



Excellence in Agronomy 2030 Initiative

Customized Scaling Readiness Agronomy Innovation Profile

for

Integrated Farm Management Decision Support Product-
Service Bundle for Cassava, Maize, Rice Production Systems

in

Nigeria

in

Nov 2021

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SCALING READINESS GLOSSARY

Intervention	A coherent set of planned activities for achieving specific goals in a defined period in a specific space. An intervention is a general name of a project. Although most interventions are projects, there are other types of interventions such as programs, a specific combination of projects for achieving higher-level objectives, and initiatives that refer to a set of planned activities usually without clear specification of goals and period. Scaling Readiness can be used for multiple types of interventions, e.g. projects, programs, policy interventions.
Innovation Readiness Metrics	In Scaling Readiness two different Innovation Readiness metrics are used for addressing two different management questions. The first one is the Average Innovation Readiness Level. It refers to the average Readiness of all the novel components of the innovation. The Average Innovation Readiness Level aims to give an overall idea about the functioning of the innovation without considering the interdependencies among the components. The second Innovation Readiness metric is the Innovation Readiness Score. The Innovation Readiness Score is the minimum of the Innovation Readiness Levels of all the novel components. It aims to present the overall functioning of the innovation taking into account the dependencies of the components for the proper functioning of the innovation. Depending on the preference of the innovation managers, either or both of the metrics can be used.
Innovation Readiness Level	It is a metric indicating how mature or effective an innovation is to achieve its use objectives. It can be considered as a systematic answer to the question "how good an innovation functions." It can be between 0, which indicates that the innovation is just an idea in the mind of its potential designers and developers, and 9, suggesting that the innovation is a proven innovation with clear evidence of its value measured in terms of livelihood impact, profit, etc. Research and development projects increase the Innovation Readiness Levels by improving the design of the innovations, developing and validating the improved designs in uncontrolled and controlled conditions.
Innovation Component	Knowledge, technology, a concept, practice, etc. that constitutes a part of innovations. Innovations have many components. Some of them are novel and play critical roles in the functioning and use of the innovation in the contexts the intervention operates for achieving specific intervention goals. They can be stand-alone innovations for other contexts and goals but for the specific goals and contexts an intervention operates they work as a part of a larger innovation. In Scaling Readiness, these novel components of innovations are identified, characterized, and diagnosed. Research for development interventions can control or significantly influence the design, development, and delivery of innovation components.
Innovation	A novel product, service, arrangement, or their purposeful combination with economic, environmental, health, industrial, etc. benefits. Innovations are different from inventions since innovations have explicit implementations. To be considered innovation, a product, service, an arrangement, or their combinations need to have a clear use objective. Innovations can be technical or social. They can be tangible and intangible. In Scaling Readiness, innovations are characterized, diagnosed, and strategized. Research for development interventions can control or strongly influence the design, development, and delivery of innovations and catalyze or support their use at scale.
Evidence-based Measurement	Measures in Scaling Readiness are calculated using evidence. Specific claims of Readiness and Use measures are assessed through a hierarchy of sources of verification. High-quality science articles and other peer-reviewed documents are the first sources. In their absence, technical documents or other publicly scrutinized documents are used to back up specific evidence claims. In the lack of any documents, multiple experts' opinions proven to have sufficient competencies are triangulated to identify the measures.
Bottleneck Component	A component or subset of components of an innovation that perform worse and are used by fewer users than the other components of the innovation. In Scaling Readiness, the bottleneck components of an innovation are used to prioritize the activities of a research for development intervention to achieve maximum impact at scale with minimum cost and resource use. Bottleneck components are not universal and depend on a specific time, space and for specific goals.

INNOVATION PROFILE SHEET

Integrated Farm Management Decision Support Product-Service Bundle for Cassava, Maize, Rice Production Systems

TRANSFERRING DISSEMINATION AND USE SUPPORT ACTIVITIES OF THE INNOVATION TO LOCAL ORGANIZATIONS

An innovators' supporting other enterprises and stakeholders to increase the use of its products or services instead of doing it itself

SITE-SPECIFIC RECOMMENDATIONS

Actionable statements that provide location-sensitive inputs for decision making

PRICE SENSITIVE CROP MODELS

Mathematical and statistical models are used to estimate the maximum amount of financial return that can be obtained from crop production given a set of input and output prices relevant for the production and sale of the crop

