

TRAINING AND FIELD REPORT

Identifying and Measuring the Effectiveness of Different Combination of Socio-Technical Innovation Bundles on Empowerment and Resilience in Kenya





CITATION

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LIST OF ABBREVIATIONS AND ACRONYMS

AECL	AfriDev Economic Consulting Limited
CA	Conservation Agriculture
CGIAR	Consortium of International Agricultural Research Centers
CIAT	International Center for Tropical Agriculture
CSA	Climate Smart Agriculture
HER+	Harnessing Gender and Social Equality for Resilience
KALRO	Kenya Agricultural and Livestock Research Organization
SI	Sustainable intensification
STIBs	Socio-Technical innovation Bundles
UU	Ukama Ustawi
WP2	Work Package 2

DETAILS OF THE PROJECT

PROJECT TITLE	Identifying and measuring the effectiveness of different combination of socio-technical innovation bundles on empowerment and resilience
DESTINATION(S)	Nakuru, Embu and Makueni Counties
DATES	21st September 2023 to 11th October, 2023
NAME(S) OF ALLIANCE STAFF	Dr. Eileen Nchanji, Dr Boaz Waswa, Mr. Cosmas Kweyu Lutomia, Mr. Fredrick Ouya, Mr. Dismas Manoti (programmer)
NAME(S) OF IMPLEMENTING STAFF FROM KALRO	Dr. Patrick Ooro (KALRO Njoro), Ms Catherine Murithi (KALRO Embu) and Ms. Emerita Njiru (KALRO Katumani)
AFRIDEV ECONOMIC CONSULTING LIMITED TEAM MEMBERS	Dr. Oscar Ingasia, Ms. Getrude Alworah and Mr. Arnold Jong

GROUPS AND PERSONS WORKED WITH

The AfriDev Economic Consulting Limited (AECL) team was composed of three consultants (2 male and 1 female) and 13 research assistants/enumerators (7 male and 6 female). The team travelled to Nakuru, Embu and Makueni counties and conducted household baseline survey to understand what combinations of Socio-Technical innovation Bundles (STIBs) in Ukama Ustawi (UU) initiative sites enhance empowerment and resilience for men and women farmers. Specifically, the study collected data on diverse modules including household demographic characteristics, land ownership and livestock keeping, participation in UU activities, mechanization, and adoption of CA practices, STIBs, food security status, institutional and organizational support, gender gaps, household income and resources, climate change and resilience and engagement in UU activities. The data collection was facilitated by six extension officers (4 female and 2 male) and 36 (16 female and 20 male) lead farmers in identifying and locating farmers across the three counties. Across the learning labs implementation sites, a total of 806 farmers were interviewed, consisting of 376 UU farmers from 17 groups (men, women and joint) hosting mother and baby demos and 430 non-UU farmers.

BRIEF INTRODUCTION

The study was conducted by the Harnessing Gender and Social Equality for Resilience in Agrifood Systems (HER+) initiative in collaboration with UU in the context of the UU learning sites and HER+ learning labs. The UU initiative aims to support climate-resilient agriculture and livelihoods in 12 countries in East and Southern Africa by helping millions of smallholders intensify, diversify and reduce the risks in maize-based farming through improved extension services, small and medium enterprise development, supporting governance frameworks and increased investment with a gender and social inclusion lens. While the HER+ initiative Work Package 2 (WP2) of HER+, i.e., EMPOWER: worked with participants in the UU sites to identify and prioritize socio-technical bundled innovations for women's empowerment and resilience. It provided a space to discuss missing social innovations that often constraint access, control and use of technology often affected by gender and other intersecting elements such as age, ethnicity, education and wealth that limit access to resources, decision-making processes, services, or information. These restrictive norms, policy and hindering environments often limit the uptake and empowerment of women as partners in designing, promoting, and using climate-smart solutions. WP2 contributes to filling the gap by providing evidence about the reasons for women's limited uptake of innovations and developing decision-support tools to guide the design and implementation of STIBs, particularly paying attention to gender and social inclusion.

Based on the aforementioned, HER+ engaged AECL to undertake the field data collection to support the achievement of its objectives which are to:

- 1 Co-identify, co-develop, and test context specific STIBs to collaboratively address climate change and empowerment.
- 2 Co-design and engage multiple partners and use diverse pathways, and processes to boost the adoption of climate smart STIBs among farmers, especially women.
- 3 Contribute to the development of a comprehensive toolbox that provides guidance on the data, tools, and processes essential for creating, implementing, and evaluating climate smart STIBs, ensuring women's empowerment and bolstering resilience.
- 3 Feed information from this study into the STIB tool kit and dashboard.

