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PARTNERSHIP FOR AGRICULTURAL RESEARCH, EDUCATION AND DEVELOPMENT (PAIRED) FINAL PERFORMANCE EVALUATION

FINAL EVALUATION REPORT

May 2023

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ACRONYMS

AfDB	African Development Bank
AFSTA	African Seed Trade Association
AGRA	Alliance for a Green Revolution in Africa
AMELP	Activity Monitoring, Evaluation and Learning Plan
ASIWA	Alliance for Seed Industry in West Africa
ASSESS	Analytical Support Services and Evaluations for Sustainable Systems
CILSS	Comité permanent Inter-Etats de Lutte contre la Sécheresse dans le Sahel/Permanent Interstates Committee for Drought Control in the Sahel
CORAF	Conseil Ouest et Centre Africain pour la Recherche et le Développement Agricoles/ West and Central African Council for Agricultural Research and Development
COVID-19	Coronavirus Disease 2019
CRI	Crop Research Institute
ECOWAP	Economic Community of West Africa Agricultural Policy
ECOWAS	Economic Community of West African States
EnGRAIS	Enhancing Growth through Regional Agricultural Input Systems
FAO	Food and Agriculture Organization of the United Nations
FtF	USAID Feed the Future Initiative
FUCOPRI	Fédération des Unions et Coopératives des Producteurs de Riz/ Federation of Unions of Rice Producers' Cooperatives
FY	Fiscal Year
GAP	Good Agricultural Practices
GDP	Gross Domestic Product
GFSS	Global Food Security Strategy
IAR	Institute of Agricultural Research
IAR4D	Integrated Agricultural Research for Development
IER	Institut d'Economie Rurale/ Rural Economy Institute

IFDC	International Fertilizer Development Center
IITA	International Institute of Tropical Agriculture
IPTT	Indicator Performance Tracking Table
INRAN	Institut National de la Recherche Agronomique du Niger/ National Institute of Agronomic Research of Niger
INSAH	Institut du Sahel/ The Sahel Institute
ISRA	Institut Sénégalais de Recherche Agricole/ Senegalese Institute of Agricultural Research
M&E	Monitoring and Evaluation
MEL	Monitoring, Evaluation and Learning
MOU	Memorandum of Understanding
NARIs	National Agricultural Research Institutions
NCRI	National Cereals Research Institute
ONG RAIL	NGO Reseau d'Appui aux Initiatives Locales
PAIRED	Partnership for Agricultural Research, Education and Development
PVP	Plant Variety Protection
ROPPA	Réseau des Organisations Paysannes et des Producteurs Agricoles de l'Afrique de l'Ouest/ West African Network of Peasants and Agricultural Producers
RQPL	Regional Quarantine Pests List
SARI	Savannah Agricultural Research Institute
SEDAP	Sahélienne D'entreprise de Distribution en Agrobusiness
SEEDAN	Seed Entrepreneurs Association of Nigeria
SOW	Scope of Work
T&Is	Technologies and Innovations
TAAT	Technologies for African Agricultural Transformation
ToC	Theory of Change
ToT	Training of Trainers

UEMOA	Union Economique et Monétaire Ouest Africaine/ West African Economic and Monetary Union
UNIS	Union Nationale des professionnelles des semences/ National Union of Seed Professionals
USAID/WA	United States Agency for International Development/ West Africa Regional Mission
WAAPP	West Africa Agricultural Productivity Program
WACTAC	West Africa Association for Cross Border Trade of Agroforestry-Pastoral
WASIX	West Africa Seed Information Exchange
WASP	West Africa Seed Program

EXECUTIVE SUMMARY

USAID/West Africa (WA) and the West and Central African Council for Agricultural Research and Development (CORAF) commissioned a final performance evaluation of the Partnership for Agricultural Research, Education and Development (PAIRED) Activity to measure the successes from this partnership, learn about its challenges and areas for improvement, and to draw lessons to inform future programming of each partner organization.

The final performance evaluation specifically focused on two technical components of the program: Component 2, with the expected result of "innovative scaling framework for agri-input technologies and innovations established in West Africa" and Component 3, with the expected result of "use of quality agri-inputs in West Africa increased." Targeted areas for this evaluation include PAIRED activities in key locations across six countries in the region. Analysis and documentation of results is given to PAIRED's work in the Feed the Future (FtF) focus countries of Benin, Ghana, Mali, Niger, Nigeria, and Senegal.

EVALUATION METHODOLOGY

The evaluation utilized a semi-structured, qualitative evaluation design appropriate for a final performance evaluation, relying on quantitative data, where available, to triangulate findings. This approach allows USAID, CORAF and its stakeholders to understand the effectiveness of the PAIRED Activity and build a knowledge base to inform decision-making, enabling USAID to test the key hypotheses underlying the overarching results framework's theory of change (ToC). This design provided for inquiries into the evaluation of processes and the achievement of the project's targets and objectives.

The PAIRED Final Performance Evaluation team conducted a total of 108 unique interviews across the six evaluation countries. Given the PAIRED Activity's primary intervention approach, interviews were focused heavily on Research Institutions and with the various actors associated with Innovation Platforms. In all,18 interviews were conducted within eight Research Institutions and 61 interviews were completed within 20 Innovation Platforms. The data collected provided detailed information on program management and organizational development, national and/or regional seed regulation, agri-input technologies and innovations, and private sector engagement throughout the levels of PAIRED implementation. The expansive scope, in both the number and type of interview, informed the assessment of PAIRED performance successes and challenges, and lessons learned at all levels of stakeholder engagement.

FINDINGS AND CONCLUSIONS

The PAIRED Final Evaluation addressed seven evaluation questions, each delving into the various actors and objectives of the PAIRED implementation. As an activity intended to address seed upscaling in West Africa, the PAIRED Activity delivered mixed results. At a macro level, success was made in increasing maize and rice seed production, but this had virtually no impact in increasing regional trade. At the farm level, the PAIRED activity struggled to move beyond the focus on grain production to seed upscaling. There are substantial lessons to be learned, as the PAIRED experience had unique elements in each of the six countries allowing for a comparative analysis to complement the overall analysis approach. A synopsis of findings and conclusions, by implementation layer, includes:

- The PAIRED Activity managed an intensive training program on good agricultural practices, technical applications of seed regulation, and business/programmatic governance at the level of the NARIs, Innovation Platforms and select private sector actors. These training courses were well received and appreciated by the intended beneficiaries. Seventy-three firms improved their organization's capacity, and 10,603 individual producers increased their knowledge.
- Supplementing the training activities, CORAF produced 357 agro-ecology seed and fertilizer information kits which were made available through the PAIRED Activity: 90 in maize, 172 in rice, 56 in millet and 39 in sorghum. In all, these toolkits exceeded the intended target by 233 percent.

- Staffing limitations influenced multiple aspects of the PAIRED Activity. The simultaneous, multi-country implementation approach, which required needs assessments, contracts with NARIs, development of work plans and seed delivery at the correct time were affected by the staffing capacity of the core team. Difficulties coordinating a six-country activity resulted in the PAIRED Activity ultimately resembling six national projects, rather than one harmonized regional activity. PAIRED's attempt to roll out the program simultaneously invariably missed the planting season in some sites, thus losing the opportunity for at least two seasons of demonstrations for new and improved seed varieties.
- CORAF's heavy reliance on training activities left the NARIs primarily responsible for managing the integration of private sector actors and market linkages, which had limited success. The PAIRED staffing structure's lack of any requirement to staff an external private sector/seed business specialist to assist in the development of a private sector strategy resulted in poor utilization of the private sector under PAIRED.
- Financial flows posed a substantial challenge to implementation. Delays in transferring funds from USAID to CORAF, from CORAF to NARIs, and from NARIs to different local partners significantly reduced the progress of field activities in different countries. The quantity of funds further limited the types of activities which could be implemented at the NARI/Innovation Platform levels.
- A lack of clear understanding of the PAIRED Activity's up-scaling outcomes at the NARI level contributed to Innovation Platform farmers' inability to upscale any varieties of certified seeds due to time constraints of PAIRED interventions, technical and bureaucratic demands for certification, and the absence of clear linkages to market actors to absorb the increased production of certified seed.
- In regard to overall volume of quality seed produced, the achievement rate varied according to the commodity type and the type of seed. For maize and rice, the targets for breeder, foundation and certified seed were exceeded, with maize returning 461 percent in excess of the original set target for certified seeds and certified rice seed arriving at 54 percent above the targeted volume. Breeder seed production resulted in the highest percentage increase across the three seed categories, indicating that the NARIs were successful in increasing their breeder seed production for maize and rice. For millet and sorghum, no targets were met for any type of seed (breeder, foundation, and certified).
- The evaluation team observed that the PAIRED Activity engaged with a total of 43 Innovation Platforms during the course of implementation, in excess of their target of 36. The majority of NARIs elected to work with previously established innovation platforms (33), while in Ghana and Nigeria, the NARIs also established 10 new innovation platforms.
- In all countries excluding Ghana, the number of beneficiary farmers reflected more than a decade's worth of investment in previously established innovation platforms, with upwards of 3,500 farmers in the innovation platforms. Ghana represented the most conservative approach to designing the innovation platforms, where an effort was made to limit all actors engaged in the innovation platform to 30, irrespective of the age of the group. In total, the Innovation Platform approach reached a total of 9,043 farmers made up of 4,425 men, 4,572 women, and 1,281 youth.
- Ultimately, the PAIRED Activity failed to produce a single certified seed grower at the time of the evaluation. Failure to adequately invest in facilitation of the certification licensing process for community seed producers in the Innovation Platforms thwarted the upscaling intention of the PAIRED Activity through the Innovation Platform intervention instrument.

- The Evaluation team noted that the private sector engagement with the PAIRED Activity, in general, and within the Innovation Platforms specifically, was weak. The weak private sector engagement within the Innovation Platforms was inconsistent and failed to capitalize on private sector strengths; this engagement was mostly limited to demonstration plots. This micro-level engagement is in contrast broader macro-level where the growing presence of private sector seed companies regionally resulted in 349 new seed companies reported during the Activity's performance period, a nearly 15-fold increase over the expected target.

RECOMMENDATIONS FOR FUTURE PROGRAMMING

- The foundational assumption that existing Innovation Platforms could be reinforced to create seed upscaling opportunities should be revisited. While PAIRED did not have more than two complete seasons to achieve the intended results, the trends which emerged indicate greater resources and/or investments need to be considered to achieve a substantial increase in seed upscaling through the application of the Innovation Platform approach.
- The PAIRED Activity demonstrates the implementation limitations faced at the farm level. Future programming must take into consideration the institutional capacity of all actors to manage financial systems, planning processes, implementation calendars, etc. as necessary to achieve a single, harmonized project.
- Should future programming continue at the farm level, CORAF must take on a greater leadership role in actively managing the engagements "on the ground." In the absence of adequate PAIRED leadership, each NARI adapted to their own understanding of the PAIRED Activity. The NARIs, despite limited funding and a pandemic, were not adequately supported which influenced their ability to achieve the PAIRED expected results.
- Any future programming must revisit the private sector engagement strategy. The expectation that the private sector would be motivated to fill programmatic gaps on their own was unrealistic; the private sector is often growing in spite of, not because of, the public sector. Greater consideration for the challenges seed companies experiences and stronger integration with the private sector in identifying shared objectives are needed to build a more cohesive private sector strategy.
- CORAF holds a particular advantage in advocating for regional seed objectives. Having made progress over the past decade in harmonized seed regulations, the focus now should look at the significant gaps which exist in the operational elements of these regulations. Working with national governments on their processes for customs clearing of seed would benefit future programming for seed upscaling. Reducing customs bottlenecks would have substantial impact in opening up the regional seed trade, thus increasing the volume of intra-regional trade by private sector seed companies.

INTRODUCTION

ACTIVITY BACKGROUND

In June 2017, USAID/West Africa (WA) and the West and Central African Council for Agricultural Research and Development (CORAF) signed a five-year (2017-2022), US$15 million-dollar Cooperative Agreement to provide support for a program entitled the Partnership for Agricultural Research, Education and Development (PAIRED).

The PAIRED Activity's primary aim was to undertake systemic reforms that would improve the efficiency, effectiveness, and professionalism of CORAF. This would be done to move the organization towards becoming a leading instrument for the regional coordination of agricultural research, and to put it on a path to financial stability and sustainability. The reforms would result in making the organization solid and resilient with a new strategic orientation capable of providing a high-quality, demand-led, core services package.

The PAIRED Activity derived its legitimacy and urgency from three interconnected realities. First, CORAF needed to build its organizational capacity to deliver more efficiently and effectively on its vision, with robust operational and implementation systems. Secondly, CORAF needed to engage emerging actors more effectively (e.g., private sector and Agricultural Research for Development (AR&D) foundations) and facilitate, enable, and encourage public and private investments in specific value chains. Finally, the program sought to ensure much needed adoption of improved agricultural technologies and practices by smallholder farmers. To this end, CORAF was expected to innovatively work with governmental and non-governmental partners to support and advocate for mechanisms that could persuade the private sector to put in place systems that ensured sustained availability, delivery, and adoption of improved seeds, fertilizers, and other agri-inputs.

Ultimately, the PAIRED Activity arrived at the following theory of change (ToC) to guide the design of the change pathways resulting in the expected results of the PAIRED Activity. It states as follows:

> ***If***, capacity of CORAF is strengthened to effectively coordinate agricultural research and development in West Africa, ***then***, CORAF will be able to assemble the necessary capacities, systems, and processes to deliver most efficiently on its vision, with robust operational and implementation systems, and this will lead to improved agri-input market and agricultural productivity in West Africa through establishing innovative scaling framework for Agri-input Technologies and Innovations and increasing the use of quality Agri-inputs in WA.

The PAIRED Activity consisted of three mutually reinforcing components that provided CORAF with financial, technical, and human resources to execute its core mandate. They included:

- Component 1: Strengthening CORAF's institutional capacity.
- Component 2: Innovative scaling framework for agri-input technologies and innovations established in West Africa; *and*
- Component 3: Use of quality agri-inputs in West Africa increased.

Components 2 and 3 were expected to deliver, in tandem with an increasingly strengthened CORAF secretariat (Component 1), to foster a progressively conducive policy environment for technology generation, dissemination, and adoption across the region and beyond. This was in line with the PAIRED TOC wherein enhanced coordination of a strengthened Executive Secretariat will impact positively on technology generation, dissemination, and utilization.

This independent PAIRED Final Evaluation assessed the performance of the PAIRED Technical Program Components 2 and 3, to determine if planned activities led to the achievement of activity objectives and expected outcomes.

EVALUATION PURPOSE

This independent evaluation assessed the performance of the PAIRED Activity's Technical Approach under Components 2 and 3, to determine if planned activities led to the achievement of activity objectives and expected outcomes. Evaluation findings will be used by USAID and CORAF to assess progress to date in building the capacity of key regional stakeholders, scaling access to proven agricultural input technologies and good agricultural practices, determining the sustainability of accomplishments to date, and serving as a learning tool on the successes, weaknesses, and gaps of the program. The intended audiences of this evaluation are the USAID/WA, Economic Community of West African States (ECOWAS) and its affiliated bodies, the National Agricultural Research Institutions, and any development actor who may be interested in regional agriculture and seed systems development.

Additionally, evaluation findings will be used to inform new activity descriptions for future programs in support of key strategic documents: i.e., newly adopted ECOWAS Regional Integrated Strategy for Inputs; the ECOWAS Agriculture Program (ECOWAP); and the USAID Regional Plan for Global Food Security Strategy (GFSS) for West Africa.

This evaluation focused on PAIRED Activity performance with respect to expected results and objectives by PAIRED technical program components 2 and 3; program design and management; the prospect of long-term sustainability; and practical recommendations for performance improvement and strategic planning. The evaluation determined if planned activities led to the achievement of activity objectives and expected outcomes. In a general sense, the objectives of the final evaluation are to provide an overall independent ability:

- To assess the progress toward meeting PAIRED objectives.
- To assess the validity of program strategies, approaches, and assumptions.
- To assess program performance management by PAIRED implementing partners; *and*
- To identify lessons learned and recommend actions for improving future programming.

In keeping with best practices, the evaluation team prioritized best practices and methodologies as a measure of the PAIRED Activity's performance. Output measurements are included to provide evidence for gauging the overall relationship between PAIRED assumptions, PAIRED interventions, and overall sustainability. Challenges and limitations are presented to justify the evaluation approach as the best possible methodology, given the reality on the ground.

EVALUATION QUESTIONS

The PAIRED Final Evaluation scope of work (SOW) detailed the following list of evaluation questions:

1. How successful has the PAIRED activity been in meeting its planned targets?
    a. If certain activity components have not been successful, please explain why (in areas of the program's assumptions, programmatic implementation, gender/youth integration into the seed or fertilizer sector, private sector partnership, staffing, etc.).
2. Which areas of performance require CORAF and USAID's remedial attention? What recommendations are there for strengthening, improving, and building upon (scale-up) program successes of PAIRED's components and sub-activities post-2022? What is the viability of the approach PAIRED has taken to scale up agriculture technologies and to build supply and/or meet agri-business companies and farmer demand for improved seeds?

3. Is CORAF/PAIRED's leadership in strengthening the seed system and advancing the ECOWAS Seed Regulations regarded as effective (or integral to scaling-up seed input success) by their counterparts such as the International Agriculture Research Centers, and NARIs, or others?
    a. Are the institutional structures/relationships now in place, for example, within partnership institutions such as the National Agriculture Research Institutes (NARIs), or are they being developed to sustain the relationships and investments that are being made by PAIRED?
4. Have CORAF and ECOWAS achieved success in advancing the ECOWAS Seed Regulations with USAID support? If not, please describe and justify what is left to do and what could be considered as success. What are the implications of donors not funding this regulation under future programs?
5. Has the CORAF leadership used the PAIRED activity to forge deeper private-sector engagement in the agricultural inputs system, especially seeds? How has the private sector fulfilled the roles expected of it in the regional seed sector? For example, describe the viability of the private sector and how it is advancing the development, promotion, and sale of certified and foundation seed.
    a. What vulnerabilities/weaknesses/gaps still exist within the private sector and what can be done to address them?
6. To what extent has PAIRED and International Fertilizer Development Center (IFDC)/ Enhancing Growth Through Regional Agricultural Input Systems **(**EnGRAIS) collaboration been effective in addressing agriculture technologies' scale up and availability of quality inputs? What is the value addition of CORAF/PAIRED in this collaboration? Include an analysis of the strengths and weaknesses of this collaboration as well as recommendations, if any, on how to improve this partnership.
7. How efficient and sustainable are the tools and systems developed and/or maintained by CORAF with the support of PAIRED (i.e., West Africa Seed Information Exchange (WASIX), FeSERWAM platform, MITA web-based Application, etc.)? What are the strengths (usefulness, utilization) and weaknesses of each tool/system?

EVALUATION METHODOLOGY

The evaluation relied heavily on a semi-structured qualitative design appropriate for a final performance evaluation, while also relying on available quantitative data to triangulate findings. This approach allows USAID, CORAF and its stakeholders to understand the effectiveness of PAIRED programming and build a knowledge base to inform future decision-making, enabling USAID to test the key hypotheses behind the overarching results framework's theory of change. This design allows for process evaluation and an assessment of the achievement of the project's targets and objectives.

SCOPE AND COVERAGE

The PAIRED Final Evaluation was carried out in a total of six West African countries and captured the experiences of national government representatives and agricultural authorities, representatives of research and academic institutions, private sector actors working in agricultural input supply, cooperative and association representatives working in agriculture, and community members in the targeted areas.

The evaluation approach was designed with extensive and detailed qualitative questionnaires, specifically intended to address PAIRED regional learning objectives, and was administered across relevant actors within the six West African countries: Benin, Ghana, Mali, Niger, Nigeria, and Senegal. The following stakeholder groups were identified as the primary groups able to comprehensively address the seven evaluation questions:

- PAIRED Implementing Partner
- CORAF Directorate
- National Agricultural Research Institution
- Innovation Platforms
- Private Sector Businesses
- Community Agri-Input Dealers

The thematically structured, qualitative questionnaires collected detailed information on PAIRED Activity implementation, performance successes and challenges, and lessons learned at all levels of stakeholder engagement. The following are the broad areas from which data was collected during the study:

- Program management and organizational development.
- National and/or regional seed regulation.
- Agri-input technologies and innovations; and
- Private sector engagement.

For the purposes of this study, each questionnaire was designed to provide guidance on expected questions to each stakeholder group, and thus was not subject to a completion threshold. In every site visit, the evaluation team ensured that women and youth were included to gather independent feedback from their experiences. The full set of questionnaires is available in Annex E.

PAIRED COUNTRY PROFILES[1]

The PAIRED Final Evaluation assessed the PAIRED Activity's implementation in the following West African countries: Benin, Ghana, Mali, Niger, Nigeria, and Senegal. Below is an overview of each country's characteristics as relevant for the PAIRED Activity.

A. Benin

With a population of approximately 13,760,000 people, agriculture significantly contributes to food security and supports livelihoods through income generation and job creation. However, the sector is dominated by subsistence farming, is largely dependent on rainfall and is vulnerable to climate change. Under the PAIRED Activity, the Institut National des Recherchés Agricoles du Bénin (INRAB) worked with two Innovation Platforms in the maize value chain, reaching a total of 427 farmers over the life of the Activity.

B. Ghana

Ghana has a population of 25,370,000 people with approximately 52 percent of the labor force engaged in agriculture. Agriculture contributes to over half of Ghana's GDP, accounts for over 40 percent of export earnings, and provides for over 90 percent of the food needs of the country. The PAIRED Activity worked with the Council for Scientific and Industrial Research's Crops Research Institute (CRI) and the Savannah Agricultural Research Institute (SARI) in maize and rice value chains, reaching 511 farmers through 22 Innovation Platforms.

C. Mali

Mali's 20,740,000 people experienced a severe prevalence of food insecurity in 2021, primarily due to an upsurge of violence. Approximately 80 percent of the labor force is engaged in farming and fisheries in either the Niger River or Senegal River watersheds which cover nearly 55 percent of the country's land area. Mali's remaining land area is located in the interior basin of the Sahara Desert. Facing a unique set of challenges in Mali, the PAIRED Activity partnered with the Institut d'Economie Rurale (IER) to address Sahelian millet, sorghum, and maize crops, reaching 2,831 farmers in 10 Innovation Platforms.

D. Niger

With a population of just over 24 million people, Niger is prone to recurrent food crises, which compound the challenges faced by an already food-insecure population. For over a decade, Niger has experienced a food security crisis with agricultural and pastoral production deficits, caused by rapid population growth, high food prices, and climatic and environmental factors disrupting production. The PAIRED Activity worked with the Institut National de la Recherche Agronomique du Niger (INRAN) to implement four Innovation Platforms and reach 950 farmers in rice, millet, and sorghum value chains.

E. Nigeria

Nigeria is the largest country in West Africa with a population of over 225 million. Over 70 percent of Nigerians engage in the agriculture sector mainly at a subsistence level, with agriculture contributing upwards of a quarter of Nigeria's GDP. To adequately address the scale of Nigeria, PAIRED partnered with two research institutions, the Institute of Agricultural Research (IAR) and the National Cereals Research Institute (NCRI), working in maize and rice value chains, allowing the Activity to reach 4,324 farmers.

[1] All population statistics are estimates for 2021 and derived from tps://www.cia.gov/; all GDP and agriculture related statistics are extracted from https://www.fao.org/.

F. Senegal

With a population of 17,920,000, agriculture accounts for 15 percent of Senegal's GDP. Senegal hosts the CORAF Offices and serves as the Headquarters location for the PAIRED Activity. The PAIRED Activity looked to partner with the Institut Sénégalais de Recherche Agricole (ISRA); however, due to management challenges, no Innovation Platforms were established at the time of evaluation. The PAIRED Activity intended to work with millet and sorghum value chains in Senegal.

DATA COLLECTION

The PAIRED Final Evaluation was conducted by four expert consultants, with operational support provided by the PAIRED Activity and the USAID ASSESS teams. The Evaluation Team Lead designed and supervised the field data collection effort, while the ASSESS Activity staff travelled with the expert consultant team to each evaluation county and provided operational support for engaging and coordinating with PAIRED Activity counterparts.

Prior to the commencement of field data collection activities, the evaluation expert team held a workshop to ensure continued technical understanding and interviewing guidelines to maintain strict quality-control, ethical, and confidentiality procedures. All workshop activities were conducted over a 2-day period in Dakar, Senegal, including a half-day session revising data collection instruments with USAID/WA representatives. The workshop consisted of harmonizing the various technical lenses needed to evaluate the PAIRED Activity, questionnaire explanations and practice, and engagement approaches for the different stakeholder groups.

The main evaluation fieldwork took approximately four weeks to complete, from August 8 to September 1, 2022. The evaluation team split into two groups to ensure adequate time for assessing each evaluation question and its underlying objectives within each country. To maintain harmonization of data collection activities, the expert consultants maintained regular communications throughout the data collection period. The following table provides the detailed data collection schedule.

Table 1: Final Evaluation Data Collection Schedule

Activity		Start Date	End Date
Evaluation Team Harmonization Workshop		August 4	August 6
Data Collection			
	Benin	August 26	September 1
	Ghana	August 11	August 23
	Mali	August 15	August 18
	Niger	August 19	August 25
	Nigeria	August 25	September 1
	Senegal	August 8	August 12
Data Synthesis & Analysis		September 2	October 2

DATA COLLECTION INSTRUMENTS

The PAIRED Final Evaluation relied on seven qualitative interview guides. The aim of each questionnaire was to gain information on the variety of experiences and issues faced by the various levels of PAIRED stakeholders and beneficiaries and to document successes and changes in beneficiary behavior. Each questionnaire included components on program management and organizational development, national and/or regional seed regulation, agri-input technologies and innovations, and private sector engagement. The questionnaires were tailored to the specific respondent group, and where applicable, questions related to the interconnectivity of the PAIRED program between groups were included.

The PAIRED Final Evaluation conducted a total of 108 unique interviews across the six evaluation countries. Given the PAIRED Activity's primary intervention approach, interviews were focused heavily on the NARIs and the various actors associated with Innovation Platforms, with 18 interviews held within eight NARIs and 61 interviews completed across 20 Innovation Platforms. Table 2, below, details the distribution of unique interviews conducted during the course of data collection

Table 2: Number of unique interviews, by country and stakeholder group

	Benin	Ghana	Mali	Niger	Nigeria	Senegal	Total
PAIRED Staff	-	-	-	-	-	1	*1*
CORAF	-	-	-	-	-	1	*1*
Research Institution	2	8	1	2	4	1	*18*
Innovation Platform	14	33	3	3	8	-	*61*
Private Sector	-	4	1	1	3	1	*10*
Cooperative / Association	-	-	-	2	1	2	*5*
Other Stakeholder	1	-	2	3	3	3	*12*
Total	*17*	*45*	*7*	*11*	*19*	*9*	*108*

For a detailed list of all interviews conducted, please see Annex A.