MULTIPLE CROP FARM PRODUCTIVITY OPTIMIZATION ALGORITHMS

Mathematical and statistical models used for identifying the crop, the number of plant materials, fertilizers and other agronomy inputs that would lead to the maximum yield

INTEGRATIONS WITH EXISTING DIGITAL LANDSCAPE

A set of programming solutions that integrate the features, processes and data of a digital product with other existing and commonly used ones

FERTILIZER USE OPTIMIZATION ALGORITHMS

A set of automatically improving algorithms that calculate the amount, timing and other fertilizer application decisions that take into account crop production and sale differences among the sites a farm is located

DIGITAL AGRO-ADVISORY AND EXTENSION PLATFORM

A set of digital products (webpages, smartphone applications) that provide information and recommendations about effective and efficient use of farming approaches, tools and practices

INNOVATION READINESS ANALYTICS

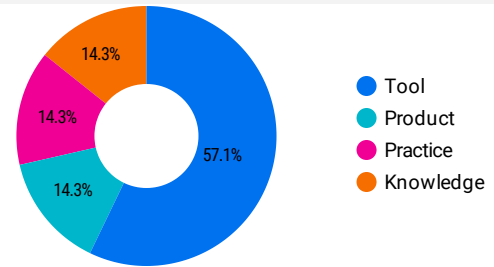
Space: Nigeria **Time:** Nov 2021 **Goal:** Improving productivity and profitability of crop production

Component Name	Type	Level	Evidence Source
Transferring dissemination and use support activities of the innovation to local organizations	Practice	4	Ngome-10,Ngome-11,CIP-12,IITA-13,Guardian-14,Tolani-15,Ngome-17,Coombs-19,Pypers-20
Site-specific recommendations	Knowledge	9	Udias-9,Ngome-10,Ngome-11,CIP-12,IITA-13,Guardian-14,Tolani-15,Zossou-16,Ngome-17,Bonilla Cedrez-18,Coombs-19,Pypers-20
Price sensitive crop models	Tool	6	Bonilla Cedrez-21,Ezedinma-22,Mishra-27
Multiple crop farm productivity optimization algorithms	Tool	6	Inoni-1,Ditzler-2,Estrada-Carmona-3,Petsakos-4,CIP-5,Timler-6,IFPRI-7,Kozicka-8
Integrations with existing digital landscape	Tool	6	Ngome-10,Ngome-11,CIP-12,IITA-13,Guardian-14,Tolani-15,Ngome-17,Coombs-19,Pypers-20,CIP-26
Fertilizer use optimization algorithms	Tool	9	Udias-9,Ngome-10,Ngome-11,CIP-12,IITA-13,Guardian-14,Tolani-15,Zossou-16,Ngome-17,Bonilla Cedrez-18,Coombs-19,Pypers-20,Mugabo-28
Digital agro-advisory and extension platform	Product	9	Ngome-10,Ngome-11,CIP-12,IITA-13,Guardian-14,Tolani-15,Zossou-16,Ngome-17,Coombs-19,Pypers-20,Mgbenka-23,Aromolaran-24,Lawal-Adebawale-25

