



WHITE  
PAPER

# Third White Paper on the Integrated Agricultural Research for Development (IAR4D) and the Innovation Platforms

Regional Case Studies on Effective Multi-Stakeholder Partnerships For The Generation Of Innovations In Africa:  
A Decade and a Half of Progress on IAR4D-IP Concept in Africa



Fatunbi AO, Ajayi MT and Agumya A

Source: freestock images



**Third White Paper on the Integrated Agricultural Research for  
Development and the Innovation Platform (IAR4D and IP)**

Authors:

Fatunbi AO, Ajayi MT and Agumya A

## Citation

Fatunbi AO, Ajayi MT and Agumya A (2025). Third White Paper on the Integrated Agricultural Research for Development and the Innovation Platform (IAR4D and IP). Pages 1-183. June 2025.

FARA encourages fair use of this material; proper citation is required.

ISBN: 978-9988-51-306-1

## Forum for Agricultural Research in Africa (FARA)

No 7, Flower Avenue, New Achimota Mile 7

PMB CT 173, Accra Ghana

Tel: +233 302 772823 / 302 779421

Fax: +233 302 773676

Email: [info@faraafrica.org](mailto:info@faraafrica.org)

Website: [www.faraafrica.org](http://www.faraafrica.org)

Layout Design & Illustration by Shaquille Pennaneach

© 2025 The Forum for Agricultural Research in Africa

## FARA Disclaimer

Opinions expressed in the White Paper and other contributions and analysis on different initiatives are solely those of the authors. They do not represent the opinion of FARA, nor signify its endorsement.

## EC / IFAD Disclaimer

This publication is an output of the CAADP-XP4 project. The project received funding from the European Union / IFAD Grant Number 2000002984. This output only reflects the views of the author(s) and many stakeholders, as conducted by a survey tool. The European Union and IFAD cannot be held responsible for any use which may be made of the information contained therein.

## ABBREVIATIONS/ACRONYMS

AATF	African Agricultural Technology Foundation
ACBF	African Capacity Building Foundation
ADPs	Agricultural Development Programmes
AFAAS	African Forum for Agricultural Advisory Services
AfDB	African Development Bank
AFSH	African Fertilizer and Soil Health
AGRA	Alliance for a Green Revolution in Africa
AGRINATURA	The European Alliance on Agricultural Knowledge for Development
AHI	African Highlands Initiative
AICCRA	Accelerating Impacts of CGIAR Climate Research for Africa
AIP	Agricultural Innovation Platform
AIS	Agricultural Innovation System
AIVs	African Indigenous Vegetables
AKIS	Agricultural Knowledge and Innovation Systems
AR4D	Agricultural Research for Development
AR4D-IP	Agricultural Research for Development-Innovation Platform
ARD	Agriculture Research and Development
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
AUC/AU	African Union Commission/ African Union
AUDA-NEPAD	African Union Development Agency-New Partnership for Africa's Development (NEPAD)
AVRDC-ESA	The World Vegetable Centre, Eastern and Southern Africa
BMZ	German Federal Ministry for Economic Cooperation and Development
CA	Alianza Cambio Andino
CA4SH	Coalition of Action for Soil Health
CAADP	Comprehensive Africa Agricultural Development Programme

CAADP-XP4	Comprehensive Africa Agriculture Development Programme Ex-Pillar 4
CABI	Centre for Agriculture and Bioscience International
CC	Climate Change
CCAFS	Climate Change, Agriculture and Food Security
CCARDESA	Centre for Coordination of Agricultural Research and Development for Southern Africa
CGIAR	Consultative Group for International Agricultural Research
CIAT	International Center for Tropical Agriculture
CIFOR	Center for International Forestry Research
CIFOR-ICRAF	Center for International Forestry Research- World Agroforestry
CIMMYT	International Maize and Wheat Improvement Center
CIRAD	French Agricultural Research Centre for International Development
CIS	Climate Information Services
CORAF	West and Central African Council for Agricultural Research and Development
CRP	CGIAR Research Programme
CSA	Climate-Smart Agriculture
CSOs	Civil Society Organisations
CSV	Climate-Smart Village
DeSIRA	Development Smart Innovation through Research in Agriculture
DeSIRA-LIFT	Leveraging the DeSIRA Initiative for agri-food systems transformation
DG INTPA	Directorate-General for International Partnerships
DG RTD	Directorate-General for Research and Innovation
DICTA	Directorate of Agricultural Science and Technology
DRC	Democratic Republic of the Congo
EBAFOSA	Ecosystem-Based Adaptation for Food Security Assembly
EFARD	European Forum for Agricultural Research

ELD	Economics of Land Degradation
EU	European Union
FANRPAN	Food, Agriculture and Natural Resources Policy Analysis Network
FAO	Food and Agriculture Organization
FARA	Forum for Agricultural Research in Africa
FDA	Food and Drug Administration
FTA	Forests, Trees and Agroforestry
GAIN	Global Alliance for Improved Nutrition
GCARD	Global Conference on Agricultural Research for Development
GFAR	Global Forum for Agricultural Research
HORTITengeru	Horticultural Research and Training Institute Tengeru
IAR4D	Integrated Agricultural Research for Development
ICRAF	World Agroforestry Centre
IDA	International Development Association
IFAD	International Fund for Agricultural Development
IFDC	International Fertilizer Development Center
IFTz	INADES-Formation Tanzania
IITA	International Institute of Tropical Agriculture
ILAC	Institutional Learning and Change
ILRI	International Livestock Research Institute
INRAE	National Research Institute for Agriculture, Food and the Environment
INSOILFER	International Network on Soil Fertility and Fertilizers
IP	Innovation Platform
IPES	International Panel of Experts on Sustainable Food Systems
IRD	Institut de Recherche pour le Développement
ISPC	Independent Science & Partnership Council
ITFCs	Indigenous and Traditional Food Crops
IWMI	International Water Management Institute

KARI	Kenya Agricultural Research Institute
KIA	Knowledge Intensive Agriculture
KTP	Knowledge Transfer Partnership
LACNET	Latin America and Caribbean Network
LMICs	Low and Middle-Income Countries
M&E	Monitoring and Evaluation
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MSPs	Multi-Stakeholders Partnerships
MUSALAC	MusaNet Latin American and Caribbean
MuZARDI	Mukono Zonal Agricultural Research and Development Institute
NaCRRRI	National Crops Resources Research Institute
NAPs	National Adaptation Plans
NARES	National Agricultural Research and Extension Systems
NARI	National Agriculture Research Institute
NEPAD	New Partnership for Africa's Development
NGOs	Non-Governmental Organizations
NORAD	Norwegian Agency for Development Cooperation
NRM	Natural Resource Management
NUS	Neglected and Underutilized Species
OFSP	Orange-Fleshed Sweet Potato
PAEPARD	Platform for African-European Partnership in Agricultural Research for Development
PARI	Program of Accompanying Research for Agricultural Innovation
PDF	Portable Document Format
PPPs	Public-Private Partnerships
PROLINOVA	Promoting Local Innovation in Ecologically Oriented Agriculture and Natural Resource Management
R&D	Research and Development
R&I	Research and Innovation
R4D	Research for Development

RTO	Research and Technology Organisation
RUFORUM	Regional Universities Forum for Capacity Building in Agriculture
SC	Steering Committee
SDGs	Sustainable Development Goals
SDP	Strategic Development Plan
SIA	Soil Initiative for Africa
SRI	System of Rice Intensification
SROs	Sub-regional Organisations
SSA-CP	Sub-Saharan Africa Challenge Programme
TCA	Tarlac College of Agriculture
TEEB-AgF	The Economics of Ecosystem Services and Biodiversity for Agriculture and Food production
TMG Think Tank	Töpfer Müller Gassner
ToC	Theory of Change
TPP	Transformative Partnership Platform
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UPWARD	Users' Perspectives with Agricultural Research and Development
USAID	US Agency for International Development
USDA	US Department of Agriculture
VACS	Vision for Adapted Crops and Soils
VAD	Vitamin A Deficiency
WAAPP	West Africa Agricultural Productivity Programme
WLE	Water, Land and Ecosystems
XIMB	Xavier Institute of Management, Bhubaneswar
ZAABTA	Zirombe Agaliawamu Agri-business Training Association

# TABLE OF CONTENTS

<u>ABBREVIATIONS/ACRONYMS</u>	4
<u>TABLE OF CONTENTS</u>	9
LIST OF TABLES	12
LIST OF FIGURES	13
<b>CHAPTER 1</b>	<b>1</b>
1.0 INTRODUCTION	13
1.1 General Introduction	1
1.2 Brief Review of First & Second White Papers on IAR4D-IP Concept	18
1.2.1 First White Paper	18
1.2.2 Second White Paper	19
1.3 Third White Paper	20
<b>CHAPTER 2</b>	<b>23</b>
2.0 PARTNERSHIP CONCEPT, TYPES AND MODELS FOR AR4D IN AFRICA	23
2.1 Partnership Concept and Definitions.	23
2.2 Types of Partnerships	28
2.3 Partnership Success Factors/Ingredients of Good Partnership	40
2.4 Case Studies of Effective Partnerships for Innovation	45
<b>CHAPTER 3</b>	<b>62</b>
3.0 SUCCESS FACTORS AND CHALLENGES OF IP SUSTAINABILITY IN AFRICA	62
3.1 Success Factors for IAR4D-IP and Effects of Partnerships on Smallholders	62
3.2 Challenges of implementing IAR4D-IP Concept	70
3.3 Factors Affecting Sustainability of IPs in Africa AR4D.	75
<b>CHAPTER 4</b>	<b>79</b>
4.0 RETHINKING THE IAR4D-IP CONCEPT	79

4.1	Why the need for the Rethinking of IAR4D-IP Concept	79
4.2	New Challenges and Emerging Issues in African AR4D	84
4.2.1	Climate Change	84
4.2.2	Natural Resources Management (Soil Health and Fertilizer Use)	86
4.2.3	The Agri-Food Systems	87
4.2.4	Adapted Crops (Forgotten Crops/Foods)	89
4.2.5	Agro-Ecology/ Regenerative Agriculture	91
4.2.6	Youth population bulge and employment in agriculture.	92
<b>CHAPTER 5</b>		<b>95</b>
<b>5.0 STRATEGIES AND MODELS FOR CONSIDERATION IN RETHINKING IAR4D-IP CONCEPT DUE TO NEW CHALLENGES AND EMERGING ISSUES IN AFRICA</b>		<b>95</b>
5.1	Climate Change	95
5.1.1	Adoption of Climate Smart Agriculture Model	95
5.2	Natural Resources Management	106
5.2.1	Adoption of Soil health and fertilizer use strategy by AR4D Smallholder Farmers	106
5.2.2	Adoption of Other Soil Management Practices (Cover crops, organic farming, etc).	108
5.3	Agri-Food Systems	109
5.3.1	Adoption of Agri-food Systems Strategy in Reviewed AR4D	109
5.3.2	Establishment of Policies for Sustainable Agri-food Systems	112
5.4	Adapted Crops / Forgotten foods/ Indigenous commodities.	115
5.4.1	Adoption of adapted and forgotten foods/crops into the value chains of AR4D-IPs.	115
5.5	Agro-Ecology	117
5.5.1	Adoption of Regenerative Agriculture Model into AR4D-IP Model	117
5.6	Youth Bulge	119

5.6.1	Strategies to address Youth Bulge in Africa	119
<b>CHAPTER 6</b>		<b>122</b>
<b>6.0 ANALYSIS OF ADDITIONAL ELEMENTS TO THE IAR4D-IP PARTNERSHIP MODELS TO DELIVER AFRICAN AGRICULTURE</b>		<b>122</b>
6.1	Importance of Partnerships and Initiatives in Rethinking AR4D Concept	123
6.2	Existing and New Partnerships Associated with Emerging Issues & Challenges in Delivering African Agriculture	124
6.2.1	Climate-Smart Agriculture Partnership/Initiatives	125
6.2.2	Fertilizer and Soil Health	129
6.2.3	Agri-food Systems	130
6.2.4	Adapted Crops/Foods	132
6.2.5	Agro-Ecology	134
6.3	Other Existing and New Multistakeholder Partnerships and Initiatives	141
<b>CHAPTER 7</b>		<b>155</b>
<b>7.0 INSTITUTIONALIZING THE AR4D PARTNERSHIP MODELS</b>		<b>155</b>
<b>CHAPTER 8</b>		<b>163</b>
<b>8.0 CONCLUSIONS AND RECOMMENDATIONS</b>		<b>163</b>
<b>BIBLIOGRAPHY</b>		<b>169</b>

# LIST OF TABLES

<a href="#">Table 1: Summary of Different Types of Partnerships &amp; their Characteristics</a>	36
<a href="#">Table 2: Respondents' Assessment of AR4D-IP Partnerships</a>	42
<a href="#">Table 3: Respondents Perception on Functionality of IPs in different parts of Africa</a>	66
<a href="#">Table 4: Respondents Perception on strengths, weaknesses, opportunities and threats to AR4D partnerships in promoting and sharing agricultural technologies and innovations in Africa</a>	73
<a href="#">Table 5: Respondents' Suggestions on the most effective partnership model opportunities that are needed to pursue broader roles in driving AR4D in Africa and How to Institutionalize the Partnership Models</a>	136
<a href="#">Table 6: Respondents' Suggestions on Model of Partnerships for the Governmental layers for IAR4D-IP to Effective Innovations Generation</a>	152
<a href="#">Table 7: Respondents perception on How to Institutionalize the suggested partnerships and Alliances</a>	158

# LIST OF FIGURES

<a href="#">Figure 1: Different Terminologies Used for Multi-stakeholder Partnerships in Agriculture.....</a>	28
<a href="#">Figure 2: Respondents' Level of Awareness of General Types of Partnerships (%) .....</a>	39
<a href="#">Figure 3: Respondents' Awareness and Involvement in Multi-Stakeholder Partnerships (%).....</a>	39
<a href="#">Figure 4: Respondents' Perception on the Achievement of IAR4D-IP Concept Principles.....</a>	44
<a href="#">Figure 5: Impact of Multi-stakeholder Partnerships on smallholders.....</a>	45
<a href="#">Figure 6: Respondents perception on whether IAR4D-IP Concept is still Relevant.....</a>	64
<a href="#">Figure 7: Respondents' Perception on Whether to have a Rethink of AR4D Concept.....</a>	84
<a href="#">Figure 8: Key components of a CSV AR4D approach/model.....</a>	105
<a href="#">Figure 9: Outline of the steps in a typical CSV AR4D.....</a>	105
<a href="#">Figure 10: Respondents' Level of Awareness of Multistakeholder Partnership Models (%) .....</a>	141
<a href="#">Figure 11: Partnerships Involving all Stakeholders at the Different Levels.....</a>	154

# Introduction

Agriculture is critical to Africa's economic growth and development, generating more than one-fifth of sub-Saharan Africa's economic output. Much of the concern over feeding Africa by 2050 relates to the relative slowing down of food production in the face of rapidly growing populations. According to a FAO (2018) report, the world will need to produce about 70 percent more food by 2050 to feed an estimated nine billion people. Food demand is projected to increase, especially in the growing urban centres of Africa, to about 60% to 80%. However, agricultural yields are not keeping pace, with gaps estimated to be 75% of the potential yield.

As the population grows and fields shrink from generation to generation impacting on the carrying capacity, farmers must produce more food on less land. As a result, African farmers have faced inexorable pressure to intensify their production. Intensification of agriculture production requires adoption of good agricultural practices.

In addition to the population challenge, climate change is creating a major problem. According to the Africa Climate Change Strategy (2014), Africa is the most vulnerable continent to climate variability and change, a situation that is aggravated by the interaction of multiple stresses, including high dependence on rain-fed agriculture, widespread poverty and weak adaptive capacity.

However, closing the productivity gap is not possible without new ways of making actors along the agriculture value chain work together across the boundaries of farm, business, government, science, and civil society. This is because innovation plays a crucial role in driving economic growth, societal development, and sustainable progress.

One of the ways to make this happen is the concept of Integrated Agricultural Research for Development (IAR4D) which recognizes the need to explore alternative ways of engaging for change based on the failure of the past methods/approaches. The IAR4D concept entails a multi-sectorial, multi-stakeholder orientation to agricultural problem diagnosis, and draws on integrated approaches using 'hard' and 'soft' sciences to provide solutions, while maximizing the available resources. A major operational framework of the IAR4D is the Innovation Platform (IP) which is a multi-stakeholder forum for information sharing and knowledge exchange along a commodity value chain with a view to enhancing the agricultural productivity and socio-economic well-being of the actors. The IAR4D-IP concept and how IP evolved from the IAR4D have been discussed explicitly in the first and second white papers.

As a result, Innovation Platforms (IPs) have become one of the preferred mechanisms for dealing with today's critical agriculture and scaling challenges, such as access to improved agri inputs, market linkages, access to financial institutions, and post-harvest management.

According to Bie (2001) and Stoop (2002), based on history, agricultural research was not very successful in improving farmers' livelihoods. This is because according to Chambers and Jiggins (1987), the linear approach to agricultural research and development was in vogue during the 1960s and 1970s and remains the same in many programmes and research institutes. Secondly, the approach looks at knowledge development/production and application as separate activities, carried out by researchers and farmers, respectively. Researchers oversee knowledge production, extension agents are expected to transfer the knowledge to farmers, who are expected to adopt it.

However, in the following decades, according to Collinson (2000) and

Dixon et al. (2001), many actors played an active role in innovation, and that innovation processes are dynamic which resulted in more holistic approaches such as Farming Systems Research. During that period, it was also discovered that farmers can adapt and come up with solutions to their local challenges which led to a change of responsibility and the evolution of the participatory approaches (Nederlof, 2006).

The Innovation System approach became popular in the 1990s and 2000s which led to the use of technology and innovation interchangeably (Leeuwis and Van den Ban, 2004). Innovation was considered to include technology with organisational and institutional elements.

To clearly understand the meaning of the innovation system, Hall et al (2006) defined the innovation system as a network of organisations, enterprises, and individuals focused on bringing new products, new processes, and new forms of organisation into economic use, together with the institutions and policies that affect their behaviour and performance. The innovation systems concept embraces not only the science suppliers, but the totality of actors involved in innovation. It extends beyond the creation of knowledge to encompass factors affecting demand for and use of knowledge in novel and useful ways.

The Forum for Agricultural Research in Africa (FARA) proposed the Integrated Agricultural Research for Development (IAR4D) as an innovation system framework that should form the base upon which transformation of agricultural research in SSA should be considered. The IAR4D concept aims to deviate from the traditional linear configuration of ARD by encouraging the engagement of multiple actors along the commodity value chain for the promotion of the process of innovation in the agricultural system.