EVALUATION LIMITATIONS AND CHALLENGES

As with all evaluations, several limitations and challenges emerged during the course of the fieldwork. The evaluation team made every effort to address the limitations that emerged and to maintain best practices in identifying appropriate solutions.

PAIRED staff availability: The PAIRED core staff was engaged in various implementation activities during the evaluation period, reducing their availability to conduct detailed one-on-one interviews during the Evaluation Team's time in Senegal.

Safety and security of interviewees and evaluators: The field team faced various engagement challenges related to insecurity in Mali, Niger, and Nigeria. In all three countries, the number of available innovation platform engagements were restricted due to two reasons: (1) the evaluation team was barred from traveling outside of the capital cities and (2) road security issues made it difficult for innovation platform actors to travel into the capital cities. The Evaluation provided logistical support to bring the innovation platform actors for in-person discussions with the evaluators in all three insecure countries. However, this reduced the evaluation team's ability to engage with large numbers of innovation platform actors when compared against the three other country sites (Benin, Ghana, Senegal.)

The following report reflects chapters mapped against the evaluation questions and serves as the main structure for outlining the evaluation findings. Each evaluation question chapter provides a synthesis of quantitative and qualitative findings, field observations, notes, considerations, and remaining areas for improvement or engagement, as relevant to that question.

EVALUATION QUESTION 1

1. How successful has the PAIRED activity been in meeting its planned targets?

- ***a. If certain activity components have not been successful, please explain why (in areas of the program's assumptions, programmatic implementation, gender/youth integration into the seed or fertilizer sector, private sector partnership, staffing, etc.).***
- ***b. Which areas of performance require CORAF and USAID's remedial attention?***

The PAIRED program sought to improve agricultural productivity in West Africa through the delivery of training, technical support, coordination, and enhanced access to agri-inputs in a holistic system that considers access, affordability, availability, and incentives for farmers to adopt technological packages. The program sought to enhance the production, distribution, and widespread use of certified seeds, fertilizers, and pesticides by smallholder farmers as a package (seeds, fertilizer, pesticides, and best practices), and thus improve agricultural productivity. The program was expected to use a two-pronged approach:

- Scaling up promising agricultural technologies and innovations, with a focus on seed production and distribution, to farmers and other technology users throughout the major agricultural value chains in the region.
- Increasing production and availability of quality agri-inputs through the promotion of business models in support of contractual arrangements for marketing of seeds and fertilizers.

The following discussion outlines the results from the PAIRED Activity's Key Performance Indicators and triangulated against findings from the independent interviews and discussions held in the field.

STAKEHOLDER CAPACITY AND IMPROVED PERFORMANCE

The PAIRED Activity's performance is tracked against twelve indicators selected to measure IR2 and IR3: three outcome indicators (one standard and two custom indicators) and nine output indicators (one standard and eight custom indicators). Disaggregation by sex and age is done for relevant indicators. Additional indicators required disaggregation per organization type, management practice / technique, commodity, and development stage, when applicable. The complete PAIRED Indicator Performance Tracking Table (IPTT) is provided in Annex D[2].

Table 3 introduces one of the key outcome indicators of the PAIRED Activity, the percent of USG-assisted organizations with improved performance. PAIRED activities designed around training, capacity support and skills transfer underpinned this indicator.

[2] The IPTT in Annex D provides a detailed breakout of annual targets and achievements, with LOP aggregates provided as a simple difference between target versus achieved for all indicators.

Table 3: Percent of USG-assisted organizations with improved performance - CBLD-9 (Indicator 1.1)

	FY18	*FY19*	*FY20*	*FY21*	*FY22*	*Target Achieved*[3]
Total percentage of organizations with improved performance	100	100	35	89	-	62
Research Institution	100	100	226	128	-	95
Cooperative	-	-	0	50	-	37
Producer Group	-	-	0	109	-	67
NGO	-	-	0	50	-	33
Government Agency	-	-	0	135	-	76
Other	-	-	0	0	-	0

The Activity did not achieve any of its intended targets for this indicator, with only 62 percent of organizations with improved performance across all groups. In a clear reflection of observations made in the field by the evaluation team, research institutions, producer groups and government agencies served as the main beneficiaries of PAIRED implementation, with 95 percent of research institutions, 76 percent of government agencies and 67 percent of producer groups with improved performance. Just a third of cooperatives (37 percent), NGO (33 percent) and other organizations (zero percent) demonstrated improved performance. Figure 1 below illustrates the difference between target versus actual achieved in the IPTT reported data.

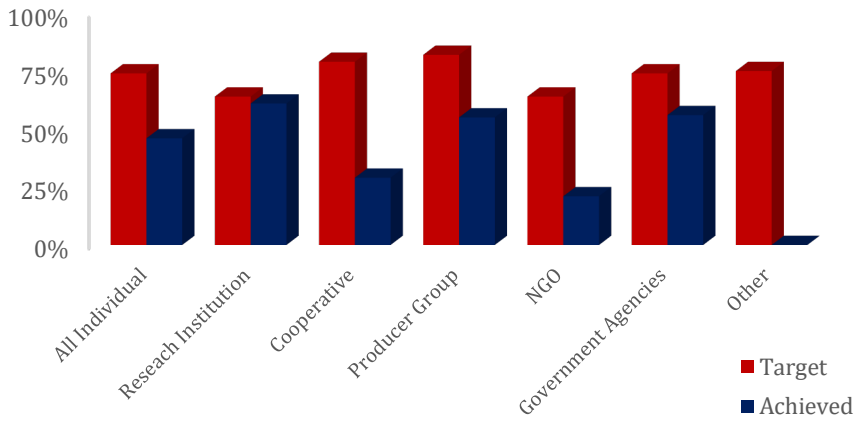

Figure 1: Percent of USG-assisted organizations with improved performance, target versus achieved by group type.

[3] This calculation appears to be miscalculated and likely reflects a cumulative versus non-cumulative record keeping in the IPTT. The bias appears to over report this statistic, resulting in higher than true values. As this evaluation does not serve the function of a Data Quality Assessment, and clear meaning in the reported number was unclear in the AMELP. The evaluators have taken all reported data as accurate and reported in line with this assumption, despite reservation on the data quality.

Through these organizations, the PAIRED Activity was able to reach a total of 16,840 individuals through USG food security programs[4] (Table 4), exceeding their target by 33 percent. Women made up one-third of the total participants, while youth accounted for every one in five individuals. Producers accounted for the vast majority of individuals in the PAIRED Activity, representing 63 percent of the total number of individuals and exceeded the intended target by 206 percent.

Table 4: Number of individuals participating in USG food security programs - EG.3-2 (Indicator 2.1)

	FY18	*FY19*	*FY20*	*FY21*	*FY22*	*TOTAL*	% *Difference* [5]
Total individuals	-	0	3628	11319	1893	16840	33
Sex of individuals participating							
Male	-	0	1377	7952	1232	10561	36
Female	-	0	2251	3367	661	6279	27
Age Category of individuals participating							
15-29	-	0	692	1924	384	3000	18
30+	-	0	2936	9395	1509	13840	36
People in government	-	0	1025	1132	284	2441	-47
People in private sector firms	-	0	2250	340	95	2685	-21
People in civil society	-	0	353	453	305	1111	-8
Producers	-	0	0	9392	1209	10603	206

Overall, the PAIRED activity met their targets in regard to total individuals, gender, and age distributions. However, the Activity's focus on producer groups within the Innovation Platforms meant that the Activity exceeded its target in producers but fell short of engaging other stakeholders, missing 47 percent of their targets for people in government, 21 percent for individuals in the private sector and 8 percent of civil society actors. Figure 2 provides a supplemental analysis in the distribution of beneficiary group types as a proportional share of total beneficiaries in USG food security programs. The distribution illustrates the PAIRED Activity's focus on producer groups, with 63 percent of all beneficiaries belonging to this group;

[4] The Evaluation Team noted that these calculations do not disaggregate against new versus continuing participants on an annual basis. The average LOP of average participants per country amounts to 2,834 individuals, which appears high given the observations made in the field during the evaluation.

[5] To understand the PAIRED performance more clearly, the final LOP achievements are provided as the percentage difference between the targeted value and the achieved performance. This allows for understanding the results as either in the positive or in the negative direction of the target. If the Activity achieved its target exactly, the percentage achieved would be "1". If the Activity overachieved, the reported statistic provides how much of that achievement was above the expected target (a positive value). Conversely, a negative value should be understood to mean the Activity performed 42 percent below the target (or achieved only 58 percent of its intended target). For example, in Table 4 the Activity reported a 33 percent over achievement from the expected target for all individuals but missed its target by -47 percent when disaggregated by people in government.

people in government (14 percent), private sector (16 percent) and civil society (7 percent) accounted for only a third in the total composition of beneficiaries.

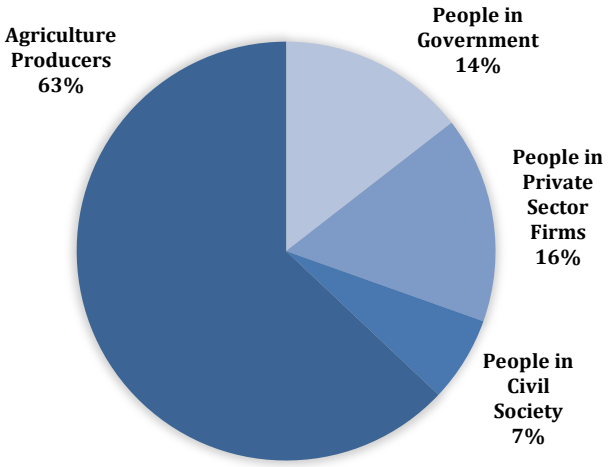

Figure 2: Distribution of individuals participating in USG food security programs, by group type.

TRAINING ACTIVITIES AND TOOLS

Training activities served as invaluable in building the capacity of NARIs and Innovation Platform leadership but had limited scope past traditional "producer association" actors. The human capacity at the NARIs was enhanced, specifically in areas of management and operations, innovation platform development, monitoring and evaluation (M&E), financial accounting and report writing, while innovation platform leaders and seed growers reported enthusiastic approval of the quality of training they received in good agricultural practices.

> *All of the training was useful, but I most enjoyed the M&E Training. It helped us understand how to create a strong baseline and defend our work. It is something I hope to use in other areas of my work - NARI Staff Member*

> *I am a leader at the Innovation Platform. I really benefited from the training in trustworthiness and transparency. It is good for us as leaders to understand how to lead our farmers into the future – Innovation Platform Executive Leader*

Training activities served as the key aspect of PAIRED's improved performance activities. The PAIRED Activity promoted a series of training during the entire Activity period, including:

- Good Agricultural Practices (GAP)
    - Seed quality control and compliance with the regional seed certification schemes
    - Plant variety protection and seed business empowerment.
    - Training on technical examination of the Distinctiveness, Uniformity and Stability (DUS) of new plant varieties candidate for protection and or registration in the national and regional catalogs.
    - Training on Participatory Integrated Climate Services for Agriculture

- Online trainings[6] on: Quality Seed production, Drying, Processing and Storage; Seed demand forecasting and production planning; Seed quality control and compliance with the regional seed certification schemes; Seed business management and marketing; Use of ITC in enhancing small farmers' access to quality seeds.
- Training actors to speed up domestication and the implementation of the regional protocols.
- Training on seed certification
- PAIRED specific management training
- Training for Monitoring & Evaluation
- Training on gender capacity building for stakeholders involved in projects and interventions.

In addition to providing training activities, the PAIRED Activity capitalized on CORAF's research capacity to design, develop and distribute seed and fertilizer toolkits to increase the number of resources and documented good agricultural practices available to PAIRED beneficiaries (Table 5). Overall, 357 agro-ecology seed and fertilizer information kits were made available through the PAIRED Activity; 90 in maize, 172 in rice, 56 in millet and 39 in sorghum. In all, the Activity exceeded its target by 233 percent.

Table 5: Number of Agro-ecology based Seed and fertilizer information toolkits made available (Indicator 2.1.3)

	FY18	*FY19*	*FY20*	*FY21*	*FY22*	*TOTAL*	*% Difference*
Maize	-	-	51	31	8	90	233
Rice	-	-	52	88	32	172	562
Millet	-	-	21	31	4	56	107
Sorghum	-	-	18	18	3	39	44
TOTAL	-	-	142	168	47	357	233

INNOVATION PLATFORMS

PAIRED's primary mechanism for upscaling was through the use of Innovation Platforms. A functional Innovation Platform was designed to be anchored by a NARI which managed the PAIRED activities within the Innovation Platform; Agricultural extension officers, private seed companies, agri-input dealers, credit institutions, insurance institutions, producers, grain traders and processors formed the "universe" of actors expected to be linked into the Innovation Platform. The Activity had a target of 36 Innovation Platforms for T&Is upscaling. As Table 6 notes, the Activity well exceeded that target by 133 percent.[7]

[6] Developed and conducted in partnership with the Food and Agriculture Organization of the United Nations (FAO)

[7] It is worth noting that the Evaluation Team was only able to document a total of 43 Innovation Platforms during the field work. This is still in excess of the proposed target of 36, but significantly lower than the cumulative totals reported in the IPTT.

Table 6: Number of functional Innovation Platforms used for T&Is upscaling (Indicator 2.1.1)

	FY18	*FY19*	*FY20*	*FY21*	*FY22*	% *Difference*
Total Number of Innovation Platforms	-	0	32	26	26	133

Supplementing the Activity's reported data, Table 7 below details the composition of the Innovation Platforms associated with each country and NARI as recorded by the evaluation team. In total, the PAIRED Activity engaged with 43 Innovation Platforms during the life of project. The majority of NARIs were elected to work with previously established Innovation Platforms. The expectation was that these previously established groups would have lower initial investment costs to begin the PAIRED implementation. Previously established Innovation Platforms were established under a number of different donor engagements, ranging from AfricaRice to AfDB projects. These Innovation Platforms functioned as producer groups first and foremost and ultimately returned limited success at upscaling seed production and availability. Only CRI and IAR, in Ghana and Nigeria respectively, organized new Innovation Platforms in their targeted communities, where the focus on quality seed production was a foundational aspect of the Innovation Platforms identity.

In terms of the size of each Innovation Platform, there was substantial variation across the farmers engaged in the Innovation Platforms. Mali and previously established groups in Nigeria's NCRI cohort reflected over a decade's organization into some form of farming group, with 2,831 farmers linked into IER's activities and 3,734 farmers associated with NCRI. Ghana represented the most conservative approach to designing their Innovation Platforms; Ghanaian NARIs limited the actors engaged in the Innovation Platform to 30 participants.

A functional Innovation Platform was designed to be anchored by a NARI which managed the PAIRED activities within the Innovation Platform; Agricultural extension officers, private seed companies, agri-input dealers, credit institutions, insurance institutions, producers, grain traders and processors formed the "universe" of actors expected to be linked into the Innovation Platform.

Table 7: Innovation Platform compositions, by Country, NARI, and Actor

	Benin	*Ghana*		*Mali*	*Niger*	*Nigeria*		*Senegal*	*Total*
	INRAB	CRI	SARI	IER	INRAN	IAR	NCRI	ISRA	
Innovation Platforms	2	10	12	10	4	3	2	0	43
New	0	7	0	0	0	3	0	0	10
Previously established	2	3	12	10	4	0	2	0	33
Farmers	427	288	223	2831	950	590	3734	0	9043
Male	236	138	101	1280	699	455	1516	0	4425
Female	191	94	132	1551	251	135	2218	0	4572
Youth	55	57	41	730	106	157	135	0	1281
Certified Seed Growers[8]	0	0	0	0	0	0	0	0	0
Agri-Input Suppliers	1	11	8	13	5	5	21	0	64

The Innovation Platforms in each location worked with the NARIs to set up demonstration plots and introduced the latter's improved varieties, in addition to required fertilizer, pesticides and good agricultural practices as a package. These demonstrations also utilized farmers preferred local seed varieties as a check for comparison. The model sought to enhance the use of improved seed and fertilizer packages in the Innovation Platform catchment areas and thus generate a critical mass of users and guarantee widespread adoption of the innovation.

In all six countries, the PAIRED Activity struggled to attract the interest of agri-input dealers to become actors in the Innovation Platform model. In Ghana, for example, only Atebubu, Amantin and Nsoatre Innovation Platforms were able to attract an agri-input dealer to join the group. In these IPs, the dealers offered advice on seed and pesticide applications to the members. Some offered sales on credit for inputs at the start of the season, which were paid at the end of the season, either in cash or in kind with farm produce.

> *Community seed production isn't enough. There is a need to formalize them into Seed Innovation Platforms with linkages to certification. Innovation Platform seed growers could move into certified growers, but inspector availability and inspection processes create limitations that need to be addressed – PAIRED Activity Coordinator*

Overall, PAIRED seed upscaling was limited for maize and negligible for rice in Ghana and Nigeria due mainly to poorly composed Innovation Platforms or a lack of understanding of how the Innovation Platform model should pivot from producer group to seed producing group. The bulk of the seeds

[8] PAIRED was expected to increase the number of available certified seed growers, creating community seed growers to increase community access. This measurement reflects new certified seed growers created in the Innovation Platform by PAIRED related activities. Where previously established certified seed growers were linked to the Innovation Platform, they are absorbed as agri-input suppliers.

produced from the PAIRED Activity supported Foundation Seed, which offered a certified seed quality to be used for the next season's crop, but which was instead sold as grain.

There appeared to be limited understanding by the Innovation Platform farmers and leadership that the yield from the provided foundation seed was intended for use as high quality (if not formally certified) seed and not grain. Consistently, in nearly every Innovation Platform visited during the evaluation, Certified seed growers grew more seed than was demanded within the Innovation Platform; with no additional market channels to sell their seeds to, the growers sold the majority of their seed crop to grain buyers. In one of the more severe cases of market linkages failure, nearly 30 tons of "certified" quality seed was sold to a commercial grain buyer for animal feed in Nigeria. Despite these seed upscaling difficulties, the PAIRED Activity producers reported high satisfaction at their increased yields and the premium price they received, even as grain, for their seed.

The PAIRED Activity required that each Innovation Platform develop and implement an action plan (see Table 8). All of the Innovation Platforms developed their action plans and began implementation.[9] Given the challenges associated with connecting upscaling activities to a production mindset within most of the Innovation Platforms, greater care should have been taken in designing these action plans to incorporate market channels and private sector actors into the broader objectives of the PAIRED Activity.

Table 8: Number of innovation platforms action plans developed and implemented (Indicator 2.1.2)

	FY18	*FY19*	*FY20*	*FY21*	*FY22*	*Target Achieved*
Number of action plans developed & implemented	-	-	12	26	26	178 %

The limited period of project implementation did not make it possible for the Innovation Platform members who showed interest in and were trained as seed growers to complete both the registration and certification processes necessary to become certified seed producers. In the case of maize, most PAIRED countries required at least two seasons of observation before any certification could be established. The rice, sorghum and millet value chains had the lowest success in committing to certified seed growing; grain production remained the key production interest for Innovation Platform farmers associated with these crops.

Not all farmers can be, or should be, seed farmers – PAIRED Activity Coordinator

While CRI in Ghana showed the strongest understanding of the stakeholder linkages needed to graduate community seed growers to certified seed growers, failure to facilitate the certification licensing process for the vast majority of seed producers in the Innovation Platforms thwarted the upscaling intention of the PAIRED Program. In total, approximately 30 seed growers were identified and engaged at some level towards the process of certification; while not a single certified seed grower was produced under the PAIRED implementation period, the Activity is likely to have facilitated potentially 6-8 certified seed growers by the end of this growing season.

PRIVATE SECTOR ENGAGEMENT

While adoption of improved seed is about 50 percent in Eastern and Central Africa, the adoption in West Africa is only between 5 – 10 per cent – Private Seed Company

[9] It is not clear to the Evaluators how this result is above 100%. From this statistic, 78 percent more Innovation Platforms completed Action Plans, which is illogical. It is assumed that there are data errors in relation to cumulative tabulation that is resulting in awkward statistics.

The private sector plays a role in the supply of quality inputs and the adoption of technological packages that will be essential in realizing the agricultural potential for greater impact. The PAIRED Activity's collaboration with other ECOWAS technical partners looked to engage diverse private sector stakeholders, who are the key players in commercializing agricultural technologies and innovations, together with their associated products.

The Evaluation team noted that the private sector engagement between the PAIRED Activity, in general, and the Innovation Platforms, specifically, with various private agri-input actors in West Africa was weak. This is in contrast to the growing presence of private sector seed companies, especially in Ghana and Nigeria. Table 9 below illustrates this growth, with 349 new seed companies being reported during the Activity's performance period, a nearly 15-fold increase over the expected target.

Table 9: Number of new seed companies supplying quality seed in West Africa (Indicator 3.1.1)

	FY18	*FY19*	*FY20*	*FY21*	*FY22*	*Target Achieved*
Number of new seed companies	-	0	0	132	217	1,938 %

Despite a large increase in the number of seed companies operating in PAIRED supported countries, there was limited and uninspired engagement during the PAIRED Activity. The primary method of private sector engagement resulted from NARIs inviting private seed companies to exhibit their seed on PAIRED supported demonstration plots and Innovation Platform communities. Private sector firms such as SeedCo were involved in the design of demonstrations, field days and promotional materials, where they showcase their varieties alongside those of the NARIs. In all five countries with active Innovation Platforms, at least one private seed company was invited to exhibit one seed variety on a demonstration plot.

> *"Promote our own" when it comes to seed production; the community needs to see that the seed business is viable; identify individual farmers who can scale drying and storage linkages; marketing grain versus seed – PAIRED Activity Coordinator*

Certain private sector actors, limited seed companies and community seed growers, received technical training on seed production and the certification process. While the NARIs are well positioned, and in many instances mandated to a role in the certification process, PAIRED leadership did not adequately impress upon the NARIs their need to engage private sector actors more deeply. This lack of adequate planning and communication at the leadership level left wide gaps in the linkages from community seed growers to large scale seed companies. On the supply side, the Evaluation Team recorded multiple instances of farmers utilizing their seed as grain from a lack of localized demand. There was no focus on creating a path for farmers to become certified seed growers. Conversely, seed companies often rely on out growers for their seed production needs. Such opportunity to link supply and demand side actors was glaringly missing from the Activity.[10] In the final year of implementation, PAIRED has committed some efforts to reverse this situation, collaborating with Alliance for a Green Revolution in Africa (AGRA) and Syngenta Foundation, bringing the private sector actors to link with the African Enterprise Challenge Funds (AECF). The Evaluation Team was unable to evaluate any outcomes of this effort due to the resulting short implementation window

[10] In Nigeria, the market linkages were in fact with large grain buyers, who annually purchased seed stock for their grain business.

VOLUME OF SEED PRODUCTION

The paramount objective of PAIRED's Components 3 was to arrive at seed upscaling, which was measured through volume of quality seed produced in the region. Overall, the achievement rate varies according to the commodity and/or the type of seed. For maize and rice, the targets for breeder, foundation and certified seed were exceeded, with certified maize returning 461 percent and certified rice seed arriving at 54 percent above the targeted volume. In millet and sorghum, no targets were met for any type of seed (breeder, foundation, and certified). Discussions held with NARIs and leaders in the millet and sorghum Innovation Platforms indicated that supply for certified seeds in these value chains is not yet met because farmers are not willing to pay for certified seeds; reduced profitability resulted in limited interest from the private sector. Table 10 illustrates the volume of quality seed produced in the region (in metric tons and by seed type.)

Table 10: Volume of quality seed produced in the region, in metric tons by value chain (Indicator 3.1)

Value Chain	Disaggregate	*FY18*	*FY19*	*FY20*	*FY21*	*FY22*		% *Difference*
Maize	*Breeder*	-	-	0	116	558		349
	Foundation	-	-	0	3482	4326		189
	Certified	-	-	65641	117791	119305		461
Millet	*Breeder*	-	-	0	14	12		-56
	Foundation	-	-	0	819	6082		92
	Certified	-	-	1913	11788	5563		-51
Rice	*Breeder*	-	-	0	186	149		179
	Foundation	-	-	0	5204	5560		139
	Certified	-	-	71560	122060	105940		54
Sorghum	*Breeder*	-	-	0	20	22		-54
	Foundation	-	-	0	668	1217		-58
	Certified	-	-	4836	24962	26981		-5

Breeder to Foundation Seed is the key barrier to increasing seed availability – PAIRED Activity Coordinator

Despite having very limited success in turning Innovation Platform farmers into drivers of certified seed production, it is clear the overall market for certified seed is growing. These certified seed volumes track reasonably with the substantial increase in the number of seed companies in West Africa (*Indicator 3.1.1*). Maize, which has the highest barriers to entry[11] for new certified seed growers, performed particularly well in the aggregate, which is likely a reflection of strong market demand driving seed suppliers to profit from maximized production.

Maybe I'll leave the grain and only grow seed in the future – Community Seed Grower

The data derived from the indicator data and evaluation gathered data raises questions around the underlying approaches to community seed growers versus established seed companies. As evidenced by the aggregate PAIRED reported data, certified seed production is increasing in West Africa; however, supply is still unable to address demand. The evaluation team's observations suggest that there remains an opportunity to identify individuals in communities who have the resources and entrepreneurial

[11] Certified maize seed, which generally is grown as a hybrid varietal, requires substantial investment in terms of land (as a barrier against cross pollination contamination is controlled for) and fertilizer inputs. Any hybrid varieties have higher demands than open pollinated varieties.

characteristics to become certified seed growers,[12] but it is unclear if this type of investment is suitable for a regional body to engage in or lead.

The market conditions needed to facilitate growth of the seed sector were in part influenced by the PAIRED collaboration with CILSS/INSAH in updating the 2021 Regional Seed Catalogue on Plant Species and Varieties of West Africa, and the full impact of which will need to be measured in the future.

> *We don't plan, so there is no way of forecasting [foundation seed production] projections – NARI Director*

From the available data, it is clear that limitations in upscaling are in part driven by the development of breeder seed and the conversion to foundation seed. Planning and forecasting remain a challenge for the NARIs, which have struggled to adapt to more market responsive management practices in their seed divisions. To illustrate this point, the Evaluation Team looked to independently gather data on each NARIs' total production and dissemination of foundation seed[13]. Only two of the eight NARIs were able to provide the team with production figures from 2019 – 2022, and only one was able to provide production and dissemination figures.