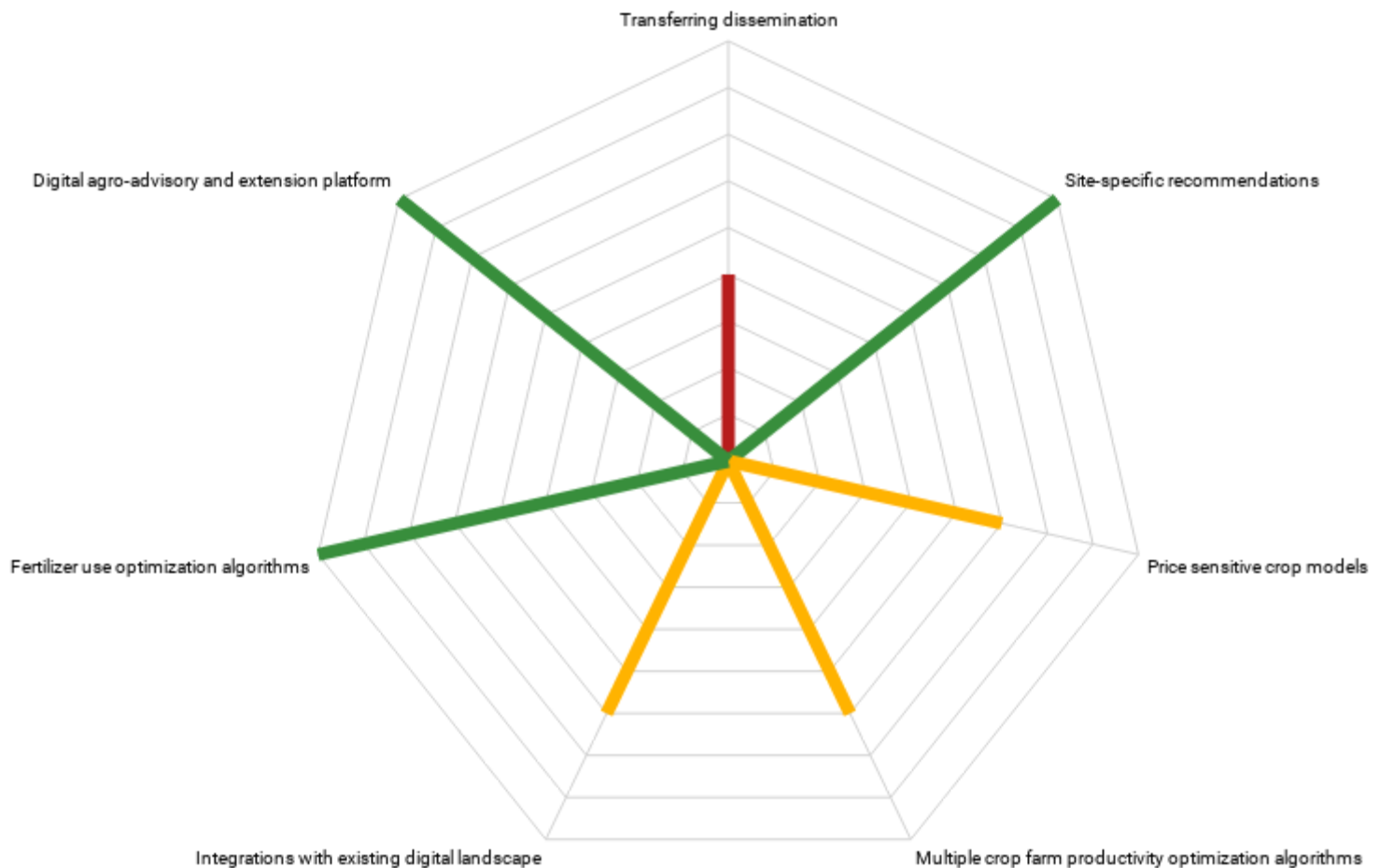
Average Innovation Readiness Level:



Type of the novel components:



INNOVATION READINESS LEVELS OF THE COMPONENTS



FINDINGS AND RECOMMENDATIONS

HIGHLIGHTS

- "Integrated Farm Management Decision Support Product-Service Bundle for Cassava, Maize, Rice Production Systems" is a service-as-a-product type of innovation
- It has 17 key performance components. Among them 7 are novel and significantly influence the impact at scale contribution of "Integrated Farm Management Decision Support Product-Service Bundle for Cassava, Maize, Rice Production Systems" in Nigeria for Improving productivity and profitability of crop production.
- These 7 are different types (4 Tool 1 Knowledge 1 Practice 1 Product)
- Readiness of the novel components vary between 4 and 9. These imply that the Innovation Readiness Score, which is based on the lowest-scoring component used for identifying the bottleneck component is 4. Meanwhile the Average Innovation Readiness Score, which is used for comparing the innovation with its previous status as well as with other innovations, is 7.
- In other words, the major bottleneck(s) for "Integrated Farm Management Decision Support Product-Service Bundle for Cassava, Maize, Rice Production Systems" in Nigeria for Improving productivity and profitability of crop production is :transferring dissemination and use support activities of the innovation to local organizations.
- Please note that the bottlenecks are identified using available evidence sources such as journal articles, book chapters, rigorous technical reports and in their absence other complementary research and research communication items. In some cases, an advanced novel component can be assessed as a bottleneck if there is no available evidence about its Readiness. This can be the case especially in innovation components that are designed, or developed recently. If this is the case, the use cases are recommended to invest resources in publishing and disseminating the evidence. Once the dissemination is done, the Readiness scores will be updated.