In the IAR4D, innovation evolves through continuous interaction among players, utilisation of feedback, analysis and incorporation of lessons learned between different processes. This essentially draws on the knowledge of relevant actors at each stage. The framework creates a network that considers the technical, social, and institutional constraints in an environment that facilitates learning with the aim of generating innovation rather than mere research products or technologies.

The Forum for Agricultural Research in Africa (FARA) is the apex continental organization responsible for coordinating and advocating for agricultural research for development (AR4D). FARA serves as the technical arm of the African Union Commission on matters concerning agriculture science, technology and innovation. FARA was conceived in the late 1990s by a core group of committed champions, including both African scientists and enlightened donor aid officials, who believed in agricultural potential to lift the continent from poverty, yet realized that this would only be achieved if the continent's weak and fragmented agricultural research systems could somehow be brought together and strengthened under a common banner. FARA was then voted into existence in 1997 by the Sub-Regional Organizations (SROs), including CORAF/WECARD, ASARECA and SADC-FANR, now Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA), at the 17<sup>th</sup> Plenary of the Special Programme for African Agricultural Research (SPAAR), a precursor organization to FARA, situated within the World Bank.

The Agricultural Innovation Systems (AIS) approach and Integrated Agricultural Research for Development (IAR4D) are closely related, but they are distinct concepts in agricultural development. AIS provides the broader theoretical framework and perspective, while IAR4D represents a specific operational approach within the AIS paradigm. These two concepts have been described under section 2.1.2. of the first white paper.

This innovation system approach is referred to as Integrated Agricultural Research for Development (IAR4D). At its inception in 2002, the Forum for Agricultural Research in Africa (FARA), the SROs and the CGIAR organizations recognised that a major constraint to such adoption lay in the complexity of the agricultural system and called for an integrated approach to the resolution of the issues which are as diverse as they are interrelated, for example, markets, productivity, policy, natural resource management, product development, nutrition, and gender. As interrelated as they are, they have been conventionally treated in isolation as they fall in the domain of different disciplines (Adekunle et al., 2013).

The term 'Integrated Agricultural Research for Development' was first

coined in 2003. The IAR4D acknowledges the complexity of the agricultural system and the need to bring together not only different related research disciplines but also multiple actors (private sector, public sector, producer organisations and policymakers) to find joint solutions to the challenges of agricultural innovation.

A major operation framework of the IAR4D is the Innovation Platform (IP) which is a multi-stakeholder forum for information sharing and knowledge exchange along a commodity value chain with a view to enhancing agricultural productivity and the socio-economic well-being of the actors.

Through the IAR4D, innovation evolves through continuous interaction among players, utilisation of feedback, analysis and incorporation of lessons learned between different processes. This essentially draws on the knowledge of relevant actors at each stage. The framework creates a network that considers the technical, social, and institutional constraints in an environment that facilitates learning with the aim of generating innovation rather than mere research products or technologies. The IAR4D cannot but be complex and would certainly require fundamental changes in the wider institutional and policy environment for it to promote the process of innovation.

## Brief Review of the First and Second White Papers on IAR4D-IP Concept

An important indicator of success for the IAR4D, besides the promotion of innovation, is its ability to influence partners to undertake partnerships in a different way. The institutional and policy environment for agricultural research and development must also change.

### First White Paper

FARA (2009) first White Paper on the IAR4D described the concept, traced its evolution, and enumerated some of its key descriptive principles. The purpose of the white paper was to contribute to an understanding of the Integrated Agricultural Research for Development and the Innovation Platform (IAR4D, IP). In the paper, four defining principles of IAR4D were proposed:

**a. IAR4D integrates the perspectives, knowledge, and actions of different stakeholders around a common theme.** The theme or 'entry point' represents a research and development 'challenge', identified by one or more stakeholders who recognize that a broader working alliance is needed to achieve the desired development impact. The interests and actions of the different stakeholders go beyond information and technology to include business, politics, finance, organization, management, etc., and the links between these.

**b. IAR4D integrates the learning that stakeholders achieve by working together.** Beyond simply a concerted action process, the IAR4D is a social learning process, with stakeholders learning from the experience of working together. This learning focuses primarily on the processes of stakeholder interaction themselves, rather than on the specific solutions to the research and development 'challenge'. This learning takes place at the individual, organizational and institutional levels.

**c. IAR4D integrates analysis, action and change across the different (environmental, social, economic) 'dimensions' of development.** The general and current concepts of 'sustainable development' and 'multi-functional agriculture' emphasize the interlinked 'dimensions' of such development. These include economic growth (linking farmers to markets), conservation of natural resources (soil fertility, biodiversi-

ty, limited carbon-dioxide production, etc.), social inclusion and equity ('pro-poor development'), as well as food security.

**d. IAR4D integrates analysis, action and change at different levels of spatial, economic, and social organization.** Agricultural innovation is an emergent property of the broader 'innovation system'. Therefore, to be effective at promoting innovation, the IAR4D needs to promote change and enhance learning throughout the broad innovation system at all levels of an organization. These include 'spatial' levels (field, farm, watershed, etc.), economic levels (product, firm, value chain, business cluster, etc.), and social levels (individual, group, community, organization, innovation system, etc.).

These four 'defining principles' of IAR4D were explored in detail with a brief account of some of the theory and experience that support these principles, and how the principles are reflected in research and development practice. This was followed by a discussion on the implications of these principles in terms of change for individuals, organizations and institutional relationships, and lessons learned from selected case studies that were provided.

At the end of it, the White Paper attempted to indicate how each principle could be incorporated in the development practice and further illustrated the principles through some case studies. The paper also explained the IAR4D/IP model for people to understand the model well.

## **Second White Paper**

The Second White paper was titled "Integrated Agricultural Research for Development (IAR4D): Revisiting Concept, Practice and Upscaling". Forum for Agricultural Research in Africa (Fatunbi et al., 2017). The White Paper covered areas, such as innovation platforms and capacity development, an ongoing debate in the IAR4D, the Sub-Saharan Africa Challenge Programme (SSACP 2004 -2014), operationalizing the IAR4D Principles – Evidence from SSA CP cases, capacity building on the concept and institutionalization of the IAR4D concept.

The second White paper took a closer look at the experiences within the SSA-CP learning sites to understand if this way of implement-

ing the IAR4D has really led to the fundamental changes hoped for in the way research interfaces with development. It also looked at whether the four (4) original principles suffice in sustaining the utility of the concept. What other principles are added over the proof-of-concept phase, based on learning, to ensure the delivery of result? What have been the main challenges in operationalizing the IAR4D concept?

However, the Second White paper indicated that in all the cases studied, while innovation platforms represented the main tool for the IAR4D, there was considerable variation in their purpose, activities, and composition. The platforms were intended to combine research and development activities through partnerships and collaboration with different stakeholders at different levels with a strong emphasis on value chain development, technology generation and transfer. Achievements of the IAR4D/IP model were provided along with the proof of the concept.

In conclusion, the authors of the second white paper admitted that the interpretation of the IAR4D has been deliberately wide, reiterating that:

*“Without a consideration of the individual, organizational and, above all, inter-institutional factors that provide the basis for the IAR4D, we will continually fail to achieve the multi-faceted, sustainable, pro-poor development that Africa desires and deserves.”*

### **Third White Paper**

In the last two decades, FARA has worked with the broad stakeholder group in African agriculture to develop the Agricultural Innovation System (AIS) approach for the development of the sector. It enacted the Integrated Agricultural Research for Development (IAR4D) concept and the Innovation Platforms (IP) for its implementation which emanated from AIS. The proof of the IAR4D concept using rigorous research methodologies came up with empirical evidence that the IP delivers quick impact from investment in agricultural research, improves livelihood, provides the needed space for research demand by the end users, and meets the demand. FARA and its partners have embarked on a series of activities and projects to bring the IAR4D/IP knowledge to

scale with significant success. The IP has become a household name in major agricultural research projects and has stood strong, yielding measurable successes in terms of livelihood change for key stakeholders. The year 2023 signifies a decade after the proof of concept, the last ten years have also brought a lot of changes to the outlook of the agricultural sector.

It is therefore imperative to consider changes in the sector and most especially to identify how the IAR4D/IP model, as an implementation instrument, can incorporate the increasing interest in food and nutrition security, climate change, soil health and fertilizer supply, and use efficiency, social movement for agroecology, regenerative agriculture, youth bulge and other megatrends that tend to drive the agricultural transition. The UN-led food systems transition drive, among others, is also indicative of the new outlook.

Considering these changes, the IAR4D-IP approach requires smart assessment to ensure its continuous relevance. While the multistakeholder approach keeps appealing to intelligence, the defining elements of the IAR4D-IP approach may require a revision or update to accommodate the emerging issues.

As a result, the CAADP-XP4 programme has created an activity tagged “Commission regional case studies on effective partnerships for innovation”. In implementing this activity, FARA is expected to: (i) Collate, synthesize, and disseminate knowledge on AIS; (ii) Conduct continental synthesis studies to update knowledge on AIS; (iii). Backstop SROs to advance the institutionalization of the IAR4D / IP to facilitate national research agenda-setting processes; and (iv) collate stakeholder experiences on Multi-Stakeholders Partnerships (MSPs).

Hence, this study seeks to review a decade and a half of progress on the IAR4D and IP concepts in Africa for the 3<sup>rd</sup> White paper of the IAR4D/IP model.

The study used both comprehensive integrative literature search from different sources and a survey of experts in Agricultural Innovation System (especially those who were part of the SSA CP and Humid Tropics staff who were involved in the IAR4D-IP concept) using an online questionnaire. This was to obtain their views in addi-

tion to the literature search on rethinking the AR4D-IP Concept and provide adequate information on the mandates of the concept and the need to widen the mandates to accommodate emerging issues. Although only 35 responses were obtained at the end of the survey, the respondents were researchers involved for decades in the IAR4D-IP research and implementation in Africa. This is an indication that responses obtained were of good quality and relevant to the issues being addressed in the Third White Paper.

Responses were received from stakeholders in the Democratic Republic of Congo, Ethiopia, Lesotho, Malawi, Mozambique, Niger, Nigeria, Rwanda, Sierra Leone, Tanzania, and Uganda.





## Chapter 2

# Partnership Concept, Types/ Models For AR4D In Africa

*This Chapter provides information on the concept of partnership, types/ models of partnership in agriculture and the Agricultural Research for Development (AR4D) and their roles and examples/case studies of effective partnerships in agriculture. The AR4D here is generalized to include the IAR4D-IP Concept.*

## Partnership Concept and Definitions

According to IFAD (2017), a review by the UN Joint Inspection Unit (2013) found that there is no clear definition for partnerships in general or implementing partners. Similarly, the United Nations system organizations use various terms and definitions depending on their business models and type of intervention. However, IFAD adopted a broad and inclusive definition of partnership that emphasizes the collaborative spirit of a relationship. Hence, in IFAD (2012) Partnership Strategy, partnerships are defined as “collaborative relationships between institutional actors that combine their complementary strengths and resources and work together in a transparent, equitable and mutually beneficial way to achieve a common goal or undertake specific tasks. Partners share the risks, responsibilities, resources and benefits of that collaboration and learn from it through regular monitoring and review.”

Caplan *et al.* (2007) indicated that the term partnership elicits much confusion. This is because it is often used to describe widely different constructs from loose networks and alliances to more institutionalised joint ventures. They refer to their voluntary nature, shared or pooling of resources, capitalising on synergies.

Therefore, Caplan *et al.* (2007) indicated that partnerships involve two or more organisations that enter a collaborative arrangement based on:

1. synergistic goals and opportunities that address issues or deliver specified tasks that single organisations cannot accomplish on their own as effectively; and
2. situations where individual organisations cannot purchase the appropriate resources or competencies purely through a market transaction.

However, Picciotto (2004) stated that “partnership is a means to an end, a collaborative relationship toward mutually agreed objectives involving shared responsibility for outcomes, distinct accountabilities, and reciprocal obligations. Where there is no common vision of what the partnership is about, no mutual stake in the outcome, lack of clarity in task allocations, or imbalance in influence and unfairness in allocation of costs and benefits, the partnership is hollow.”

ISPC (2015) also indicated that there are overlapping and contradictory rationales and ambiguous and contrasting definitions emerging from different fields of practice and schools of research. However, Horton *et al* (2009) stated that studies of partnership and their definitions tend to reflect the concepts, methods, and priority issues of their authors’ disciplines.

Therefore, Horton *et al* (2009) attempted a definition of partnership relevant to AR4D as “a sustained multi-organizational relationship with mutually agreed objectives and an exchange or sharing of resources or knowledge for the purpose of generating research outputs (new knowledge or technology) or fostering innovation, that is, use of new ideas or technology for practical ends”.

Partnerships in agriculture are voluntary and strategic alliances be-

tween two or more entities that share a common goal, vision, or interest related to agriculture. Partnerships can involve various actors, such as farmers, researchers, extension agents, NGOs, private companies, public institutions, and donors. Partnerships can have different forms, levels, and scopes, depending on the purpose, context, and resources of the partners. Partnerships can enable innovation by combining diverse perspectives, skills, experiences, and resources to address complex problems and create novel solutions.

Multistakeholder partnerships are being widely promoted as mechanisms to deliver development goals such as Agricultural Research for Development (AR4D). The IAR4D is an innovation system-based approach that involves multi-stakeholders' collaboration and partnerships towards resolving the multi-faceted challenges in agricultural research and development and thereby promote improved livelihood of the stakeholders, especially the smallholders' agricultural practitioners (Fatunbi *et al* (2016)).

According to Adekunle *et al* (2013), partnerships have been seen as veritable tools that help deploy the crucial benefits of innovation in the development process, a point that has also been made several times by the World Bank (2007).

Similarly, the effectiveness of the existing IAR4D partnerships among its partners and member countries is essential because FARA has championed agricultural development trajectory over the past two decades through collaborative partnerships/engagements. This is because according to Susan *et al* (2004), strengthening partnerships and sharing roles and responsibilities across the research-for-development continuum is an important part of managing innovation processes. Building strategic partnerships allows decentralization to have control over the research agenda and permits a much broader set of stakeholders to become involved in research and the technology innovation process.

According to Sriramesh (2012), in organizational contexts, the term partnership usually means the legal/contractual association between two or more entrepreneurs. Furthermore, the word "partner" originated from "parcener" a legal term meaning joint heir. However, it was

reported that in the fourteenth century, the emphasis on partner shifted away from this legal orientation because of the similarity to part (part of). Webster dictionary still puts the contractual relationship of the word partner first and only then mentions a cooperative relationship between people or groups who agree to share responsibility for achieving some specific goal.

As a result of this, Sriramesh (2012) indicated that the non-legal definition is most useful for discussing partnerships in agriculture for development and the term partner refers to the various human elements involved in the long chain of agriculture for development. This, however, helps in moving science closer to the common man.

To ILAC (2010), partnership has been defined in many ways and in different contexts. However, in AR4D, when people refer to a partnership, they are usually thinking of a collaborative relationship involving people from two or more organizations pursuing common objectives.

But in the context of ILAC (2010), partnership is seen as a collaborative relationship among individuals, groups or organizations who pursue mutually agreed objectives and exchange or share resources or knowledge for the purpose of generating research outputs which means new knowledge or technology or fostering innovation. This means in simple terms, the application of new ideas or technology for practical ends.

Furthermore, ILAC (2010) felt that this partnership definition is broad enough to cover many types of informal and formal arrangements that seek to promote the generation of knowledge and its practical application in AR4D, that is, ranging from loose knowledge-sharing to more integrated collaborative arrangements. This also includes public-private partnerships and those that involve individuals and organizations from only one sector (e.g., researchers in the public sector). However, it was pointed out that this does not include teamwork that does not cross organizational boundaries, as well as contract work or outsourcing where there is a strictly commercial exchange of resources, rather than a sharing of resources and knowledge.

In a similar vein, Picciotto (2004) indicated that despite this confusion over the definition of partnership, Multi-Stakeholder Partnerships

(MSPs) represent a specific form of partnership. This is because MSPs are structured alliances of stakeholders from public, private and civil society sectors which include companies, policy makers, researchers, various types of NGOs, development agencies, interest groups and stakeholders from local, national, regional and international governance regimes. However, to Freeman (2010) and Hemmati (2012), as the term suggests, 'multi-stakeholder' refers to the involvement of several societal groups with diverse and sometimes conflicting interests, goals, and values.

In providing reasons why there should be partnerships, ILAC (2010) indicated that three reasons are commonly identified in literature on partnership. The first reason is to gain access to resources (including knowledge) that are not available within a single organization. The second reason is to improve knowledge management across the boundaries separating organizations that share similar long-term goals (e.g., sustainable poverty reduction) but traditionally work in isolation. Finally, the third reason is to build the capacity to influence policies or economic activity by participating in social networks. However, from the experience of the Learning Laboratory Programmes, a fourth reason is established which is to create a safe and nurturing space for learning and innovation that is not present within one's own organisation.

ICRA (2009) indicated that there are at least six considerations that are important when forming partnerships, which are objectives, partners, organization, management, funding and reflection and learning.

Partnerships are essential for innovation in agriculture, as they can help overcome barriers and challenges that hinder innovation. Such partnerships can facilitate access to information, knowledge, and technology that can improve agricultural practices and outcomes. Additionally, they can enhance the capacity and skills of the partners to innovate, as well as create a culture of innovation where partners can experiment, learn, and share successes and failures. Moreover, partnerships can increase the legitimacy, credibility, and impact of the innovation by involving relevant stakeholders and beneficiaries in the co-creation process. They can also mobilize and leverage resources, such as funding, infrastructure, and networks to support and scale up

the innovation and according to Sartas et al (2018), using MSPs in agricultural innovation systems is expected to create an enabling environment for institutional and technological innovations.

## Types/Models of Partnerships for AR4D

Several types/models of partnerships have been reported in literature in relation to the AR4D. According to Maryono et al (2023), various names of MSPs are sometimes used interchangeably in documents as a single MSP initiative may be referred to by different names in various documents, suggesting a lack of consensus on the defining characteristics of this type of partnership. In their study, 12 different terminologies were used to refer to MSPs in agriculture as shown in Figure 1. However, three main terminologies used to refer to MSPs at the operational/practical level are public-private partnership, innovation platforms, and multi-stakeholder platform.