REGIONAL/ CROSS BORDER TRADE

The PAIRED Activity saw little, if any, movement on the volume of cross-border trade of quality seeds. Maize represented the one exception, with approximately 25,000 metric tons of certified seed traded under the PAIRED Activity. The breeder and foundation seed trade did not cross borders during the Activity. This was in part a result of monopolistic practices at the NARIs regarding breeder and foundation seeds and the application of national seed policies within each country. Table 11 details the complete volume of intra-regional quality seed trade, in metric tons by value chain and seed type.

[12] How these growers would engage the marketplace appears to vary widely by country, with some individuals better suited to out-growing for established seed companies while others could make the transition into full-fledged seed companies with adequate time and technical support.

[13] The intention for this data was to test the hypothesis that foundation seed was the barrier to increased production. If the disseminated values consistently equal the production figures, then it is reasonable to assume the foundation seed volumes are a limitation to seed upscaling. From the one NARI who was able to provide both data points, dissemination did not equal 100% in 2021 and 2022, suggesting that forecasting efforts were helping the NARI plan adequately for demand.

Table 11: Volume of intra-regional quality seed trade, in metric tons (Indicator 3.2)

Value Chain	Disaggregate	FY18	FY19	FY20	FY21	FY22	% Difference
Maize	Breeder	-	-	0	0	0	-100
	Foundation	-	-	0	0	0	-100
	Certified	-	-	5600	1631	18157	370
Millet	Breeder	-	-	0	0	0	-100
	Foundation	-	-	0	0	0	-100
	Certified	-	-	15	5909	304	-68
Rice	Breeder	-	-	0	0	0	-100
	Foundation	-	-	0	0	0	-100
	Certified	-	-	100	13	98	-95
Sorghum	Breeder	-	-	0	0	0	-100
	Foundation	-	-	0	0	0	-100
	Certified	-	-	72	3	9	-99

Changing the conditions needed to expand intra-regional quality seed trade required more time than was allotted under the PAIRED Activity. A key element of success was PAIRED's contribution to the Regional Quarantine Pests List (RQPL). The RQPL was a high regional priority for enhancing regional trade. This List is part of the Regional Quarantine System comprising a number of regulatory and operational activities that together are designed to prevent the entry, establishment and spread of regulated pests in the region. The PAIRED Activity worked alongside CILSS/INSAH in promoting a wide dissemination of the List.

The Evaluation Team noted three areas, in particular, which were not integrated into the PAIRED Activity and were indicated by various stakeholders as significant and substantial in changing the pace of the regional seed trade.

First, at a policy level, more resources were needed to accelerate and finalize the full implementation of the Regional and National seed policies. While the ECOWAS, UEMOA and CILSS West Africa Regional Seed and Seedling Committee (WARSSC) was functional, the Committee has been limited in organizing meetings and conducting adequate follow up actions to move the Regional and National seed policies forward.

Second, at a programmatic level, PAIRED leadership did not adequately engage the "Seed Policy" Task Force of experts from the West African and the Sahelian sub-region working in the seed sector. During the USAID WASP Activity, a full-time staff seed specialist was engaged for the entirety of the Activity. Under PAIRED, this position was not integrated into the Activity and was supported through the use of a short-term consultant to assist at the ECOWAS Regional and National seed meetings. By the end of 2020,

the Activity did not have a seed policy expert engaged in support of the PAIRED regional trade objectives in any capacity.

Third, on an operational level, PAIRED did not adequately consider the processes faced by seed companies and traders when conducting cross border trade. While the ECOWAS regional regulations related to free movement of goods and services provides some groundwork legislation, they either do not properly integrate seed trade components, or the integration of seed trade components is not well understood by customs agents. Nearly all large seed companies who conduct cross border trade lamented the haphazard application of the regional seed regulations by customs officials. The national customs services do not have simplified or modernized import and export processes, procedures, documentation, and other regulatory measures. Seed company truck drivers are often delayed and hassled at border crossings, delays of which are compounded by language differences and customs agents' lack of familiarity with seed versus grain regulations. As a regional activity, PAIRED's attention to reducing the bottleneck in applying regional regulations at the point of customs clearing would have likely contributed to a substantial expansion of regional seed trade.

PUBLIC PRIVATE PARTNERSHIPS

Public Private Partnerships (PPPs) are needed to address the above-mentioned bottlenecks and to develop market responsive solutions to both national and regional seed trade barriers. The PAIRED Activity formed a total of 44 PPPs during the height of the pandemic, in 2020 and 2021. This achievement was 38 percent above the target.

Table 12: Number of Private Public Partnerships formed as a result of USG assistance (Indicator 3.1.3)

	FY18	*FY19*	*FY20*	*FY21*	*FY22*	*TOTAL*	% *Difference*
Number of PPP formed	-	-	29	15	0	44	38 %

As part of the PPP approach, PAIRED continued to provide support to the reform efforts at the Alliance for Seed Industry in West Africa (ASIWA). The reform process is moving slowly, and responsibility for delays in reform measures is, in part, with the leadership provided by the West Africa Farmers Organization (ROPPA). The African Seed Trade Association (AFSTA) and IFDC have formally requested to enable farmers' capacity to adopt and use new seed technologies, and to expand seed markets across borders as part of a broader agri-input strategy. At the time of this evaluation, little progress had been made in moving this strategy forward and more attention needs to be given to resolving and improving leadership issues to further advance the agri-input strategy.

GENDER AND YOUTH

Gender and youth viewpoints were assessed and integrated throughout the evaluation. The evaluators noted that the most successful integration of women and youth occurred in the composition of the Innovation Platforms. In Benin, the NARI worked with a consultant from PAIRED to develop an approach to increase the inclusion of women and youth into various aspects of the Activity. The requirement of tracking of gender and age disaggregated data harmonized with national policies to promote the participation of women in all sectors and was incorporated into the NARIs approach to working with beneficiaries. Mention was made to the existence of "La Collective des Femmes" which is implemented by the NARI to support female researchers, providing an example of the gender being institutionalized. In Mali, two Innovation Platforms were composed predominantly of women, a notable difference as compared to the other Innovation Platforms which were composed of fewer women and youth and, even then, their participation was more in planting and processing activities. In limited instances, such as with

the seed company Faso Kaba in Mali, women were not directly involved in the upscaling of certified seed, nor did they necessarily have full ownership of those processes.

If you want to get to women, we need to talk about mechanization – PAIRED Activity Coordinator

As a general rule, women tended to be more involved, and had greater influence, in the post-harvest processing of grain in all the targeted value chains. Near universal concurrence within discussions among Activity Coordinators and Agriculture Extension Officers highlighted the need to address mechanization as a way to increase women's ownership of the seed production process. These leaders expected the introduction of basic hand tools would yield stronger outcomes than training and toolkits.

PERFORMANCE LIMITATIONS FOR REMEDIAL ATTENTION

The underlying assumptions which grounded the PAIRED Activity's ToC came into clear focus during the course of the evaluation and are reflected in the Activity's performance. The PAIRED Activity was an experiment in applying industry standard approaches (Innovation Platforms) to upscaling outcomes, which is a departure from the traditional role of Innovation Platforms in overall agricultural production. The Evaluation found that the PAIRED Activity was challenged by the expansive scope and broad range of activities, both at regional and national levels, through the engagements with the NARIs, Innovation Platforms, and key individual stakeholders. These limitations impacted the successful upscaling of improved, certified seeds in the region.

The following areas of performance limitations require CORAF and USAID's remedial attention:

- *Institutional limitations - CORAF*: CORAF, as a regional organization has limited capacity to intervene at sub-national levels. This limitation required CORAF to work through the NARIs in order to reach any farm level interventions. The reliance on NARIs to manage all aspects of the PAIRED activities in-country was unsustainable under all conditions. This was complicated further by NARIs historic relationships with CORAF, which confused the distinction between CORAF and PAIRED as a distinct program. The NARIs did not explicitly have enough resources to manage Innovation Platforms as seed upscaling mechanisms which could demonstrate new upscaling technologies considered adequate to prove the efficiency and efficacity of the Innovation Platform model.
- *Institutional limitations - NARIs*: NARIs have their own bureaucracies which tend to slow the implementation processes. The timelines to undertake needs assessments and reach agreement on contracting terms and a plan of action delayed the implementation of PAIRED in nearly all countries. In the extreme case of Senegal, ISRA's internal administrative red tape contributed to no Innovation Platform being created or revitalized. In Ghana, the initially proposed maize value chain for SARI was adjusted to rice by the NARI, a decision that ultimately did not prove beneficial to upscaling. In so much that NARIs are research institutions, the limitations in their internal capacity to manage private sector and market linkages was evident; the most successful NARIs had staff with agribusiness backgrounds, yet not all NARIs were staffed by those with agribusiness backgrounds.
- *Operational limitations and staffing constraints*: PAIRED's attempt to roll out the Activity simultaneously in six countries, resulted in missed planting season in some sites and missed opportunities to have at least two seasons of activity in all countries at the time of the evaluation. The operating model to ensure the simultaneous implementation of the Activity, from needs assessments, contracting with NARIs, developing suitable work plans and the delivering of seed was affected by resource constraints facing the core team. The field activity challenges could have benefited from stronger coordination and deeper engagement from PAIRED, which was limited

by the staff available. Taking account of the importance of the seed sector on this project, the absence of a full-time seed specialist on the core PAIRED staff was also noted as a weakness.

- *Research versus agribusiness*: The approach to the PAIRED Activity was built on the foundation that Research Bodies, in general, and NARIs, in particular, could adequately evolve away from research for an academic or policy audience to using data to drive evidence-based decision making in the field. The Evaluation Team observed the strongest performance in NARIs who had agribusiness professionals associated with their institution and the Activity. Employing coordinators and NARI staff with agribusiness backgrounds is necessary if research institutions are expected to take on a greater role in the agriculture sector.
- *Timely release of funds*: PAIRED funds were not always available in a timely manner in every country of implementation. The amount obligated was not disbursed due to delays in financial supporting documentation requirements. In Benin and Senegal, NARIs reported on the administrative formalities for making funds available. In Benin, the activities initially planned to be implemented during the first quarter of 2020 could not start until March 2020. In Senegal, the transfers were delayed until July (2020 and 2021). Timing is critical in agriculture; by August it is already too late for the implementation of on-farm activities at the Innovation Platforms. In Ghana and Niger, the NARIs elected to "pre-finance" their approved activities in order not to lose the critical agricultural periods within which the activities needed to commence. Monthly justification and other disbursement procedures are not appropriate for the agricultural production cycle. The cumbersome and slow pace of ISRA's internal procedures translated into a low budget mobilization and lack of engagement.
- *Insufficient value for funding*: The insufficient amount of available funds limited the performance of the NARIs to deliver on upscaling and was not commensurate with the ambitious scope of PAIRED activities. In the most egregious of cases, the low value of monthly funding[14] did not allow IER to correctly perform supervision at their Innovation Platforms. Additionally, all NARIs raised concerns over the inadequacy of the financial disbursements granted. As a result, in Benin, the repetition of the required trials for registering new varieties in the Catalogue was not completed; the Plant Protection and Control Service participated in only two of the five required inspections for seed certification with PAIRED seed growers. In Ghana, additional support was provided by one of the two NARIs as the PAIRED objectives aligned with those of the NARI. The successes of their Innovation Platforms reflect the NARIs' commitment to their national agriculture sector and upscaling. In Mali, the only field monitoring mission related to maize and sorghum crop activities took place for three days in July 2021 in the Koulikoro region. In Niger, due to the reduction in the initial budget for 2020, the interventions were carried out only in the geographic area of Konni instead of the three initially planned geographic areas. In Nigeria, the disbursement of foundation seed to Innovation Platform farmers amounted to only 150 kgs of seed (5kg each for 30 farmers).
- *Providing stronger support to seed growers in the certification process:* Ultimately, greater focus in facilitation in the certification licensing process for the seed producers in the Innovation Platforms would have increased the upscaling potential of PAIRED Activity through the Innovation Platform approach. This can take on different approaches and needs to be market responsive. In Ghana, growers responded favorably to technical support while seed growers in Mali would have

[14] The Evaluation Team found the average monthly disbursement amounted to approximately US10,000.

benefitted from grants or subsidies to cover the certification costs. While there were no formal PAIRED linkages with the Activity and National Seed Services, it is the responsibility of the National Seed Services to ensure compliance with the national regulations, including the inspections, sampling, and laboratory tests to receive certification. Challenges for PAIRED supported farmers ranged from agent availability to registration costs. For future programming, upscaling requires the participation of all actors who act as gatekeepers in increasing certified seed supply.

A note on the global coronavirus pandemic: What began in November 2019 as a novel virus grew into a pandemic by the start of 2020. In March 2020, like in much of the world, many ECOWAS countries found themselves navigating a universe of lockdowns and restricted movements in an effort to curb the spread of the disease. While a number of stakeholders spoke of the pandemic as a potential explanation for delays in implementation, a large portion shared that their activities were not necessarily restricted, but that they needed to adapt. In Nigeria, the government proclaimed that agriculture as a sector was exempt from work lockdowns. The NARIs saw their role in maintaining food security in the face of a global pandemic. While implementation in Benin, Mali, Niger, and Senegal may have lost a season, Ghana and Nigeria worked to make 2020 a productive PAIRED year. As such, the evidence of impact as a result of the pandemic is mixed, suggesting the pandemic alone was not the cause of low performance in a variety of technical areas. The evaluation team has endeavored to provide evidence of the additional assumptions and implementation mechanisms that drove the performance of PAIRED, in spite of the pandemic

EVALUATION QUESTION 2

2. What recommendations are there for strengthening, improving, and building upon (scale-up) program successes of PAIRED's components and sub-activities post-2022? What is the viability of the approach PAIRED has taken to scale up agriculture technologies and to build supply and/or meet agri-business companies and farmer demand for improved seeds?

The PAIRED Activity's Innovation Platforms served as the main strategy to scale up agriculture technologies and to build supply and/or meet agri-business companies and farmer demand for improved seeds. Innovation Platforms in five of the six PAIRED countries intended to scale up maize, rice, millet, and sorghum value chains in order to create an enabling environment for technology upscaling and adoption. While Innovation Platforms are largely accepted within the development community as effective vehicles for advancing agricultural production, the implementation around the Innovation Platform and the characteristics that underpin each Innovation Platform are significant.

> *Innovation platforms have fast become part of the mantra of agricultural research and development projects and programs. Their basic tenet is that stakeholders depend on one another to achieve agricultural development outcomes, and hence need a space where they can learn, negotiate, and coordinate to overcome challenges and capitalize on opportunities through a facilitated innovation process.*[15] *– Schut et al, 2018.*

Overall, the Evaluation noted that the PAIRED Activity choice in putting the Innovation Platform strategy as the central, upscaling technology tool to increase the volume of certified seeds was not adequate. In order to reduce any subjective bias, the following evaluation analysis approached the Innovation Platform strategy through the lenses prescribed by Schut et al. (2018) that for an effective innovation platform, five conditions needed to be met, including:

i. Ability and mandate to pitch the platform at the right level(s).
ii. Conducive institutional environment for an Innovation Platform approach.
iii. Availability of sufficient capacities and skills.
iv. Organizing monitoring, evaluation, and learning; and
v. Adequate funding for innovation.

Under PAIRED, the Innovation Platforms took on a variety of different characteristics; the most effective PAIRED Innovation Platforms tended to maintain a smaller membership and demonstrated strong central leadership. In Ghana, PAIRED created Innovation Platforms averaged 30 members, whose executive leadership, on average, was strongly invested in the benefits the Innovation Platform garnered for their communities, which conforms to Schut et al's suggestion that an ideal Innovation Platform membership should be in the range of 20 – 40 members. These smaller Innovation Platforms were better able to work harmoniously with the PAIRED Activity to focus on the actor dynamics between farmers, community seed growers, agri-input suppliers, financial institutions, and public sector actors such as agriculture extension officers. This more focused approach provided better conditions for increasing quality seed production and uptake by farmers. In Innovation Platforms where group sizes were large, for example those in Benin, Mali, Niger, and Nigeria whose memberships ranged from 200 to upwards of 3,500 members per Innovation Platform16, the prerequisite that PAIRED programming be clearly central to the Innovation Platforms activity experienced challenges. From a managerial perspective, the Innovation Platforms with

[15] Schut, M. *et al.* Innovation Platforms: Synopsis of Innovation Platforms in Agricultural Research and Development (2018). https://library.wur.nl/WebQuery/wurpubs/540964

[16] A complete list, with detailed actor composition by Innovation Platform, is included in Annex <…>

large memberships tended to become unwieldy and in extreme cases, dysfunctional. These large groups, having historically been organized as producer groups by other donors, had substantial experience in production activities and were focused on their own targeted interest, which did not necessarily align with PAIRED's expectations.

> *Starting a new Innovation Platform is more expensive; however, in regard to outcomes, starting a new Innovation Platform is much better – PAIRED Activity Coordinator*

While group size influenced Innovation Platforms' capacities to successfully upscale improved agri-inputs and seed production, as opposed to overall grain production, the field visits also highlighted the value in investing in newly formed groups as opposed to introducing new objectives to well established, producer-focused groups. Ghana's CRI and Nigeria's IAR approach to PAIRED included creating wholly new groups to serve as seed upscaling Innovation Platforms. Interviews held with the executive leaders, farmers and seed growers in these Innovation Platforms demonstrated a better understanding of the value their Innovation Platforms could bring to their communities, specifically as resources for improved agri-inputs; this was reflected in Innovation Platforms which were much better integrated into agri-input streams, market linkages, and financial institutions.[17] The Activity worked to create market channels for their seeds and significantly mentored and supported seed growers in their certification process. One Innovation Platform leader in Ghana shared how his close collaborative relationship with the NARI provided him the opportunity to access the cold storage room at the research institute to store his excess seed for the next season. One Innovation Platform seed grower in Nigeria reported that he was doing good business with his high-quality seed and supplying to community members who preferred to buy seed from him. These Innovation Platforms demonstrated the most promise at producing locally available certified seed growers; however, as documented in Evaluation Question 1, the time horizon for implementing the PAIRED Activity was not adequately mapped against the certification process and no certified seed growers had been created at the time of the evaluation.

Farmer-level seed upscaling was the most suitable level to receive the platform pitch and for meeting the PAIRED objectives; however, inadequate messaging and field reinforcement hampered the overall program effectiveness at this level. Many Innovation Platform actors – farmers in particular – were unclear as to the objectives of PAIRED support to the Innovation Platform. Few understood the main objective was to arrive at seed upscaling, as most farmers were interested in producing more and higher quality grain. In certain instances, the NARIs themselves were unclear over the distinction between managing an Innovation Platform geared towards overall production versus seed upscaling. Arguably, the absence of a dedicated seed specialist on the PAIRED team at CORAF contributed to implementation inefficiency at the national levels.

To enable scaling, Innovation Platforms need to be firmly embedded in existing agricultural innovation and extension systems. While the use of NARIs was intended to act as the mechanism through which innovation platforms would embed into existing systems, the reality at implementation was less encouraging. The majority of farmers from the innovation platforms were unable to bridge the certification process to be able to sell their yields as certified seeds. The Innovation Platform model failed to adequately address the necessary linkages between production and certification, which led to insufficient capacity for the Innovation Platform actors to arrive at upscaling. Any certification activity requires coordination with the National Seed Inspectorate Division, in a process which can take upwards of three growing seasons to obtain, depending on the crop. Not every farmer is a candidate for developing into a certified seed grower. In addition, costs in time, land and financial resources act as substantial barriers to becoming a certified seed grower. In Ghana, CRI commenced the PAIRED Activity with a target of having one certified

[17] Integration does not necessarily mean uptake. In Ghana, where financial interest rates were relatively high and geared towards short term lending (20 percent) rather than longer term investing (35-40 percent), the demand for using financial products in their farming activities were relatively low. Nigeria's experience, despite significantly lower interest rates which rarely broke a double-digit threshold, also indicated a low uptake in formal lending products in the PAIRED supported innovation platforms.

seed grower per Innovation Platform. Of the 12 farmers who began the process, only seven remained committed to the certification process at the time of evaluation. By any objective measure, such a level of attrition would be considered relatively successful; however, it raises larger issues on the effectiveness of Innovation Platforms to serve as scaling mechanisms. **At the time of evaluation, not one of the 43 PAIRED Innovation Platforms had produced a single certified seed grower.**

> *Farmer is still central to the Innovation Platform, but they shouldn't be the primary actor – PAIRED Activity Coordinator*

The field findings of this evaluation arrived at the assessment that the concept of an Innovation Platform is not inherently an unsuccessful approach. By measures of overall production, the good agricultural practices that were shared with Innovation Platform farmers and input suppliers resulted in substantial increases to farm yields. Farmers also reported increasing incomes, and few shared any substantive complaints. However, the objective of the Innovation Platform within the PAIRED Activity was to arrive at upscaling of certified seeds. As documented throughout this report, the mechanisms on how the PAIRED Innovation Platforms were structured and supported did not return substantial gains in upscaling; rather, the evaluation team repeatedly documented instances where high quality seeds grown under the PAIRED Activity were sold off as grain.

VIABILITY AND CONTINUITY

Concerning the viability and continuity of the Innovation Platform approach to scaling up agriculture technologies, and specifically to upscale seed production, the **evaluation found that the stand-alone innovation platform solution was not a successful choice, considering that the capacities of farmer associations were geared towards grain production.** The innovation platforms participating in the PAIRED Activity were relatively well-established and composed of farmers, or communal associations supported by previous international organizations such as IITA, WAAPP, Africa Rice, CARE International and others. PAIRED looked to capitalize on these previous donor investments as a means of building on established capacity. However, this pattern of building on previous investment and recycling Innovation Platforms meant that any pivots from previously established objectives proved exceedingly difficult. This recycling process proved particularly unsuccessful at effectively transitioning producer focused activities to seed upscaling mechanisms. The most successful Innovation Platforms proved to be those newly formed under PAIRED, where the Activity was able to set the objectives clearly with the Innovation Platform members.

While the seed certification process is fundamentally driven by the National Seeds Services, which can take upwards of three years depending on country and value chain, improved efficiency can be achieved when the NARIs better integrate with the National Seed Service Offices to better support farmers looking to convert to seed producers, reducing the barriers for receiving licenses in certified seed production. Seed growers associated with newly established Innovation Platforms understood the market incentives to growing certified seed, often returning two to four times the profit of comparable grain sales depending on the country and value chain. Stronger integration with all the stakeholders in the certification process may have encouraged more farmers to take up the effort to become certified seed growers.

EVALUATION QUESTION 3

3. Is CORAF/PAIRED's leadership in strengthening the seed system and advancing the ECOWAS Seed Regulations regarded as effective (or integral to scaling-up seed input success) by their counterparts such as the International Agriculture Research Centers, and NARIs, or others?

> ***a. Are the institutional structures/relationships now in place, for example, within partnership institutions such as the National Agriculture Research Institute (NARIs, or are they being developed to sustain the relationships and investments that are being made by PAIRED?***
>
> *[Custom/Border Officials] understand trade in grain, not in seed – Seed Cooperative Executive*

One of the largest constraints to agricultural productivity in West Africa is the inefficiency of the regional seed system. In response, the PAIRED Activity intended to increase the production quality of quality, improved certified seeds in West Africa, building on past USAID investments in this area. The West African seed value chain lacks strong links among research institutions, seed producers, certifiers, and farmers. PAIRED worked to facilitate such links by recognizing the relationship between public and private sectors, and the central role of the private sector in the development of more standard quality seeds. PAIRED also increases the coordination capacity of regional seed networks including national seed associations, which are critical to the long-term success of a robust and high-quality regional seed supply. In short, PAIRED implementation supported regional and national elements in advancing seed regulation across West Africa.

REGIONAL SEED SYSTEM STRENGTHENING

At a regional level, seed systems, in general, and ECOWAS Seed Regulations, specifically, have been a cornerstone of USAID and CORAF collaboration. Continuing on this legacy of regional integration, the PAIRED Activity made substantial advances in:

(i) Supporting the less advancing countries (Cape Verde, Guinea-Bissau, Mauritania, and Sierra Leone) in completing protocols at their national levels.

(ii) (ii) Supporting the updating and development of the National and Regional Quarantine Pest Lists for the eleven (11) priority crops (Rice, Maize, Sorghum, Millet, Groundnut, Cowpeas, Yam, Cassava, Irish Potato, Tomato, and Onion) defined by the ECOWAS community.

(iii) (iii) Developing and disseminating the entrepreneurship & business management tools in collaboration with FAO, covering the following trainings: Module 1: development of small-scale seed enterprises; Module 2: seed processing, principles, equipment & practice; Module 3: seed quality assurance; Module 4: seed sector regulatory framework; Module 5: seed marketing, Module 6: seed storage.

(iv) (iv) Updating nearly 150 additional seed actors including seed companies, seed producing cooperatives and government officials with the modules through CORAF and PAIRED Activity networks.

(v) (v) Supporting the establishment of a collaborative linkage between the national implementing partners (NARIs) in four target countries (Ghana, Senegal, Nigeria, Mali) and the private sector.

LEADERSHIP TO EXPAND SEED SUPPLY

To address supply limitations, CORAF capitalized on its convening power within its authority as the technical arm of the ECOWAS to increase the number of Member States (13 out of 15) effectively implementing the ECOWAS harmonized seed regulation, which is integral to scaling-up seed input success. These efforts were intended to address regional supply bottlenecks; however, existing bottlenecks in the movement of seed across borders, often due to delays in processing documents accompanying goods because of language barriers and differences in customs' regulations between countries remain.

Despite these gains, private seed companies in nearly all PAIRED countries expressed frustrations in the implementation of elements in the Seed Regulations. In Nigeria, seed companies raised concern over delays in the trans-boundary movement of seed consigned through the Francophone countries. There is a Regional Quarantine Pests List (RQPL) developed and adopted for West African countries and national plant protection officers trained in each of the 15 members states; however, multiple seed companies described situations where their seeds were delayed at border crossing, contributing to losses for both the business and the availability of seed in the region.

The PAIRED experience in Benin indicated that there is capacity to export within the region and trade is already occurring with yellow maize from an Innovation Platform region linked to demand from Nigeria. However, one private seed company indicated that the cross-border trade situation is not perfect as there are rice producers who bring small quantities of rice seed through Niger that they like from neighboring countries such as Mali. The import procedures and border controls limit the ability to bring in larger quantities. Furthermore, the legislative environment in Niger that only allows NARIs to authorize the release of new varieties is a problem for the movement of seed across borders and generates challenges for seed companies from neighboring countries to transit through Niger.

In Mali, the NARI suggested that more could be done to elevate scientific engagement at the regional level to determine the added value and benefit of the new varieties that do not meet the market demand. Emphasis was given to the need to ensure a demand driven approach to strengthening the regional seed system. An example was given related to the continued focus on the development of NARI rice varieties that have been developed without an accompanying analysis of the comparative market demand for each variety. Other matters that could be discussed include assessing the socio- economic impact of technologies disseminated to date within the region and reviewing and restructuring how researchers participate with end users/ growers/ farmers.