RECOMMENDATIONS

Option 0: Prove - document and disclose available and recently generated cognitive, conceptual, applied, experimental or impact/benefit evidence of transferring dissemination and use support activities of the innovation to local organizations in Nigeria or sufficiently similar contexts

Main mandate and contribution of research for development organizations like CGIAR is to develop scalable solutions, or innovations, that can achieve high impact at scale. However, not all scalable solutions are suitable for the CGIAR system. Innovations can be produced by repetitive trial and error or can be discovered and developed by coincidence. The key niche and contribution of CGIAR are science-based innovations. What makes science-based innovations different from the others is the systematic documentation of how they work and the availability of the information for public scrutiny. Therefore, it is important for EiA Sasakawa Africa Association Nigeria to prove the Readiness of their innovations by systematically documenting the performance of the innovation and disclosing the information to the public. This will not only increase the scientific credibility and reputation of the use case but also increase its attractiveness for investments.

FINDINGS AND RECOMMENDATIONS

RECOMMENDATIONS

Option 1: Substitute - find alternative solutions that can serve the same purpose as transferring dissemination and use support activities of the innovation to local organizations

transferring dissemination and use support activities of the innovation to local organizations increase the user base of a product or service. If there are any available sufficiently performing alternatives that can increase the user base of a product or service, it is recommended to replace transferring dissemination and use support activities of the innovation to local organizations with the most suitable alternative

Option 2: Outsource - establish a partnership with organizations that can develop and validate transferring dissemination and use support activities of the innovation to local organizations more effectively, efficiently and locally

transferring dissemination and use support activities of the innovation to local organizations is at the level of application (proven). For it to move to the next level, it is necessary to test the capacity of transferring dissemination and use support activities of the innovation to local organizations using applied research methods. If there are local or national organizations or teams with sufficient experience and capabilities to test the capacity of transferring dissemination and use support activities of the innovation to local organizations using applied research methods it is recommended to outsource the work on transferring dissemination and use support activities of the innovation to local organizations. If there are no such local and national organizations and teams, but there are international organizations that can do the work effectively and efficiently, they can be the second outsourcing option.

Option 3: Insourcing - further design, develop transferring dissemination and use support activities of the innovation to local organizations using the human resources of the use case team.

if the substitution and outsourcing options have a low likelihood to increase the user base of a product or service, it is recommended to (further) develop it using the internal human resources of EiA Sasakawa Africa Association Nigeria.

Please note that working with existing partners is not necessarily an advantage. Although, working with local organizations that EiA Sasakawa Africa Association Nigeria team has long term collaborations can improve the ownership of fully developed "Integrated Farm Management Decision Support Product-Service Bundle for Cassava, Maize, Rice Production Systems" in the future, it might hinder the (further) development of transferring dissemination and use support activities of the innovation to local organizations significantly. Therefore, it is recommended to have an honest conversation with existing long term partners about the development needs and validate if their experience and capabilities match these needs. If they do not match, it is recommended to offer the long term partners to co-manage the collaboration with other development partners that will be leading the outsourced work.

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ANNEX-1: INNOVATION READINESS LEVELS (v.2.2)

READINESS LEVEL	READINESS LEVEL CATEGORY	READINESS LEVEL DESCRIPTION
9	Innovation (proven)	Validated application using evidence on the value or benefit
8	Innovation (unproven)	Testing the capacity of the application to generate value by solving a problem in a specific uncontrolled context
7	Application (proven)	Validated applied model using experimental evidence
6	Application (unproven)	Experimental research on application model's ability to solve a problem in the controlled conditions
5	Application Model (proven)	Validated basic model using applied evidence
4	Application Model (unproven)	Desktop research on the basic model's ability to solve a problem using existing applied evidence
3	Basic Model (proven)	Conceptual/theoretical validated set of interrelated hypotheses
2	Basic Model (unproven)	Desktop research on the hypotheses using existing conceptual/theoretical evidence
1	Hypothesis (proven)	Cognitively validated idea about a novelty's ability to solve a problem
0	Hypothesis (unproven)	Cognitive validation of idea's potential to solve the problem. / Thinking about a novelty's ability to solve a problem