indicators	Target	Achieved
	KIAMIS implementation manual.	1 manual to guide the implementation.	Partially
Baseline	0		
Comments	<p>Rather than produce one large manual, it was decided to produce a series of smaller subject-specific manuals. See the Documents section above.</p> <p>A review of generated documentation should be made to assess completeness and coverage of functions, roles and responsibilities in KIAMIS.</p>		
Activity 4.1	Establishment of working groups		
	Achieved	Partially	
	Comments	<p>Once a core project team was constituted, the team met weekly under the coordination of ATO/MoALF&C to review progress.</p> <p>Competing priorities from many key stakeholders delayed decision-making, and reduced feedback and contribution, delaying project timelines.</p> <p>The KIAMIS Steering Committee should be formally constituted.</p>	
Activity 4.2	Revise the system		
	Achieved	Yes	
	Comments	<p>The pilot provided an opportunity for stakeholders to provide feedback which resulted in changes to the core system.</p> <p>A review should be made of stakeholder feedback and relevant proposals incorporated in the roadmap under the guidance of the KIAMIS Steering Committee.</p>	
Activity 4.3	Development and dissemination of a KIAMIS implementation manual		
	Achieved	Yes	
	Comments	<p>KIAMIS implementation documents (user and technical manuals) were prepared and shared.</p> <p>The KIAMIS Steering Committee should review the available documents and recommend any additional areas that need supplementary documentation.</p>	

Partnerships and Outreach

For more information, please contact: Reporting@fao.org

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