In Senegal, one of the seed producer cooperatives operated within an eco-system that included CORAF and Africa Rice; they welcomed the shifts in seed policy regulation and regional harmonization as it creates opportunities for the emergence of an active private sector. The private seed companies in Senegal demonstrated a desire to engage in research and development, not only in growing certified seeds. Further changes to national seed policy could do much to unlock the private sector potential in Senegal.

INFLUENCING SEED MARKET DEMAND

To stimulate demand, PAIRED adopted a strategy whereby technology diffusion and adoption were induced at the community level. This was done through mass communication and increased awareness, brought forth via appropriate tools and channels including demonstration plots/dissemination plots of already released varieties. This strategy provided an opportunity to highlight the performance of improved seed varieties to farmers and to support awareness creation, in addition to demonstration/dissemination plots, farmer trainings and activities, and other communication approaches including use of local radio, open field days, and distribution of small seed packs, were also used to inform farmer decisions to adopt and purchase improved agricultural inputs.

The PAIRED Activity components all included an element of capacity building. Institutional capacity building at the PAIRED Implementer level (CORAF) was addressed as part of Component 1 and strengthening the

capacity of stakeholders was included in the implementation of Components 2 and 3 (integrated technologies and scaling framework and the scaling the use of Agri-inputs). Key levers of capacity building are leadership, institutional arrangements, knowledge, and accountability; the PAIRED final evaluation questions test multiple dimensions of these four elements.

Institutional arrangements included but were not limited to the policies, systems, processes, and structures used by organizations to regulate, plan, and manage their activities effectively as well as to coordinate with others to collaborate and fulfil their mandates. Institutional arrangements and organizational design and performance was enhanced when the skills, staff, style, and shared values also referred to as the soft Ss in the McKinsey 7s Framework[18] are considered in the establishment of effective institutional arrangements.

Table 13: List of signed partnerships, by organization and expected outcomes.

Organizations	Expected Outcomes
Sub-awardees: INRAB, CSIR-CRI, CSIR-SARI, IER, INRAN, IAR, NCRI, ISRA	Collaboration for the implementation of PAIRED. For instance, coordination of Research-Extension/Advisory Services-FBOs-Private Sector Networks
Syngenta Foundation	Development of License Contract Model to Facilitate seed. Business and access to New Genetic Materials from Research. Establishment of linkage and collaboration between the national implementing partners (NCoS / RCoS and other national research centers) and the private sector for the production of early generation seeds on a win-win basis.
UPOV / OAPI	Capacity Building on Plant Variety Protection
The Africa Seed Access Index (TASAI)	Seed index development and engagement in the Alliance for Seed Industry in West Africa (ASIWA). Updating of the country index including Sierra Leone, Nigeria, Burkina Faso, and Ghana.
The Access to seed foundation	Seed index development and engagement in the Alliance for Seed Industry in West Africa (ASIWA)
Seed Co – West Africa	Experience sharing on variety licensing and engaging in ASIWA
CDC Group	Fund leveraging for the private sector and capacity development
AFSTA	Revamping partnership with CORAF and revitalization of AFSTA West Africa. Advocate and support the regional seed industry. Engage negotiation with AFSTA to support the organization of the learning visit in East Africa on the seed industry.
COMESA	Learn and deploy COMESA regional seed Label Model in West Africa
African Union Inter-African Phytosanitary Council (AU-IAPSC)	Support the development of the regional framework and the executive regulation for phytosanitary control and certification of seed

[18] https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/enduring-ideas-the-7-s-framework

AATF/TAAT	Update the joint action plan to support the implementation of the regional seed regulation particularly the support to non-PAIRED countries and the co-funding of the regional catalogue development
FAO	Financial support to conduct a meta-analysis of the seed sector in 8 countries of West Africa. A task force established to develop the roadmap of activities to be conducted for operationalizing the regional framework to manage emerging productivity risk.
CILSS/INSH	Upgrade the electronic data of varieties and conduct in country missions in Chad, Cabo Verde, and Guinea Bissau to fast track the implementation of the seed regulation in these countries
Seed Systems Group (SSG)	Joint activities plan developed relating to Agri-Inputs and Agricultural Technologies Development in West Africa
AKADEMIYA2063	
AfricaSeeds	
World Benchmarking Alliance	Regional Access to seed index development has been developed in collaboration with CORAF/PAIRED and the regional index has been shared during the side event of the 7th Session of the UN Africa Regional Forum on Sustainable Development and during the regional seed committee.
Union Nationale des professionnelles des semences (UNIS), Faso Kaba, SeedCo, and OCP	Facilitate the communication on the improved technologies and foster their dissemination and adoption.

The challenge in the process of signing MOUs however as seen in countries like Senegal and Niger can become complex and long as internal institutional processes, compliance to financial motivations and the international banking processing timelines in different countries delayed the implementation of the program. Understanding the internal financial systems is important and building capacity to be expeditious in the management of the flow of funds has been identified as an area of focus from the interview process. Where there is a dual point of contact with CORAF, and PAIRED challenges exist for accounting of resource allocation distinguishing between CORAF activities and the PAIRED activities as mentioned by the NARIs.

The PAIRED Activity focused attention on strengthening and operationalizing the Innovation Platforms by building the capacity of Innovation Platform members to become certified seed producers; developing and production of communication, marketing and awareness raising tools and content on the use of agri-input packages; facilitating training in agribusiness, finance and entrepreneurship, seed demand forecasting, and seed planning tools, impact assessment training on the PVP system and legal environment, strengthening the capacity of plant breeders and quality control agents in the implementation of the seed regulations at the regional level. Training was provided both face to face and virtually.

EVALUATION QUESTION 4

4. Have CORAF and ECOWAS achieved success in advancing the ECOWAS Seed Regulations with USAID support? If not, please describe and justify what is left to do and what could be considered as success. What are the implications of donors not funding this regulation under future programs?

The launching of the Alliance for Seed Industry in West Africa (ASIWA) in Abidjan, Ivory Coast in August 2015 brought the regional seed industry to another level, which aroused stakeholders' interest, awareness, and commitment to the development of the seed industry and to open up the regional seed trade across borders. Subsequently, 10 ASIWA National Affiliates were established in Benin, Burkina Faso, Côte d'Ivoire, Ghana, Niger, Nigeria, Senegal, Togo, and national meetings were organized to spur the development of the seed sector. The establishment of the regional steering committee of ASIWA in Lomé, in March 2017 provided a clear roadmap for operationalizing the Alliance in a more sustainable way.

In 2019, PAIRED took the responsibility to continue the work on the seed policy implementation initiated by USAID's West Africa Seed Program (WASP). The effective implementation of a regional seed policy would create a harmonized environment to facilitate seed trade among ECOWAS Member States.

The ECOWAS Seed Regulations seek to have all the national seed laws aligned with the regional regulations for improved variety registration and certification processes, including clear and consistent procedures and fees. It is also required for Member States to put in place a Plant Variety Protection (PVP) System which could motivate the private sector to engage in the development of new and relevant seed varieties more actively for the market.

To support the implementation of the ECOWAS harmonized seed regulation in Member States, PAIRED developed partnerships through the signing of MoU with the African Agricultural Technology Foundation (AAFT) under the framework of the AfDB Initiative, Technology for Africa Agriculture Transformation (TAAT). The purpose of these partnerships was to support the enforcement of the harmonized procedures for variety release and registration and the development of procedure manuals for seed import/export. PAIRED and AAFT organized a consultative meeting in June 2019 to improve the implementation of the regional seed regulation, involving the RECs, AFDB, AATF, CORAF, the private sector, the ECOWAS Member States, the donors including USAID, the World Bank, FAO, etc. The workshop resulted in the development of an action plan and recommendations to address the bottlenecks in the full implementation of the regulation.

CORAF and ECOWAS sensitized national policy makers and stakeholders to fast-track the implementation of the seed regulation in countries lagging behind, Chad and Mauritania, and in the development of national action plans to strengthen the national seed sector.

Table 14: Number of countries for which ECOWAS policies are gazetted and fully implemented with technical assistance of PAIRED (Indicator 1.4.1)

	FY18	*FY19*	*FY20*	*FY21*	*FY22*	*% Achieved*
Number of countries	0	0	0	8	-	-71

PAIRED's performance indicator related to seed harmonization was Indicator 1.4.1, Number of countries for which ECOWAS policies are gazetted and fully implemented with Technical Assistance of PAIRED. The Activity only reported country contributions in 2021 with eight countries having fully gazetted and implemented the ECOWAS policies, 71 percent below the expected target.

Despite not achieving the planned target, the evaluators noted that the Parliaments of Ghana and Nigeria had enacted the UPOV- PVP system but had not as yet operationalized the private seed developers to

benefit from their investments. The use of quality seed is a critical input for increasing agricultural productivity and attainment of food self-sufficiency. Due to the dominance of small-scale farmers, the use of quality seed is limited, which if left unaddressed may lead to a continuous diminishing of agricultural productivity and compromise the cherished regional goal of food security.

> *Seed Policy looks to subsidize seed – this means the Government is the main client for seed companies – NARI Staff*

In addition to the policies at the regional level, the following advancements were accomplished across the ECOWAS region, but outside the scope of the 6 evaluated countries:

- Publication of the regulations in the Official Journal: with the exception of Guinea Bissau, Mauritania and Liberia, all other countries, actually published the regional regulations in their official journal.
- The establishment of a national catalog of species and varieties: most countries have instituted a national catalogue, with a registration of plant varieties based on results of the required DHS and VATE tests. Some only have a list of varieties plants authorized, on the basis of their adaptability to the cropping systems of the country (case of Cape Verde, Guinea-Bissau). Liberia has drawn up a national catalog of species and varieties in 2022 (CILSS)
- The establishment of national seed committees: all member states have a CNS but not all are operational – low frequency of holding sessions statutory (Guinea Bissau, Guinea Conakry, Mauritania, Chad).
- The establishment of the Seed Sector Support Fund (FASS): Even if actions are initiated in most countries, the seed sector support fund is not implemented. Only Burkina Faso has created the FASS by law and which has been supplied, but it is not yet fully operational as the fund management procedures are in the process of being validated.
- PAIRED organized a consultative meeting to launch the creation of the West Africa Seed Trade Association (WASTA) and set up a regional task force for developing the chart of the Association and organizing the first General Assembly., but not operational.
- Seed index development and engagement in the Alliance for Seed Industry in West Africa (ASIWA). PAIRED conducted strategic discussions and technical meetings with the executive steering committee of ASIWA to update its agenda and to engage ASIWA in strategic regional consultative meetings and policy and regulation paper as well as seed business tools developments and validations (Phyto-sanitary executive regulation, regional catalogue of plant varieties, seed demand forecasting and seed production planning tool etc.).

Sustainability remains at the forefront of regional seed policy. The donor community has invested heavily in the harmonization and implementation of regional seed policy. Concerning the sustainability of the Regional Seed Regulations, ECOWAS and UEMOA indicated that these regulations remain a priority and in the event that donor funds are allocated towards different priorities in the future, ECOWAS and UEMOA will be able to take the lead in moving this process forward.

OUTSTANDING ISSUES

In spite of all the various activities which have been implemented through the PAIRED Activity and its partners at ECOWAS, UEMOA, and CILSS, the evaluators noted that the Regional Harmonized Seeds and Seedling Regulations are still not fully implemented. Challenges remain and impede the full implementation of the Regional Seed Policy and Regulations. These challenges include fragmentation at the national government seed services in each country, whose collective bureaucratic, lengthy, inefficient, and sometimes inconsistent local procedures hampered the full enforcement of regionally agreed upon provisions. Additionally, the lack of stronger coordination and inclusion of the private sector failed to

adequately identify the bottlenecks in regional seed movement. And, as noted above, the Regional Seeds and Seedling Committee for West Africa and Sahel secretariat (led by CORAF) does not have a dedicated seed expert and rarely calls on the "Seed Policy" Task Force. The implementation of a dedicated seed expert is something which ideally would have been executed based on PAIRED experience under the WASP program. These problems, and potential solutions are further detailed below.

The chain between seed company to farmer is broken – Seed Company Owner

Problems at the private sector level: Seed companies have expressed difficulties in exporting and importing seeds between ECOWAS countries. Faso Kaba seed company provided an example where one of their transportation trucks from Mali to Sierra Leone was delayed one month at the border. In Senegal, the TROPICASEM seed company raised the problem of the high costs on the export and homologation[19] of seeds. In Nigeria, Savannah Seeds reported the loss of nearly 40 percent of the company's exported inventory to spoilage or damage in 2021 due to border control delays.

Future activities needed to fully implement seed regulation require engaging actors at both national and regional stakeholders. The Evaluation Team recommends the following:

Solutions at the Member State Level:

- The reforms enacted by the harmonized regional seed regulations must be passed and effectively implemented. To do this, Member States should organize awareness campaigns with the goal of informing seed value chain actors of the provisions of harmonized regional seed regulations (still poorly known) as well as organizing training sessions on the regionally agreed procedures for seed variety release, seed quality control, phytosanitary control, etc.

Solutions at the Regional Level:

- The RSSCWAS/CRSPAOS secretariat must be operational, in terms of its ability to understand seed related matters and fully play its role, namely, "to assist the ECOWAS and UEMOA Commissions, as well as the CILSS Executive Secretariat, in the implementation of regional seed laws and regulations, in force."
- CORAF should advocate for ECOWAS to integrate the seed trade issue into the ongoing "West Africa Association for Cross Border Trade of Agro-Forestry-Pastoral – Fisheries and Food system" (WACTAC) for the "free movement and integrated pastoral markets in the Sahel and West Africa through the cross-border trade." This would increase private sector seed company opportunities in expanding their import / export business throughout West Africa.
- CORAF should work to strengthen coordination mechanisms with the other bodies (UEMOA, CILSS, ECOWAS) for countries to show political and technical commitment to strengthen the Seed Regulations and Regional Seed Trade. In addition, CORAF should help build capacity in country-level standards of seed certification.
- There is also a need for building human capacity of Seed Technologists, Seed Technicians and Agronomists within each sub-region. There is a need for training of personnel in seed science and technology at both technical and graduate research grades to replace the aged and retiring staff (trained in the 1980s and 1990s), in order to keep the sector vibrant and to support further advancements in the seed industries within each sub-region.

[19] Inter-ECOWAS, and general national export policies require that seeds are homologated by a public agency to assure that they meet the necessary standards. In theory, these policies should align with the broader ECOWAS supported Seed Regulations.

EVALUATION QUESTION 5

5. Has the CORAF leadership used the PAIRED activity to forge deeper private-sector engagement in the agricultural inputs system, especially seeds? How has the private sector fulfilled the roles expected of it in the regional seed sector? For example, describe the viability of the private sector and how it is advancing the development, promotion, and sale of certified and foundation seed.

b. What vulnerabilities/weaknesses/gaps still exist within the private sector and what can be done to address them?

The PAIRED Activity recognized that the role of the private sector was a crucial aspect in the production and distribution of certified seeds in the region. Activity engagement with the private sector is necessary to increase the use of quality seeds and amplify the positive impacts of quality seed introduction on food production in the region. PAIRED's integration of private sector actors, and particularly private seed companies, was intended to support upscaling of promising crop varieties and agri-input packages by:

- Establishing dissemination plots which showcased new improved varieties and created demand at farm level.
- Supporting the NARIs producing increased quantities of foundation seed of promising varieties as a means of increasing availability for the private sector; *and*
- Capacity building in personnel for selected private seed companies by offering short training workshops in M&E, PVP, Seed Purity Standards, and the introduction of the digital FeSERWAM toolkit.

The role of engaging with the private sector was shared between CORAF and the NARIs, depending on the level of engagement. CORAF predominantly led engagements with seed company cooperatives around issues of policy and training to member businesses. NARIs, serving as the implementing mechanisms for direct in-country support to the Innovation Platform actors, predominantly engaged directly with individual seed companies under varying levels of engagement such as demonstration plots and agri-input sales to farmers. Table 15 provides an overview of seed associations and companies which were interviewed during the evaluation.

Table 15: Seed associations and companies, by country

Benin	*Ghana*	*Mali*	*Niger*	*Nigeria*	*Senegal*
ASASEMB	Heritage Seed	Faso Kaba	FUCOPRI	SEEDAN	SEDAP
	Ariku Seed	Camara Seed	ONG RAIL	Premier Seed	UNIS
	SeedCo	Soprosa	AINOMA	Value Seed	Tropicasem
	Antika Seed		Haarusa	Savannah Seed	Limagrin

The private sector support provided by the PAIRED Activity included:

- Facilitating improved business development tools and protocols to better plan for the production and supply of quality seed.
- The introduction and reinforcement of partnerships between seed companies and the national breeding institutions in order to transfer and scale appropriate and improved seed varieties for adoption.
- Partnerships in joint demonstration plots and farmer field days.

- Engagement of private sector platform representatives in regional policy dialogues.
- Support in the design and validation of seed policy executive regulation (Phytosanitary control and certification) and seed business management tools (seed demand forecasting tool); *and*
- In limited cases, online consultations with ASIWA to revamp regional alliances and support the creation of a regional seed enterprise umbrella association.

While individual seed company engagements occurred in all PAIRED supported countries, in most instances, market linkages remained under-developed for the Innovation Platforms and their members, both in terms of input supply and seed production markets. In Benin, Mali, and Niger, PeBCO Betesda, CLCAM, La Volonté, FasoKaba, FUCOPRI, and ONG RAIL gave agri-inputs to farmers which the latter paid back at the market price when crops were later harvested. In Ghana and Nigeria, the private sector model followed an approach where private seed companies were encouraged to demonstrate their seeds in PAIRED Innovation Platforms, and this introduction provided the opportunity for an exchange between market supply and demand; however, lack of coordination between NARIs, Innovation Platforms and the private sector meant a loss in connecting farmers to larger seed companies for opportunities beyond agri-input sales channels.

Data gathered on agri-input dealers illustrated that the private sector is growing and doing business in providing seed and agro-chemical supplies to farmers in rural communities around the Innovation Platforms. Nearly half of all agri-input dealers spoken to in Ghana reported a high degree of satisfaction with the certified seed market, with only a quarter of dealers suggesting that the market needed improvement. There were indications that use of quality seed was increasing in the region, particularly around certified maize value chains. The private seed company, SeedCo, indicated that while adoption of improved seed was about 50 percent in East and Central Africa, only 5-10 percent seed adoption was occurring in Ghana and West Africa, indicating a high potential for growth in the West African seed business industry. SeedCo participated in the PAIRED Activity in Ghana in the design of demonstration plots, field days, and promotional materials, where they show-cased their seed varieties alongside those of the NARIs and other certified seed companies.

> *Our partnership has been effective but [we] would love to see continuation of the program in Ghana where adoption of improved varieties is still very low – Private Seed Company*

The woman-owned seed company Faso Kaba provided a good example of how the PAIRED Activity could provide direct coordination and support to the private sector. Faso Kaba opened in August 2007 with the intention of running a high-quality seed business. Their partnership with PAIRED helped Faso Kaba access breeder seeds from IER, the national research institute in Mali, and facilitated introductions with the agriculture offices at the sub-national level. As a result of these relationships, inspections of Faso Kaba's seeds occur frequently causing fewer delays, allowing Faso Kaba to respond to market conditions and produce more certified seeds. Insecurity in Mali, and the collapse of the market in Northern Mali, has reduced the demand for seed; however, Faso Kaba's overall business operations have improved significantly as a result of the PAIRED Activity's support. The agreement with PAIRED ensured Faso Kaba's active involvement in the seed upscaling process in Mali through active participation in targeted Innovation Platforms, display on demonstration plots and the organization of open field days. Faso Kaba, in turn, has signed agreement letters with 30 cooperatives and has partnered with 13 farmers to run demonstration plots.

GROWING THE PRIVATE SECTOR

While small successes were achieved under the PAIRED Activity, the lack of innovative approaches to engaging with the private sector left multiple challenges unaddressed for both the private sector, in particular, and the seed sector overall.

At the field level: viability was a seriously unaddressed element when discussing certified seeds in the private sector. The evaluation team observed many small-scale, private agri-input dealers with inadequate seed storage facilities, such that certified seeds were stored at room temperature, on the floor, or inappropriately in the seed shops. Low germination of seeds is a disincentive to farmers and results in a loss of confidence in the seed trade at large. Complaints of poor germination were reported by farmers who bought PAIRED-supported certified seeds, highlighting the importance of this issue. Measures should be taken to restore confidence by ensuring that seed viability is maintained from production fields, through transit to distribution locations, with the use of cold rooms and refrigerated containers at all levels along the seed trade.

Seed inspections remain inadequate due to the limited numbers of the MoFA Seed Inspectors, who often do not have the logistics necessary to undertake inspections. In the cases of Ghana and Nigeria, private seed companies helped facilitate the inspections process with logistical support, and inspection fee payments, in order to ensure inspectors were evaluating their fields at the appropriate time. Furthermore, seed inspection stems from the ability of farmers to grow certified seeds, helping to prevent the sale of fake seeds which are otherwise difficult to detect. The evaluators noted several interviews that raised concerns over fake seeds and/or instances of low germination. In Nigeria, to counter these fraudulent developments, the private Seed companies have introduced codes on seed packs which enable the buyer to verify the source and authenticity of a seed pack. This solution could be adopted by all seed dealers in the region to further increase confidence in quality seeds.

Distortions in the market, generated by the public sector's support of agri-input subsidies, have also created a variety of issues which were documented in the field. Innovation Platform farmers regularly discussed their intention to use their own saved seed for planting in the successive season, despite having planted a hybrid seed. These farmers were aware that the best practice would require the purchase of new seed in the successive season; however, a hope, mixed with no previous experience with hybrids, created conditions where farmers were willing to "test" the strength of their PAIRED supported seed. Farmers spoke to how seed prices were too high, despite acknowledging that their yields and profits had increased. The expectation was clear, seeds should be free or subsidized, irrespective of the benefits of higher quality seeds.

At the regional level: Dependency on the State and other institutional buyers, the largest customers of seed companies have broader knockoff effects. The regional seed trade remains heavily impacted by these institutional buyers and the political management of seed accessibility. The PAIRED Activity did not look to address these political levers in the seed sector, despite its unique regional advocacy position.

> *The player can't also be the referee – Private Seed Company*

Additionally, where large private seed companies engaged with the evaluation, they expressed substantial limitations and challenges to exporting their seed across ECOWAS countries. Challenges to protectionist national seed policies, exacerbated by customs-clearing struggles, reduced the overall certified seed available to address ECOWAS countries' demand.

Advocacy for implementing the existing policy reforms, combined with affordable financing to farmer associations and local enterprises to strengthen agri-input delivery systems is needed. Examples of policy reforms which could have been pursued include the liberalization of foundation seed production in countries that showed reluctance to private sector involvement. The participation of the private sector along with the public sector in workshops and trainings organized by the PAIRED Activity enabled the private sector to communicate their difficulties and give voice to their grievances, including concerns

regarding intellectual propriety rights, quality assurances, free movement of goods and services, seed import regulations, cost homologation of varieties, etc.

Addressing capacity issues in the region is needed to improve standards in seed certification, remove bottlenecks in intra-regional seed trade for smooth movement of seed to meet supply and demand. CORAF should strengthen advocacy for governments to allocate a minimum value of public expenditure to agriculture, and to ensure its efficiency and effectiveness. There is also a need to encourage the public sector to allow for stronger private sector participation in the seed business. The agri-input strategy to deliver seed, fertilizer and pesticides as a package should be driven by the private sector.

EVALUATION QUESTION 6

6. To what extent has PAIRED and International Fertilizer Development Center (IFDC)/ Enhancing Growth Through Regional Agricultural Input Systems (EnGRAIS) collaboration been effective in addressing agriculture technologies' scale up and availability of quality inputs? What is the value addition of CORAF/PAIRED in this collaboration? Include an analysis of the strengths and weaknesses of this collaboration as well as recommendations, if any, on how to improve this partnership?

The International Fertilizer Development Center (IFDC)/ Enhancing Growth Through Regional Agricultural Input Systems (EnGRAIS) Activity was developed with a main objective to improve sustainable agriculture productivity and inclusive growth in West Africa and to increase the regional availability and use of appropriate and affordable fertilizers. Given the linkages between fertilizer and seed, there was substantial logic in encouraging a collaboration between the PAIRED and EnGRAIS Activities.[20]

The first PAIRED and EnGRAIS MOU was signed in February 2018 to collaborate in bringing seed and fertilizer together as a package for upscaling in supporting the PAIRED Activity's intended result to develop technologies to help farmers improve their production. There were well documented agreements and agreed upon work plans that reflect accountability between the two organizations and in the event that work was outsourced, a tripartite agreement was held with the third party. The partnership between the two organizations enabled distinct yet complementary roles in undertaking actions to achieve the results within the PAIRED Activity, predominantly to:

- Develop and up-scale appropriate seed and fertilizer packages and best practices in the major agro-ecologies in West Africa (in collaboration with IFDC). The collaboration is specifically intended to support two sub-objectives:
    - Updating fertilizer and seed recommendations to develop these for targeted crops and agro-ecological zones across West Africa; *and*
    - Promoting market comprehensive fertilizer and seed input packages across West Africa.

These PAIRED results intended to link into and harmonize with the EnGRAIS Activity's results to achieve "comprehensive input packages developed and disseminated in cooperation with CORAF and EnGRAIS."

An advantage of this collaboration was the opportunity for the two Activities to harmonize their work on the two main agriculture inputs in the region, seeds, and fertilizer. By making available a complete package of suitable agri-inputs, the partnership would use different communication strategies to reach large numbers of farmers with quality options for agri-input packages made of seeds, fertilizers and associated good agricultural practices. Key activities to this partnership included:

- Developing agri-input packages to support seed production under different agri-ecological conditions.
- Setting up demonstration sites that provided farmers demonstratable differences between seed varieties; *and*
- Implementing the FeSERWAM Platform.[21]

[20] Separate of any USAID funded relationships, CORAF and IFDC have held a long-standing relationship, dating back to the first Memorandum of Understanding (MOU) between the two partners in 2013. They have since gone on to sign two additional agreements in 2020 and 2022, marking their commitment to collaboration.

[21] A detailed discussion of the FeSERWAM experience is provided in Evaluation Question 7.

The administration of the PAIRED/EnGRAIS partnership held clearly delineated roles and responsibilities: PAIRED was responsible for advising on promising seeds while IFDC was responsible for advising the most suitable fertilizer type. PAIRED and EnGRAIS held joint advisory committee meetings to develop a joint annual work plan, updated on a quarterly basis. The meetings of this advisory committee served as an avenue for presenting and discussing the achievements of both activities, developing, joint annual work plans, and provided a mechanism for making recommendations on improving implementation and result reporting. Lastly, the advisory committee served as a link between other regional programs and ongoing bilateral projects for the development of the fertilizer and seed sub-sectors.