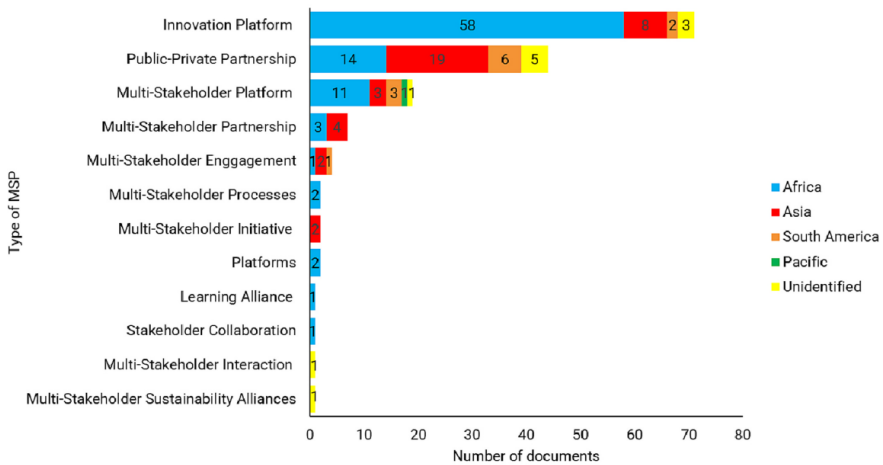


Figure 1: Different Terminologies Used for Multi-stakeholder Partnerships in Agriculture. Source: Maryono et al (2023).

Similarly, Agboton et al (2018), also indicated that the Innovation platforms and multi-stakeholder platforms were used interchangeably or as multi-stakeholder innovation platforms.

However, ISPC (2015) reported four different types of partnerships which are:

- Agricultural research partnerships which usually involve collaboration between public research organisations, including universities. Priorities are framed by public policy imperatives or by private industry-sponsored funding.
- Agricultural innovation delivery partnerships: Agricultural research organisations collaborate in agricultural production and agri-business innovation that delivers new products and services that create value for farmers and companies. Partnerships, platforms and alliances are used as a mechanism to organise collaboration among public agricultural research organisations and the private sector, NGOs, and farmers' groups. Priorities are framed by the convergence of technology push from research, demand pull from farmers and markets, and by public policy imperatives.
- National Agri-food systems Innovation Partnership: In this type of partnership, agricultural research organisations participate in the efforts of the public and private sectors to catalyse innovation in agri-food systems that creates social, economic, and environmental value in line with national development plans. Interlinked farm-to-policy multi-stakeholder processes and partnerships used to organise collaboration and participation of relevant stakeholders at multiple levels. Priorities are framed by negotiation between public and private sectors and articulated in national development plans.
- Global development innovation partnerships: Agricultural research organisations participate in efforts of national and global public and private sector stakeholders to catalyse innovation in economic and social systems to achieve social, economic, and environmental development targets set by the Sustainable Development Goals (SDGs). Global architectures of MSP platforms used create coherence between global and local agendas and implementation strategies. Priorities are framed by global negotiation and agreement in the SDGs."

To GFAR and ILAC (2010), there are at least three types of AR4D partnerships which are:

- Scientific discoveries which focused on bringing together technical skills and knowledge bases to enhance Research and Development (R&D) results. These partnerships view themselves accountable to the structures of the scientific method and the specific requirements of donors. They follow models consistent with R&D management. These partnerships tend to incentivize and reward discovery rather than development outcomes.
- Coordination among development actors which involves mobilizing disparate actors to jointly address challenging development needs. These partnerships find it difficult to sort to whom and what they are accountable for.
- Advocacy which involves bringing coalitions together to influence allocation of resources (focused particularly on financial) and public policies. Partnerships commit to adhere to joint communications and collaborative advocacy. In principle they are accountable to advancing development interests.

However, ILAC (2010), indicated that there are four broad types of partnership in AR4D, categorized according to their overall objectives as follows:

- Research partnerships which aim to produce research outputs in the form of public goods. The members of the partnership are usually researchers in either public or private organizations. The degree of formality ranges from highly informal, in the case of professional communities, to highly formal, where the participating organizations sign letters of understanding that detail issues of budget and intellectual property rights.
- Partnerships for capacity development and knowledge sharing which aim to develop the capacity of partners to share and use new knowledge, rather than produce new knowledge per se. Such partnerships typically involve partners with distinct but complementary knowledge bases (e.g., the importance of boundary management learning alliances), or those with different levels of capacity (e.g., North-South partnerships).
- Partnerships for market or value-chain development which aim to strengthen market chains or their support systems (e.g., local

governing councils or regulation bodies) in ways that benefit poor producers, traders or consumers. Such partnerships tend to involve diverse members, all of whom have a stake in the development of the market or value chain in question. Typically, a R&D organization initiates this type of partnership to improve communication and mediation among market-chain actors to stimulate innovation within the market chain. Leadership might later be transferred to one or more of the participating market-chain actors and become institutionalized within the partnership itself. These partnerships are often thought of as “innovation platforms”.

- Advocacy partnerships which aim to influence public opinion and policies. They involve diverse partners to improve communication among them and strengthen the capacity of researchers, CSOs and economic actors to influence public opinion and policy making. Such partnerships often draw ideas and principles from networks and use a wide range of communication and networking strategies to achieve these goals.

However, according to Fatunbi and Adekunle (2013), two broad categories of partners are known in agriculture, which are the public and the private sector practitioners. Although these two operate on a different plane, their combined effect is required if African agriculture is to develop effectively. According to them, the engagement of the private sector practitioner in agricultural research and development is vital to the development of the sector in African countries as is the case in some West and South Asian countries.

In the same vein, FAO (2016) defines Public-Private Partnership (PPP) as a formalized partnership between public institutions and private partners designed to address sustainable agricultural development objectives, where the public benefits anticipated from the partnership are clearly defined, investment contributions and risks are shared, and active roles exist for all partners at various stages throughout the PPP project life cycle.

In their description of public and private sector partnership in agriculture, Fatunbi and Adekunle (2013), provided the roles and trends of private sector partnership in African agriculture. According to them,

the partnership arrangement in agricultural research and development was initially driven by the public sector with concentration on the research and extension institutions which constituted the traditional Agricultural Research and Development (ARD) stakeholders in most African countries.

They also provided the partnership trends from the time of the ARD linear model to the time of when agriculture was taken as a system. They indicated how the capacity of the IAR4D innovation platform foster a smooth public-private sector partnership as one of its key advantages that contribute to the generation of impact.

In justifying the reason for public-private partnership in agriculture, FAO (2016) indicated that against the background of limited government resources and expertise, innovative partnerships such as PPP that bring together actors from business, government and civil society are increasingly being promoted as a mechanism for improving productivity.

Secondly, the partnerships are broadly promoted as having the potential to help modernize the agriculture sector and deliver multiple benefits that can contribute to the pursuit of sustainable agricultural development that is inclusive of smallholder farmers. However, according to Mangeni (2019), private sector entities and research institutes partner among themselves or with public entities to bring new technologies to smallholder farmers.

Similarly, in emphasizing the importance of private sector in agricultural partnership, Paul Polman, the Chief Executive Officer of Unilever in 2016 indicated as follows:

*"In 2015, governments adopted the UN Sustainable Development Goals and agreed to a climate deal. Sustainable agriculture is at the very centre of the global development agenda. It is now clear that we can only make real progress when we work in deep partnership. Grow Africa is a great example of this type of collaboration. As resource prices decline, it is also clear that developing commercial sustainable agriculture in partnership with the private sector is absolutely critical to boost and diversify economic growth, expand opportunity and reduce poverty. Grow Africa provides the kind of channel we urgently need to support such work while ensuring bringing in smallhold-*

*ers, with a focus on women. Moreover, by connecting climate-smart strategies to increased farm productivity, Grow Africa can help drive efficient and low-carbon growth in the agriculture sector to build a truly productive and sustainable future for Africa.”*

A good example of Public-Private partnership in the IAR4D-IP concept was given by Fatunbi and Adekunle (2013) with the story of Mamera in Box 1.

### **Box 1: Story of Mamera**

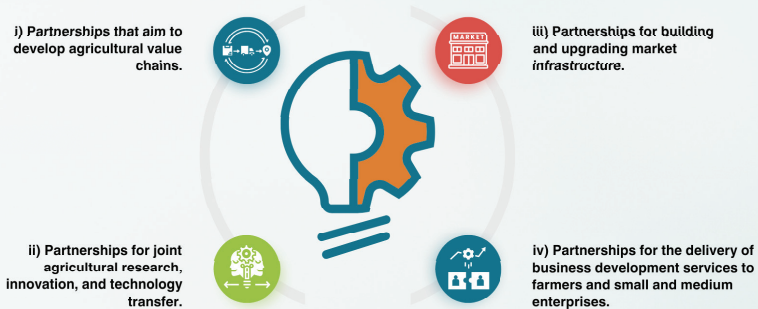
*The Mamera success story was generated on the Bubare Sorghum IP in Uganda; it is one of the 36 innovation platforms set up by the SSA CP. The IP works on Sorghum and addresses the problems of low productivity, poor and uncoordinated marketing and lack of storage facilities. These problems were prioritized by the IP which was composed of farmers, researchers (Makerere University, Uganda), financial institutions, and input dealers. After the first iterations where improved technologies and production practices were introduced, farmers obtained huge increase in the yield of sorghum and marketing became a more prominent problem, justifying the need for effective market linkages and or development of new product.*

*To address this problem, the researchers from Makerere University extended a pre-developed technology for the production of a beverage from sorghum to the platform and this was taken up by a private sector practitioner on the platform, the Huntex Industries, for further refinement, production and marketing. The product became a success that opened new market for Sorghum, generated more income for farmers, provided new jobs and leveraged benefits for all the stakeholders on the platform.*

*In conclusion, Mamera is a product of indigenous knowledge that is strengthened with modern science and contributions from the University of Makerere. The product finds a willing entrepreneur on the IP; farmers who are looking for market for their sorghum find a buyer on the IP, the input dealers also find the market for their products. And with the cooperation of the Policy makers and extension services and finance from Stanbic Bank, a Win-Win Partnership was established.*

Similarly, Mangeni (2019) provided another example of a public-private partnership in which the African Agricultural Technology Foundation (AATF) facilitates public-private partnerships to develop drought-tolerant maize.

According to FAO (2016), in an analysis of 70 PPP cases gathered from 15 developing countries in a study, four common project types were identified:



However, eight key lessons were identified in the study reported by FAO (2016) on public–private partnerships in agriculture.

- To be successful, agribusiness partnerships need to align the partners' disparate interests and visions and reach consensus, particularly on public–sector objectives, and priorities for promoting PPPs.
- The role of each partner should be clearly defined according to the unique skills and expertise that each can bring to the PPP in agriculture, with appropriate incentives designed to reward these roles.
- Effective PPPs in agriculture share risks fairly among partners and include risk management mechanisms to protect the most vulnerable.
- There is ample scope for the involvement of financial institutions as an additional core partner in PPPs in agriculture.
- While PPPs in agriculture can promote the inclusion of smallholders and SMEs, they are unlikely to have an impact on the poorest of the poor.
- Collective action is an essential feature of all PPPs in agriculture and helps both to promote inclusion and to reduce transaction costs.
- Sound institutional and regulatory frameworks are essential factors in the design of well-performing PPPs.

- There is a pressing need to improve the monitoring and evaluation (M&E) of PPPs in agriculture.

Other types of partnerships which are becoming popular according to Castillo (1997), is the North-South and South-South partnerships. Traditionally, research partnerships tended to follow North-South patterns of colonial history. However, with the advent of research programmes funded from multiple sources, this is changing. Although the North is still the predominant source of funds, new programmes are designed to meet the needs of a wide audience and are therefore compelled to develop links with several regions, countries, and even local communities to have any impact. With regional developments and political alliances among countries of the South, South-South research partnerships have become more fashionable. No one can dispute the inherent value of South-South connections for: developing solidarity and consciousness of kind; addressing common problems and interests; exploiting the complementarity of assets; learning and sharing together; and for increasing collective self-reliance and voice.

Despite all the hazards of North-South partnerships, a very important lesson learned through the years is that it is easier to network and partner regionally and internationally than it is to promote intra- and inter-institutional research collaboration within the same country. Quite often, it takes external entities to loosen up the tightly guarded 'turfs' of local institutions. Therefore, those who promote North-South or South-South partnerships are being urged to be conscious of this and deliberately play the role of catalyst rather than driving a wedge between local institutions (Castillo, 1997).

**Table 1: Summary of Different Types of Partnerships and their Characteristics**

S/N	Partnership	Characteristics
1	<b>Project-based</b>	Several institutions come together to implement a project. The partnerships are specific, time bound, focusing on implementation of specific activities described in a project document.
2	<b>Strategic/institutional</b>	It is long term and of strategic nature and is forged to achieve significant complementary roles and greater impact.  The main purpose of this relationship is to undertake research on mutually agreed areas of commodity development, capacity development and information exchange and networking.
3	<b>Networking</b>	Networking involves several research programmes in the region which come together to implement a set of agreed activities. The structure of most of the networks has national programme members, a coordinating unit, and a steering committee (SC).
4	<b>Contractual</b>	This type is common, for example a NARI, its institute and programme won a research project and had to sub-contract certain activities to partners. It is however common in linking research institutes and programmes with local service providers, such as extension agents and NGOs but not common in research.
5	<b>Agricultural research partnerships</b>	Agricultural research partnerships which usually involves collaboration between public research organisations, including universities. Priorities are framed by public policy imperatives or by private industry-sponsored funding.

6	<b>Agricultural innovation delivery partnerships</b>	Agricultural research organisations collaborate in agricultural production and agribusiness innovation that deliver new products and services that create value for farmers and companies.
7	<b>National Agri-food systems Innovation Partnership</b>	Agricultural research organisations participate in the efforts of public policy and private sector to catalyse innovation in agri-food systems that creates social, economic, and environmental value in line with national development plans.
8	<b>Global development innovation partnerships</b>	Agricultural research organisations participate in efforts of national and global public and private sector stakeholders to catalyse innovation in economic and social systems to achieve social, economic, and environmental development targets set by the SDGs.
9	<b>Scientific discoveries partnerships</b>	This is focused on bringing together technical skills and knowledge bases to enhance R&D results. The partnerships view themselves accountable to the strictures of the scientific method and the specific requirements of donors. They follow models consistent with R&D management and incentivize and reward discovery rather than development outcomes.
10	<b>Coordination among development actors' partnerships</b>	This involves mobilizing different actors to jointly address challenging development needs. These partnerships find it difficult to sort to whom and what they are accountable.
11	<b>Advocacy partnership</b>	This involves bringing coalitions together to influence the allocation of resources (focused particularly on financial) and public policies. Partnerships commit to adhere to joint communications and collaborative advocacy. In principle, they are accountable to advancing the development interests.

12	<b>Research partnerships</b>	This aims to produce research outputs in the form of public goods. The members of the partnership are usually researchers in either public or private organizations. It may be formal or informal.
13	<b>Partnerships for capacity development and knowledge sharing</b>	This aims to develop the capacity of partners to share and use new knowledge, rather than produce new knowledge per se. Such partnerships typically involve partners with distinct but complementary knowledge bases (e.g., the importance of boundary management learning alliances, or those with different levels of capacity (e.g., North-South partnerships).
14	<b>Partnerships for market or value-chain development</b>	This aims to strengthen market chains or their support systems (e.g., local governing councils or regulatory bodies) in ways that benefit poor producers, traders or consumers. Such partnerships tend to involve diverse members, all of whom have a stake in the development of the market or value chain in question.
15	<b>Public-Private Partnerships (PPPs)</b>	This involves collaboration between government agencies and private sector organizations. PPPs can focus on various aspects of agriculture, such as infrastructure development, research and development

In support of the findings from literature, respondents were requested to indicate the types of partnerships they were aware of and involved in, which is presented in Figures 2 and 3. The findings show that all the partnership models reported in literature were also confirmed by the respondents of this study.

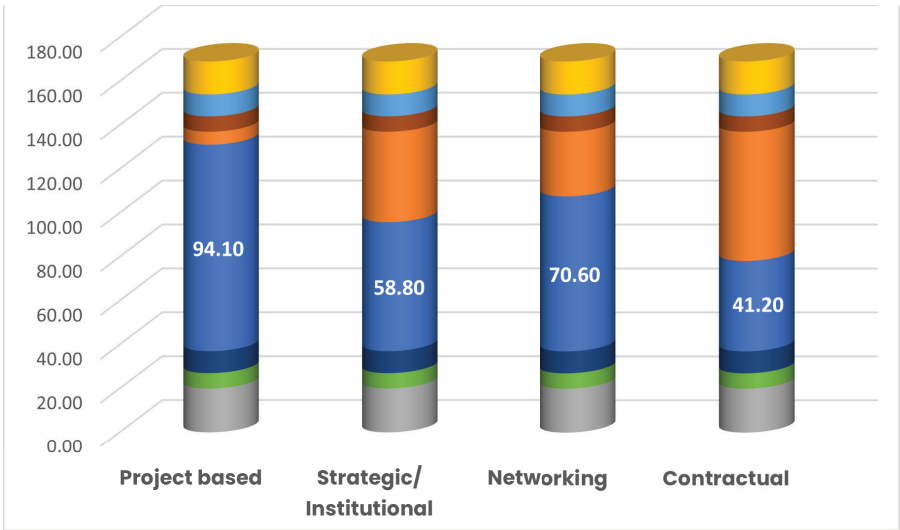


Figure 2: Respondents' Level of Awareness of General Types of Partnerships (%)  
Source: Survey 2024

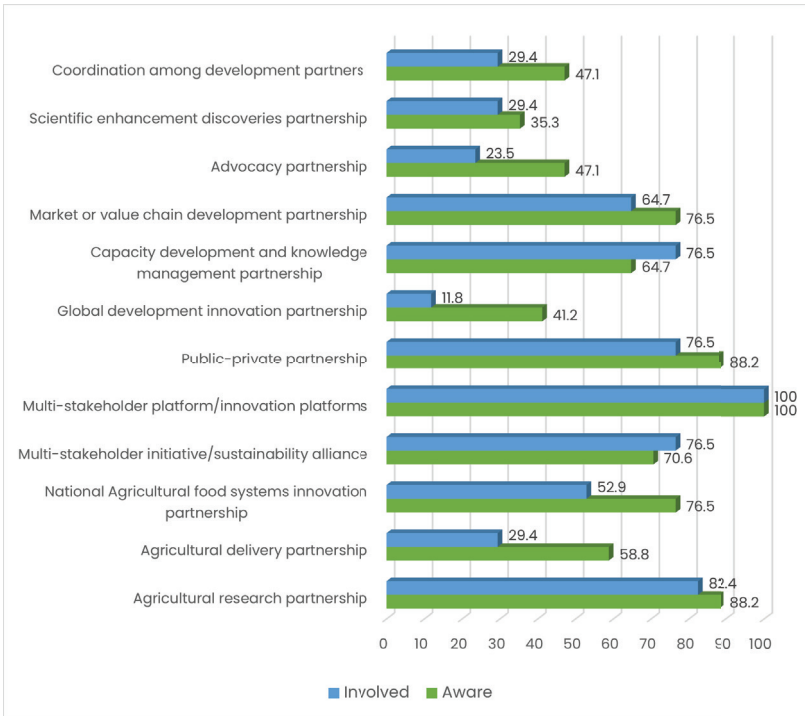


Figure 3: Respondents' Awareness and Involvement in Multi-Stakeholder Partnerships (%)  
Source: Survey 2024

## Partnership Success Factors/ Ingredients of Good Partnership

According to Sriramesh (2012), the major ingredient that helps to develop good partnership is the trust element. This is because every good partnership is built on trust and when trust is lost, partners become suspicious to the point of being paranoid and that leads to a breakdown of the relationship. Transparency and open communication help to build trust.