OBJECTIVES OF DATA COLLECTION

The objectives of the data collection were to:

- ◆ Establish the status of use of STIBs across agro-ecologies in Kenya.
- ◆ Measure the effectiveness of different combination of STIB for resilience and empowerment.
- ◆ Identify key indicators for monitoring and evaluation.
- ◆ Inform the design and implementation of socio-technical innovation bundling approaches to ensure that they are tailored to the actual needs and conditions of farmers in UU learning labs.

RESEARCH TECHNIQUES, METHODS, AND TOOLS

The study used a semi structured questionnaire for the household survey of farmers hosting mother and baby demos trials. Additionally, observation and photography were used during the data collection where the AECL research team visited the learning labs in each county to learn how the implementation took place in the different counties. Thematically, the household tool was grouped into 12 modules of: household identification, household demographic characteristics, land ownership and livestock keeping, participation in initiative/project activities, mechanization of farm operations, crop production, gender gaps, STIBs, food security, institutional and organizational support, household income and resources, climate change and resilience and UU engagement.

PRE-DATA COLLECTION ACTIVITIES

The pre-field activities mainly involved recruitment, training, and briefing of enumerators. Recruitment of enumerators followed the AECL requirements to ensure collection of quality data. The enumerators selected had completed bachelor's degree in an agricultural-related field and had previous experience in socio-economic field data collection including mobile data collection platforms. A total of 13 enumerators (6 female and 7 male) were recruited from AECL database in consultation with the implementing partners in the counties to ensure local ownership of the exercise and a balanced male and female team for cultural sensitivity. The tool for data collection was developed by Alliance of Bioversity International and CIAT with input from AECL through the HER+ and UU focal persons in Kenya.

A 4-day joint training workshop was organised at KALRO Njoro under the experts from AECL and the Alliance of Bioversity International and CIAT.

DAY 1 – PAPER QUESTIONNAIRE TRAINING: The session began with two presentations (UU and HER+) by the HER+ Kenya focal person, Mr. Lutomia, to set the context of the data collection exercise. This gave the team a clear understanding of the HER+ project and the linkage with UU including the goals of the twin initiatives. He stressed on the importance of collecting quality data so that at the end will have a good report which will inform on areas to reinforce for the survival of the project. Thereafter, the Njoro Sub-County Officer was invited to elaborate on the practices under UU and HER+ including the operationalization of implementation. Afterwards, the AECL team with support from the Alliance of Bioversity International and CIAT staff discussed the paper questionnaire (Annex 1) with the enumerators in order to have a common understanding of the questions and changes in structures of questions where applicable. Some of the major changes/adjustments during this session included restructuring questions in module 6 on STIBs to ensure enumerators were able to capture the required information. Detailed changes to the tool are presented in Annex 2.



Photo 1: AECL team training at KALRO Njoro

DAY 2 - COMPUTER-ASSISTED PERSONAL INTERVIEWING (CAPI) TRAINING:

The team adopted Survey CTO in data collection where the tool after incorporation of day 1 changes were programmed into tablets provided by AECL. The enumerators were first re-oriented into the basics of the Survey CTO with emphasis on uploading the questionnaire, filling the questionnaire and submission. Further, the AECL and Alliance of Bioversity international and CIAT team demonstrated to the enumerators the practical use of Survey CTO.

The enumerators were also equipped with quality data collection soft skills. After practical demonstration of the whole questionnaire, the enumerators were paired for role plays, where the AECL and Alliance of Bioversity international and CIAT team took a technical backstopping role. Later, feedback was collected from each pair which were later used to adjust the tool in readiness for pretest on day 3. Day two also involved the visit to the mother demo in KALRO Njoro for familiarization of the technologies and the setup of the baby and mother demos.



Photo 2: AECL team during role play



Photo 3: Data collection in the mother demo in KALRO Njoro

DAY 3 - PILOTING/PRETEST OF THE TOOL PRIOR TO ACTUAL DATA COLLECTION: A one-day pretest exercise was conducted in Nakuru county with the support from the Njoro sub-county agricultural officer. The enumerators were accompanied by AECL and the Alliance of Bioversity international and CIAT team to administer the questionnaire to a selected farmers providing backstopping role. The pretesting aims to assess key parameters, including:

- ◆ Duration it takes to administer one questionnaire.
- ◆ The enumerators' comprehension of the questionnaire
- ◆ The ease of using the digital questionnaire
- ◆ Framing and flow of the questions
- ◆ Translation of the tool into the local language
- ◆ Relevance and completeness of the provided options in the questionnaire
- ◆ Enumerators' practical experience in administering the questionnaires.