While both PAIRED and ENGRAIS reported a relatively good collaboration between the two partners at an institutional level, successfully launching FeSERWAM, the database on high yielding and adaptable seed varieties, appropriate fertilizer availability, and good agricultural practices for West Africa, the Evaluation Team noted the collaboration was much less successful at delivering on its goal at the field level.

An underlying assumption in the justification of the PAIRED/EnGRAIS partnership was that collaboration would enable more effective implementation at the country level. In all PAIRED countries, the key actors associated with PAIRED implementation, the NARIs, predominantly lacked any awareness of the PAIRED/EnGRAIS partnership; rather, IFDC's history in the region made them familiar actors as an organization working on fertilizer issues in the region. One NARI in Nigeria proved to be an exception in this case, as that institution was clear on the fertilizer training linkages between PAIRED and EnGRAIS, and the provision of their own research institutions seed. At the level of the Innovation Platforms, most participants in the training activities and demonstration sites lacked a clear awareness of the PAIRED and EnGRAIS partnership. In Benin, the Innovation Platforms members repeatedly expressed their concerns about soil fertility and conservation challenges, and the managing NARI staff indicated that no agri-inputs were supplied as part of the PAIRED program.[22] One of the few instances of successful field level implementation occurred in Senegal, where UNIS was involved in the PAIRED/EnGRAIS partnership as distributors of "agri-packs" to their membership. Working through a cooperative structure confirmed the value of the introduction of good management practices as part of the agri-pack for farmer support.

An intended goal of the PAIRED/EnGRAIS partnership was the ability of both projects to benefit from the experience and expertise of both organizations. However, EnGRAIS members pointed to challenges in working with the PAIRED Activity. The comparatively small PAIRED team struggled under their administrative workloads, which contributed to the team's struggles to collaborate and plan with EnGRAIS. Availability conflicts and overlapping activities in calendars made joint planning and implementation difficult, resulting in delays in rolling out elements of the collaborative agreement in a timely manner. This capacity misalignment within the partnership was problematic and was further impacted by the fact that PAIRED Activity deliverables were varied and required extensive stakeholder engagement, whereas the EnGRAIS Activity was quite focused in their design and delivery of specific products. Processes within both organizations, as well as in their interaction with USAID, also created time allocation challenges.

The field interviews identified a number of operational challenges, including difficulties in synchronizing calendars, which led to implementation delays. Another noted weakness to this collaboration is that the two organizations have different global objectives and meet only when programing a joint activity or training, under special agreements that each of them contributed with a specific budget. This "silo"-ing of joint activities rather than a more holistic integration approach requires improved efficiency and coordination in the planning of annual workplans. This extends to needing to improve internal processes of releasing funds for joint activities by PAIRED and EnGRAIS. The funding terms between the two Activities are different in timing and length of funding cycles. EnGRAIS' funding period, from February 2018

[22] The cause of no available agri-inputs was unclear to the Evaluation Team. The NARI did communicate a push to eliminating chemical inputs in the maize value chain in response to market demand from the processors, which possibly explains the lack of chemical fertilizer availability.

– February 2023, and PAIRED's funding period, from June 2017 – June 2022, created a misalignment that was difficult to remedy under their joint work planned activities.

More could have been done to align activities with the PAIRED and EnGRAIS objectives such as aligning marketing strategies, subsidy policies approaches, methods for seed quality control, seed price and availability monitoring, and the development of seed catalogues with greater country-level engagement and stakeholder management.

EVALUATION QUESTION 7

7. How efficient and sustainable are the tools and systems developed and/or maintained by CORAF with the support of PAIRED (i.e., West Africa Seed Information Exchange (WASIX), FeSERWAM platform, MITA web-based Application, etc.)? What are the strengths (usefulness, utilization) and weaknesses of each tool/system?

WASIX

The West Africa Seed Information Exchange (WASIX) is a digital seed demand forecasting tool. It provides time-sensitive data used to forecast potential and actual seed demands in support of both public sector decision-making and business and investment decision-making for seed companies. In short, WASIX was intended to collect, process, and disseminate information on seed market conditions (supply and demand), provide networking and market linkages, collect sub-regional harmonized seed regulation applications, and ultimately contribute to Regional Seed System Governance. The tool was developed under the USAID WASP Activity as it was of substantial interest to seed stakeholders in the facilitation of intra-regional seed trade.

At the time of this evaluation, the WASIX exchange was not operational, and the portal had been disconnected from the CORAF website. Discussions have been underway to transfer WASIX to the private sector, through ASIWA, to manage. This transfer is not without political and operational conflicts. The process requires confirmation on the decision to host WASIX under the permanent secretariat of ASIWA, the administrator of the e-platform, and the cost-effectiveness of separating the e-platform from the permanent secretariat. There are national level concerns as well. Interviews held in Mali raised the issue of inherent competition between CORAF and the NARIs concerning the ownership of the new seed varieties being developed. The Senegalese Seed Services reported their strong support for any future iteration of WASIX to be managed by the private sector but impressed upon the team that CORAF was resisting the release of WASIX management responsibility to the private sector.

Ultimately, of the three systems created in part or in their entirety by CORAF, the Evaluation Team found WASIX had the farthest reach in terms of awareness and useability. Public sector actors – all NARIs and national seed services interviewed - reported knowledge of WASIX, ranging from personal user experience (mostly as contributors) to attendance in training events held by CORAF. The core issues appear to stem from conflicts related to the role and capacity of the private sector, a trend also prominently featured under the PAIRED Activity. Private seed companies reported knowing about WASIX, but generally ranked its importance to their business operations as relatively low. This pattern follows a broader trend where the public sector's development of knowledge products has not harmonized adequately with private sector users, who ultimately need to take ownership of the process in order to increase regional seed availability.

FESERWAM PLATFORM

The FeSERWAM online toolkit is a decision-making tool developed to facilitate agriculture stakeholders' access to information regarding the best improved seed varieties, the optimal fertilizer recommendations, and associated good agricultural practices by agro-ecological zones in West Africa. FeSERWAM provided information on seed and fertilizer packages made up of best suited varieties of maize, millet, sorghum, peanut, cashew nut, cotton, banana, cowpea, and rice with appropriate fertilizer recommendations and best agricultural practices by agro-ecological zone. The set of tools were designed to be used together to encourage stronger productivity and higher yields of target crops. The packages were developed using participatory inputs from national and regional stakeholders in targeted countries, including farmers, private input suppliers, research institutions, and extension services. These agri-input packages were organized by country and crop within downloadable PDF files. The initial launch of the FeSERWAM

platform occurred on September 22, 2020. An updated version of the toolkit was released on August 25, 2022,[23] and its links were shared with national research institutions in Ghana, Mali, Senegal, Benin, Nigeria, and Niger. Dissemination activities included the use of radio for Ghana and Nigeria, in the form of Farm Radio. A total of 520 agri-input packages promoting appropriate varieties of target crops are now available online. Among the 376 agri-input packages ready to be downloaded or printed, 142 were developed for the value chains promoted by PAIRED.

An example of successful coordination between the PAIRED and EnGRAIS partnership was the organization of a regional training of trainers (ToT) on the use and the management of the agri-input packages, and fertilizer and seed recommendation for the map of West Africa via the FeSERWAM platform. To supplement the ToT, an integrated communication and marketing strategy aiming to support the dissemination of FeSERWAM, and agri-input packages was developed, launched, and validated. The roadmap for the deployment of the strategy was also designed and validated.

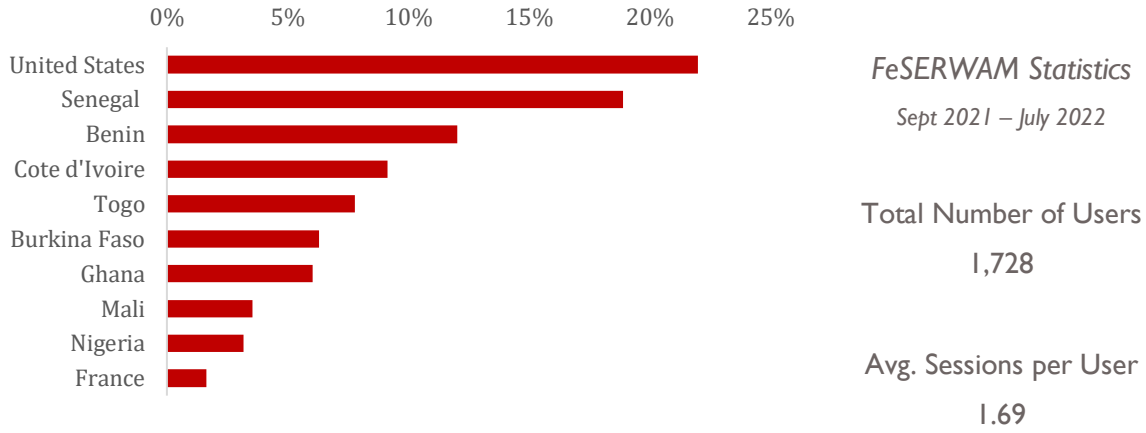

Figure 3: FeSERWAM user distribution, percentage by country

The FeSERWAM tool has the potential to boost agricultural productivity in the sub-region from the knowledge gained and application of the agro input packages. Using Google Analytics data covering Sept 1, 2021, through July 31, 2022, the website reported 1,728 unique users of the FeSERWAM platform. Users of the platform had an average of 1.69 sessions with an average session lasting 3.23 minutes. Figure 3 details the percentage distribution of users by country; oddly, the largest share of FeSERWAM users, 1 in 5, were in the United States. Users based in all PAIRED supported countries except Niger did engage with FeSERWAM, and in aggregate represented 44 percent or 754 unique individual users. The FeSERWAM Platform was not familiar to many actors within the Innovation Platforms and among stakeholders from the National Agricultural Research Centers. The Private Sector or Government entities that supported the PAIRED program had heard of the platform, but they had not used the first iteration due to user interface problems. Data collected from field interviews confirmed PAIRED users in Benin, Ghana and Senegal as having any familiarity with FeSERWAM, although their reported engagement was limited except in the case of Senegal.

Discussions held during the field visits highlighted challenges to accessibility, as the toolkit requires internet availability and payment to access the platform. Accessibility is limited due to unavailable and unreliable internet for most of the PAIRED farmers and the cost of accessing the information was prohibitively high. To address the issue around internet connectivity, FeSERWAM should expand its usability by developing additional content specific to fertilizer companies and agro-input dealers, who in turn would make available suitable formulations for farmers in their communities; moving from a web-based to a mobile-based

[23] All evaluation findings are associated with the first iteration of the platform. All reported data closed on July 31, 2022.

platform would also increase the usability of the platform by making some information available while offline; supplementally, CORAF and IFDC could train agricultural extension officers, who would act as the agents of dissemination of information on the recommendations to farmers. On the other hand, the platform remains mostly unaffordable for the small farmers, and where farmer associations may be able to absorb the cost, limitations to internet facilities at the village level reduces the reach of the platform. Furthermore, at the time of the evaluation, FeSERWAM was only available in English and French, which precluded access to Portuguese speakers. CORAF and IFDC should consider training agricultural extension officers who would disseminate recommendation information to farmers. The evaluation team noted that the IFDC had secured additional funding for a continued three years for maintenance of the FeSERWAM platform, which will provide an opportunity for the platform to adapt to the needs of their endline users.

MITA WEB-BASED APPLICATION

The Market for Agricultural Innovations and Technologies (MITA) is a web-mobile application for information on improved agricultural innovations and technologies and their transactions (purchase-sale). It serves as a direct interaction between research users and promoters, involved in the generation or transfer of technologies, with a view to stimulating demand for improved technologies. As a technology exhibition and discovery space, it potentially serves a very important role in the virtual demonstration of technologies and innovations to boost scale-up and adoption.

At the completion of the last upgrade to MITA, the PAIRED Activity organized information and sensitization meetings to present the new MITA 2.0 to country partners. These meetings were used to train stakeholders in the effective use of the platform and receive feedback about the new platform and resulted in the drafting of a roadmap for the collective and continuous updating of the web-based seed demand forecasting tool. The MITA application was upgraded with 232 technologies, and now provides information on improved agricultural innovations and technologies and their transaction (purchase-sale). Respondents at one NARI reported that, although the necessary training on MITA was provided, they experienced difficulties populating the electronic platform due to the reluctance of researchers who did not want to disclose information about their technologies. One respondent suggested more appropriate messaging to researchers highlighting the advantages and opportunities offered by MITA, which would enable better visibility. The Director of Seed Services in one francophone country reported no knowledge of MITA, a trend that reflected the experience in all but one PAIRED country.

Like the other electronic toolkits discussed, MITA's greatest weakness may be accessibility and use, which makes the tool limited to areas with internet connectivity and may not reach many of the smallholder farmers in West Africa, who lack cellphones and/or internet access. There is also a need for training agricultural extension agents and researchers to become accustomed to its use, as not one respondent from these stakeholder groups in any PAIRED supported country could speak to any familiarity with MITA. In order to ensure that credible information is added to populate the electronic toolkits, there is a need to set up a committee of experts to verify all data and information (clearing house system) before it is put on platforms for consumption.

FUTURE ELECTONIC PLATFORM CONSIDERATIONS

Overall, the evaluators documented through interviews in the field, and substantiated by available website tracking metrics, to identify significant challenges faced by the PAIRED Activity to increasing the functionality and accessibility of these online platforms. The development of these tools by CORAF in collaboration with other organizations was controversial. At the country level, PAIRED implementation stakeholders did not have adequate information on how to use these tools as a component of implementation, and as such did not utilize the knowledge contained in these resources. Challenges

included making fluid the information exchange, and addressing the economic viability of such platforms, including an appropriate integration of cost factors in developing the technology.

Respondents during the field visits reported that these regional electronic data management platforms needed to be more user-friendly to enable easy registration and access to valuable data, suggesting the best overhauls to these platforms might require moving from web-based to mobile-based platforms, and empowering intermediary stakeholders who regularly engage with farmers such as agri-input suppliers and agricultural extension officers. A more collaborative process on the utility of these platforms is needed. As a regional body, CORAF should facilitate stronger collaboration with national level utilizers, NARI leadership, National Seed Service Directorates, and other agriculture services, with a focus on inclusion with the private sector, to discuss the utility of these platforms. Ultimately, the development of these platforms should address the needs of end-line users and not the objectives of researchers and developers.

RECOMMENDATIONS

The PAIRED Activity sought to improve agricultural productivity in West Africa through the delivery of training, technical support, coordination, and to enhance the production, distribution, and widespread use of certified seeds, fertilizers, and pesticides by smallholder farmers as a package (seeds, fertilizer, pesticides, and best practices). The Activity was implemented in six West African countries and relied heavily on the various NARIs to deliver the program through on-the-ground support to Innovation Platforms and their members. The overall performance of the PAIRED Activity did not return widespread upscaling of certified seeds, and the following recommendations provide starting points for further discussion among all relevant stakeholders:

The foundational assumption that existing Innovation Platforms could be reinforced to create seed upscaling opportunities should be revisited. While PAIRED did not have more than two complete seasons to achieve the intended results, the trends which did emerge indicate greater resources and/or investment need to be considered to achieve a substantial increase in seed upscaling through the application of the Innovation Platform approach.

The PAIRED intervention demonstrates the implementing limitations faced at the farm level. Future programming must take into consideration the institutional capacity of all actors to manage financial systems, planning processes, implementation calendars, etc. as necessary to achieve a harmonized singular project.

Should future programming continue at the farm level, CORAF must take on a greater leadership role in actively managing the engagements on the ground. In the absence of adequate PAIRED leadership, each NARI adapted to their own understanding of the PAIRED Activity. The NARIs, despite limited funding and a pandemic, were not supported adequately to achieve PAIRED expected results.

Any future programming must revisit the private sector engagement strategy. The expectation that the private sector would be motivated to fill programmatic gaps on their own was unrealistic; the private sector is often growing in spite of, not because of, the public sector. Greater consideration for the challenges seed companies faces and stronger integration of the private sector in identifying shared objectives is needed to build a more cohesive private sector strategy.

CORAF holds a particular advantage in advocating for regional seed objectives. Having made progress over the past decade in harmonized seed regulations, the focus now should look at the significant gaps which exist in the operational elements of these regulations. Future programming would benefit upscaling by working with national governments on their processes for customs clearing of seed. This would have a substantial impact in increasing the volume of intra-regional trade by private sector seed companies.

ANNEX A: INTERVIEW LIST

BENIN

	TYPE OF STAKEHOLDER	NAME	POC	DATE
Porto Novo				
	Other Stakeholder	Direction Ag/ National Seed Service	Oliveira, Ndiaye, Njobe, Tchorly-Boadi	August 26, 2022
Cotonou				
	Research Institute	INRAB/General Direction	Oliveira, Ndiaye, Njobe, Tchorly-Boadi	August 26, 2022
Allada – Niaoulli				
	Research Institute	Maize Specialisation Centre Focal Point	Oliveira, Ndiaye, Njobe, Tchorly-Boadi	August 26, 2022
Couffo				
	Innovation Platform	Farmers FGD - Mixed	Oliveira & Njobe	August 29, 2022
	Innovation Platform	IP Departmental Leadership	Ndiaye & Tchorly-Boadi	August 29, 2022
	Innovation Platform	Farmers FGD - Seed Growers	Ndiaye & Tchorly-Boadi	August 29, 2022
	Innovation Platform	Aplahoué Branch	Ndiaye & Tchorly-Boadi	August 29, 2022
	Innovation Platform	Dogbo Branch	Ndiaye & Tchorly-Boadi	August 29, 2022
	Innovation Platform	Djakotomey Branch	Ndiaye & Tchorly-Boadi	August 29, 2022
	Innovation Platform	Ag. Extension Officer	Oliveira & Njobe	August 29, 2022
	Innovation Platform	Ag. Extension Officer	Ndiaye & Njobe	August 30, 2022
Ifangni				
	Innovation Platform	Agri-input Dealer	Oliveira & Tchorly-Boadi	August 29, 2022

	Innovation Platform	IP Leadership	Ndiaye & Njobe	August 30, 2022
	Innovation Platform	President	Oliveira & Tchorly-Boadi	August 30, 2022
	Innovation Platform	Farmers FGD - Mix	Ndiaye & Njobe	August 30, 2022
	Innovation Platform	Farmers FGD - Seed Growers	Oliveira & Tchorly-Boadi	August 30, 2022
	Innovation Platform	Farmers FGD - Processors (Women)	Oliveira & Tchorly-Boadi	August 30, 2022

GHANA

	TYPE OF STAKEHOLDER	NAME	POC	DATE
Accra				
	Other Stakeholder	IFDC/EnGRAIS	Akromah	11 Aug 2022
	Private Sector	Antika Seed	Akromah	29 Aug 2022
	Private Sector	Heritage Seeds	Akromah	30 Aug 2022
Kumasi				
	Research Institute	Director	Makuch	15 Aug 2022
	Research Institute	Upscaling Team	Akromah	15 Aug 2022
	Research Institute	Dissemination Team	Ashiteye & Ashong	15 Aug 2022
Woraso				
	Innovation Platform	Farmers FGD – Women	Akromah	15 Aug 2022
	Innovation Platform	Farmers FGD – Youth	Ashiteye	15 Aug 2022
	Innovation Platform	Farmers FGD – Men	Ashong	15 Aug 2022
Atebubu				
	Innovation Platform	Farmers FGD – Mix	Ashiteye	16 Aug 2022
	Innovation Platform	Seed Grower	Akromah & Makuch	16 Aug 2022
	Quant Instrument	Input Dealers	Ashiteye & Ashong	16 Aug 2022
Amantin				
	Innovation Platform	Farmers FGD – Mix	Ashiteye	16 Aug 2022
	Innovation Platform	Seed Grower	Akromah	16 Aug 2022
	Quant Instrument	Input Dealers	Ashong	16 Aug 2022
Nsoatre				

	Innovation Platform	Farmers FGD – Mix	Ashong	17 Aug 2022
	Innovation Platform	Farmers FGD – Aggregators	Ashiteye	17 Aug 2022
	Innovation Platform	Input Dealer	Akromah	17 Aug 2022
	Innovation Platform	Seed Grower	Akromah	17 Aug 2022
	Innovation Platform	Financial Institution	Makuch	17 Aug 2022
	Innovation Platform	Ag Extension Officer	Makuch	17 Aug 2022
Derma				
	Innovation Platform	Farmers FGD – Women	Ashong	17 Aug 2022
	Innovation Platform	Farmers FGD – Men	Ashiteye	17 Aug 2022
	Innovation Platform	Seed Grower	Akromah	17 Aug 2022
	Innovation Platform	Financial Institution	Makuch	17 Aug 2022
	Research Institute	Coordinator (Jonas)	Makuch	17 Aug 2022
Tamale				
	Research Institute	Project Management	Makuch	19 Aug 2022
	Research Institute	Breeder and Agronomy	Akromah	19 Aug 2022
	Research Institute	Communications	Ashiteye	19 Aug 2022
	Research Institute	Ag Extension	Ashong	19 Aug 2022
	Quant Instrument	Input Dealers		
Tosinape				
	Innovation Platform	Farmers FGD – Women	Akromah	19 Aug 2022
	Innovation Platform	Farmers FGD – Youth	Ashiteye	19 Aug 2022
	Innovation Platform	Farmers FGD – Men	Ashong	19 Aug 2022

Tantuani				
	Innovation Platform	Farmers FGD – Women	Akromah	20 Aug 2022
	Innovation Platform	Farmers FGD – Youth	Ashiteye	20 Aug 2022
	Innovation Platform	Farmers FGD – Men	Ashong	20 Aug 2022
	Innovation Platform	Seed Grower	Makuch	20 Aug 2022
Yapala				
	Innovation Platform	Farmers FGD – Mix	Akromah & Makuch	20 Aug 2022
	Innovation Platform	Seed Grower	Akromah	20 Aug 2022
Nayagnia				
	Innovation Platform	Farmers FGD – Mix	Ashiteye	22 Aug 2022
	Innovation Platform	Farmers FGD – Mix	Ashong	22 Aug 2022
	Innovation Platform	Seed Grower	Akromah	22 Aug 2022
	Innovation Platform	Ag Extension Officer	Makuch	22 Aug 2022
Kologo				
	Innovation Platform	Farmers FGD – Women	Ashiteye	22 Aug 2022
	Innovation Platform	Farmers FGD – Men	Ashong	22 Aug 2022
	Innovation Platform	Farmers FGD – IP Leadership	Akromah	22 Aug 2022
	Quant Instrument	Input Dealers	Akromah, Ashiteye, Ashong & Makuch	22 Aug 2022
Bolgatani				
	Quant Instrument	Input Dealers	Akromah, Ashiteye, Ashong & Makuch	23 Aug 2022

MALI

	TYPE OF STAKEHOLDER	NAME	POC	DATE
Bamako				
	Research Institute	IER	Oliveira, Ndiaye, Njobe, Tchorly-Boadi	August 15, 2022
	Other Stakeholder	CILSS/INSAH	Oliveira, Ndiaye, Njobe, Tchorly-Boadi	August 15, 2022
	Private Sector	ONG FasoKaba	Oliveira, Ndiaye, Njobe, Tchorly-Boadi	August 15, 2022
	Other Stakeholder	Direction of Agriculture, Deputy General Director	Oliveira, Ndiaye, Njobe, Tchorly-Boadi	August 16, 2022
Méguetan				
	Innovation Platform	General	Oliveira, Ndiaye, Njobe, Tchorly-Boadi	August 17, 2022
Doumba				
	Innovation Platform	General	Oliveira, Ndiaye, Njobe, Tchorly-Boadi	August 17, 2022
Sirakola				
	Innovation Platform	General	Oliveira, Ndiaye, Njobe, Tchorly-Boadi	August 17, 2022

NIGER

	TYPE OF STAKEHOLDER	NAME	POC	DATE
Niamey				
	Research Institute	IRAN Focal Point	Oliveira, Ndiaye & Tchorly-Boadi	August 19, 2022
	Research Institute	Communications	Oliveira, Ndiaye & Tchorly-Boadi	August 19, 2022
	Other Stakeholder	MofA/Seed Direction	Oliveira, Ndiaye & Tchorly-Boadi	August 19, 2022
	Cooperative & Association	ONG RAIL	Oliveira & Ndiaye	August 19, 2022
	Other Stakeholder	CILSS/CRA	Oliveira, Ndiaye, Njobe, Tchorly-Boadi	August 22, 2022
	Private Sector	AÏNOMA	Oliveira, Ndiaye, Njobe, Tchorly-Boadi	August 22, 2022
	Other Stakeholder	National Seed Association - APPSN	Oliveira, Ndiaye, Njobe, Tchorly-Boadi	August 22, 2022
	Cooperative & Association	FUCOPRI	Oliveira, Ndiaye, Njobe, Tchorly-Boadi	August 23, 2022
Say				
	Innovation Platform	Farmers FGD - Leadership	Oliveira, Ndiaye, Njobe, Tchorly-Boadi	August 22, 2022
	Innovation Platform	Farmers FGD - Farmer	Oliveira, Ndiaye, Njobe, Tchorly-Boadi	August 22, 2022
	Innovation Platform	Seed Grower	Oliveira, Ndiaye, Njobe, Tchorly-Boadi	August 22, 2022

NIGERIA

	TYPE OF STAKEHOLDER	NAME	POC	DATE
Abuja – NCRI				
	Research Institute	Inbrief Team	Akromah & Makuch	26 Aug 2022
	Research Institute	Coordinator	Makuch	30 Aug 2022
Goronyo				
	Innovation Platform	Chairman	Akromah & Makuch	30 Aug 2022
	Innovation Platform	Seed Grower	Akromah	30 Aug 2022
	Innovation Platform	Ag Extension Officer	Makuch	30 Aug 2022
	Innovation Platform	Farmer Discussion	Akromah	30 Aug 2022
Abuja – IAR				
	Research Institute	Inbrief Team	Akromah & Makuch	26 Aug 2022
	Research Institute	Coordinator	Makuch	29 Aug 2022
Jengre				
	Innovation Platform	Executive Committee	Makuch	29 Aug 2022
	Innovation Platform	Farmers FGD - Male	Akromah	29 Aug 2022
	Innovation Platform	Farmers FGD -Women	Akromah	29 Aug 2022
	Innovation Platform	Ag Extension Officer	Makuch	29 Aug 2022
Abuja - All Other Stakeholders				
	Other Stakeholder	ECOWAS - Director, Agriculture	Akromah & Makuch	26 Aug 2022
	Association/ Cooperative	SEEDAN	Akromah & Makuch	31 Aug 2022
	Private Sector	Savannah Seeds	Makuch	31 Aug 2022
Remote	Private Sector	SeedCo Nigeria	Akromah	31 Aug 2022
Remote	Private Sector	Premier Seed	Akromah	31 Aug 2022