Similarly, Tropical Agricultural Platform (2018) indicated that the success of multi-stakeholder AR4D (Agricultural Research for Development) partnerships is often attributed to stakeholder interaction and knowledge exchange, collective learning, and establishment of mutual trust between the partners involved. Achieving these outcomes depends very much on the leadership of the partnership, and how this leadership relates to partnership facilitation and project coordination and/or management.

However, there has been an argument about trust, that whether it is impossible to build and maintain trust without effective (two-way) communication among partners which shows the importance of communication in partnership. Sriramesh (2012) also indicated that mutuality of control, that is sharing control in the partnership, is also another key ingredient of good partnership.

In their own contribution, some success factors for partnerships identified by ILAC (2010) are passionate leadership, common vision and agenda, commitment of partners, adequate process facilitation, clearly defined roles and responsibility, appropriate communication, knowledge sharing and joint learning, individual and collective benefits, and adequate change management.

However, ILAC (2010) went further to indicate that partnerships are complex and inherently unstable arrangements that can take unpredictable courses in which, sometimes, external or internal shocks can occur at any point, requiring adjustments in activities or strategies, or even transitions to new institutional

arrangements. Furthermore, it was indicated that sometimes, partnership priorities may likely evolve with the activities, and output may evolve as well. For example, a partnership that initially focused on research might later need to engage in capacity building or other development-related activities.

According to (Sriramesh, 2012), there are several elements that help in cultivating good partnerships which include:

- **Access:** This occurs when partners share access to each other and their networks of information and influence and with this, there will be harmony in the partnership.
- **Disclosure and openness:** This indicates that both partners must equally be open.
- **Shared mutual networks:** Good partners help one another integrate into individual networks, thereby enhancing one another outreach and influence.
- **Shared interests and shared tasks:** Overlapping interests obviously bring partners closer together, whether in personal or professional settings. Similarly, sharing similar tasks (and thereby goals and objectives) also leads to closer partnerships.
- **Continuing dialogue and frequent communication** between partners are a sure way of building good partnerships. In addition, dialog helps to reduce tensions in partnerships before these become irreparable.

To further probe into success factors of AR4D partnerships, Table 2 shows the respondents' perception of the AR4D-IP partnerships, while Figure 4 shows the assessment of IAR4D-IP principles.

**Table 2: Respondents' Assessment of AR4D-IP Partnerships**

Questions/Statements of Assessment	Mean	Std. d.
How would you rate the impact of partnership in using the innovation system approach?	3.94	0.83
How would you rate the way people and organizations work together in the AR4D partnership?	3.82	0.81
How would you rate the AR4D partnership as regards implementation of its plans?	3.82	0.88
How would you rate the memorandum of understanding in terms of written agreement between parties to clearly establish expectations, goals and roles and responsibilities in the project/AR4D partnership?	3.76	0.75
Fairness in providing capacity building opportunities	3.75	0.78
How has the AR4D partnership improved collaboration within and among national, sub-regional and continental agriculture research and extension organizations?	3.71	0.77
How satisfied are you with your involvement in the development and/or review of the Project Scope during Project Initiation and Planning?	3.71	0.69
How effective was mainstreaming gender and youth in the AR4D partnership?	3.71	0.85
How would you rate the Terms of Reference for the establishment of the project, with attention to issues of governance related directly to the partnership?	3.65	0.70
How would you rate the achievement in developing smallholder production systems that are compatible with sound natural resource management?	3.65	0.79
Fairness in allocation of roles and responsibilities	3.65	0.70

<b>Fairness in performance of roles and responsibilities</b>	3.65	0.86
<b>Effective communication</b>	3.65	0.70
<b>Enabling environment established</b>	3.65	0.61
<b>How satisfied are you with the partnership joint discussions and formalization of an agreement on what resources each partner will provide (financial, human resources, equipment, indigenous knowledge etc.)?</b>	3.62	0.89
<b>How effective were the initiatives and projects introduced and implemented in the AR4D partnership?</b>	3.59	0.80
<b>Effective conflict management</b>	3.59	0.71
<b>Commitment and trust by partners were established</b>	3.59	0.71
<b>How satisfied are you as regards meeting the objectives of partnership in AR4D partnership involvement in innovation systems?</b>	3.56	0.81
<b>Aligning interventions and support to existing frameworks notably CAADP- XP4 Consortium</b>	3.56	0.89
<b>How would you rate the achievement in improving the accessibility and efficiency of markets for smallholder and pastoral products?</b>	3.53	0.94
<b>How satisfied are you with partnership assistance in the implementation of the strategic themes?</b>	3.47	0.72
<b>The partnership is supporting platforms for inter-regional cooperation (South-South and North-South)</b>	3.44	0.89
<b>Grand mean</b>	3.52	0.82

Source: Survey, 2024. n = 35

1= Poor; 2= Fair; 3= Good; 4= Very good; and 5= Excellent

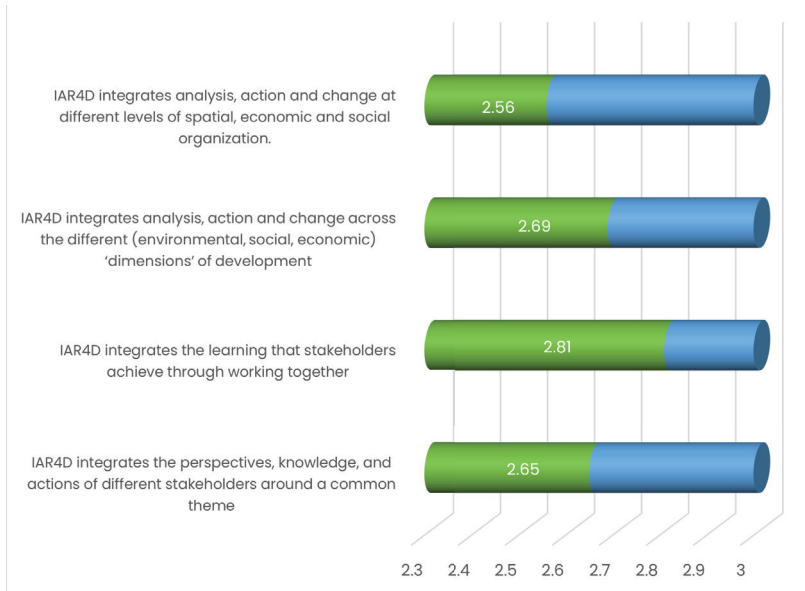


Figure 4: Respondents' Perception of the Achievement of the IAR4D-IP Concept Principles

Decision: 1.00 – 1.67 = Not effective at all

1.68 – 2.35 = Partially effective

Above 2.35 = Fully effective

In a similar vein, in their systematic literature study using qualitative and quantitative methods by Maryono *et al* (2023), Figure 5 shows the findings on the impact of multi-stakeholder partnerships on smallholders as perceived by researchers.

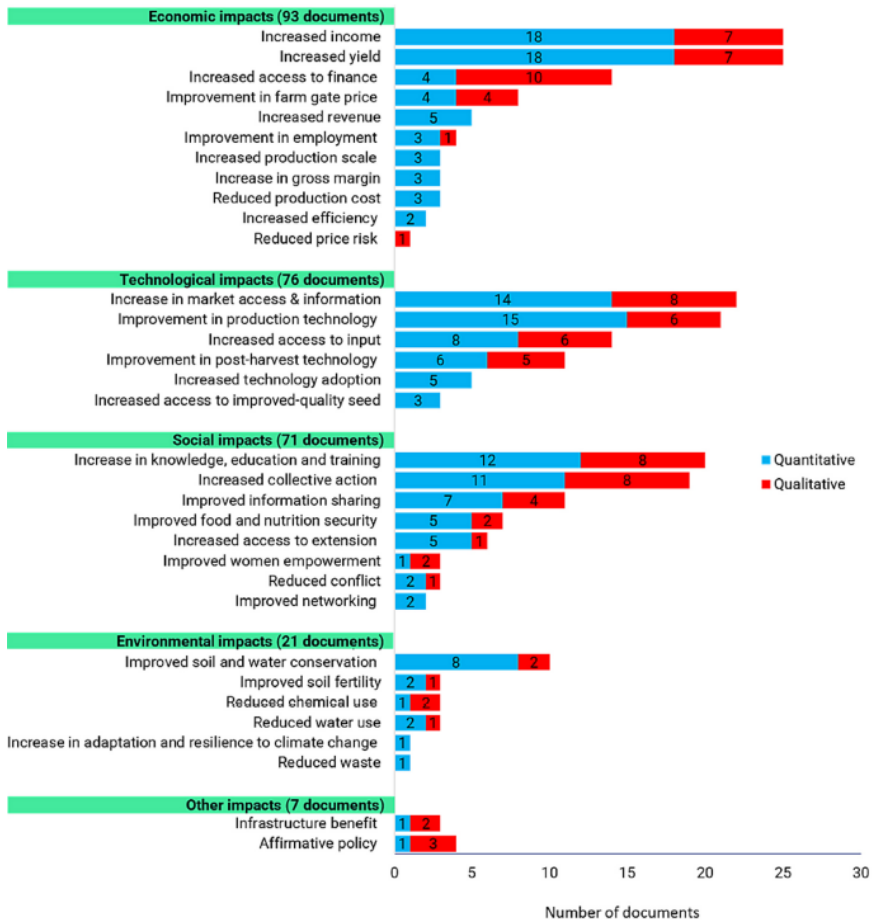


Figure 5: Impact of Multi-stakeholder Partnerships on smallholders  
 Source: Maryono et al (2023)

## Case Studies of Effective Partnerships for Innovation that can Serve as Models in both Africa and Outside Africa

Research has shown that there is a substantial diversity in partnership experiences in the AR4D programmes. An important implication of this diversity is that universal guidelines for partnership management are unlikely to be helpful but several common set of factors that appear to have influenced effective performance of partnerships have been identified. According to ILAC (2010), these are passionate leadership,

common vision and agenda, commitment of partners, adequate process facilitation, clearly defined roles and responsibility, appropriate communication, knowledge sharing and joint learning, adequate change management, policies and management practices, partner culture and policies, socio-economic and political environment, organisational policies and management practices, capacity development and monitoring and evaluation of the partnership.

The synthesized case studies of six AR4D programmes from the lessons from the ILAC Learning Laboratory workshop of the Institutional Learning and Change (ILAC) Initiative on Partnering in International Agricultural Research for Development are good examples of national and regional case studies that can serve as models that can be adopted for effective regional, international, South-South and North-South partnerships. These case studies provide professionals of AR4D with actionable information on the organization and management of effective partnerships in international AR4D.

The programmes are:

- 1 African Highlands Initiative (AHI), in Ethiopia, Kenya, Rwanda, Tanzania and Uganda. ([www.cgiar-ilac.org/content/african-highlands-initiative-ahi](http://www.cgiar-ilac.org/content/african-highlands-initiative-ahi)) – Regional partnership in five (5) countries
- 2 Alianza Cambio Andino (CA), in Bolivia, Peru, Colombia and Ecuador ([www.cambioandino.org/](http://www.cambioandino.org/))– Regional partnership in four (4) countries
- 3 Learning in Knowledge Intensive Agricultural Systems (KIA) in India– National
- 4 Musa Network for Latin America and the Caribbean (MUSALAC) ([www.musilac.com/](http://www.musilac.com/)) – Regional in 12 countries
- 5 Smallholder Dairy Project (SDP), in Kenya (<http://www.smallholderdairy.org/>) – National
- 6 Users’ Perspectives of Agricultural Research and Development (UPWARD) network, in South-East and South Asia ([www.eseap.cipotato.org/upward](http://www.eseap.cipotato.org/upward)) – National

Factors related to effective partnership establishment and manage-

ment case studies:

## Leadership

Partnerships imply a shared leadership among respected individuals, recognized and empowered by their own organizations to build consensus and resolve conflicts. Often, one organization takes the lead on managing the process. There must be established trust in each other's ability to lead effectively and honestly. Leadership has been a critical factor for effective partnerships. Research (Casey et al., Dhillon et al.) has shown that partnership leaders/champions, who are passionate about the partnership's mission and who are able to mobilize others to achieve common goals, are needed. Imbalances in power and resources have been common challenges in the partnerships, and leaders who could act as 'honest brokers' have helped to balance competing interests. Engaging the right leaders to drive and champion such an effort is critical for effective partnership. A facilitative style is needed to bring people together in the pursuit of common objectives and to build trust among partners who often have distinct perspectives and conflicting perceived interests.

### Box 2: Examples of leadership case studies

*In MUSALAC, Bioversity International regional scientists combine technical expertise with administrative and facilitation support to the network, working with the president of the network steering committee who is elected every two years. The regional scientists' leadership is strengthened by access to information and experiences from other regions and to the experiences of advanced research partners.*

*In UPWARD, the partners are recognized as leaders in their own field of expertise. For example, experts at the Tarlac College of Agriculture (TCA) with field experience lead the Farmer Field Schools on integrated crop management and the production of clean planting materials, while local government representatives lead targeting and extension work. The UPWARD co-ordinator leads the institutional learning processes.*

*In the SDP partnership, a leadership mechanism was established that ensured that each of the lead partners – the Ministry of Livestock Development, the Kenya Agricultural Research Institute (KARI) and*

*ILRI – contributed to the project decision-making processes. Formal processes (through a well-structured and systematically interacting steering committee) and informal processes (where the lead partner representatives consulted each other regularly) were used to inform the decisions taken.*

*The KIA case shows that leaders do not necessarily have to be experts. One of the partners, the Xavier Institute of Management Bhubaneswar (XIMB), created a 'learning alliance' to encourage the flow of information between government departments, CSOs, farmers and researchers, many of whom were working independently on the new SRI way of growing rice. The XIMB soon assumed a leadership role in organizing learning alliance meetings that brought together these actors and used its own research on scaling up SRI to encourage dialogue among them at a meeting in Orissa State. The meeting included people from outside the State and the country as well, whose presence helped take the discussions beyond regional considerations and introduced a culture of sharing and innovation. This institutional innovation of State-level learning alliances has since been taken up in SRI work in other States in India.*

## **Vision, goals and agenda**

To ensure partners' commitment to the partnership and the coherence of its activities, a common vision and agenda need to be developed based on shared interests and goals. It is important to recognize that each partner comes to the table with distinct interests, priorities and agendas that need to be understood and respected. The challenge is not to try to change these positions and values, but to find a common ground on which the partnership can develop a shared vision, goal and agenda. This requires discussing the positions and values of all partners in the initial stages of developing the partnership. Once these are well understood, it is more likely that an effective and shared vision, goal and agenda for the partnership, which respects individual interests, will be developed. Co-operation within a partnership is collaborative; it will be effective if the partners share a strategic vision, pursue compatible targets, and are all equal members in a predetermined organisational structure.

### Box 3: Case studies of ways of establishing a vision, goals and agenda for a partnership

*In the MUSALAC partnership, country representatives raise issues of national interest, while the Bioversity International regional scientists and network advisor add an inter-regional and global perspective. Priorities are identified for short- and medium-term action. Since 2007, MUSALAC has been mobilizing national, regional and private sector interests on greater quarantine vigilance on Fusarium Tropical Race 4, a potentially devastating new disease. Other priority issues are addressed through multi-country grants for AR4D.*

*In UPWARD, the partners considered it important to trace back to own-institution goals and connect them to the goals of the partnership. The new Sweet Potato R4D Phase 2009–2012, for example, benefited from a series of workshops that reviewed past activities and individual institutional agendas. These were brought forward when partners held a meeting to establish a common vision, goal and agenda on enhancing research involvement in improving the livelihoods of sweet potato farmers in disaster-prone communities.*

*The SDP had a binding goal that respected the individual missions of each partner – poverty alleviation among livestock-dependent households, which required, as a first step, creating a policy environment that accommodated millions of resource-poor dairy farmers, informally operating small-scale milk traders and associated dependants. These organizational objectives were shared among partners. When the regulations were changed to accommodate resource-poor actors in the dairy industry, the priority shifted to increasing the benefits they derive from participating in specific market chains.*

*Establishing a common vision and agenda in the CA partnership was difficult in the initial stages because of the different institutional backgrounds of the partners. For example, the impact evaluation component involved both researchers and evaluators, who had different objectives and evaluation criteria, and there was disagreement between researchers and development practitioners about the future orientation of the project and the time needed for changes*

*in behaviour and knowledge to become evident. The impact pathway model had to be used for the programme in order to develop a clear vision of the future and establish a working agenda. Within this pathway, the partners found common ground that reflected their own visions and agendas and were able to formulate the theory of change for each participatory methodology. This made the planning process easier and the specific contributions more evident, especially in terms of their evaluation.*

*In KIA, open and frequent sharing of information has played an important role in shaping the partnership vision and goals. An e-group, originally meant for the partners, has sought the participation of social science research institutes such as XIMB. The nascent SRI community now has more than 350 topics under discussion in this virtual space, tackling such issues as appropriate agricultural tools, pest management and how 'organic' the practice of SRI can become. In complex environments, such open spaces do help to create the vision, goals and agenda for network-based alliances and in many cases can also help in policy dialogue and interventions.*

## **Partners' commitment**

Forming an effective partnership involves 'knowing your partner' and attracting partners (both organizations and individuals) who not only have the resources and capacities needed to achieve the partnership goals, but who are also strongly committed to the partnership and its goals. Potential partners need to negotiate what each intends to 'give' (resources and capacities) and what each expects to 'take' (the potential benefits of partnering). Productive and committed partners have appropriate resources to contribute to the partnership and they also derive significant benefits from partnering. If they engage in joint activities mainly to obtain funding, rather than to achieve a common objective, their participation can become a burden. On the other hand, if their expectations are unrealistically high, they might become disillusioned and lose interest in the partnership. Potential partners also need to understand the risks of joining a partnership. Working with a group tends to slow down decision-making, and if one partner 'drops the ball' this could affect the commitment of the others.