DAY 4 - FEEDBACK SESSION AND UPDATING OF THE QUESTIONNAIRE: A joint session was organised to provide feedback on the pre-test where all programming-related issues were raised and addressed. The questionnaire was updated using the feedback from the pre-test exercise and uploaded for use during the actual data collection. The final tool for data collection (Annex 3) was agreed on with the Alliance of Bioversity international and CIAT team before full deployment. Thereafter, details of logistics and field data collection plans were elaborated.

DATA COLLECTION AND ACHIEVEMENTS

Data collection was conducted for 17 days, including two Sundays, across the three counties. AECL supervised and provided backstopping during the entire fieldwork to guarantee the quality of data collected. In each county, the data collection team visited the mother demo before starting the data collection in order to familiarize themselves with the technologies that were being promoted in each of the counties.



Photo 4: Data collection team visiting the mother demo in Embu and Makueni County

Close monitoring for data collection was also sustained throughout the data collection period coupled with adequate logistics support. The data collected was uploaded daily for analysis by the project team leader and the data manager on behalf of Alliance of Bioversity international and CIAT. This ensured the consultant team had the opportunity to monitor the relevance, consistency, and accuracy of all the data collected by the enumerators. Additionally, the consultant team strived to conduct morning and evening debriefs with field teams to address any issues and/or confirm the data progress.

Generally, the survey targeted a sample of 750 households across the three counties. AECL managed to collect 806 samples compared to the study target of 750 samples in the three counties. A total of 17 groups were visited and interviewed (6 in Nakuru, 6 in Embu and 5 in Makueni). Table 1 presents a summary of the data collection by county and type of farmer.

Table 1: Summary of respondents by county and type of farmer

COUNTY	TYPE OF FARMER		TOTAL
	UU FARMER	NON-UU FARMER	
NAKURU	147	165	312
EMBU	114	136	250
MAKUENI	115	129	244
TOTAL	376	430	806

CHALLENGES AND MITIGATION STRATEGIES

- ◆ Unavailability of some farmers for interviews. However, they were available past 5 pm due to off-farm job related activities and other personal commitments. This meant that we had to fit in to their program and interview them past 5 pm to minimize non-response bias.
- ◆ Group dynamics has affected their functioning thus leading to others dropping out of the project. This was mainly a problem in Embu and Makueni Counties. Some farmers dropped out of the groups because they were not hosting mother demos which they claim to have more benefits compared to baby demos.
- ◆ In Embu and Makueni counties, the UU farmers are not adding up to 150, reflected in the lower samples for UU farmers interviewed as presented in Table 1.
- ◆ Some plots had not been harvested as at the time of the survey, especially in Nakuru county. This was mitigated by collecting information on only plots which were already harvested.

GENERAL OBSERVATIONS

- ◆ Training on the sustainable intensification/climate smart agriculture/conservation agriculture (SI/CSA/CA) and gender sensitive training have been conducted in all sites except gender sensitive nutrition in Embu County.
- ◆ Some non-UU farmers were adopting the SI/CSA/CA technologies from the mother demos through field days and peer to peer learnings.
- ◆ There was good coordination of groups and linkages with implementing partners.
- ◆ There was a weak understanding of STIBs by farmers though they were using it.
- ◆ Generally, there was crop failure across the three counties which had an impact on the yields received by farmers.
- ◆ There was widespread reporting by farmers of delays in the delivery of start-up kits which reduced the effectiveness and performance of the mother demos and baby demos across the counties.
- ◆ Low access to mechanization limits the wider usage of the technologies.
- ◆ Land constrained the adoption of the technologies due to the competing use of the land by other enterprises especially in Embu County.

LESSONS LEARNT AND WAY FORWARD

- ◆ There is a need for enhanced involvement of the government extension officers in addition to the private extension officers in the project activities to increase awareness of the technologies and for sustainability.
- ◆ There is a need for the implementing partners to increase the efficiency in the supply of the start-up kits as this will increase the level of adoption of the SI/CSA/CA technologies.
- ◆ There is need for the implementors to devise strategies to enable them to reach the targeted 150 farmers per county especially in Embu and Makueni counties. Further, support is needed to enhance the stability of the groups and the challenges that come with the location of the mother demos.
- ◆ There is a need for the project to encourage farmers to adopt their self-assessed suitable technologies to the general plots.
- ◆ A staggered approach in establishing mother demos and baby demos is ideal for new groups to enable them pick suitable technologies as opposed to simultaneous establishment in some cases.
- ◆ There is a need to enhance farmers understanding of STIBs and their relevance for empowerment, resilience and food security.

ANNEXES

ANNEX 1: PRE-TRAINING TOOL



Original Survey
Tool.html

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ANNEX 2: TRAINING COMMENTS



Corrections on the
tool.docx

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ANNEX 3: POST-TRAINING FINAL TOOL



Final Survey
Tool.html

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