Remote	Other Stakeholder	NPPO	Akromah	1 Sept 2022
Remote	Other Stakeholder	National Seed Council	Akromah	1 Sept 2022

SENEGAL

	TYPE OF STAKEHOLDER	NAME	POC	DATE
Dakar				
	PAIRED Staff	PAIRED Evaluation Launch	FULL Evaluation Team	August 8, 2022
	CORAF	Acting Executive	FULL Evaluation Team	August 8, 2022
	Research Institute	ISRA/BAME Focal Point	Oliveira, Ndiaye, Njobe, Tchorly-Boadi	August 10, 2022
	Other Stakeholder	IFDC/EnGrais	Oliveira, Ndiaye, Njobe, Tchorly-Boadi	August 11, 2022
	Cooperative / Association	SEDAP	Makuch & Njobe	August 11, 2022
	Cooperative / Association	UNIS	Makuch & Njobe	August 11, 2022
	Private Sector	TROPICASEM	Oliveira, Ndiaye & Tchorly-Boadi	August 11, 2022
	Other Stakeholder	AFSTA/WA	Oliveira, Ndiaye & Tchorly-Boadi	August 11, 2022
	Other Stakeholder	MofA/Seed Division DISEM	Oliveira, Ndiaye, Njobe, Tchorly-Boadi	August 12, 2022

ANNEX B: INNOVATION PLATFORM COMPOSITION

BENIN

INRAB-ASSISTED INNOVATION PLATFORMS			
Couffo			
		Total Number	**Name**
	IP Executive Leaders	3	
	Chairman	1	Mr. Bonaventure Tohouegnon
	Secretary	1	Mr. Casimir Gbokede C.
	Treasurer	1	Ms. Pauline Atoui
	Other	10	Danhoub Fidèle, Agbelehounco Gamélé Bernard, Mayé Appoline, Gbokede Ruffine, Tode Elisabeth, Sodegla Robert, Dioussou Sidonie, Victor Ninivi, Dayou Barthélémy, Richard HEKPAZO
	Farmers	326	***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	190	
	Women	136	
	Youth	52	
	Certified Seed Grower(s)	5	Mr. Sodegla Robert, Mr. Dayou Barthélémy, Mr. ADJAHOSSOU Comlan, Mr. Casimir Gbokede C., Mr. NOUMONVI Gilbert
	Input Dealer(s)	1	Ms. Dioussou Sidonie
	Financial Institution	2	PeBCO Bethesda, CLCAM
	Ag Extension Officer	3	Plant protection services, Agricultural extension services, Seed inspection services
	Other (*please specify*)	3	LA VOLONTE (Agri-inputs supplier), INRAB, locally elected official,

Ifangni			
		Total Number	**Name**
	IP Executive Leaders	3	
	Chairman	1	Mr. Mouzy Jean
	Secretary	1	Mr. Jean Baptiste Noudeviwa
	Treasurer	1	Ms. Anne Gassa
	Other	2	Mr. Achiwadjou Adouchédé, Mr. Samuel Babalolou
	Farmers	101	***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	46	
	Women	55	
	Youth	3	
	Certified Seed Grower(s)	3	Mecara Noudeviwa, Valentin Roko, Mouzy Jane
	Input Dealer(s)	0	
	Financial Institution	0	
	Ag Extension Officer	1	Agence Territoriale de Développement Agricole
	Other (*please specify*)	2	Agriculture Focal Point of the Mayor of Ifangni, INRAB,

GHANA

CRI-ASSISTED INNOVATION PLATFORMS			
Woraso			
		Total Number	**Name**
	IP Executive Leaders	6	
	Chairman	1	Osei Kwabena
	Secretary	1	Stephen Adda
	Treasurer	1	Grace Sarpong
	Coordinator	1	Osei Kwabena
	Other(Organizers)	2	Kwame Abosi & Ama Sika
	Other(Vice-Chairman)	1	Daniel Kwasi Owusu
	Farmers	40	***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	20	
	Women	12	
	Youth	8 (F 3, M 5)	
	Certified Seed Grower(s)	1	Osei Kwabena
	Input Dealer(s)	1	George Owusu
	Financial Institution	2	Opportunity Bank (Rep-Adwoa Tiwaa) and J.O. Micro-finance (Amos Antwi)
	Ag Extension Officer	1	Francis Tetteh
	Other *(Tractor operators)*	3	Abdullai Boamah, Ayuba Berchie & Atta Ntiamoah
	Other (*Traders*)	2	Collins Owusu & Akua Boatemaa
Atebubu			
		Total Number	**Name**
	IP Executive Leaders	6	

	Chairman	1	Yusif Bunbas
	Secretary	1	Robert Suglo
	Treasurer	1	Sadia Musah
	Coordinator	1	Joseph Donkor
	Other (Organizers)	2	George Boadan & Paulina Okyere
	Farmers	30	***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	15	
	Women	8	
	Youth	7(F 2, M 5)	
	Certified Seed Grower(s)	1	Yusif Bunbas
	Input Dealer(s)	2	Issah Mohammed & Yusif Bunbas
	Financial Institution	1	Brong-Ahafo Catholic Cooperative for Social and Religious Advancement (BACCSOD) (Rep-Emmanuel Balebo)
	Ag Extension Officer	1	Lawrence Adomako
	Other (*Tractor owners*)	3	Nana Kofi, Samuel Owusu and Yusif Bunbas
	Other (*Traders*)	2	Kwaku Mintah & Issah Mohammed
Amantin			
		Total Number	**Name**
	IP Executive Leaders	5	
	Chairman	1	Amoh Ayisi
	Secretary	1	Combat Shadrack
	Treasurer	1	Asana Mohammed
	Coordinator	1	Shadrack Combat
	Other (Vice-Chairman)	1	Georgina Konabe
	Other (Organizer)	1	Habib Mohammed

	Farmers	22	***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	14	
	Women	6	
	Youth	2 (M 2)	
	Certified Seed Grower(s)	2	Ibrahim Tanko & Baba Seidu
	Input Dealer(s)	1	Baba Seidu
	Financial Institution	2	Amantin-Kasei Community Bank (Rep-Stephen Sarfo) & Success for People Micro-Finance (Rep-Samuel Owusu Wiafe
	Ag Extension Officer	1	Adjei Gershong
	Other (*Tractor owners*)	5	Moses Laar, Daniel Nawang, Baba Seidu, Ibrahim Tanko & Amoh Ayisi
	Other (*Traders*)	1	Susana Combat & Habib Mohammed
Nsoatre			
		Total Number	**Name**
	IP Executive Leaders	5	
	Chairman	1	Johnson Kyere
	Secretary	1	Gabriel Asare
	Treasurer	1	Mary Asantewaa
	Coordinator	1	Kweku Kyeremeh
	Other (Organizer)	1	Stephen Krobea Asante
	Farmers	20	***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	13	
	Women	1	
	Youth	7 (F 2, M 5)	
	Certified Seed Grower(s)	1	Johnson Kyere
	Input Dealer(s)	1	Ebenezer Asante

	Financial Institution	1	Nsoatreman Rural Bank (Rep- Lawrence Amuah)
	Ag Extension Officer	1	Daniel Fosu
	Other (*Traders*)	5	Akosua Owusuaa, Habiba Tenee, Mary Asantewaa, Janet Asieduwaa & Elizabeth Achiaa
Derma			
		Total Number	**Name**
	IP Executive Leaders	5	
	Chairman	1	Isaiah Nsiah Asare Bediako
	Secretary	1	Stephen Adjei Sarkodie
	Treasurer	1	Christiana Dapaah
	Coordinator	1	Michael Obeng Mensah
	Other(Organizer)	1	Kwabena Adu
	Farmers	30	***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	15	
	Women	10	
	Youth	5 (M 5)	
	Certified Seed Grower(s)	1	Isaiah Nsiah Asare Bediako
	Input Dealer(s)	1	Samuel Oduro
	Financial Institution	1	Derma Area Rural Bank (Rep-Akalangdi Akalangdi Hero)
	Ag Extension Officer	1	Samuel Owusu
	Other (*Traders*)		Augustine Boateng, Mariama Fuseini & Isaiah Nsiah Asare Bediako
Adidwan			
		Total Number	**Name**
	IP Executive Leaders	4	

	Chairman	1	Kwabena Sarfo
	Secretary	1	Samuel K. Boakye
	Treasurer	1	Grace Abebrese
	Coordinator	1	Kwabena Sarfo
	Other (Organizer)	1	Akua Akoto
	Farmers	35	***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	15	
	Women	18	
	Youth	2 (M 2)	
	Certified Seed Grower(s)		N/A
	Input Dealer(s)	1	Kwabena Sarfo
	Financial Institution		N/A
	Ag Extension Officer	1	Aheto Winfred Simon
	Other (*Tractor operator*)	1	Kwame Zakari
	Other (*Trader*)	1	Salifu Seidu
Ahyiayem			
		Total Number	**Name**
	IP Executive Leaders	7	
	Chairperson	1	Mary Alamisi Azongo
	Secretary	1	Yaa Awini
	Treasurer	1	Charity Ampomah
	Coordinator	1	Mary Alamisi Azongo
	Other (Assistant Secretary)	1	Mary Benewaa
	Other (Vice Chairperson)	1	Collins
	Other (Organizers)	2	Joseph Haruna & Bismark Adjei Opoku

	Farmers	30	***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	6	
	Women	13	
	Youth	11 (F 6, M5)	
	Certified Seed Grower(s)	1	Mary Alamisi Azongo
	Input Dealer(s)	1	Francis Tawiah
	Financial Institution	1	GCB
	Ag Extension Officer	1	Adam Salisu
	Other (*Tractor owners*)	2	Frimpong Manu & Bismark Adjei Opoku
	Other (*Trader*)	2	Achiaa Memoria & Theresa
Kontonso			
		Total Number	**Name**
	IP Executive Leaders	7	
	Chairman	1	Yaw Amoako
	Secretary	1	Isaac Nuolayeng
	Treasurer	1	Mary Osman
	Coordinator	1	Mary Osman
	Other (Assist. Secretary)	1	Owusu Kennedy
	Other (Organizer)	1	Kwaku Dapaah
	Other (Vice-Chairman)	1	Baba Abass
	Farmers	21	***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	17	
	Women	4	
	Youth	-	
	Certified Seed Grower(s)		N/A

	Input Dealer(s)	1	Yaw Amoako
	Financial Institution	1	Teachers' Credit Union (Rep-Ophelia Adu)
	Ag Extension Officer	1	Bruno Kavaarpuo
	Other (*Tractor owner*)	2	Saule Adams & Baba Abass
	Other (*Traders*)	2	Saule Adams & Baba Abass
Nyamebekyere			
		Total Number	**Name**
	IP Executive Leaders	5	
	Chairman	1	David Asamoah
	Secretary	1	Daniel K. Atta
	Treasurer	1	Faustina Sampson
	Coordinator	1	Daniel K. Atta
	Other (Assist. Treasurer)	1	Joyce Pokuaa
	Other (Organizer)	1	Kwame Jolipor
	Farmers	30	***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	12	
	Women	13	
	Youth	5 (F 2, M 3)	
	Certified Seed Grower(s)	1	David Asamoah
	Input Dealer(s)	1	Gabriel Henneh
	Financial Institution	1	Brong-Ahafo Catholic Cooperative for Social and Religious Advancement (BACCSOD) (Rep-Emmanuel Asubonteng)
	Ag Extension Officer	1	Andrew Sobah
	Other (*Tractor owner*)	1	Gabriel Henneh
Nkrankyire			

		Total Number	Name
	IP Executive Leaders	5	
	Chairman	1	George Kyeremeh
	Secretary	1	Azure Musah Latif
	Treasurer	1	Vivian Nkrumah
	Coordinator	1	Amadu Musah
	Other (Organizer)	1	Mary Opoku
	Farmers	30	***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	11	
	Women	9	
	Youth	10 (M 6, F 4)	
	Certified Seed Grower(s)	-	N/A
	Input Dealer(s)	1	Samuel Oduro
	Financial Institution	1	Derma Rural Bank (Rep-Akalangdi Akalangdi Hero)
	Ag Extension Officer	1	Samuel Owusu
	Other (*Traders*)	2	Augustine Boateng

GHANA

SARI-ASSISTED INNOVATION PLATFORMS			
Upper East			
Nayagnia			
		Total Number	**Name**
	IP Executive Leaders		
	Chairman	1	Gerard A. Morgan
	Secretary	1	Cosmos Asaabu
	Treasurer	1	Abuga Millicent
	Coordinator	1	Oho Avogo
	Other	1	Pualima Kaba (Assistant Secretary)
	Farmers	30	***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	9	
	Women	8	
	Youth	7	
	Certified Seed Grower(s)	1	Gerard A. Morgan
	Input Dealer(s)	1	Members of Peasant Farmers Association
	Financial Institution	1	Nara Rural Bank
	Ag Extension Officer	1	Elijah Bobby
Kologo			
		Total Number	**Name**
	IP Executive Leaders		
	Chairman	1	Clement A. Afuo
	Secretary	1	Patrick Anawine

	Treasurer	1	Alugba Awea
	Coordinator	1	Atanga Nbire
	Other	3	Carlous Aposiko (Vice Chair), Amaliba Anyokibalinga (Vice Treasurer), Ida Achatowe (Vice Secretary)
	Farmers		***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	10	
	Women	9	
	Youth	4	
	Certified Seed Grower(s)	1	Clement A. Afuo
	Input Dealer(s)	0	
	Financial Institution	0	VSLA (Nara Rural Bank is also available)
	Ag Extension Officer	1	Joseph Alosisa
Kalbeong			
		Total Number	**Name**
	IP Executive Leaders		
	Chairman	1	Yussif Adayaara
	Secretary	1	Apaadike Emmanuel
	Treasurer	1	Ateyine Azumah
	Coordinator	1	Simon Apuko
	Other	1	Akunsaaya Atangamah (Vice chairperson)
	Farmers		***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	12	
	Women	9	
	Youth	2	

	Certified Seed Grower(s)	0	
	Input Dealer(s)	2	
	Financial Institution	0	VSLA
	Ag Extension Officer	1	Michael Akaburi
Yibongo			
		Total Number	**Name**
	IP Executive Leaders		
	Chairman	1	Benjamin Asogeyolko
	Secretary	1	Stephen Akolgo
	Treasurer & Women's Organizer	1	Azaarebono Nyaaba
	Coordinator	1	Nyaaba Atule
	Farmers		***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	7	
	Women	12	
	Youth	3	
	Certified Seed Grower(s)	1	Aligiya Solomon
	Input Dealer(s)	1	Gilbert Atambire Anizam
	Financial Institution	0	VSLA
	Ag Extension Officer	1	Asigre John Anaba
	Other (*please specify*) Tractor operator	1	Moses Akenzia Asuure
Upper West			
Naha			

		Total Number	Name
	IP Executive Leaders		
	Chairman	1	Yakubu Arihimara (Chairperson)
	Secretary	1	Issahaku Sansew
	Treasurer	1	Rahi Abdul Latif
	Coordinator	1	Fuseini Alimata
	Farmers		***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	7	
	Women	19	
	Youth	0	
	Certified Seed Grower(s)	0	
	Input Dealer(s)	0	
	Financial Institution	0	VSLA
	Ag Extension Officer	1	Mahama Nafisah
Tendoma			
		Total Number	**Name**
	IP Executive Leaders		
	Chairman	1	Kakariba Yuorido
	Secretary	1	James Yuorido
	Treasurer	1	Tounkun Zudoli
	Coordinator	1	Pualina Batire
	Farmers		***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	7	
	Women	18	

	Youth	0	
	Certified Seed Grower(s)	1	Kakariba Yuorido
	Input Dealer(s)	0	
	Financial Institution	0	VSLA
	Ag Extension Officer	1	Wanye Abubakari
	Other (*please specify*)	1	Kakariba James (Tractor operator)
Dakyie			
		Total Number 30	**Name**
	IP Executive Leaders		
	Chairman	1	Kaatoore Alexander
	Secretary	1	Zabogu Denis
	Treasurer	1	Nyerewie Alice
	Coordinator	1	Yelekyene Rebecca
	Other	2	Bangmuribu John Bosco (Vice chairman), Eunice Zabogu (Assistant coordinator/organizer)
	Farmers		***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	4	
	Women	14	
	Youth	4	
	Certified Seed Grower(s)	0	
	Input Dealer(s)	1	Badengu Ningbogi
	Financial Institution	0	VSLA
	Ag Extension Officer	1	Richard Ankobo Chireh

	Other (*please specify*)	1	Vitus Kanye (Tractor operator)
Wogu			
		Total Number	**Name**
	IP Executive Leaders		
	Chairman	1	Pienaar Adisatu
	Secretary	1	Maga Peter
	Treasurer	1	Agnes Kan-oge
	Other	3	Mary Gayuoni (Organizer) Naronaa Yaro (Assistant treasurer) Yarama Anbanbaha (Disciplinary secretary)
	Farmers		***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	8	
	Women	12	
	Youth	2	
	Certified Seed Grower(s)	0	
	Input Dealer(s)	1	Nafiu Gaayuoni
	Financial Institution	0	VSLA
	Ag Extension Officer	1	Shittu Ibrahim
	Other (*please specify*)	3	Maga peter (Tractor owner) Massalina Alhassan (Marketer) Pienaar Adisatu (Rice processor)
Savannah			
Tosinape			
		Total Number	**Name**
	IP Executive Leaders		

	Chairman	1	Yidana Kwaku
	Secretary	1	Nyedini Mohammed
	Treasurer	1	Saibu Maria
	Coordinator	1	Adam Hudu
	Other	1	Ewura Mariama (Women organizer)
	Farmers		***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	9	
	Women	5	
	Youth	7	
	Certified Seed Grower(s)	0	
	Input Dealer(s)	0	
	Financial Institution	0	VSLA
	Ag Extension Officer	1	Yahaya Sulemana
	Other (*please specify*) (Tractor operators)	4	Issah Adam, Abukari Napari, Haruna Kweku, Iddrisu Awudu
Tantuani			
		Total Number	**Name**
	IP Executive Leaders		
	Chairman	1	Alhassan Bawa
	Secretary	1	Abudu Smaila
	Treasurer	1	Zakaria Ibrahim
	Coordinator	1	Hawa Mohammed
	Farmers		***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	8	
	Women	7	

	Youth	7	
	Certified Seed Grower(s)	0	
	Input Dealer(s)	1	Zakaria Ibrahim
	Financial Institution	0	VSLA
	Ag Extension Officer	1	Seidu A Rauf Osman
	Other (*please specify*)	4	Alhassan Mohammed (Tractor operator) Salifu Adisah (Processor) Zakaria Sanatu (Processor) Rabi Zakaria (Aggregator)
Yapala			
		Total Number	**Name**
	IP Executive Leaders		
	Chairman	1	Abdul Raman Yakubu
	Secretary	1	Suhuyini Yussif
	Treasurer	1	Fuseini Amina
	Coordinator	1	Salifu Abdul Majeed
	Farmers		***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	10	
	Women	6	
	Youth	5	
	Certified Seed Grower(s)	0	
	Input Dealer(s)	1	Ramatu Yakubu
	Financial Institution	0	VSLA
	Ag Extension Officer	1	Seidu A Rauf Osman

	Other (*please specify*)	4	Ibrahim Abdul Manan (Tractor operator) Alimatu Dawuni (Processor) Yussif Memunatu (Processor) Abibata Abu (Aggregator)
Japalpe			
		Total Number	**Name**
	IP Executive Leaders		
	Chairman	1	Yahaya Ninchuboare
	Secretary	1	Adam Nabila
	Treasurer	1	Abass Memunatu
	Coordinator	1	Salifu Ibrahim
	Other	2	Fatawu Mahama (Vice chairman) Alhassan Rukaya (Women organizer)
	Farmers		***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	10	
	Women	13	
	Youth	0	
	Certified Seed Grower(s)	0	
	Input Dealer(s)	0	
	Financial Institution	0	VSLA
	Ag Extension Officer	1	Ziblim Mohammed
	Other (*please specify*)	2	Issaka Wumbei (Tractor operator) Adam Nabila (Tractor operator)

MALI

IER - ASSISTED INNOVATION PLATFORMS			
Meguentan / Benkedi			
		Total Number	**Name**
	IP Executive Leaders	3	
	Chairman	1	Mamadou Fadel Traoré
	Secretary	1	Tièmogo Fané
	Treasurer	1	Salif Traoré
	Other	12	Kafouné Coulibaly, Keffa Diarra, Segua Ballo, Adama Traoré, Diamako Diarra, Bafing Coulibaly, Diarraba Diarra, Ibrahim Traoré, Daouda Fané, Konimba Diarra, Soiba Diarra, Salimata Coulibaly
	Farmers	77	***DO NOT LIST INDIVIDUAL FARMER NAMES***
	Men	49	
	Women	28	
	Youth		
	Certified Seed Grower(s)	3	Mamadou Fadel Traoré, Salif Traoré, Diarraba Diarra
	Input Dealer(s)	1	Mamadou Fadel Traoré
	Financial Institution	1	Kafo jiginew
	Ag Extension Officer	1	Sous-Secteur Agriculture Meguetan (Koulikoro)
	Other (*please specify*)	2	ONG MALIMARK, IER Sotuba
Doumba / Gnetagaton			
		Total Number	**Name**
	IP Executive Leaders	3	

	Chairman	1	Adama Bah Traoré
	Secretary	1	Mory Diarra
	Treasurer	1	N'golo Diarra
	Other	14	Sigua Traoré, Baba Diarra, Adama Coulibaly, Mama Coulibaly, Ba Sekou Diarra, Mariame Coulibaly, Dramane Diarra, Koninba Traoré, Djibril Coulibaly, Dadio Diarra, Aiché Traoré, Seydou Coulibaly, Deamane Coulibaly, Aminata Camara
	Farmers	198	***DO NOT LIST INDIVIDUAL FARMER NAMES***
	Men	113	
	Women	85	
	Youth		
	Certified Seed Grower(s)	5	Adama Bah Traoré, Adama Coumibaly, Djibril Coulibaly, Mama Coulibaly, Dadio Diarra
	Input Dealer(s)	1	Mama Coulibaly
	Financial Institution	2	Baobab, Kafo Jiginew
	Ag Extension Officer	1	Sous-Secteur Agriculture Doumba (Koulikoro)
	Other (*please specify*)	3	ONG MALIMARK, IER, locally elected official
Sirakorola / Sirakorolaton			
		Total Number	**Name**
	IP Executive Leaders	3	
	Chairman	1	Moriba Traoré
	Secretary	1	Neh Coulibaly
	Treasurer	1	Mamadou Coulibaly
	Other	8	Lamine Coulibaly, Konze Traoré, Bah Coulibaly, Koninba Diarra, Ali Coulibaly, Tièkoura Diarra, Souleymane Camara, Mama Kéou Dienta

	Farmers	72	***DO NOT LIST INDIVIDUAL FARMER NAMES***
	Men	55	
	Women	17	
	Youth		
	Certified Seed Grower(s)	4	Moriba Traoré, Mamadou Coulibaly, Lamine Coulibaly, Bah Coulibaly
	Input Dealer(s)	2	Mamadou Coulibaly,Koninba Diarra
	Financial Institution	1	RMCR
	Ag Extension Officer	1	Sous-secteur Agriculture Sirakorola
	Other (*please specify*)	2	ONG MALIMARK, IER
Siramana			
		Total Number	**Name Coopérative** *DOUNKAFA*
	IP Executive Leaders	6	
	Chairman	1	NGOLO SANGARE
	Secretary	1	MODOGO Bengaly
	Treasurer	1	CHAKA
	Other	3	YAYA S BENGALI, BIRAM DJOUMOUTENE, OUMAR DIABITE
	Farmers	251	***DO NOT LIST INDIVIDUAL FARMER NAMES***
	Men	201	
	Women	50	
	Youth	200	
	Certified Seed Grower(s)	0	
	Input Dealer(s)	0	
	Financial Institution	3	KAFO, SORO YIRIWA SO, BNDA

	Ag Extension Officer	1	Direction Régional de l'Agriculture (DRA)
	Other (*please specify*)	0	
Loutana			
		Total Number	**Name :** Coopérative *FOKABEN*
	IP Executive Leaders	15	
	Chairman	1	Diarrah TRAORE
	Secretary	1	Mariam TRAORE
	Treasurer	1	Kamaga TRAORE
	Other	12	Mariam DIAMOUTENE, Mariam TRAORE, Bintou BERTHE, Chita BENGALY, Bintou K. BERTHE, Mandia GNISSAMA, Madougou SANGARE, Korotoumou BOLOZOGOLA, Mama DIAMOUTENE, Kadia SANGARE, Koniba TRAORE, Bintou BERTHE
	Farmers	330	***DO NOT LIST INDIVIDUAL FARMER NAMES***
	Men	0	
	Women	330	
	Youth	250	
	Certified Seed Grower(s)	0	
	Input Dealer(s)	0	
	Financial Institution	2	BNDA, KAFAO DJIGUINE
	Ag Extension Officer	1	Direction Régional de l'Agriculture (DRA)
	Other (*please specify*)	0	
Niena			
		Total Number	**Name Coopérative** des Femmes Riziculteures de Nièna (*COFERN*

	IP Executive Leaders	3	
	Chairman	1	Rokia DIALLO
	Secretary	1	Biba DIARRA
	Treasurer	1	Fatoumata SANGARE
	Other	0	
	Farmers	556	***DO NOT LIST INDIVIDUAL FARMER NAMES***
	Men	0	
	Women	556	
	Youth	252	
	Certified Seed Grower(s)	0	
	Input Dealer(s)	1	
	Financial Institution	2	BNDA, KAFAO DJIGUINE
	Ag Extension Officer	1	Direction Régional de l'Agriculture (DRA)
	Other (*please specify*)	0	
Doumanaba / PMA Doumanaba			
		Total Number	**Name** Plateforme Multi-acteurs (*PMA*)
	IP Executive Leaders	3	
	Chairman	1	Cletchou BERTHE
	Secretary	1	Korotoumou BERTHE
	Treasurer	1	Fanta SANOGO
	Other	0	
	Farmers	98	***DO NOT LIST INDIVIDUAL FARMER NAMES***
	Men	20	

	Women	78	
	Youth	0	
	Certified Seed Grower(s)	0	
	Input Dealer(s)	0	
	Financial Institution	1	KAFO DJIGUINE
	Ag Extension Officer	1	Direction Régional de l'Agriculture de Sikasso
	Other (*please specify*)	0	