The factors involved in assessing and engaging partners and managing the diversity among them highlight the importance of cultural competence in partnership management. An especially difficult issue is how to handle significant imbalances among partners in their access to resources or their commitment to the partnership. Resource imbalances can sometimes be reduced over time through training and other capacity-building strategies. Lack of commitment can be contagious, and it requires quick action, either to rebuild commitment or to arrange the 'graceful exit' of an uncommitted partner.

#### **Box 4: Case studies of ways of engaging appropriate and committed partners**

*In addition to the annual and bi-annual face-to-face meetings of the partners, MUSALAC also organizes training and scientific exchanges alongside network meetings, provides multi-country grants for AR4D, organizes technical assistance missions on emerging problems and produces specialized publications. Although, all partners are not guaranteed the same benefits, they do all have access to some benefits.*

*In the initial stages of the SDP and during the regular project review meetings, the roles of each partner and their contribution to planned activities were reviewed, along with how their strengths could be exploited and their weaknesses compensated for, in the context of achieving the partnership goals.*

*When AHI activities are being implemented, workshops are held to enable partners to talk about their expectations of the partnership and their potential contributions to it. This indicates which partners will be appropriate in addressing the various issues in the project. A strategy for achieving the partnership goal is then jointly drawn up, and subsequently reviewed and updated regularly to ensure commitment and the ongoing relevance of activities to the partnership as well as to the partners themselves. AHI also organises regular capacity-building efforts for the partners and mobilizes multi-country grants to share with partners according to their roles in the partnership. When significant funds are available for a programme, there is always the possibility that some partners will be involved mainly to*

have access to the funds.

*To avoid this, the CA programme developed a scoring model matrix that features partner attributes that contribute to programme objectives as well as potential benefits for the partners. Higher values are given to partners that make a significant contribution to the partnership (via skills, competences, resources, etc.), as well as to those who stand to benefit most from the partnership. Appropriate and committed partners tend to be those who benefit most, as they usually find a way to contribute more in order to maintain the partnership.*

## Process facilitation

Process facilitation is needed to stimulate and channel dialogue, prevent conflicts, build trust and balance competing interests in a partnership. As dialogue and joint decision-making are central to partnering, it is important that leaders be active listeners who ensure that all interests are heard and taken into consideration. Leaders also need to cultivate open and frank discussions, knowledge sharing among partners, and transparent and participatory decision-making. A challenge for many partnerships is to cultivate awareness of the value of professional group facilitation and to mobilize the resources needed for facilitation.

### Box 5: Case studies of process facilitation

*MUSALAC engaged a facilitator to help the group reflect on achieving greater impact in the forthcoming decade, with special regard to achievements to date. For a partnership activity focusing on plantain production, processing and added value, the inaugural workshop used a participatory planning approach, Participatory Impact Pathways Analysis (PIPA), in order to move beyond individual research outputs and look at cumulative research and uptake in pilot communities.*

*In explaining the CA initiatives to policymakers in Bolivia, a young female policy analyst was used as the facilitator and proved invaluable to the process. In a context where there is a large gap between institutions and the public sector, she was able to present research evidence neutrally, thus avoiding mistrust. Her non-threatening im-*

*age and her good understanding of the interests of both sides enabled her to act as a bridge between actors who later found common ground for collaborative work.*

## **Roles and responsibilities**

An effective partnership should have recognisable and autonomous structure to help establish its identity. The roles and responsibilities of individuals in a partnership need to be clearly defined and based on an understanding of and respect for individual interests and capabilities. A common problem with partnerships is the poor understanding of partners' roles and contributions. Early in the establishment of a partnership, it is useful to 'map' the potential roles of partners, and then enable them to 'try on' their new roles and responsibilities to see how well they fit with their work in their 'home organizations'. A common error is to assume that individuals from different organizational settings (e.g., research organizations and NGOs) need to change their 'paradigm' and work together in a totally new way. In many cases, however, successful partnering involves linking up the activities of different organizations more effectively, rather than changing what each organization considers its core activities.

### **Box 6: Case studies of ways of establishing clear roles and responsibilities**

*In UPWARD, the current sweet potato R4D partnership benefited from collaborative proposal development, particularly in setting the goals and agenda. The partners then set out the specific activities they would undertake to achieve the goals, allowing them to clearly identify where they could make a clear contribution and add value to the partnership. They pieced their views together to form a comprehensive plan of action with clearly delineated roles for each partner. This was a critical step for the partnership because some partners initially had seen themselves as competitors rather than collaborators.*

*The case of AHI is similar. AHI engages in collaborative proposal development in which the roles of the partners are clearly spelt out. This is followed up by a joint effort to create work plans and specific activities where partner contributions to common goals are determined.*

*In the CA partnership, linking the impact assessment component with the implementation component has been crucial in determining responsibilities during the M&E studies (e.g., who should collect the information, and who should make judgements and reach conclusions).*

## **Communication, knowledge sharing and joint learning**

If the organisational structure of a partnership is the glue that holds it together, then communication is the grease which allows it to operate smoothly. An important recommendation from the Learning Laboratory workshop was: “Never leave your partner behind, always keep them informed and engaged.” Appropriate mechanisms and processes are needed to promote effective communication, knowledge sharing and joint learning, with time and resources available for this at the initial planning phase and throughout the duration of the partnership. Partners need ‘safe spaces’ in which to voice constructive criticism and share experiences. Individual and group accomplishments also need to be acknowledged.

Much of the knowledge that needs to be shared within a partnership is ‘tacit knowledge’ that is best communicated through face-to-face interactions, preferably in a field environment. Collective learning is a particular challenge. As one participant noted: “Someone needs to seriously hold up the learning flag.” A clear learning strategy needs to be developed and implemented.

All these observations highlight the importance of effectively facilitating interactions to ensure good levels of knowledge sharing and collective learning. In addition, non-controversial entry points for learning are useful. For example, systematic evidence on progress and goal attainment is a useful starting point for discussions in the planning stage on the clarity of goals and the effectiveness of strategies and theories of change and this highlights the potential value of Monitoring and evaluation.

## Box 7: Case studies of promoting communication, knowledge sharing and joint learning

*MUSALAC usually follows a pattern of intense interaction during the face-to-face biennial meeting and then a quieter period. Electronic communication has greatly facilitated ongoing interaction between meetings, with some partners being very active but others rarely heard online. The network has discussed the value of new electronic tools but has not yet expanded their use to any great extent.*

*In UPWARD, the sweet potato R4D partnership holds learning workshops that encourage knowledge sharing. These include the UPWARD network meetings of the past and the less formal workshops of more recent years. The basic elements of these workshops include a review, a reflection and a course of action to take, with specific tasks allotted. Efforts are made to link these workshops, or at least to recall them in subsequent ones, in order to provide follow-up as well as learning.*

*All the major SDP review events (e.g., logframe revisits) are held in up-country retreats away from distractions and the strong influences of the individual partner organizations.*

*In the CA partnership, joint learning activities on empowerment and market articulation were established; they included virtual learning modules as well as online and face-to-face discussions. Some partners were able to link adequately, but others, particularly those with many technicians in the field, suffered from poor connectivity and frequently missed the events. The methodology therefore had to be changed, and more field visits were organized in order to use face-to-face meetings as joint learning opportunities. Particularly important are the annual planning meetings, because they provide an opportunity to co-ordinate and share perspectives and goals.*

*In AHI, the partners are establishing a knowledge-sharing and communication plan in which all the partners state how they can contribute to the common goal, based on their core goals and interests and on the mode of communication to be used to disseminate different knowledge materials to different partners, depending on their needs, capacity and interests. The AHI partners also benefit from frequent*

*face-to-face interactions through workshops and meetings to plan, monitor and review activities.*

*How to connect different policy areas and institutions working in those areas, the networking between these institutions and with their stakeholders, is the most challenging task. Informal ways of networking were used to complement the structured forms of communication (websites, newsletters, etc.); this is especially useful in interaction with policy makers, opinion leaders, and the general public and with other “outside” institutions with which the partnership interacts in the course of its work.*

## **Change management**

Critical management tasks vary depending on the stage of development of a partnership. For example, in the start-up phase, particular attention needs to be paid to partner selection. Later, more attention needs to focus on establishing adequate mechanisms for communication, managing joint activities and maintaining partner commitment. Later still, it becomes important for partners to take stock of their accomplishments and shortcomings and consider revising their goals and strategies.

But partnering seldom follows such a neat three-stage model. Partnerships are complex and inherently unstable arrangements that can take unpredictable courses. External or internal shocks might occur at any point, requiring adjustments in activities or strategies, or even transitions to new institutional arrangements

Over time, partnership priorities are likely to evolve, and the activities and output should evolve as well. For example, a partnership that initially focused on research might later need to engage in capacity building or other development-related activities. The circumstances in which partnerships operate also shift, sometimes dramatically. In some cases (e.g., CA and UPWARD), partnerships are established with donor support, and it can be a major challenge to sustain the partnership when the initial funding ends.

UPWARD provides a good example of how this can be achieved. Since the AR4D domain supported by UPWARD reflects the core institutional

mandate of the partners, the commitment is not limited by a short-term project. In addition, UPWARD has nurtured personal relationships that have sustained interactions beyond the project setting. In all cases, partners can be expected to come and go over time, and as their interests and priorities change so should their roles and the relationships among them. These dynamic elements of partnering highlight the fact that managing change is central to effective partnership management.

#### **Box 8: Examples of case studies of change management**

*MUSALAC began as the Latin American and Caribbean Network (LACNET), which brought together prominent banana scientists with an emphasis on genetic resources. This reflected the high priority being given at the time to breeding, new cultivars and genetic resource conservation. In the late 1990s, however, the agenda for banana expanded and the regional network was re-organized based on country representatives.*

*More recently, a change in donor funding to shorter-term targeted projects has led to a shift to biennial meetings, with greater use of electronic communication.*

*The objectives of the SDP programme have changed considerably over 20 years. These changes were influenced by the frequent reviews of the project's progress goal based on information from the dairy industry and on observations by external actors, especially the donor, on how the project could achieve the greatest impact. Initially, the project sought to develop technologies to enhance production at farm level. Mid-way through it, the focus shifted to exploring milk marketing and engaging all types and levels of partners to address what was emerging as the major constraint, access to appropriate and effective markets.*

*The project finally focussed on using information generated over its lifetime to inform policy formulation, especially on the importance of the dairy industry to the country's economy and the constraints inherent in the marketing regulation framework.*

*AHI has undergone an adaptive learning process, responding to changes in its external environment and taking account of the views*

*of it partners. It is currently in its fourth phase since inception. Initially, AHI was organized around regionally determined technical priorities (e.g., characterization and diagnosis, integrated pest management, and improved soil productivity). It then shifted its approach to participatory research with an integrated systems perspective and multi-institutional and multi-disciplinary teamwork. It funded work at pilot benchmark sites as a way of testing and demonstrating the value of new technologies and modes of working. It later linked farm-level work to improved productivity with collective action to address issues at higher levels. Over time, action research approaches and participatory M&E have been introduced, and AHI now focuses on promoting the use of integrated natural resource management (NRM) approaches, including self-led institutional change (where institutions realize the need to modify and adapt to changing situations as a result of learning) and the development of farmer institutions (supporting capacity building to improve leadership, management and governance). It also empowers farmer institutions to exercise their rights and engage in pro-poor policy development and landscape governance (management of natural resources at landscape level through participatory by-law formulation).*

### **Factors related to the environment in which a partnership operates**

The effectiveness and benefits of working in partnership depend not only on the management and relationships within the partnership itself, but also on the culture, policies and procedures within the partnering organizations and on socio-economic, political and other factors in the broader external environment.

### **Partner organizations' culture, policies and procedures**

The ways that partnerships operate and the results they produce are strongly influenced by the culture, policies and operating procedures that prevail within the partner organizations. If, for example, a partner organization values individual achievement over teamwork, then individuals from that organization might be discouraged from engaging substantially in the co-production of outputs through a partnership.

Similarly, if a partner organization has strict rules on intellectual prop-

erty rights, this could also discourage partnering.

If an organization wishes to work productively in partnership with others, it therefore needs to examine its own culture, policies and management practices and, where necessary, make changes to encourage and facilitate partnering behaviour. Management elements that typically require special attention include human resources (e.g., performance assessment criteria), administration and finance (e.g., procedures for letters of understanding, contracts and audits; and IPR rules that cover the co-production of outputs), planning and M&E (ensuring partners' needs and views are reflected) and assessment of partnership processes.

A common challenge in partnerships is that each partner has its own bureaucratic processes, and these need to be respected. Organizations with hierarchical and rigid structures and procedures can have difficulty operating effectively in a partnership. Bringing about changes in such structures requires support from the highest level of management and, even where this exists, making procedures more partnership-friendly requires a change process in the organization that elicits the support and active involvement of middle-level managers.

#### **Box 9: Case studies of how partners' culture, policies and procedures affect partnerships**

*In a multi-country project that brought together partners from MUSALAC, one partner (a national coffee institute run by growers' organizations) designated its involvement to an organization in another country (a university looking for research opportunities for young professors and students) due to the latter's greater research capacity.*

*In UPWARD, a lot of time and effort went into sorting out project reporting, fund disbursement and reporting, management and co-ordination of a multi-agency sweet potato research activity. These factors were addressed through explicit provisions in memoranda of agreement (MOA), while existing umbrella MOAs and memoranda of understanding (MOUs) were reviewed. What could and could not be undertaken by the different partners, and how others could fill the gap, dictated operational details. Transparency in all areas of the*

*partnership was found to be essential to maintaining trust among partners.*

*In the SDP programme, the three major implementing organizations differed considerably in their accounting procedures, and none was willing (or able) to change their procedures to be more compatible with those of the other partners. To address this, at the beginning of the project the partners developed a unique accounting system for the SDP, which satisfied the donor's reporting requirements, suited the fieldwork and met other accountability requirements. This system was then implemented and hosted in a partner institution (ILRI) that could accommodate separate accounting processes.*

## **External socio-economic and political environment**

Partnerships operate in a macro context affected by political and socio-economic currents. In some cases, these favour the partnership model, in others they do not. When establishing and managing a partnership, it is important to be sensitive to shifting currents in the macro context that can affect the partnership. Where partnerships cross national boundaries, they need to be aware of national issues and trends that influence individual partners' priorities and room for manoeuvre (e.g., one country's national policies might favour market-chain development over small-farm organization, whereas another might favour the opposite; a regional partnership ignores such differences at its peril).

Three specific challenges that have been identified were: how to recognize and manage the diversity of partners' contexts; how to build and maintain partnerships in unstable environments; and how to manage the effects of an unstable political environment.

### **Box 10: Examples of how the socio-economic and political environment affects partnerships**

*In an ongoing multi-country MUSALAC project, three of the four partner research institutes are experiencing a period of instability due to personnel changes in the management team, national elections and a rumoured dissolution of the institute. In two cases, the situation is temporary, with little impact on the proposed work, but in the third*

case a major overhaul of the partnership might be necessary.

*The SDP mission was to be implemented in the context of strong socio-economic and political currents and its success depended on a thorough understanding of this context. This was achieved in two ways: carrying out a study of the policy environment and framework that affected the dairy industry (SDP, 2004); and working with representatives who were insiders in the country's policy structures. The Project Steering Committee had representatives from the Ministry of Livestock, KARI and the Kenya Dairy Board, all senior government officials who were well informed about the country's policy dynamics and, to some extent, influential in the direction it would take.*

*In the Andean region, while Peru and Colombia favour market-chain development and the decentralization of public policies, Bolivia and Ecuador focus on food sovereignty, recovery of indigenous knowledge and community development. These differences have led CA to be a partnership with different types of institutions in each country, working differently according to the context. Having partners with different strengths and perspectives was possible because, despite the different approaches, they were all focused on development and poverty alleviation.*



## Chapter 3

# Success Factors & Challenges of IP Sustainability In Africa

*This chapter explains the success factors for the IAR4D-IP Concept and some of the achievements, the challenges faced in implementing the concept and the issue of sustainability of IPs and partnerships in implementing the IAR4D. This is to also emphasize the importance of rethinking the IAR4D-IP Concept due to emerging issues that may affect IAR4D achieving its objectives.*

## Success Factors for IAR4D-IP and Effects of Partnerships on Smallholders

According to Schut (2017), “innovation platforms are fast becoming part of the mantra of agricultural research for development (AR4D) projects and programmes. They have become an increasingly popular approach to enhancing multi-stakeholder collaboration in AR4D. Their basic tenet is that stakeholders in the agricultural sector (farmers, government, private sector) depend on one another to solve their problems, and hence need a space where they can learn, negotiate, and coordinate to overcome challenges and capture opportunities through a facilitated innovation process.”

However, Marc Schut et al (2018) indicated that there are five key conditions/factors for effective innovation platforms that need to be met: (1) ability and mandate to pitch the platform at the right level(s); (2)

conducive institutional environment for an innovation platform approach; (3) availability of sufficient capacities and skills; (4) organising monitoring, evaluation and learning (ME&L) and (5) adequate funding for innovation platform implementation.

In contributing to the factors behind the success of innovation platforms, Deaton (2010) reported that based on the policy literature, it is a function of characteristics of the region where the project is implemented and secondly based on different organizations involved. This is because according to Allcott & Mullainathan (2012) and Deaton (2010), the organisations may possess different organisational and managerial capacities and have different efficiency levels.

The first factor on region and target population where the project is implemented was further investigated by Pamuk et al (2014, 2015) and van Rijn et al (2015). While Pamuk et al (2014) reported heterogeneity in terms of the impact of innovation platforms on certain dimensions of agricultural technology adoption, they also found tentative evidence that the performance of the IPs depends on specific dimensions of ex ante social capital. However, Rijn et al (2015) reported that the influence of the IPs on the level of social capital differs greatly between countries. Thus, the researchers argued that heterogeneity could result from the different social, economic or institutional contexts in which the IAR4D was implemented.

In their own contribution, Haki and Fedes (2019) indicated that IPs are more successful in promoting agricultural networks of households with farmers within the community when they abide by the principles of the IP. This result is more pronounced when IPs are 'non-linear, collective and collaborative' (a key principle). IPs that are successful at capacity building activities lead to more visits from households to promote the interaction of households with research stations.

Adekunle et al (2013) identified some of the factors for the success of the IAR4D which include the following:

- developing strong partnerships to address the constraints and needs identified by local communities;
- establishing IPs in designed locations to encourage local ownership and sustainability after project completion;

- addressing marketing constraints by creating links between farmers and agro-input suppliers and marketing, with provision of seed being addressed through supporting community-based seed producers;
- using research knowledge to promote the use and local adaptation of new technologies;
- recognizing the role of farmers, their needs and capabilities as being key to all interventions. Central to this has been the use of participatory approaches; and
- strengthening community-based farmers' organizations and groups. This is done through training of both male and female farmers in organizational development to improve group cohesion, leadership, communication and, importantly, technical training associated with new technologies.