Kolokani

		Total Number	**Name**
	IP Executive Leaders	3	
	Chairman	1	Abel mory Diarra
	Secretary	1	Fakoro Cissé
	Treasurer	1	Nétian Coulibaly
	Other	1	Daba Koné
	Farmers	169	***DO NOT LIST INDIVIDUAL FARMER NAMES***
	Men	92	
	Women	77	
	Youth	7	
	Certified Seed Grower(s)	1	Natiné COULIBALY
	Input Dealer(s)	2	Seydou Adama Traoré, Lassina Touré
	Financial Institution	1	Kafo jiginew
	Ag Extension Officer	1	Direction Régional de l'Agriculture (DRA)
	Other (*please specify*)	1	locally elected official

Dioila			
		Total Number	**Name**
	IP Executive Leaders	6	
	Chairman	1	Tièkoura Dembélé
	Secretary	1	Abdou Sangaré
	Treasurer	1	Aminata Sanogo
	Other	3	Aminata Sanogo, Sadibou Diakité, Mamou Coulibaly
	Farmers	623	***DO NOT LIST INDIVIDUAL FARMER NAMES***
	Men	443	
	Women	180	
	Youth	11	
	Certified Seed Grower(s)	5	Abdou sangaré, Madou Diallo, Djeneba Coulibaly, Sitan Coulibaly et Aminata Diarra, Sadibou Diakité
	Input Dealer(s)	5	Ousmane Diakité, Daouda Traoré, Oumar Coulibaly, Yaya Diakité et Souleymane Sagaré
	Financial Institution	1	Kafo jiginew
	Ag Extension Officer	1	Secteur d'agriculture
	Other (*please specify*)	2	Union locale des producteurs de céréales «ULPC», Locally-elected official

Signe			
		Total Number	**Name**
	IP Executive Leaders	6	
	Chairman	1	Bakadjan Coulibaly
	Secretary	1	Salia Coulibaly,
	Treasurer	1	Kadia Dembélé

	Other	3	Assim Coulibaly, Drissa Koné, Adama Diabaté
	Farmers	457	***DO NOT LIST INDIVIDUAL FARMER NAMES***
	Men	307	
	Women	150	
	Youth	10	
	Certified Seed Grower(s)	2	Salia coulibaly, abou Koné
	Input Dealer(s)	1	Drissa Koné
	Financial Institution	1	Soroyiriwa
	Ag Extension Officer	1	Secteur d'agriculture de Koutiala
	Other (*please specify*)	1	MALIMARK

NIGER

INRAN-ASSISTED INNOVATION PLATFORMS

Say

		Total Number	Name
	IP Executive Leaders	3	
	Chairman	1	Mr. Hassane Sanda
	Secretary	1	Mr. Hamadou Boubacar
	Treasurer	1	Ms. Abdou Aïssa Amadou
	Other	3	Mr. Amadou Garba, Marou Sanda
	Farmers	200	***DO NOT LIST INDIVIDUAL FARMER NAMES***
	Men	144	
	Women	56	
	Youth	23	
	Certified Seed Grower(s)	3	Ibrahim Abdoulaye, Amadou Sanda, Idrissa Boubacar
	Input Dealer(s)	1	FUCOPRI
	Financial Institution	1	FUCOPRI
	Ag Extension Officer	1	Ministry of agriculture Extension services
	Other (*please specify*)	0	

Wacha

		Total Number	Name
	IP Executive Leaders	3	
	Chairman	1	Laouali Abba
	Secretary	1	Zeinadou Dan Malam
	Treasurer	1	Mariama Harou
	Other	3	Siradji Habou, Sani Sale, Souweyba Hassan

	Farmers	300	***DO NOT LIST INDIVIDUAL FARMER NAMES***
	Men	180	
	Women	120	
	Youth	33	
	Certified Seed Grower(s)	4	Sani Abou, Salissou Malam Karami, Babayé Mai Kano, Rabi Elh Salé
	Input Dealer(s)	2	CADEL, ONG RAIL
	Financial Institution	2	YARDA, ASUSU Sa
	Ag Extension Officer	1	Ministry of agriculture Extension services
	Other (*please specify*)	0	

Konni

		Total Number	**Name**
	IP Executive Leaders	3	
	Chairman	1	
	Secretary	1	
	Treasurer	1	
	Other	3	
	Farmers	150	***DO NOT LIST INDIVIDUAL FARMER NAMES***
	Men	120	
	Women	30	
	Youth	17	
	Certified Seed Grower(s)	1	ONG RAIL
	Input Dealer(s)	1	ONG RAIL
	Financial Institution	2	CAPITAL FINANCE, ASUSU Sa
	Ag Extension Officer	1	Ministry of agriculture Extension services
	Other (*please specify*)	0	

Djirataoua			
		Total Number	**Name**
	IP Executive Leaders	3	
	Chairman	1	
	Secretary	1	
	Treasurer	1	
	Other	3	
	Farmers	300	***DO NOT LIST INDIVIDUAL FARMER NAMES***
	Men	255	
	Women	45	
	Youth	33	
	Certified Seed Grower(s)	1	ONG RAIL
	Input Dealer(s)	1	ONG RAIL
	Financial Institution	3	YARDA, ASUSU Sa, CAPITAL FINANCE
	Ag Extension Officer	1	Ministry of agriculture Extension services
	Other (*please specify*)	0	

NIGERIA

NCRI - ASSISTED INNOVATION PLATFORMS

Bukan-Sidy

		Total Number	Name
	IP Executive Leaders		
	Chairman	1	Joshua Jonathan
	Secretary	1	Habila Alaku
	Treasurer	1	Regina Joseph
	Other		
	Farmers		***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	1250	
	Women	2138	
	Youth	40	
	Certified Seed Grower(s)	10	
	Input Dealer(s)	6	
	Financial Institution	3	
	Ag Extension Officer	10	
	Other (*please specify*)		

Goronyo

		Total Number	Name
	IP Executive Leaders		
	Chairman	1	Ibrahim Abubakar
	Secretary	1	Abdullahi Jafaru
	Treasurer	1	Lawal Muhammed Mafara
	Other	1	Rabi Adebayo

	Farmers		***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	266	
	Women	80	
	Youth	95	
	Certified Seed Grower(s)	10	
	Input Dealer(s)	15	
	Financial Institution	2	
	Ag Extension Officer	5	
	Other (*please specify*)		
	Processors	50	
	Millers	10	
	Marketers	10	
	Transporters	5	
	Uptakers	5	

NIGERIA

IAR-ASSISTED INNOVATION PLATFORMS

Gumau

		Total Number	Name
	IP Executive Leaders		
	Chairman	1	Danlami Galadima
	Secretary	1	Bello Umar
	Treasurer	1	Ibrahim Shuaibu
	Financial Secretary	1	Mrs. Ramatu Abdullahi
	PRO	1	Salisu A. Umar
	Farmers		***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	60	
	Women	60	
	Youth	22	
	Certified Seed Grower(s)	N/A	SEEDCO, Premier Seed
	Input Dealer(s)	2	Abubakar Ahmad Babanta, Hassan Gumau Ventures
	Financial Institution	1	Bank of Agriculture
	Ag Extension Officer	1	Yunusa Abdullahi Aliyu
	Other (*please specify*)		

Jengre

		Total Number	Name
	IP Executive Leaders		
	Chairman	01	Bello Zailani
	Asst. Chairman	01	Abdullahi Ahmad

	Secretary	01	Muhammad Garba
	Asst. Secretary	01	Nuhu Nabaka
	Treasurer	01	Lawai Alwar'u
	Financial Secretay	01	Hannatu Kabiru
	PRO	01	Abdurrahman
	Farmers		***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	45	
	Women	25	
	Youth	15	
	Certified Seed Grower(s)	N/A	SEEDCO, Premier Seed
	Input Dealer(s)	02	Abubakar Ahmad Babanta, Hassan Gumau Ventures
	Financial Institution	01	Bank of Agriculture
	Ag Extension Officer	01	Mrs Bambis Matep Godfrey
	Other (*please specify*)		
Rogo			
		Total Number	**Name**
	IP Executive Leaders		
	Chairman	1	Mustapha Ismail
	Deputy Chairman	1	Kabiru Ado Rogo
	Secretary	1	Bilya Ahmad
	Treasurer	1	Yahaya Hayatu
	Farmers		***DO NOT LIST INDIVIDUAL FARM NAMES***
	Men	350	
	Women	50	
	Youth	120	

	Certified Seed Grower(s)	N/A	SEEDCO and Premier seeds
	Input Dealer(s)	1	Alh Lawal Mustapha ado, Auwalu Popoola
	Financial Institution	1	Bank of Agriculture
	Ag Extension Officer	1	Idris S. Ado Rogo
	Other (*please specify*)		

ANNEX C: EVALUATION FIELD WORK CALENDAR

Aug 2022

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4 ***Full Team arrives in Senegal***	5 Senegal - Dakar Team Harmonizing	6 Senegal – Dakar Team Harmonizing
7 OFF	8 Senegal - Dakar USAID & CORAF Inbrief Presentation	9 Senegal - Dakar Finalize Tools	10 Senegal - Dakar ***(Richard & Barbara travel Ghana)***	11 Senegal – Dakar Ghana – Accra ***(Katrina travels Ghana)***	12 Senegal - Dakar Ghana – Accra	13 ***Mali Team Travel*** Ghana – Accra
14 OFF	15 Mali - Bamako Ghana – Kumasi	16 Mali - Bamako Ghana – Kumasi	17 Mali - Bamako Ghana – Kumasi	18 ***Niger Team Travel*** Ghana – Tamale	19 Niger - Niamey Ghana – Tamale	20 Niger - Niamey Ghana – Tamale
21 OFF	22 Niger - Say	23 Niger - Wacha	24 Niger - Niamey	25 ***Benin Team Travel***	26 Benin – Porto-Novo	27 Benin – Porto-Novo

	Ghana – Tamale	Ghana – Accra	***Nigeria Team Travel***	Nigeria - Abuja	Nigeria – Abuja	Nigeria – Abuja
28	29	30	31	1	2	3
OFF	Benin – Aplahoué Nigeria - Abuja	Benin – Ifangni Nigeria - Abuja	Benin – Porto-Novo Nigeria - Abuja	***All Teams Finish Data Collection***		

ANNEX D: PAIRED INDICATOR PERFORMANCE TRACKING TABLE

Disaggregation		Baseline	Fy18		Fy19		Fy20		Fy21		Fy22		Total		
			Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target Achieved
INDICATOR 1.1: PERCENT OF USG-ASSISTED ORGANIZATIONS WITH IMPROVED PERFORMANCE CBLD-9 (FTF INDICATOR)															
Total (%)		0%	100%	100%	13%	13%	49%	17%	91%	81%	100%	-	74%	46%	62%
Numerator (N) Total number of organizations with improved performance		0	1	1	1	1	26	9	70	62	21	-	119	73	
Denominator (D) Total number of USG-assisted organizations receiving organizational capacity development support		0	1	1	8	8	53	8	77	79	21	-	160	96	
Research institutions	Total (%)	0%	100%	100%	13%	13%	50%	113%	88%	113%	100%	-	64%	61%	95%
	N	0	1	1	1	1	4	9	7	9	8	-	21	20	
	D	0	1	1	8	8	8	8	8	9	8	-	33	26	
Cooperatives	Total (%)	0%	NA	-	0%	-	50%	0%	92%	46%	100%	-	79%	29%	37%
	N	0	NA	-	0	-	6	0	22	11	2	-	30	11	
	D	0	NA	-	0	-	12	0	24	24	2	-	38	24	
Producer Group	Total (%)	0%	NA	-	0%	-	50%	0%	92%	100%	100%	-	82%	55%	67%
	N	0	NA	-	0	-	6	0	22	24	8	-	36	24	

	D	0	NA	-	0	-	12	0	24	24	8	-	44	24	
NGO	Total (%)	0%	NA	-	0%	-	43%	0%	86%	43%	0%	-	64%	21%	33%
	N	0	NA	-	0	-	3	0	6	3	0	-	9	3	
	D	0	NA	-	0	-	7	0	7	7	0	-	14	7	
Governments Agencies	Total (%)	0%	NA	-	0%	-	50%	0%	92%	125%	100%	-	74%	56%	76%
	N	0	NA	-	0	-	6	0	11	15	3	-	20	15	
	D	0	NA	-	0	-	12	0	12	15	3	-	27	15	
Others	Total (%)	0%	NA	-	0%	-	50%	0%	100%	0%	0%	-	75%	0%	0%
	N	0	NA	-	0	-	1	0	2	0	0	-	3	0	
	D	0	NA	-	0	-	2	0	2	0	0	-	4	0	
INDICATOR 1.1.1. NEW STRATEGIC PLAN (2018-2027) AND OPERATIONAL PLAN (2018 - 2022) DEVELOPED AND APPROVED															
Strategic Plan (2018-2027)		0	0	1	0	0	0	0	0	0	0	0	0	1	0%
Operational Plan (2018 - 2022)		0	0	1	0	0	0	0	0	0	0	0	0	1	0%
INDICATOR 1.2.1 PERCENTAGE OF FINANCIAL AUDIT REPORTS RECEIVING SATISFACTORY REVIEW		0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Numerator = number of Audit report receiving satisfactory review		0	2	2	2	2	2	2	2	1	2	2	10	9	

Denominator = number of Audit reports carried out		0	2	2	2	2	2	2	2	1	2	2	10	9	
INDICATOR 1.3.1. PERCENT OF ACHIEVING CORAF OUTCOME LEVEL TARGETS FOR ITS OPERATIONS IN ACCORDANCE WITH ITS OPERATIONAL PLAN 2018-2022															
Outputs	Total (%)	0%	0%	0%	25%	0%	38%	38%	50%	75%	63%	75%	35%	38%	7%
	N	0	0	0	2	0	3	3	4	6	5	6	14	15	
	D	0	8	8	8	8	8	8	8	8	8	8	40	40	
Outcomes	Total (%)	0%	0%	0%	0%	0%	22%	22%	22%	56%	33%	56%	16%	27%	71%
	N	0	0	0	0	0	2	2	2	5	3	5	7	12	
	D	0	9	9	9	9	9	9	9	9	9	9	45	45	
INDICATOR 1.4.1. NUMBER OF COUNTRIES FOR WHICH ECOWAS POLICIES ARE GAZETTED AND FULLY IMPLEMENTED WITH TECHNICAL ASSISTANCE OF PAIRED		0	5	0	8	0	10	0	16	8	16	8	55	16	29%
INDICATOR 2.1. NUMBER OF INDIVIDUALS PARTICIPATING IN USG FOOD SECURITY PROGRAMS - EG.3-2															
Sex of individuals participating (no double counting)	Total	0	0	0	537	0	5200	3628	4750	11319	2190	1893	12677	16840	133%
	Male	0	0	0	468	0	3120	1377	2850	7952	1314	1232	7752	10561	136%
	Female	0	0	0	69	0	2080	2251	1900	3367	876	661	4925	6279	127%
Age Category of individuals	Total	0	0	0	537	0	5200	3628	4750	11319	2190	1893	12677	16840	133%

participating (no double counting)	*15-29*	0	0	0	107	0	1040	692	950	1924	438	384	2535	3000	118%
	30+	0	0	0	430	0	4160	2936	3800	9395	1752	1509	10142	13840	136%
People in government		0	0	0	372	0	2080	1025	1525	1132	626	284	4603	2441	53%
People in private sector firms		0	0	0	165	0	2600	2250	375	340	260	95	3400	2685	79%
People in civil society		0	0	0	0	0	520	353	475	453	219	305	1214	1111	92%
Producers		0	0	0	0	0	0	0	2375	9394	1085	1209	3460	10603	306%
INDICATOR 2.1.1. NUMBER OF FUNCTIONAL INNOVATION PLATFORMS USED FOR T&IS UPSCALING		0	NA	-	0	0	12	32	12	26	12	26	36	84	233%
INDICATOR 2.1.2. NUMBER OF INNOVATION PLATFORMS ACTION PLANS DEVELOPED AND IMPLEMENTED		0	NA	-	0	0	12	12	12	26	12	26	36	64	178%
INDICATOR 2.1.3. NUMBER OF AGRO-ECOLOGY BASED SEED AND FERTILIZER INFORMATION TOOLKIT MADE AVAILABLE															
Maize		0	NA	-	0	0	15	51	6	31	6	8	27	90	333%
Rice		0	NA	-	0	0	10	52	8	88	8	32	26	172	662%
Millet		0	NA	-	0	0	15	21	6	31	6	4	27	56	207%
Sorghum		0	NA	-	0	0	15	18	6	18	6	3	27	39	144%
INDICATOR 2.1.4 NUMBER OF HECTARES UNDER IMPROVED MANAGEMENT PRACTICES OR TECHNOLOGIES WITH USG ASSISTANCE E.G.,3.2-25															
Type of Hectare: Crop land			NA	-	NA	-	500	128	4000	5247	4000	0	8500	5375	63%

Sex of Participant (no double-counting)	Male	0	NA	-	NA	-	400	0	3200	3935	3200	0	6800	3935	58%
	Female	0	NA	-	NA	-	100	0	800	1312	800	0	1700	1312	77%
Age of Participant (no double-counting)	Total	0	NA	-	NA	-	500	0	4000	5247	4000	0	8500	5247	62%
	15-29	0	NA	-	NA	-	100	0	800	787	800	0	1700	787	46%
	30+	0	NA	-	NA	-	400	0	3200	4460	3200	0	6800	4460	66%
Management Practice or Tech Type (double counting allowed)	Total	0	NA	-	NA	-	500	0	4000	5247	4000	0	8500	5247	62%
	Soil-Related Fertility and Conservation	0	NA	-	0	0	250	0	2000	0	2000	0	4250	0	0%
	Climate Adaptation/ Climate Risk Management	0	NA	-	0	0	250	0	2000	0	2000	0	4250	0	0%
Commodity	MAIZE	0	NA	-	NA	-	200	0	1600	2139	1600	0	3400	2139	63%
	RICE	0	NA	-	NA	-	75	0	600	914	600	0	1275	914	72%
	MILLET	0	NA	-	NA	-	75	0	600	700	600	0	1275	700	55%
	SORGHUM	0	NA	-	NA	-	150	0	1200	1494	1200	0	2550	1494	59%
Indicator 2.2.1. Number of institutions that are promoting climate information or implementing risk-reducing actions to improve resilience to climate change		0	NA	-	NA	-	8	0	12	0	12	16	32	16	50%

INDICATOR 3.1.VOLUME OF QUALITY SEED PRODUCED IN THE REGION (MAIZE, SORGHUM, MILLET, RICE)															
Maize	Breeder	0	NA	-	NA	-	50	-	50	116	50	558	150	674	449%
	Foundation	0	NA	-	NA	-	900	-	900	3482	900	4326	2700	7807	289%
	Certified	0	NA	-	NA	-	18000	65641	18000	117790	18000	119305	54000	302737	561%
Millet	Breeder	0	NA	-	NA	-	20	-	20	14	20	12	60	26	44%
	Foundation	0	NA	-	NA	-	1200	-	1200	819	1200	6081	3600	6900	192%
	Certified	0	NA	-	NA	-	13000	1913	13000	11788	13000	5563	39000	19264	49%
Rice	Breeder	0	NA	-	NA	-	40	-	40	186	40	149	120	335	279%
	Foundation	0	NA	-	NA	-	1500	-	1500	5204	1500	5560	4500	10763	239%
	Certified	0	NA	-	NA	-	65000	71560	65000	122060	65000	105940	195000	299559	154%
Sorghum	Breeder	0	NA	-	NA	-	30	-	30	20	30	22	90	42	46%
	Foundation	0	NA	-	NA	-	1500	-	1500	668	1500	1217	4500	1885	42%
	Certified	0	NA	-	NA	-	20000	4836	20000	24962	20000	26981	60000	56779	95%
INDICATOR 3.2. VOLUME OF INTRA-REGIONAL QUALITY SEED TRADE (MAIZE; SORGHUM/MILLET, RICE)															
Maize	Breeder	0	NA	-	NA	-	3	0	3	0	3	0	8	0	0%
	Foundation	0	NA	-	NA	-	45	0	45	0	45	0	135	0	0%
	Certified	0	NA	-	NA	-	1800	5600	1800	1631	1800	18157	5400	25388	470%
Rice	Breeder	0	NA	-	NA	-	2	0	2	0	2	0	6	0	0%
	Foundation	0	NA	-	NA	-	75	0	75	0	75	0	225	0	0%

	Certified	0	NA	-	NA	-	6500	15	6500	5909	6500	304	19500	6228	32%
Millet	Breeder		NA	-	NA	-	1	0	1	0	1	0	3	0	0%
	Foundation	0	NA	-	NA	-	60	0	60	0	60	0	180	0	0%
	Certified	0	NA	-	NA	-	1300	100	1300	13	1300	98	3900	211	5%
Sorghum	Breeder	0	NA	-	NA	-	2	0	2	0	2	0	5	0	0%
	Foundation	0	NA	-	NA	-	75	0	75	0	75	0	225	0	0%
	Certified	0	NA	-	NA	-	2000	72	2000	3	2000	9	6000	84	1%
INDICATOR 3.1.1. NUMBER OF NEW SEED COMPANIES SUPPLYING QUALITY SEED IN WEST AFRICA		0	NA	-	NA	-	8	0	5	132	5	217	18	349	1939%
INDICATOR 3.1.2. NUMBER OF INFORMATION TOOLKIT ON FOOD SAFETY AND TRADE STANDARDS COMPILED FOR LARGE SCALE DISSEMINATION															
	Stage 1	0	NA	-	NA	-	16	0	16	0	0	0	32	0	0%
	Stage 2	0	NA	-	NA	-	16	1	16	1	1	1	33	3	9%
	Stage 3	0	NA	-	NA	-	8	1	16	2	0	0	24	3	13%
INDICATOR 3.1.3. NUMBER OF PRIVATE PUBLIC PARTNERSHIPS FORMED AS A RESULT OF USG ASSISTANCE		0	NA	-	NA	-	16	29	16	15	0	0	32	44	138%
INDICATOR 3.2.1. EASE IN DOING AGRI-INPUTS BUSINESS INDEX IN THE REGION															
Quality of regulatory system		0	0	-	0	-	4	-	4	3.8	4	3.9	12	7.7	64%

Starting a seed business (Time and Cost)- *Not cumulative*	0	0	-	0	-	3	-	4	3	4	3	11	6	55%
Length of variety release process,- *Not cumulative*	0	0	-	0	-	3	-	4	3.5	4	3.3	11	6.8	62%
Adequacy of seed inspectors,- *Not cumulative*	0	0	-	0	-	3	-	3	2.9	4	3.2	10	6.1	61%
Getting access to early generation seed, - *Not cumulative*	0	0	-	0	-	4	-	4	2.7	4	2.8	12	5.5	46%
Getting access to import/export permit - *Not cumulative*	0	0	-	0	-	3	-	3	4.1	4	4.3	10	8.4	84%

ANNEX E: SURVEY QUESTIONNAIRES

PAIRED Implementing Partner - CORAF Staff

Program Management and Organizational Development

1. How would you describe the partnership between the PAIRED Program and CORAF?

2. Please describe the areas of capacity building support CORAF has received from PAIRED activities. How have the PAIRED capacity building activities helped you improve the capacity at CORAF? Which activities did you find were most useful? What activities do you believe should have been included?

3. How has the PAIRED Program influenced your management and organizational practices within the broader CORAF organization?

4. What are the institutional arrangements (structures, frameworks, systems, processes, and dedicated resources) that CORAF has put in place to ensure the deepening of partnerships at the funding/donor levels and the project implementation level, which will provide for continued implementation and sustainability of CORAF?

5. To what extent has the PAIRED program influenced how CORAF reinforces gender and youth integration into the design of CORAF's organizational plan and/or activities?

National and/or Regional Seed Regulation

6. Has PAIRED achieved success in advancing the ECOWAS Seed Regulations with USAID support? What remains necessary to advance the ECOWAS Seed Regulations?

7. What could be considered as success in advancing the ECOWAS Seed Regulations?

8. What could be done to improve the effectiveness of the collaboration and coordination in advancing and strengthening the seed system? What future support would be needed to achieve a fully implemented seed regulation across the region?

Agri-Input Technologies and Innovations

9. How effective are the tools and systems developed and/or maintained by CORAF with the support of PAIRED (i.e. WASIX, FeSERWAM, MITA, etc.)?

10. How do you envision the future of the CORAF supported digital platforms, 5 and 10 years into the future? What limitations exist to fulfilling this vision?

Private Sector Engagement

11. How do you identify approaches to engaging the private sector?

12. Has the PAIRED Program contribute to the CORAF strategy on engaging the private sector in the region in the past 5 years.

PAIRED Implementing Partner Staff

Program Management and Organizational Development

1. How would you describe the partnership between USAID and the PAIRED Program?

2. What aspects of the coordinating, collaboration mechanisms and communication channels worked well to facilitate the effective participation of the various stakeholders on the PAIRED Program (i.e., NARIs, Private Sector, etc.)? Why do you think these worked well?

3. What are the institutional arrangements (structures, frameworks, systems, processes, and dedicated resources) that your organization has put in place to ensure the deepening of partnerships, and continued implementation and sustainability of the PAIRED Program outcomes after the current funding for the project is finished?
4. How have the PAIRED capacity building activities helped increase the upscaling of seeds in the region? Which activities did you find most useful? What activities do you believe should have been included?
5. What were the top challenges your organization faced under the PAIRED project?

6. How are the lessons learned from the PAIRED Program being recorded and responded to? What are examples of your organizations responding to or using lessons from PAIRED?

7. To what extent has the PAIRED program influenced the various PAIRED partners and sub-awardees to reinforce gender and youth integration into PAIRED activities? Please provide examples.

National and/or Regional Seed Regulation

8. Has PAIRED achieved success in advancing the ECOWAS Seed Regulations with USAID support? Provide specific examples of success achieved by PAIRED?

9. What activities under PAIRED have been effective in increasing collaboration and coordination in strengthening the seed system? What are examples of PAIRED success in advancing and strengthening the seed system?

10. What more could be done to improve the effectiveness of the collaboration and coordination in advancing and strengthening the seed system?

11. What are the implications of donors not funding this regulation under future programs?

Agri-Input Technologies and Innovations

12. To what extent has PAIRED been effective in addressing agri-input technologies scale up and increasing the availability of quality inputs? Please provide examples.

13. How successful was the PAIRED partnership with the IARCs and NARI's in scaling up seed input for farmers in the region?

14. How effective was the use of the Innovation Platforms in upscaling agri-input technologies across the region? Please provide examples.

15. What challenges and limitations did PAIRED face in implementing through the Innovation Platforms. Please provide examples.