However, based on the current emerging issues and challenges, it was necessary to find out from stakeholders whether the IAR4D-IP concept is still relevant in yielding measurable successes in terms of livelihood change for key stakeholders. Figure 6 shows the results of respondents' perception of this. The results indicate that the IAR4D-IP concept is rated favourably and is still relevant.

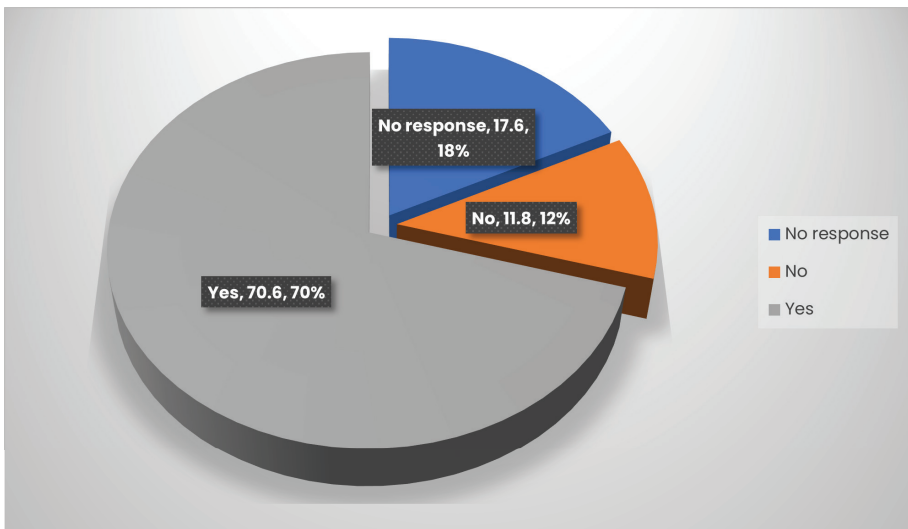


Figure 6. Respondents perception of whether the IAR4D-IP Concept is still relevant

Many reasons were provided by the respondents for their perception of the relevance of the IAR4D-IP Concept, the key collated ones are presented in Box 11.

**Box 11: Respondents' Reasons for their perception that the IAR4D-IP Concept is still relevant.**

- *Access to good inputs since all the stakeholders are together within the IP.*
- *Good agricultural practice.*
- *Bringing together multi-stakeholders reduces the time of delivery of outcomes.*
- *Value chain capacity development helps to address multiple challenges.*
- *Based on its achievements, many farmers are still benefitting from the principles.*
- *Farmers' yields have increased. Livelihood of stakeholders, especially smallholders, have improved.*
- *It encourages women and youth participation.*
- *It promotes a win - win partnership.*
- *It creates inclusiveness in research and development.*
- *It promotes learning and knowledge sharing.*
- *Partners gain confidence in implementing their roles.*

In a similar vein, respondents also expressed their views as regards the functionality of the IPs for which they were part or aware of as shown in Table 3.

**Table 3: Respondents Perception of the  
Functionality of IPs in different parts of Africa**

No	Criteria	Mean	Std. d.
<b>A</b>	<b>GOVERNANCE AND LEADERSHIP</b>		
A1	Existence of Functional leadership	3.88	0.78
A2	The level of facilitation of the IP	4.18	0.64
A3	The organization of the IP meetings	3.82	0.88
A4	The implementation of the IP activities	3.88	0.86
A5	Conflict resolution strategies used within the IP	3.65	0.79
A6	Transparency and accountable leadership	3.59	0.94
<b>B</b>	<b>COMMUNICATION AND NETWORKING</b>		
B1	Extent to which these issues are relevant to you	3.82	1.02
B2	Your level of awareness and understanding of the critical issue being addressed by the IP	3.94	1.09
B3	The level of participation and inclusiveness of all actors in IP activities and discussions	3.59	1.00
B4	Information sharing within the IP	3.76	0.97
B5	Effective communication among actor groups	3.76	0.56
<b>C</b>	<b>MARKET OPPORTUNITIES (INPUT AND OUTPUT MARKETS)</b>		

C1	Effective actor linkages	3.82	0.81
C2	Access to new output markets	3.59	0.80
C3	Higher commodity prices	3.35	0.70
C4	Proper standards for measuring produce	3.35	0.79
C5	Increase in demand for produce	3.53	0.94
<b>D</b>	<b>ACCESS TO IMPROVED PRODUCTION TECHNOLOGIES</b>		
D1	Access to quality seeds	3.88	0.93
D2	Improved yield	4.24	0.83
D3	Appropriate fertilizer application techniques to reduce usage and cost	3.82	0.88
D4	Technologies that allow for expansion in farm size	3.35	0.79
D5	Climate-Smart Agriculture Technologies	3.12	0.93
<b>E</b>	<b>ACCESS TO SUPPORT SERVICES</b>		
E1	Tractor services	3.00	0.87
E2	Extension services	3.71	1.05
E3	Advisory services	3.76	0.97
E4	Credit	2.71	0.92
E5	Access to effective and affordable transportation system	2.76	0.97
<b>F</b>	<b>CAPACITY IMPROVEMENT</b>		

F1	Effective engagement with service providers (credit, tractor operators, extension, etc.)	3.24	0.97
F2	Improved knowledge in production	3.53	0.87
F3	Knowledge in marketing and negotiations	3.47	0.94
F4	Effective communication skills	3.65	0.93
F5	Financial management and record keeping	3.35	0.93
<b>G</b>	<b>ENABLING ENVIRONMENT AND POLICY FRAMEWORK</b>		
G1	Adequate Access to land	3.00	0.87
G2	Access to storage infrastructure	3.12	0.86
G3	Improved road network	2.53	0.94
G4	Support from government development programmes	3.18	1.07
<b>H</b>	<b>EVIDENCE OF TANGIBLE OUTPUTS</b>		
H1	Extent to which IP objectives have been achieved	3.71	0.99
H2	Extent to which your IP activities are coordinated	3.71	0.92
H3	Presence of an action plan or workplan	3.76	0.66
H4	Extent to which the developed action plan has been implemented	3.44	0.73
H5	Resource mobilization capacities of the IP	3.24	0.75
H6	Effective linkage to NGOs and community-based support systems	3.65	0.70

H7	Ability to contribute to mobilization of own resources	3.35	0.79
H8	Mindset change towards farming as business	3.59	0.71
<b>I</b>	<b>GENDER INTEGRATION AND MAINSTREAMING</b>		
I1	Significant change in gender roles	3.82	0.73
I2	Women and youth within the IP take an effective part in decision-making	3.82	0.73
I3.	Women and youth have more access to resources through the IP	3.63	0.72
	Grand mean	3.54	0.86

*5=Excellent, 4 = Very Good, 3 = Undecided, 2 = Poor, 1 = Very Poor. n =35*

*Source: Field Survey 2024.*

As regards lessons learned from the IAR4D-IP concept, respondents provided the following collated lessons as it is shown in Box 12.

### **Box 12: Lessons learnt in the IAR4D-IP Concept Partnerships**

- 1. The IAR4D-IP concept is beneficial to all stakeholders*
- 2. If the partnership is adequately established, the IP could run by itself without dependence on external institutions*
- 3. Improved commitment by partners to perform their roles effectively*
- 4. Interchange of good ideas on the IAR4D*
- 5. Involvement of the private sector in IAR4D was useful to the success of the IAR4D Concept*
- 6. Need to deliver low hanging fruits- short term benefits*
- 7. Partnership headaches need to be carefully managed*
- 8. Partnerships is the best way of research and extension service delivery*
- 9. Stakeholder Engagement; Interdisciplinary Collaboration; Sustainability and Exit Strategies; Communication and Knowledge Management*
- 10. Teamwork makes Dream work*

## **Challenges of implementing the IAR4D-IP Concept**

Tenywa et al (2011) identified some challenges of implementing the agricultural innovation platforms as follows:

### **i) Dealing with emerging challenges during implementation**

“During implementation, while addressing the initial constraint, the solution developed often resulted into new challenges that required timely reflection and redress. For example, at Chahi, initial analysis showed that lack of access to market and inability to get remunerative price was the main constraint. Accordingly, negotiations were initiated with the private sector to purchase potato from the farmers directly. After long-negotiations with various players in the potato market chain, a system to purchase

potato directly from the producer by a group of retailers was established with well laid guidelines and a memorandum of understanding.”

According to Tenywa et al (2011), the assumption was that farmers in the area have enough produce to meet the market demand. When the action was implemented, it was quickly realised that the available potato was insufficient to meet the market demand. The situation was reviewed and the need for increased productivity was identified as the solution. However, this required improved seed and other agro-input which too required financial support through banks.

They also reported a similar situation that was dealt with in Kisikisi banana juice (in DR Congo) and Mamera sorghum porridge (in Uganda). Following successful branding, packaging and presentation and introduction to the market, the issue of patent came up among AIP members. This too required dialogue and negotiation to resolve the issue.

Similarly, in Mudende (in Rwanda), an AIP involving two cooperatives was successfully linked to Inyange Milk Cooling plant. Conflicts emerged thereafter amongst AIP members. This too required mediation to reach an understanding among the members.

## **ii) Managing the “hand-out” syndrome (high expectations) particularly in the emergency areas**

The second example provided by Tenywa et al (2011) was that Agricultural Innovation Platform (AIP) activities are being implemented in areas where the majority of the people are resource poor and expect full support from the project. As such, AIP activities are being supported by the SSA-CP project but the challenge is how to sustain the AIPs activities when such support ceases.

## **iii) Low capacity of partner organisation**

An Agricultural Innovation Platform is composed of stakeholders with different backgrounds in various aspects of AIPs. Many retail

traders have limited capital and have largely depended on middlemen. Farmers in rural areas have low capacity to contend with the multitudes of risks and constraints they face. The NARS staff also have different backgrounds. Therefore, it takes a lot of effort and resources to improve their capacity to grasp and implement AIP concepts (Tenywa et al., 2011).

In their contribution to challenges of implementing innovation platforms, Luis Fernando et al (2023) indicated that challenges for agricultural innovations include access to information, knowledge in training, involvement of cooperatives, technological platforms, and sustainability transitions for inclusive dialogue among actors.

However, Anandajayasekeram (2011) agrees with the view of Tenywa et al (2011) that the key challenges in the implementation of innovation platforms are the low capacity of partner organizations (especially the skills required by farmers to understand and articulate key issues), dealing with persistent “handout-syndrome,” building new relationships between the private and public sectors and farmers for mutual and sustainable benefits, and ensuring inclusiveness as well as eliminating marginalization within the platforms. The success of commodity-based innovation platforms requires farmers to be able to negotiate as equal partners with others. At present in many instances farmers are unable to express their concerns or demands as an organized voice. It is also worth noting that many of the innovation platforms are currently driven by projects or “external” agents, and therefore sustainability beyond the life of these projects is a key issue of concern.

In addition to these challenges mentioned in literature, some experts, who are mainly the respondents, also gave their views on strength, weakness, opportunities and threats to the AR4D-IP partnerships as shown in Table 4.

**Table 4: Respondents Perception of strengths, weaknesses, opportunities and threats to AR4D partnerships in promoting and sharing agricultural technologies and innovations in Africa**

Strengths supporting AR4D partnerships	Weaknesses Challenging AR4D partnerships
Access to Networks and Stakeholders; Increased Reach and Impact; Resource Sharing; Complementary Expertise	Complex coordination
Fair	Conflicting roles among partners
Good knowledge of agricultural practices	Consistency of commitment
Inclusiveness; Gender mainstreaming; Better level of achievement	Lack of proper communication
Integrated value chain approach, participatory approach	Poor level of financing, wide scoping
Memorandum of understanding is well prepared	Poor knowledge transition to improve production efficiency
Partners have the capacity to conduct their roles	Power Imbalances; governance and Management Challenges; Diverse Objectives and Priorities; Communication and Coordination Issues
Space to share knowledge and learn from each other	Remote areas
Strong Agricultural institutional base	There is weak transparency

There is political will by governments and the public sector has welcomed the idea	Unfavourable policies to support institutionalization
Vast experiences in managing AR4D partnership	Weak collaboration

Projected opportunities for AR4D partnerships	Projected threats for AR4D partnerships
Advancements in Technology; Public-Private Partnerships; Increasing Investment in Agriculture	Climate change such as cyclone
Alignment with global goals, climate resilience	Market Volatility; Social and Cultural Barriers; Policy and Regulatory Challenges
The AR4D concept needs to be revised	Desire for incentives to attend meetings and partnership headaches (conflicting interests)
Contacts with IP, regularly	Lack of funding
Enabling environment provided by Government	Insecurity, Corruption, and Fraud
High market demand for quality products	Lack of communication
Public awareness	New emerging issues in agriculture
Scaling up agricultural Innovations promoting gender equality	Poor finance
There is a lot of interest by partners	Some partners may continue to depend on funds from outside

## Factors Affecting Sustainability of IPs in Africa AR4D

Sustainability is concerned with measuring whether the benefits of an activity are likely to continue after donor funding has been withdrawn.

In his view on sustainability of the IP, Schut (2017) believed that three dimensions of sustainability should be carefully distinguished as follows:

- Sustainability of the changes that happened through the platform (the innovations).
- Sustainability of the innovation platform itself as a mechanism, niche, or entity for change and collective action.
- Sustainability of stakeholders' capacity to innovate.

He explained that while the first relates to the outcomes desired and attained by an innovation platform, the second is a measure of organizational sustainability while the third relates to institutionalization of the innovation process, as tested by the platform, diffused through changes in conventional wisdom and practices, that lead to enhanced capacity within innovation systems.

Eneku et al (2013) indicated that the function of the platform depends on the commitment and willingness of the stakeholders to deliver their knowledge, skills, and resources to the platform. Swaans et al (2014) pointed out that resource mobilization is a very important process of obtaining the resources required for the operation of the IP and ensures its sustainability. This is because for the IP to function well there is the need to identify what kind of resources are needed, the sources of the resources and the strategies that can be employed for sustained sources of resources (Makini et al., 2013).

In support of this view, Pyburn and Mur (2014) indicated that motivation and commitment to the stakeholders as well as ownership of the platform by the actors are crucial for the sustainability of the IP. Similarly, Putaa et al (2018) also indicated that the sustainability of the IP is influenced by a number of factors, which are motivation, commitment and ownership, capacity building, resources mobiliza-

tion and linkages.

As regards resources, Kusters et al (2017) emphasized that financial resource is the most important resource that the platform needs to have to operate effectively and efficiently both in the present and for the sustainability of the IP. Makini et al (2013) indicated that this is because IP activities, such as trainings, meetings, workshops, exchange visits, demonstrations, communications, marketing, and facilitation role of bringing actors, all entail financial resources which can make the IP sustainable.

According to Nederlof et al (2011), during a writeshop, several reasons were provided by participants to explain why innovation platforms cease to function well after the funded project ends, which include:

Lack of an organisation or individual willing to put in the (co-ordination/ brokering) effort required to keep getting people to contribute and change with changing needs.

A change in material or other (e.g., training) incentives for participants to contribute (a shift in travel reimbursement or per diem payment).

Lack of active facilitation (or lack of recognition of leadership such as was the case for the mango value chain in Kenya) leading to a loss of confidence in results by participants.

A shift in balance of power in the platform resulting in a single party hijacking the agenda.

Lack of recognition of the importance of the innovation platform.

Lack of representation of key groups, or perceived legitimacy of representatives by the interest group they are supposed to represent, leading to apathy.

Lack of sufficient organisation, either at the local level (where activities lead to practical results), or at the national level (to ensure organisational support for activities).

Innovation platforms do run a risk of turning into a "talk shop" which means meeting for the sake of meeting without contributing to growth by catalysing innovation (e.g., in the case of the national

platform in Benin).

In a similar vein, Ajayi and Osei-Adu (2023) found in their study of situational analysis of innovation platforms in the Gambia that all the 22 innovation platforms established during the West Africa Agricultural Productivity Project ((WAAPP) between 2012 -2016) are no longer functioning. Some of the reasons adduced to the collapse of these Ips, based on information from stakeholders and from the survey conducted, include the following:

- 1 The IPs were project-driven rather than government or government agency-driven, which means that as funding of the project ended the IPs also ended as the stakeholders did not take ownership of the IPs. This agrees with the view of Anandajayasekeram (2011) that many of the innovation platforms are driven by projects or external agents, and therefore sustainability beyond the life of these projects is a key issue of concern.
- 2 There was no exit strategy and therefore no adequate sustainability plan after the WAAPP Project.
- 3 Stakeholders reported that IPs were formed towards the end of the WAAPP Project which affected their growth.
- 4 The way the IPs were formed indicated that the concept of innovation platforms was not properly understood.
- 5 The IPs did not follow the concept of integrated agricultural research for development (IAR4D) as it was discovered that not all the stakeholders participated.
- 6 Facilitation of the IPs was weak which might be a major challenge for the sustainability of the IPs because one of the major factors contributing to the success of an IP is effective and efficient facilitation.
- 7 Effective partnership is a requirement for a successful IP which was found to be inadequate in the previous IPs as some of the partner institutions were not working together adequately.
- 8 Concentration of the IPs was basically on producers and therefore the IPs were based on farmer groups.

- 9 The issue of specialization was a challenge. This is because some people who acted as processors for example also served as transporters and other specializations which affected the operation of the IPs. It would have been better to have specialized people to be actors in their areas of specialization.
- 10 As a result of many projects dealing with the same farmers at the same time, farmers were confused in differentiating between IP and agricultural-based groups. This is because different projects assisted in different ways that involved groups working together but which cannot be described as an IP concept.
- 11 The issue of attitude was a major challenge as people always relied on government all the time, which is totally against the philosophy of the innovation platform where stakeholders will formulate their work plan, with each stakeholder fulfilling his or her responsibility rather than waiting for the government.
- 12 There was inadequate capacity building of stakeholders that should have assisted in the continued facilitation of the IPs.



## Chapter 4

# Rethinking the IAR4D-IP Concept

*This chapter explains why there should be a rethinking of the Integrated Agricultural Research for Development (IAR4D-IP) model, describes the main new emerging issues and challenges so that IAR4D stakeholders can appreciate them and find ways of accommodating them within the IAR4D-IP and partnerships models.*

## Why the need to rethink the IAR4D-IP Concept

The IAR4D-IP model was designed to embed research within an innovation system comprising all actors in the agricultural value chains. Within such a system, a network configuration, innovation does not follow a linear path that begins with research, moves through the processes of development, transfer, diffusion, adoption, production, and ends with successful introduction and use of new products and processes; rather, it tends to involve continuous feedback between different stages (Dantas, 2005), thus drawing on the knowledge of all relevant actors at each stage. The network configuration facilitates timely interaction and learning, and aims at generating innovations rather than research products per se.

The IAR4D concept is anchored on the social network theory advanced by Wasserman & Faust, 1994, that a social network is a mapping of nodes and links whereby nodes are the individual el-

ements in the network and tie the associations that bind those nodes (actors).

The concept is also anchored on the systems theory. Ludwig (1968) defines a system as “A matrix of interconnected elements including different principles, such as connection, number, mechanization, central planning, rivalry, finality, etc.”. It is a set of two or more interrelated elements, whereby each element influences the functioning of the whole. It is a structured or complex piece: an assemblage or mixture of items or sections comprising a structured or unitary whole. There is a multi-dimensional effect such that each element is affected by at least one other element in the system and all possible subgroups of elements affect the whole, while affecting each other. This implies that for a system to survive there is a need for well facilitated, well-organized and coordinated efforts to sustain its structure and function.

The systems theory assumes the concept of synergy such that the whole is more than the sum of its parts. Like IP actors, every part is committed to developing strategies that preserve the benefits of having their system.

The systems theory establishes a very important thinking relevant to IPs, whereby, individual actors are the different parts that form the whole (AIP) while multidimensional effects are the relationships that exist between actors. The theory is equally relevant in as far as facilitation, organization and coordination of actor efforts are important practices necessary to sustain and render IPs resilient.

The structure of the IAR4D concept is hinged on three pillars, i.e., actors, connections (interactions) and coordination. The main challenge to this structure is resilience. Owing to the challenges engulfing the success of networks (IPs inclusive), it is indispensable to have proper structures that would ensure success and resilience (Muller, 2017).

Resilience of an IP refers to its ability to establish institutional structures that enable it to overcome shocks, learn from them, and emerge strengthened and transformed. Resilience is associated

with an entity's inner capacities and ability to reconstitute after a shock or sustained attack (Aranda, Zeeman, Scholes, & Morales A, 2012).

There have been successes recorded in agricultural research and technology adoption. They have enabled a growing populace to avoid mass starvation and created the much-needed food supplies (GCARD, 2010).

Similarly, in the last two decades, FARA and its partner Sub-Regional Organizations and the CGIAR organizations have worked with the broad stakeholder group in African agriculture to develop the Agricultural Innovation System (AIS) approach for the development of the sector. It enacted the Integrated Agricultural Research for Development (IAR4D) concept and the Innovation Platforms (IP) for its implementation. The proof of the IAR4D concept using rigorous research methodologies came up with empirical evidence that the IP delivers quick impact from investment in agricultural research, improves livelihood, provides the needed space for research demand by the end users, and meets the demand. FARA and its partners have embarked on a series of activities and projects to bring the IAR4D/IP knowledge to scale with significant success. The IP has become a household name in major agricultural research projects and has stood strong, yielding measurable successes in terms of livelihood change for key stakeholders.

However, a radical restructuring and urgent revitalization of the IAR4D systems are now urgently required for a significant reduction of hunger and malnutrition, to grow out of poverty and to address the many new challenges and emerging issues in agriculture.

Moreover, just as it was indicated by GCARD in 2010, it is now known that "business as usual" is not an option for AR4D and that these aims can be achieved only if there is a need to revise the IAR4D-IP concept to accommodate new challenges and emerging issues. Similarly, Ana et al (2021) emphasized that a "new approach in agricultural research for development is needed." This is because, according to them, the AR4D is a major part of the innovation sys-

tem, and it cannot be business as usual for the AR4D.

It is imperative therefore to consider changes in the sector and the relevance of the IAR4D / IP model as an implementation instrument to leverage science for technology generation, dissemination, and use. It is also important to consider, the increasing emerging issues and challenges which can affect food and nutrition security if care is not taken.

The IAR4D-IP concept has focussed on forming partnerships based on commodity productivity before some of these emerging issues came up. This is one of the reasons for the re-thinking of the IAR4D/ IP concept to accommodate the new emerging issues. Without such re-thinking, traditional scientific approaches and logic may limit the contribution that the IAR4D can make to the achievement of the Sustainable Development Goals.

However, Ana et al (2021) indicated that many actions should be taken to align agriculture and food systems on a pathway that is more sustainable, inclusive, healthy and climate resilient, but these actions must enable innovation in all food systems.

They also suggested that the AR4D approaches should be the ones that work across the innovation system for agriculture from early-stage development to product development to large-scale deployment, where research efforts are targeted towards end-user needs and underpinned by robust partnerships with private, public and civil society actors to ensure adoption and societal outcomes. The approach also implies working on the institutions and incentives that ensure uptake and scaling.

In their contribution to the issues, processes and approaches that are becoming more important for public agricultural research organizations, Hall and Dijkman (2019) noted that transformation and the sustainable development agenda are creating a different context for all organizations involved in innovation and change processes. This is because some of these concerns relate to the nature of transition and transformation processes and its dynamics, its governance and its stakeholders. Other concerns relate to society's increasing engagement in decisions around the direc-

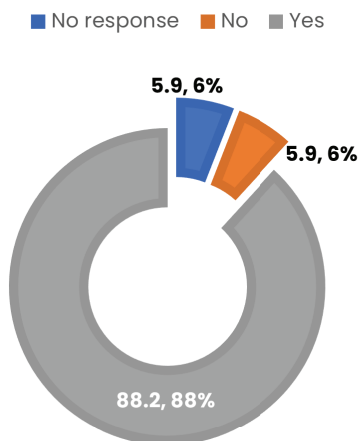
tion of societal change.

In rethinking the IAR4D, it is important to consider establishing and strengthening IP leadership capacities that not only refresh the network with relevant actors but create an enabling environment for sustained interactions to address any emerging issues.

Therefore, public agricultural research organisations are going to need to pay increased attention to the following issues:

- Transformation as a deeply political process.
- The increasing power of societies to articulate and leverage aspirations and patterns of societal acceptance.
- Negotiated processes used to determine future development pathways.
- Engagement with pioneer activity to leverage niche sustainability experiments.
- The increasing prominence of complexity in sustainable development problem framing.
- The directionality of innovation.
- ICT revolution/AI. The future of agriculture from research to production, to marketing, processing, to the plate, shall be facilitated by ICT and AI. Addressing youth bulge should be integrated with technological revolution.
- Globalization/supply chains.
- Mechanization.
- Conflicts/security/refugees/displacements.

In support of what has been described in literature in relation to rethinking the AR4D, respondents were asked whether they agree that there is a need to rethink the IAR4D-IP Concept partnerships, in view of the new challenges and emerging issues. The percentage of those who agreed and those not in agreement and those who did not respond is shown in Figure 7.



## New Challenges and Emerging Issues in African AR4D

There are new emerging issues and challenges which call for a rethink of the IAR4D-IP Concept, which include the following:

### Climate Change

According to a report, the world will need to produce about 70 percent more food by 2050 to feed an estimated nine billion people. However, production stability, agricultural productivity, income, and food security are negatively affected by climate change. Climate change's negative impacts are already being felt, in the form of reduced yields and more frequent extreme weather events, affecting crops and livestock.

According to FAO (2009), climate change is emerging as a major challenge to agriculture development in Africa. The increasingly unpredictable and erratic nature of the weather systems on the continent has placed an extra burden on food security and rural livelihoods.

Similarly, according to Zougmoré et al (2014), the livelihoods of people in most parts of Africa depend on rain-fed agriculture and livestock. Ramirez-Villegas and Thornton (2015) indicated that these factors are known to be the most vulnerable to climate change with serious threats to food security.

Agriculture is said to be a prominent source as well as a sink of greenhouse gases (GHGs). There is a consensus among scientists, policy makers and development practitioners that climate change poses complex challenges to the development of countries in Africa.

Extensive assessment of the expected effects of climate change on agriculture in the Africa region was provided by the Intergovernmental Panel on Climate Change 2007 report. It was estimated that Africa will be the most vulnerable to climate change globally, due to the multiple stresses of poor infrastructure, poverty, and governance. Temperatures are also likely to increase by between 1.5–4°C in this century. Projections on yield reduction show a drop of up to 50% and crop revenue is forecast to fall by as much as 90% by 2100.

In the same vein, the World Bank (2009) forecasts indicated that SSA will surpass Asia as the most food-insecure region with 40–50% of undernourished people globally in 2080 compared with 24% today. Levels of viable arable land for production are predicted to decline by 2080, with 9–20% of arable land becoming much less suitable for agriculture.

Overall, climate change presents a substantial challenge to regional agricultural development.

From food security, nutrition to sustainable management, climate change is a significant threat to the welfare of millions of the continent's rural poor. Without extensive current strategies on adaptation for agriculture in Africa, the region will remain vulnerable in its exposure to the widespread effects of climate change.

In addition to soil fertility is known as one of the major challenges faced by agriculture in sub-Saharan Africa, Sasson (2012) indicated that climate change variability also adds extra burdens. This is because the livelihoods of people in the region depend on rain-fed agriculture and livestock which are known to be the most vulnerable to climate change, with serious threats to food security.

As a result, according to Nyuor et al (2016) and Palazzo et al (2016), managing agricultural production risks is of paramount importance in the context of a crucial need to improve food security and sustaining rural economies. This is why climate-smart agriculture is being con-

sidered in AR4D/Innovation Platforms.

It is therefore not surprising that Tenywa et al (2010) indicated that a participatory innovation platform can be an appropriate tool for learning about and adopting the CSA concept in a community.

## **Natural Resources Management (Soil Health and Fertilizer Use)**

FAO (2015) define Soil health as the capacity of soil to function as a living system. Healthy soils maintain a diverse community of soil organisms that help to control plant disease, insect and weed pests, form beneficial symbiotic associations with plant roots, recycle essential plant nutrients, improve soil structure with positive effects for soil water and nutrient holding capacity, and ultimately improve crop production. A healthy soil also contributes to mitigating climate change by maintaining or increasing its carbon content.

Smallholder farmers, who are estimated to produce about 35 percent of the world's food, are highly dependent on the ecosystem service benefits provided by natural resources. Protecting natural resource assets, through improved governance and management, supports smallholder producers and presents opportunities to build economic capital, mitigate risks from climate change and other shocks, promote equity and inclusion, and increase returns on food security investments (FAO. 2021 and Timberlake et al., 2022).

A healthy soil is said to be the foundation of productive, sustainable agriculture. This is because a healthy soil allows producers to work with the land to reduce erosion, maximize water infiltration, improve nutrient cycling, save money on inputs, and ultimately improve the resiliency of their working land. Furthermore, FAO (2015) indicates that food availability relies on soils: nutritious and good quality food and animal fodder can only be produced if soils are healthy. A healthy living soil is therefore a crucial ally to food security and nutrition.

Soil degradation in cropping systems is primarily driven by low application and suboptimal management of nutrients, which leads to nutrient losses and a decline in soil biological, chemical, and physical quality, thereby reducing the capacity to support production and en-

vironmental functions (ten Berge et al., 2019).

IFDC (2023) indicated that decades of soil nutrient mining have eroded the productive capacity of large areas of agricultural soils in Sub-Saharan Africa. According to Zou et al (2022), Sub-Saharan Africa remains the only global region experiencing negative nutrient balances that have continued to increase over time. This is one of the major reasons why the issue of soil health should be considered in the rethinking of the new AR4D concept.

This might be the reason why IFDC (2023), indicated that increasing crop productivity to meet current and future food needs will be elusive without increased, effective and efficient use of fertilizer nutrients.

The rethinking of the agricultural systems has long been considered but has been concentrated more on crop yield and productivity. According to IFDC (2023), the 2006 Africa Fertilizer Summit in Abuja aimed to position fertilizer as a key ingredient to increase crop yields and address the associated challenges of food insecurity and poor incomes faced by smallholder farmers in Africa. However, this has changed from a crop productivity and profitability focus to a broader set of goals and targets, with a specific focus on sustainability, climate change mitigation, rehabilitation of degraded land, and restoration of environmental services, including biodiversity, driven by ever-increasing evidence that agricultural systems are operating beyond planetary boundaries on a global scale which must be considered in the rethinking of the AR4D.

In this regard, in the reassessment of the AR4D, natural resources management should be given priority.

## **The Agri-Food Systems**

Agri-food systems encompass the primary production of food and non-food agricultural products, as well as food storage, aggregation, post-harvest handling, transportation, processing, distribution, marketing, disposal and consumption. Within agri-food systems, food systems comprise all food products that originate from crop and livestock production, forestry, fisheries and aquaculture, and from other sources such as synthetic biology, that are in-

tended for human consumption (FAO, 2021).

However, UNEP, FAO and UNDP (2023) see agri-food systems as all the elements (environment, people, inputs, processes, infrastructures, institutions, etc.) and activities that relate to the production, processing, distribution, preparation and consumption of food, and the outputs of these activities, including socioeconomic and environmental outcomes.

According to UNEP, it has been recognized that food systems are one of the main reasons why the world is failing to stay within the planet's ecological boundaries. That was why the 2021 Food Systems Summit aspired to nothing less than sweeping global transformation.

Hall and Dijkman (2019) indicated that it is not an exaggeration to say that the success of the SDGs depends on finding ways to use research and innovation to transform agri-food systems towards more productive but also more sustainable and socially inclusive pathways.

They believe that thought should be given to how to adapt research and innovation essential activities to the necessities of the era, while technological breakthroughs will be undoubtedly essential. It is increasingly recognized, however, that deploying new technology will require deep changes in agri-food systems if more sustainable and socially responsible growth is to be achieved. This recognition represents a complex set of interrelated technological, social, and policy and political changes. The CGIAR and other public agricultural research organisations need to consider how to engage with this dynamic and reposition themselves in a way that best contributes to the aspirations for inclusive and sustainable agri-food systems (Hall and Dijkman, 2019).

An ideal food system is one that ensures equitable access to nutritious and culturally appropriate food for all individuals, while promoting sustainable agricultural practices, preserving biodiversity, and supporting local communities. It is a system that addresses the needs of the present without compromising the ability of future generations to meet their own needs. Achieving such an ideal food system is a complex and multifaceted endeavour, requiring the collaboration and efforts of various stakeholders.

As a recommendation, Masoumi (2022) noted that “it is now to call the transformation of agri-food systems urgent as we cannot wait more decades to commence the transition. Based on the country’s climate and context, it needs the right policy and strategy to turn big ships of local and global agri-food systems from their current course of the journey toward coherent, well-incorporated, and sustainable food systems.” All these statements from experts justify the reassessment of the AR4D model.

In 2022, Dr Anna Macready, an Associate Professor at the University of Reading, said “the food system must be transformed if we are to succeed in ensuring it can deliver healthy, sustainable food for all. We cannot achieve this without bringing consumers into the heart of this journey, so that they can trust that the food they eat is good for them, and for the planet. As we develop the new innovations and technologies needed to future proof the food system, we must do more to engage with consumers directly, supporting them to make the right decisions that lead to a healthier and more sustainable lifestyle.”

## **Adapted Crops (Forgotten Crops/Foods)**

There are some crops/foods which have been classified in different ways by experts depending on the way they have seen them. Looking at them from their resilience, they are called adapted crops, which are crops that can respond positively to changes in agricultural conditions. This is because their traits are genetically controlled and provides an ability to exploit environmental attributes, both natural and agronomic.

However, looking at them from their usage, the Global Forum for Agricultural Research (GFAR) in Rome (2021) refers to these adapted crops as “Forgotten Foods” which are derived from a diversified set of Neglected and Underutilized Species (NUS) produced within traditional production systems, particularly adapted to marginal environments constrained by water scarcity, poor soils and increasing temperatures.

Neglected crops which include grains, such as sorghum and millet, and vegetables, such as amaranth and eggplant are also known as “indigenous,” “lost,” “native,” “orphan,” “traditional,” or “underutilized” crops, or as ingredients in “forgotten foods” (Lefebevre et al., 2023)

and “adapted crops/foods” (The United States Special Envoy for global food security, 2024).

GFAR also feels that focusing on Forgotten Foods and crops means strengthening the local knowledge that supports them, as well as the coping strategies, resilience and livelihoods of the population living in those areas. Beyond this, these actions can contribute to more adapted and adaptable support services, and to mitigating and adapting to climate impacts.

Furthermore, these crops are indigenous or native to a specific region in Africa where they have traditionally been the basis for highly nutritious foods, but over time, they were lost or forgotten by many and they are now underutilized by farmers and producers, neglected by consumers, plant breeders, policymakers, and donors.

According to the GFAR 2021 consultation on the Asia-Pacific Farmers’ Declaration Manifesto on Traditional and Indigenous Food crops, these crops include cultivated, semi-domesticated and wild species and traditional varieties that have been produced and consumed for centuries for their food, fibre, fodder, oil and medicinal properties. However, their roles have been undervalued and their importance neglected in terms of research, extension, policy makers and conservation and commercialization. These crops have grown well in African soils, even in marginal areas with very little inputs and withstand adverse conditions.

Similarly, according to Lefebevre et al (2023), neglected crops were traditionally cultivated for subsistence, but during the 20<sup>th</sup> century, they were gradually displaced by crops better suited to commercial farming. The globalizing agrifood sector grew increasingly specialized and concentrated. Along with modernization and urbanization, the search for ever more efficiency and productivity led to the dominance of very few (arguably too few) food sources. A handful of staple crops replaced the once-wide range of subsistence crops in which up to 75% of crop varieties disappeared over the 20<sup>th</sup> century. However, in 2020, maize, rice, and wheat accounted for over 41% of the world calorie intake (Lefebevre et al., 2023).

Reintroducing and scaling up cultivation and use of these crops, which

offer a promising way to address both the food and climate crises, particularly for Africa, also have an implication for rethinking the new AR4D-IP model.

## **Agro-Ecology/ Regenerative Agriculture**

One interesting thing about these emerging issues is that they are interwoven with each other even though they are given different terminologies. For example, Newton et al (2020) in their literature review found some other terms commonly used synonymously with, or adjacently to, the term regenerative agriculture which included “agroecological farming” “alternative agriculture,” “biodynamic agriculture,” “carbon farming,” “nature-inclusive farming,” “conservation agriculture,” “green agriculture,” “organic regenerative agriculture,” and “sustainable agriculture.” These were variously based on processes (e.g., use of cover crops, the integration of livestock, and reducing or eliminating tillage), outcomes (e.g., to improve soil health, to sequester carbon, and to increase biodiversity), or combinations of the two.