16. Describe the WASIX, FeSERWAM, MITA systems' functionality and accessibility by the various stakeholders in the ECOWAS Region? How effective were these systems in upscaling agri-input technologies across the region? Please provide examples.

17. What challenges has PAIRED faced in increasing the functionality and accessibility of these systems?

18. Overall, what is the viability of the approach PAIRED has taken to scale up agriculture technologies and to build supply and/or meet agri-business companies and farmer demand for improved seeds?

Private Sector Engagement

19. How has the PAIRED activity forged deeper private- sector engagement in the agri-inputs system, especially seeds?

20. How has the private sector fulfilled the roles expected of it in the regional seed sector?

21. How viable is the private sector in expanding the availability of higher quality seeds?

22. How is the private sector advancing the development, promotion, and sale of certified and foundation seeds?

23. What vulnerabilities / weaknesses/gaps still exist within the private sector?

24. Which of the approaches to dissemination of seeds and fertilizer can be considered as innovative and hence could be upscaled?

PAIRED National Centers of Specialization Staff

Program Management and Organizational Development

1. How would you describe the partnership between your research institution and the PAIRED Program? Has CORAF, with support from PAIRED, established criteria to strengthen the partnership?

2. How have the PAIRED activities helped you improve the capacity of your institution? Which activities did you find most useful?

3. What aspects of the coordinating and collaboration mechanisms worked well to facilitate the effective participation of your institution and the Innovation Platforms under PAIRED? Please provide examples.

4. To what extent has PAIRED contributed to sustaining (or strengthening) your organizational capacity as National Center of Specialization?

5. From your perspective, what have been the limitations of the PAIRED program implementation?

6. How are the lessons learnt from the PAIRED Program being recorded and responded to? Please provide examples on how your research institution applied lessons from PAIRED.

National and/or Regional Seed Regulation

7. What activities under PAIRED have been effective in increasing collaboration and coordination in strengthening the seed system? What are examples of PAIRED success in advancing and strengthening the seed system?

8. What more could be done to improve the effectiveness of the collaboration and coordination in advancing and strengthening the seed system?

Agri-Input Technologies and Innovations

9. To what extent have PAIRED activities been effective in addressing agri-input technologies scale up and increasing the availability of quality inputs? Please provide examples.

10. Which are the PAIRED interventions that have contributed to efficiency and effectiveness in your Institute's performance in upscaling improved seeds (Breeder and Foundation to the Private Sector)?

11. How effective are the tools and systems developed and/or maintained by CORAF with the support of PAIRED (i.e WASIX, FeSERWAM, MITA, etc.)? Please describe your experience with these digital platforms.

12. Please describe the partnership between your research institution and the Innovation Platforms. How effective was the use of the Innovation Platforms in upscaling agri-input technologies across the region? Please provide examples.

13. What challenges and limitations did your research institution face in implementing through the Innovation Platforms. Please provide examples.

14. Has this approach been effective at increasing seed production and dissemination in the region?

15. Overall, what is the viability of the approach PAIRED has taken to scale up agriculture technologies and to increase the volume of quality seed production in the region?

16. What challenges and opportunities exist to further increasing the volume of quality seed production in the region?

Private Sector Engagement

17. How is your Research Institution engaging with the private sector?

18. How would you describe your relationship with the private sector in expanding the availability of quality, certified seeds?

19. After the completion of the PAIRED project, do you anticipate your Research Institution further integrating with private sector actors?

PAIRED Innovation Platform

Program Management and Organizational Development

1. Please tell us a bit about your Innovation Platform. How long have you been operational? Who are your members? What is your history? What are the activities/services your innovation platform engages in?

2. Is there a governance structure for your Innovation Platform? Who are the leaders and how are decisions made?

3. How would you describe the partnership between your Innovation Platform and the National Research Institution?

4. What aspects of the coordinating, collaboration mechanisms and communication channels worked well to facilitate the effective partnership with the National Research Institution?

5. How have the PAIRED capacity building activities helped you improve the capacity of your Innovation Platform? Which activities did you find most useful? What additional activities would you have liked to have included?

6. What platform arrangements (governance framework, systems, processes, resources, impact metrics) are in place to ensure the efficiency, continued existence, and sustainability of the Innovation Platforms beyond the funding from PAIRED. How well are they working?

7. What activities have been most beneficial for women and youth within the PAIRED supported activities? Does you Innovation Platform have other mechanisms through which women and youth are supported. Please describe.

Agri-Input Technologies and Innovations

8. Describe what your Innovation Platform has accomplished in the past 4 years. Provide examples.

9. To what extent has your Innovation Platforms been successful in increasing the volume and quality of seeds in your community?

10. In which ways has the Research Institute been beneficial to your platform?

11. How has your Innovation Platform engaged with the tools and systems developed and/or maintained by CORAF with the support of PAIRED (i.e WASIX, FeSERWAM, MITA, etc.)? How have your members engaged with these digital platforms to increase agri-inputs in your community? Please provide examples.

12. What were the top challenges your Innovation Platform faced under the PAIRED project?

13. What types of non-PAIRED support does the Research Institute provide to your Platform?

14. Do the relevant Innovation Platform members anticipate continuing with the certified seed production activities after the PAIRED program?

15. What are the lessons learnt from the PAIRED Program? How are you documenting these lessons for future learning?

Private Sector Engagement

16. How is your Innovation Platform engaging with the private sector?

17. How would you describe your relationship with the private sector in expanding the availability of higher quality seeds?

18. How is the private sector advancing the development, promotion, and sale of certified and foundation seed through your Innovation Platform?

19. After the completion of the PAIRED project, do you anticipate your Innovation Platform further integrating with private sector actors?

PAIRED Private Sector

Program Management and Organizational Development

1. Please tell us a bit about your business. How long have you been operational? What do you sell? Who are your customers? What is your history? Do you provide any services in addition to sales?

2. How would you describe the partnership between your business and the Innovation Platform?

3. Have you participated in any PAIRED capacity building activities and how have they helped you improve the way you do business? Which activities did you find were most useful?
4. How has the PAIRED Program contributed to your business services and financial growth? Please provide some specific examples of what has changed for the better.

5. What aspects of the coordinating and collaboration mechanisms worked well to facilitate your participation in Innovation Platform activities? Why do you think these worked well?

6. Please share your experience on the ease of doing agri input business in your community.

Evaluator, please consider prompts:

1. Time and cost of starting a seed business
2. Length of variety release process
3. Adequacy of seed inspectors
4. Getting access to Early Generation seed
5. Existence of Plant Variety Protection system or Breeders' Rights

7. How would you describe the engagement of women and youth at your business, as an owner/ worker/ customer? What opportunities exist for women and youth in agri-input business activities? Please provide examples.

Agri-Input Technologies and Innovations

8. How has the PAIRED program helped to improve your (Private sector) capacity to increase production or availability of Foundation and Certified seeds for farmers? What activities have you found most beneficial? Please provide examples.

9. What quantity (volumes) of Certified and/or Foundation seed has your business been able to produce (on yearly basis) under the PAIRED program?

10. To what extent do you feel there has been an increase in the volume of intra-regional quality seed trade? Please provide examples.

11. What are the barriers and opportunities to increasing the volume of intra-regional quality seed trade?

12. Would your business be able to sustain production of seed to meet farmer demand post-2022?

13. How has your business engaged with the tools and systems developed and/or maintained by CORAF with the support of PAIRED (i.e., WASIX, FeSERWAM, MITA, etc.)? How have you engaged with these digital platforms to increase agri-inputs in your community? Please provide examples.

14. What are the most significant challenges your business faces to increasing quality agri-inputs, and specifically quality, certified seeds, to your customers?

ANNEX F: EVALUATION SCOPE OF WORK

https://docs.google.com/document/d/1PELVPNC9SU66urn0XslpSecquUwLN8D_/edit?usp=share_link&ouid=116312056423658128430&rtpof=true&sd=true

ANNEX G: EVALUATION MATRIX

EVALUATION QUESTION	QUESTION OBJECTIVE	CORRESPONDING PERFORMANCE INDICATORS	DATA COLLECTION STRATEGY	DATA SOURCE
1. How successful has the PAIRED activity been, in meeting its planned targets? a. If certain activity components have not been successful, please explain why (in areas of the program's assumptions, programmatic implementation, gender/youth integration into the seed or fertilizer sector, private sector partnership, staffing, etc.). b. Which areas of performance require CORAF and USAID's remedial attention?	iii. Determine how successful the PAIRED activity has met its planned targets and how all reported indicators validate PAIRED's role in achieving the results. v. Identify internal and external factors that have affected the implementation of the Activity. Assess the extent to which the assumptions outlined by CORAF, and USAID are appropriate and have been addressed.	The full AMELP list of 12 performance indicators[24]	Document review Key informant interviews	PAIRED activity quarterly and annual reports; supplemental activity reports PAIRED staff; Local and regional CORAF officials; PAIRED local or regional partners
2. What recommendations are there for strengthening, improving and building upon (scale-up) program successes of PAIRED's components and sub-activities post-2022? What is the viability of the approach PAIRED has taken to scale up agriculture technologies and to build supply and/or meet agri-business companies and farmer demand for improved seeds?	iv. Document any successes, best practices, lessons learned, unintended consequences and challenges the Activity encountered, in order to inform future programming. x. Identify the key results and insights gained that should inform future food security endeavors in the region.	The full AMELP list of 12 performance indicators l	Document review Key informant interviews Quantitative survey Gender/Youth focus group discussions Direct observations	PAIRED staff; Local and regional CORAF staff; PAIRED local or regional partners PAIRED Activity demand side stakeholders; Private sector actors; Input suppliers; Agri-business actors Evaluation team field notes from within country of evidence of functional demand

[24] Number of individuals participating in USG food security programs; Number of functional Innovation Platforms used for T&ls upscaling; Number of innovation platforms action plans developed and implemented; Number of Agro-ecology based Seed and fertilizer information toolkit made available; Number of hectares under improved management practices or technologies with USG assistance; Number of institutions that are promoting climate information or implementing risk-reducing actions to improve resilience to climate change; Volume of quality seed produced in the region; Volume of intra-regional quality seed trade; Number of new seed companies supplying quality seed in West Africa; Number of information toolkit on food safety and trade standards compiled for large scale dissemination; Number of Private Public Partnerships formed as a result of USG assistance; Ease in doing Agri-inputs business index in the region

3. Is CORAF/PAIRED's leadership in strengthening the seed system and advancing the ECOWAS Seed Regulations regarded as effective (or integral to scaling-up seed input success) by their counterparts such as the International Agriculture Research Centers, and NARIs, or others? a. Are the institutional structures/ relationships now in place, for example, within partnership institutions such as the NARIs, or are they being developed to sustain the relationships and investments that are being made by PAIRED?	vi. Ascertain the extent to which the Activity helped to advance collaborative and participatory management practices for key stakeholders including: seed producers, seed distributors, agri-business operators, farmer organizations, National Seed Committees, etc.	Number of functional Innovation Platforms used for T&Is upscaling Number of institutions that are promoting climate information or implementing risk-reducing actions to improve resilience to climate change Number of new seed companies supplying quality seed in West Africa Number of Private Public Partnerships formed as a result of USG assistance Ease in doing Agri-inputs business index in the region	Document review Key informant interviews Direct observations	PAIRED activity quarterly and annual reports; supplemental activity reports PAIRED staff; PAIRED partner institutions, research centers and NARIs.
4. Have CORAF and ECOWAS achieved success in advancing the ECOWAS Seed Regulations with USAID support? If not, please describe and justify what is left to do and what could be considered as success. What are the implications of donors not funding this regulation under future programs?	vii. Ascertain the extent to which CORAF and the PAIRED team has used the Activity to forge strategic partnerships among key regional partners and stakeholders working to achieve comparable results regionally	Number of Agro-ecology based Seed and fertilizer information toolkit made available Number of hectares under improved management practices or technologies with USG assistance Volume of quality seed produced in the region Volume of intra-regional quality seed trade Number of new seed companies supplying quality seed in West Africa	Document review Key informant interviews	PAIRED activity quarterly and annual reports; supplemental activity reports PAIRED staff; PAIRED local or regional CORAF and ECOWAS staff; other National or line Ministry partners
5. Has the CORAF leadership used the PAIRED activity to forge deeper private-sector engagement in the agricultural inputs system, especially seeds? How has the private sector fulfilled the roles expected of it in the regional seed sector? For example, describe the viability of the private sector and how it is advancing the development, promotion and sale of certified and foundation seed. a. What vulnerabilities/ weaknesses/ gaps still exist within the private sector and what can be done to address them?	viii. Determine the extent to which the activity's local capacity development initiatives managed to develop and strengthen the capacity of the key stakeholders and assess the sustainability of the approach.	Number of functional Innovation Platforms used for T&Is upscaling Volume of intra-regional quality seed trade Number of new seed companies supplying quality seed in West Africa Number of Private Public Partnerships formed as a result of USG assistance Ease in doing Agri-inputs business index in the region.	Document review Key informant interviews Quantitative survey Input suppliers focus group discussions Direct observations	PAIRED staff; Local and regional CORAF staff; PAIRED local or regional partners PAIRED Activity stakeholders; Private sector actors; Input suppliers; Agri-business actors Evaluation team field notes from within country of evidence of agricultural input systems.

6. To what extent has PAIRED and IFDC/EnGRAIS collaboration been effective in addressing agriculture technologies scale up and availability of quality inputs? What is the value addition of CORAF/PAIRED in this collaboration? Include an analysis of the strengths and weaknesses of this collaboration as well as recommendations, if any, on how to improve this partnership.	i. Document the depth of PAIRED's success in scaling producer access to the CORAF documented portfolio of technologies and practices that have been proven ready for wide-scale use across the region. ii. Review the PAIRED adopted Innovation Platforms scaling approach and assess its appropriateness for achieving the program's stated results. Assess CORAF's success in leading change in scaling using the model. Describe what worked and what did not.	Number of functional Innovation Platforms used for T&Is upscaling Number of Agro-ecology based Seed and fertilizer information toolkit made available Number of hectares under improved management practices or technologies with USG assistance Volume of quality seed produced in the region.	Document review Key informant interviews	PAIRED activity quarterly and annual reports; supplemental activity reports PAIRED staff; Local and regional CORAF staff
7. How efficient and sustainable are the tools and systems developed and/or maintained by CORAF with the support of PAIRED (i.e WASIX, FeSERWAM, MITA, etc.)? What are the strengths (usefulness, utilization) and weaknesses of each tool/system?	ix. Identify any strategic results that are ready for scale up or that may influence follow-on design.	Number of innovation platforms action plans developed and implemented Number of Agro-ecology based Seed and fertilizer information toolkit made available Number of institutions that are promoting climate information or implementing risk-reducing actions to improve resilience to climate change Volume of quality seed produced in the region Volume of intra-regional quality seed trade Number of new seed companies supplying quality seed in West Africa	Document review Key informant interviews Direct observations	PAIRED activity quarterly and annual reports; supplemental activity reports PAIRED staff; Local and regional CORAF staff/ system users Evaluation team field notes on accessibility and utilization of tools and systems

ANNEX H: EXPERT PROFILES

Katrina Makuch: Ms. Katrina Makuch has led multiple evaluations for USAID and other donors across sub-Saharan Africa, with over 16 years of overseas experience leading monitoring and evaluation (M&E) activities including strategic planning, performance and adaptive management, baseline development, midterm, and final evaluations. She has extensive experience with quantitative methodologies, including randomized control trials and quasi-experimental design, with a focus on providing rigorous, empirical evaluation approaches for data-driven results analysis. She has conducted substantial field work, including primary data collection for over a dozen evaluations across Africa and Asia. She is a seasoned capacity building specialist providing support to various US government agencies, host country national governments, US and foreign militaries, NGOs, and local community leaders.

Her previous evaluations have included both performance and impact evaluations. She provided technical guidance and oversight for the design and implementation the USAID/Egypt FAS project, which focused on a market systems development approach, specifically targeting 8 value chains in Upper Egypt. In 2019 and again in 2020, she led the FAS Project Outcome Study design and implementation, having interviewed farmers and cooperative/association management in direct and participatory community-based observation, ultimately looking to determine the impact FAS interventions had on overall incomes. She has gone on to design, implement and lead over a dozen evaluations, primarily focused on local economic and enterprise development across Africa, Asia, MENA, and Eastern Europe.

Richard Akromah, PhD: Richard Akromah is a Plant Genetic Resources Conservation and Utilization Specialist with a PhD in Agricultural Botany from the University of Reading, United Kingdom (1999) on a World Bank Scholarship. He joined the Crops Research Institute of Ghana in 1985 and worked as a Plant Genetic Resources Specialist for 16 years. He holds a Distinction Certificate of Associateship of IRRI (International Rice Research Institute) in rice genetics. He joined the Kwame Nkrumah University of Science and Technology in August 2001 as a Lecturer in Genetics, Plant Breeding and Plant Biotechnology and was promoted to Senior Lecturer in September 2003 and then to Associate Professor in 2008 and Professor of Crop Science in October 2013.

He served as Provost of the College of Agriculture and Natural Resources, KNUST for 3 years. A recent landmark achievement is the winning of the Bill and Melinda Gates' Foundation grant of USD 2.67 million to train 30 young graduates at the Masters Level in Cultivar Development, which has benefitted Nationals from five countries (Ghana, Nigeria, Burkina Faso, Mali and Niger) In May/June, 2016, he was contracted by the USAID- West Africa Office, in a Team with four others, to conduct the Midterm Evaluation of the West Africa Seed Program (a Nine million dollar project in 7 West African Countries). In January 2017, he made a presentation on the CORAF/WECARD of the ECOWAS, at a Learning Event, to the USAID/West Africa Staff in Accra. He also serves on the Board of Adventist Development and Relief Agency (ADRA), Ghana.

Jorge Oliveira: Mr. Oliveira obtained his master's degree at the Higher Institute of Agronomy in Lisbon (Portugal). As a Senior Agriculture Policy Adviser successfully participated in the elaboration of different community assessment for various countries in the West African region, working with International regional Organizations such as ECOWAS, UEMOA, CILSS, CORAF ROPPA. He contributed to the USAID and Presidential initiatives in Food Security and Agriculture, (Feed the Future), including the recent Regional Global Food Security Strategy. Mr. Oliveira was nominated Director of Agriculture at the Ministry of Rural Development from Guinea Bissau for a period of two year (1990-1992) and General Director of AGHYMET/CILSS from 1992 to 1999. In 2003, integrated on the USAID/West Africa Regional Mission in Bamako, he participated in all the negotiations with the CILSS/ECOWAS to prepare the support to the elaboration of the ECOWAS Agriculture Regional Policy, while managing the Strategic Objective Agreement for Permanent Interstate Committee to Prevent Drought in the Sahel (CILSS) and the West Africa Seed Program with CORAF. Mr. Oliveira has over 40 years of work experience in Agronomy-Agricultural Development and Policy. During the course of his career, he won more than 15 Awards from

USAID-West Africa and the USA Government. He is Commander of "Ordem do Rio Branco" from the Government of Brazil.

Sounka Ndiaye: Mr. Ndiaye holds a master's degree in planning and development economics, and a Statistics study Diploma. From November 2, 1978, through October 13, 1992, he worked with the National Statistics Office in Dakar (Senegal). From October 15, 1992, through January 9, 2015, he worked with the United States Agency for International Development (USAID) in Dakar (Senegal) as Economist (1992-1999) and Monitoring and Evaluation (M&E) Officer (1999-to 2015). As M&E Officer, he served as principal advisor to USAID/Senegal management, its partners, and customers on systems for monitoring, evaluating, and reporting on USAID development outcomes and impact. As part of this career, he has a strong track record in (a) strategic planning; (b) monitoring, evaluation, reporting, and analysis; (c) program administration and implementation; and (d) facilitation of monitoring workshops. He has extensive work experience with a wide range of local and international PVOs/ NGOs entrusted with the implementation of activities relating to economic growth, education, governance, health, peace, and local capacity building.

ANNEX I: DISCLOSURE OF CONFLICT OF INTEREST

USAID Disclosure of Real or Potential Conflict of Interest for External Evaluation Team Members

Name	**Katrina Makuch**
Title	Senior Monitoring and Evaluation Specialist
Organization	**USAID/WA ASSESS Project**
Evaluation Position	☒ Team Leader ☐ Team member
Evaluation Award Number *(contract or other instrument)*	Project No. 624-P-14-00004
USAID Activity(s) Evaluated *(Include activity name(s), implementer name(s) and award number(s), if applicable)*	USAID/WA Partnership for Agricultural Research, Education and Development (PAIRED) Activity, implemented by the West and Central Africa Council for Agricultural Research and Development (CORAF)
I have real or potential conflicts of interest to disclose.	☐ Yes ☒ No
If yes answered above, I disclose the following facts: *Real or potential conflicts of interest may include, but are not limited to:* 1. Close family member who is an employee of the USAID operating unit managing the activity(s) being evaluated or the implementing organization(s) whose activity(s) are being evaluated. 2. Financial interest that is direct, or is significant though indirect, in the implementing organization(s) whose activities are being evaluated or in the outcome of the evaluation. 3. Current or previous direct or significant though indirect experience with the activity(s) being evaluated, including involvement in the activity design or previous iterations of the activity.	

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CONTINUED **If yes answered above, I disclose the following facts:** *Real or potential conflicts of interest may include, but are not limited to:* 4. Current or previous work experience or seeking employment with the USAID operating unit managing the evaluation or the implementing organization(s) whose activity(s) are being evaluated. 5. Current or previous work experience with an organization that may be seen as an industry competitor with the implementing organization(s) whose activity(s) are being evaluated. 6. Preconceived ideas toward individuals, groups, organizations, or objectives of the particular activities and organizations being evaluated that could bias the evaluation.	

I certify (1) that I have completed this disclosure form fully and to the best of my ability and (2) that I will update this disclosure form promptly if relevant circumstances change. If I gain access to proprietary information of other companies, then I agree to protect their information from unauthorized use or disclosure for as long as it remains proprietary and refrain from using the information for any purpose other than that for which it was furnished.

Date	Nov 11, 2022
Signature	

USAID Disclosure of Real or Potential Conflict of Interest for External Evaluation Team Members

Name	**Professor Richard Akromah**
Title	Agribusiness and Input Sector Development Expert
Organization	**Kwame Nkrumah University of Science and Technology**
Evaluation Position	☐ Team Leader ☒ Team member
Evaluation Award Number *(Contract or other instrument)*	Project No. 624-P-14-00004
USAID Activity(s) Evaluated *(Include activity name(s), implementer name(s) and award number(s), if applicable)*	The Partnership for Agriculture Research, Education and Development (PAIRED) Activity, implemented by the West and Central African Council for Agricultural Research and Development (CORAF)
I have real or potential conflicts of interest to disclose.	☐ Yes ☒ No
If yes answered above, I disclose the following facts: *Real or potential conflicts of interest may include, but are not limited to:* 1. Close family member who is an employee of the USAID operating unit managing the activity(s) being evaluated or the implementing organization(s) whose activity(s) are being evaluated. 2. Financial interest that is direct, or is significant though indirect, in the implementing organization(s) whose activities are being evaluated or in the outcome of the evaluation.	

3. Current or previous direct or significant though indirect experience with the activity(s) being evaluated, including involvement in the activity design or previous iterations of the activity.	
CONTINUED **If yes answered above, I disclose the following facts:** *Real or potential conflicts of interest may include, but are not limited to:* 4. Current or previous work experience or seeking employment with the USAID operating unit managing the evaluation or the implementing organization(s) whose activity(s) are being evaluated. 5. Current or previous work experience with an organization that may be seen as an industry competitor with the implementing organization(s) whose activity(s) are being evaluated. 6. Preconceived ideas toward individuals, groups, organizations, or objectives of the particular activities and organizations being evaluated that could bias the evaluation.	

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Date	07 September, 2022
Signature	

USAID Disclosure of Real or Potential Conflict of Interest for External Evaluation Team Members

Name	**Jorge Oliveira**
Title	Agric Research and Technologies Upscale Expert
Organization	**Freelance**
Evaluation Position	☐ Team Leader ☒ Team member
Evaluation Award Number *(Contract or other instrument)*	
USAID Activity(s) Evaluated *(Include activity name(s), implementer name(s) and award number(s), if applicable)*	The Partnership for Agriculture Research, Education and Development (PAIRED)
I have real or potential conflicts of interest to disclose.	☐ Yes ☒ No
If yes answered above, I disclose the following facts: *Real or potential conflicts of interest may include, but are not limited to:* 1. Close family member who is an employee of the USAID operating unit managing the activity(s) being evaluated or the implementing organization(s) whose activity(s) are being evaluated. 2. Financial interest that is direct, or is significant though indirect, in the implementing organization(s) whose activities are being evaluated or in the outcome of the evaluation. 3. Current or previous direct or significant though indirect experience with the activity(s) being evaluated, including	

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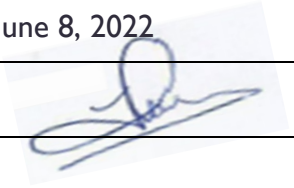
Date	June 8, 2022
Signature	

USAID Disclosure of Real or Potential Conflict of Interest for External Evaluation Team Members

Name	**NDIAYE SOUNKA**
Title	AGRIC EVALUATION EXPERT
Organization	**Free Lance**
Evaluation Position	☐ Team Leader ☒ Team member
Evaluation Award Number *(Contract or other instrument)*	
USAID Activity(s) Evaluated *(Include activity name(s), implementer name(s) and award number(s), if applicable)*	The Partnership for Agriculture Research, Education and Development (PAIRED); (CORAF). CA # AID-624-A-17-00002
I have real or potential conflicts of interest to disclose.	☐ Yes ☒ No
If yes answered above, I disclose the following facts: *Real or potential conflicts of interest may include, but are not limited to:* 1. Close family member who is an employee of the USAID operating unit managing the activity(s) being evaluated or the implementing organization(s) whose activity(s) are being evaluated. 2. Financial interest that is direct, or is significant though indirect, in the implementing organization(s) whose activities are being evaluated or in the outcome of the evaluation. 3. Current or previous direct or significant though indirect experience with the activity(s)	

being evaluated, including involvement in the activity design or previous iterations of the activity.	
CONTINUED **If yes answered above, I disclose the following facts:** *Real or potential conflicts of interest may include, but are not limited to:* 4. Current or previous work experience or seeking employment with the USAID operating unit managing the evaluation or the implementing organization(s) whose activity(s) are being evaluated. 5. Current or previous work experience with an organization that may be seen as an industry competitor with the implementing organization(s) whose activity(s) are being evaluated. 6. Preconceived ideas toward individuals, groups, organizations, or objectives of the particular activities and organizations being evaluated that could bias the evaluation.	

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Date	June 28, 2022
Signature