Agroecology (also referred to as ecological or regenerative agriculture) is a farming approach that is inspired by natural ecosystems, combines local and scientific knowledge and focuses on the interactions between plants, animals, humans and the environment. According to the United Nations Environment Programme (UNEP) (2021), agroecology is one of the most effective ways to make food systems more sustainable; and to build a safer, cleaner, more inclusive post-COVID. This is because according to UNEP, by drawing on natural processes, such as biological nitrogen fixation, biodiversity and recycling rather than chemicals, which reduce biodiversity and contribute to climate change, it challenges the ‘business as usual’ agricultural model.

Newton et al (2020) revealed that many definitions and descriptions of regenerative agriculture were being used. According to Rhodes (2017), regenerative agriculture has at its core the intention to improve soil health or to restore highly degraded soil, which symbiotically enhances the quality of water, vegetation and land-productivity.

According to the Syngenta Group, regenerative agriculture is an outcome-based food production system that nurtures and restores soil health, protects the climate and water resources and biodiversity,

and enhances farms' productivity and profitability and better nutrition and human health. It comprises a range of techniques, supported by innovative technologies, which can combat the challenges of climate change by restoring soil health and protecting the land's ecosystem. Regenerative agriculture is an evolution of conventional agriculture, reducing the use of water and other inputs, and preventing land degradation and deforestation.

According to USAID 2021, examples of regenerative agricultural practices include reducing tillage, decreasing use of chemical inputs, growing cover crops, and rotating crops. However, for the Syngenta Group, many of the key practices of regenerative agriculture, such as intercropping, where multiple crops are planted together, agroforestry, and integrating livestock, for example, have their roots with indigenous farmers who work with the land rather than against it. Therefore, the Syngenta Group believes that regenerative agriculture can underpin the transformation of the global food systems.

The Group also more or less supports the notion that there is need to review the AR4D model. This is because according to the Group, the agricultural sector needs to be transformed, and regenerative agriculture can enable this transition by building up soil organic matter and nurturing its health. However, it is not a one-size-fits-all solution but instead, each unique context requires a different set of farming approaches to maximize productivity while restoring soils and biodiversity. This is because different regenerative practices suit different regions or even individual farms depending on the conditions, although they are underlain by a common set of principles.

## **Youth population bulge and employment in agriculture**

In 2022, the Director General of the Centre for Agriculture and Bioscience International (CABI) indicated that in 2019, almost 60% of Africa's population was under the age of 25. Africa is the world's youngest continent, but just 56% of the population is of working age. This translates to about 1.3 people of working age supporting every dependant (mostly youth) compared to a global average of two workers to every dependant. This in essence is the 'youth bulge', and addressing it is more urgent than ever.

According to Canning, et al (2015), Africa is experiencing a ‘youth bulge’ in which the share of young people in the working age population is peaking due to past declines in mortality coupled with persistently high fertility.

Africa’s population is expected to double by 2050. The working-age population is also expected to increase sharply and a youth bulge, namely a relatively large increase in the number and proportion of the population of youthful age, is rapidly forming beneath looming economic uncertainty.

Justin Yifu Lin, a former World Bank Chief Economist and Senior Vice President, in 2012 described the youth bulge well in his write-up titled “Youth Bulge: A Demographic Dividend or a Demographic Bomb in Developing Countries?” Lin (2012) explained that in a country with a youth bulge, as the young adults enter the working age, the country’s dependency ratio which is the ratio of the non-working age population to the working age population will decline. In essence, if the increase in the number of working age individuals can be fully employed in productive activities, other things being equal, the level of average income per capita should increase as a result. Therefore, the youth bulge will become a demographic dividend.

However, if a large cohort of young people cannot find employment and earn satisfactory income, the youth bulge will become a demographic bomb, because a large mass of frustrated youth is likely to become a potential source of social and political instability (World Bank, 2011). Therefore, one basic measure of a country’s success in turning the youth bulge into a demographic dividend is the youth (un) employment rate.

Ouassif (2021) also noted that this indisputable fact exacerbates the issues of migration, and the brain drain, as unemployment threatens African youth and rampant poverty and inequalities still cloud the perspectives of those living where sound structural change has yet to take place. Therefore, this will create greater pressure to feed many mouths amid the challenges of economic, political and societal instability, let alone the impacts of climate change.

Agriculture has long been the dominant sector in much of Africa in

terms of output, employment and export earnings. In fact, agriculture is arguably the most important business opportunity for the continent's young people to embrace.

This is especially true when thinking of young people's roles in agricultural value chains. This is one of the reasons why rethinking the AR4D is essential to encourage and accommodate youths in agricultural value chains. However, there is a need to take a two-pronged approach to enhancing their skills not only in producing safer foods free from crop pests and diseases but also in involving them as village-based advisors. They could also combine these roles to tackle the ever-increasing food crisis. By doing so, the youth bulge can be transformed into a demographic dividend, rather than a demographic bomb. Mueller and Thurlow (2019) supported this assertion when they indicated in their book that Africa's "youth bulge" presents opportunity to advance rural development.

# Strategies and Models for Consideration in Rethinking the IAR4D-IP Concept due to New Challenges and Emerging Issues in Africa

*Based on the emerging issues and challenges discussed in chapter 4 on the rethinking of the IAR4D-IP concept, Chapter 5 proposes strategies and models, including partnership models with case studies where available, that should be considered to address these challenges and emerging issues.*

## Climate Change

The following strategies and models are suggested for the sustainable increase in the levels of agricultural production and income of small-holder farmers, and for adaptation and mitigation of climate change.

### Adoption of the Climate-Smart Agriculture Model

As discussed in Chapter 4, to avoid a lose-lose scenario where agriculture contributes further to climate change effects through deforestation and unsustainable resource use, and agricultural production and food security are compromised through climate change, the FAO developed the concept of climate-smart agriculture. This concept is based on three pillars or principles:

**Production:** Sustainably increasing the levels of agricultural production and income

**Adaptation:** Development of resilient production systems adapted to climate change

**Mitigation:** Reduction or elimination of greenhouse gas emissions where possible

Some developing countries have however designed nationally appropriate mitigation actions and national adaptation programmes of action that highlight the need for agricultural systems that are adaptive and resilient to the threats posed by climate change. However, FAO (2013) indicated that in response to this, the concept of climate-smart agriculture (CSA) was developed to address the issues of productivity, adaptation and mitigation as CSA's focus is primarily on addressing climate change.

Many definitions have been propounded for climate-smart agriculture. Lipper et al (2014) defines an approach for transforming and re-orienting agricultural development under the new realities of climate change. However, FAO (2013) defines climate-smart agriculture as "agriculture that sustainably increases productivity, enhances resilience (adaptation), reduces/removes GHGs (mitigation) where possible, and enhances the achievement of national food and nutritional security as well as all other development goals."

FANRPAN (2013), provided an action-based definition. It described climate-smart agriculture (CSA) as an applied set of farming principles and practices that increases productivity in an environmentally and socially sustainable way (adaptation). It strengthens farmers' capacities to cope with the effects and impacts of climate change (resilience), conserves the natural resource base through maintaining and recycling organic matter in soils (carbon storage); and, as a result reduces greenhouse gas emissions (mitigation).

FAO (2018) further explained the concept of climate-smart agriculture as an approach that aims to overcome challenges posed by climate change, maintain, or improve food security, help farmers adapt to changing climatic conditions and reduce the amount of greenhouse gases in the atmosphere.

From these definitions, the main goal of climate-smart agriculture is seen as sustainable food security and development while three ob-

jectives/interlinked pillars necessary for achieving this goal are productivity, adaptation, and mitigation (FAO 2013a and Lipper et al. 2014).

In the light of this, a holistic concept of agriculture production, climate-smart agriculture (CSA), is therefore proposed as a solution to transform and reorient agricultural systems to support food security under the new realities of climate change.

This has facilitated several technological developments aimed at fighting the common enemy of climate change. However, not all these technologies are addressing the issue of climate change. Therefore, climate-smart technologies must be differentiated from other technologies. Smallholder farmers are the central users of CSA technologies in Africa. However, the knowledge of the climate-smart agriculture technologies is limited because it is hard to differentiate them from the already existing practices, in most cases.

Climate-smart agriculture includes proven technologies and practices, such as water management, intercropping, conservation agriculture, crop rotation, mulching, integrated crop-livestock management systems, agroforestry, and improved pasture and grazing management. There are many options to reduce the negative impacts of climate change on agricultural systems, make them resilient to climate change and reduce emissions. Options range from change in crop management such as sowing time to change in cropping systems and land use to adjust to new climates (Porter et al. 2014).

Therefore, the IAR4D-IP concept should be reviewed to encompass climate-smart agriculture. This is because according to Osorio-García et al (2020), an innovation platform can foster and provide a basis for multi-actor collaboration in order to enable climate-smart agriculture (CSA) implementation at local level.

Similarly, based on their research, Muller et al (2018) indicated that an innovation platform could support generation and exchange of knowledge on climate change, exchange and identification and implementation of options for adaptation tailored to local needs by the participating farmers. This supported the view of Tenywa, et al (2010) that a participatory innovation platform can be an appropriate tool for learning about and adopting the CSA concept in a community.

Müller et al (2018) emphasized that participatory innovation platforms constitute a new methodology to be applied in climate change adaptation efforts with possibilities to streamline adaptation to the pressures of climate change. Also, the platform is a useful tool for governmental institutions to identify opportunities for improvement in current agricultural practices and to identify new practices, test them in an experimental community-based manner and receive feedback from the communities.

A good example of how climate-smart agriculture was used to adapt to climate change was demonstrated by Müller et al (2018) in Honduras. This can also be done in Africa. The design of the programme involved the use of four communities. There were five steps which are:

1. Baseline study to describe and characterize the diversity of farms.
2. Design of the innovation platform.
3. Experiment of CSA practices.
4. Analysis of the policy mix.
5. Final evaluation.

This is used as a case study here and can be emulated in Africa.

### **Box 13: Case study of a Participatory Innovation Platform for Adaptation to Climate Change**

#### **Activities and Outcomes**

##### **Baseline Study**

*The baseline study on farmer characteristics and farming practices shed light on the distribution of land among farmers and their weekly working routines, sources of income, the household composition and roles of men and women. Furthermore, the effects of drought on the production of basic grains and coffee could be examined. It was found that farmers, depending on the type of cultivation (for cash or subsistence), had different levels of mitigation adaptation and productivity due to different prioritizations between achieving high levels of agricultural production and ecological sustainability and resilience.*

*The agricultural practices that were examined showed that many farmers already apply an array of CSA practices on their farms, such as live barriers, minimal tillage, composting and organic pest management. Furthermore, the motivations behind the different practices applied was examined. It was found that the main reason for the application of artificial fertilizer and pesticides is the advantage of saving time and that a barrier to applying agroecological practices in their fields is the large distance of some plots to the home of the farmers.*

*It was found that families that had a high connectivity to farmer groups and external organizations were among the most climate-smart ones.*

### **Innovation Platform**

*The council of the Suctal watershed was founded and was assumed to be relevant for communication and knowledge sharing. A participatory body to manage water in the Suctal watershed has been created and farmers in one of the municipalities created a farmers' association together. Furthermore, the different Farmer Cooperatives exchanged knowledge on the different experiments and CSA practices.*

*Farmers shared knowledge and experiences on how to co-create innovative solutions for climate change adaptation and on decision making and future planning. Solutions, such as the avocado nursery, organic fertilizer and pesticides as well as the solar drier were tested on farm.*

### **Experiments of CSA Practices**

*On-farm experiments were conducted during the 2016 and 2017 cropping seasons.*

*Basic grain experiments - The participating farmers learned about basic grain cultivation, collaborative research and tested 12 new varieties of beans and maize.*

*Reforestation/ Agroforestry - Awareness was raised among participating families and school children for the need of trees in the (agro)ecosystem. Around 1,000 trees were planted in farms and*

areas close to the Suctal watershed.

*Avocado Nursery - 14 Farmers were capacitated on the creation and management of an improved variety of avocado nursery.*

*Solar drier - Steps were taken for the women's savings group to receive a solar drier that can be used to process surplus foods and prolong the availability of food as well as add value to it.*

*Organic fertilizer and pesticides - First interviews were held to support the production of organic fertilizers and pesticides in the area. The interest of more farmers in the application and use of these organic inputs has been raised. Further operations are planned with DICTA.*

### **Policy Analysis**

*The analysis showed that adaptation to climate change in agriculture and other domains is integrated in the political agenda and policies in Honduras. Climate change is a topic that has an influence on many different domains of policy making and consequently there are many different strategies to respond to climate change. These strategies are often written in an unspecific way. Often, the coherence between the interlinked strategies is not clear as well as the hierarchy of the different institutions and strategies.*

*While the institutions in charge of climate change response keep evolving and efforts are being made, it has been evident that the public institutions have limited capacity to reach smallholder farmers on a large scale to support them in CC adaptation.*

*In the study area, there are several different international and national organizations active in the adaptation to climate change with a wide variety of activities. These organizations differ strongly in the extent to which they collaborate with other organizations and are coherent with national policies or try to empower local institutions. The role of national NGOs has been important as they have had a large impact on producers but show less coherence with national policies and strategies.*

*Strategies formulated at the national level that do include small-*

scale agriculture have not yet materialized in actions that reach smallholders.

### **Evaluation and Validation**

*The project was finalized with an evaluation with the different groups and a validation and exchange of the results and outcomes. The activities of PIASAC, particularly the experiments, were discussed, evaluated and validated together with the participating farmers and the implementing staff from DICTA.*

*In the evaluation with the farmers, the role and impacts of climate change were discussed, and the outcomes of the developed activities were shared and evaluated to discuss the success of the project for the farmers.*

*The farmers were in general content with the project and the assistance they received from outside.*

*All the farmers indicated that they have learnt valuable new skills and knowledge, ranging from awareness and knowledge about climate change effects, over cultivation of new and old crops to financial and entrepreneurial skills.*

*Concerning the basic grains experiments, some farmers had been more active than others, but all were interested in the outcomes, and the Lenca Precoz bean and the DICTA Lempira maize were of special interest. Furthermore, the farmers agreed on the need for future research and the general notion that it was important to maintain a diversity of genetic material in basic grains so that adaptation to the unpredictable future conditions would be easier.*

*The evaluation among the staff of DICTA showed that the methodology of applying a participatory innovation platform in order to transfer knowledge and technology was recognized to have high potential for the adaptation of small-scale agriculture to climate change.*

*It was concluded that for this type of project more time and resources would be needed to be able to design trainings and the experiments in a way that allows for better learning from the*

*farmers side. Furthermore, the implementing staff needs more training to apply this new methodology.*

## **Policy Implications and Recommendations**

### **Baseline Study**

*It is important to have in mind that family farmers have different characteristics, motivations and priorities when applying CSA practices.*

*It is necessary to fine-tune the intervention to the local context and especially the level of education of the farmers/participants.*

### **Innovation Platform**

*Participatory Innovation Platforms constitute a new methodology to be applied in climate change adaptation efforts with possibilities to streamline adaptation to the pressures of climate change.*

*In similar projects in the future, sufficient resources need to be devoted if participatory innovation platforms are applied.*

*The platform is a useful tool for governmental institutions to identify opportunities for improvement in current agricultural practices and to identify new practices, test them in an experimental community-based manner and receive feedback from the communities.*

### **Policy Analysis**

It is important for governmental institutions that have a role in climate change to achieve a higher degree of coordination between operating governmental and non-governmental organizations to fully harness the benefits of resources dedicated to family farmers and agriculture.

The demand for CSA practices from the farmers side to be incorporated in policies and regional extension implies a need for a new approach of governmental aid to family farmers.

*Source: Muller et al (2018). CCAFS Policy Brief. Wageningen, the Netherlands. CGIAR Research Programme on Climate Change, Agriculture and Food Security (CCAFS).*

## **Adoption and Scaling of the Climate-Smart Village Approach/Model**

FAO (2018) explained the concept of climate-smart agriculture as an approach that aims to overcome challenges posed by climate change, maintain, or improve food security, help farmers adapt to changing climatic conditions and reduce the amount of greenhouse gases in the atmosphere.

Based on all the definitions propounded for CSA, the main goal of climate-smart agriculture is seen as sustainable food security and development while three objectives/interlinked pillars necessary for achieving this goal are productivity, adaptation, and mitigation (FAO 2013a and Lipper et al., 2014).

In the light of this, a holistic concept of agriculture production, climate-smart agriculture (CSA), is therefore proposed as a solution to transform and reorient agricultural systems to support food security under the new realities of climate change.

According to Aggarwal et al. (2013), the Consultative Group for International Agricultural Research's (CGIAR) Research Programme on Climate Change, Agriculture and Food Security (CCAFS) is implementing a climate-smart village (CSV) approach in Asia, Africa, and Latin America to generate the evidence on the efficacy of climate-smart options. This is because according to Campbell et al (2016), the climate-smart village approach is a key part of the agriculture research-for-development (AR4D) agenda to address climate change challenges for food security.

The CCAFS started piloting the CSV AR4D approach or model in 2012 in Africa – Burkina Faso, Ghana, Mali, Niger, Senegal, Kenya, Ethiopia, Tanzania, and Uganda – (Aggarwal et al., 2018).

Aggarwal et al (2018) describes the climate-smart village approach/model which involves some components and processes. The CSV approach is an AR4D approach to test, through participatory methods, technological and institutional options for dealing with climate change in agriculture. It aims to generate evidence at local scales of what climate-smart agricultural options work best, where, why, and

how, and use this evidence to draw out lessons for policy makers, agricultural development practitioners, and investors from local to global levels.

The testing is done through a multistakeholder collaborative platform at CSV sites. The sites are a cluster of villages, small landscapes, or 10 km<sup>2</sup> grids. Every CSV site has its own theory of change (ToC; a narrative description of the logical causal chain from research activities to impact) linked to national priorities to ensure that it is consistent with initiatives and actions across different scales.

According to Aggarwal et al (2018), the strategy of the CSV approach is to:

1. Understand the effectiveness of a variety of CSA options (practices, technologies, services, programmes, and policies) not only to enhance productivity and raise incomes, but also to build climate resilience, increase adaptive capacity, and wherever possible, reduce GHG emissions.
2. Develop (no regrets) solutions in anticipation of future climate change impacts.
3. Understand the socioeconomic, gender, and biophysical constraints and enablers for adoption; and
4. Test and identify successful adoption incentives, finance opportunities, institutional arrangements, and scaling out/ up mechanisms while ensuring alignment with local and national knowledge, institutions, and development plans.

Figure 8 shows the major components of a typical CSV approach/ model. Climate-smart agriculture interventions are considered in a broad sense by including practices, technologies, climate information services, insurance, institutions, policies, and finance. However, according to Aggarwal et al (2018), there is no fixed package of interventions or a one-size-fits-all approach because options differ based on the CSV site, its agroecological characteristics, level of development, and capacity and interest of the farmers and of the local government.

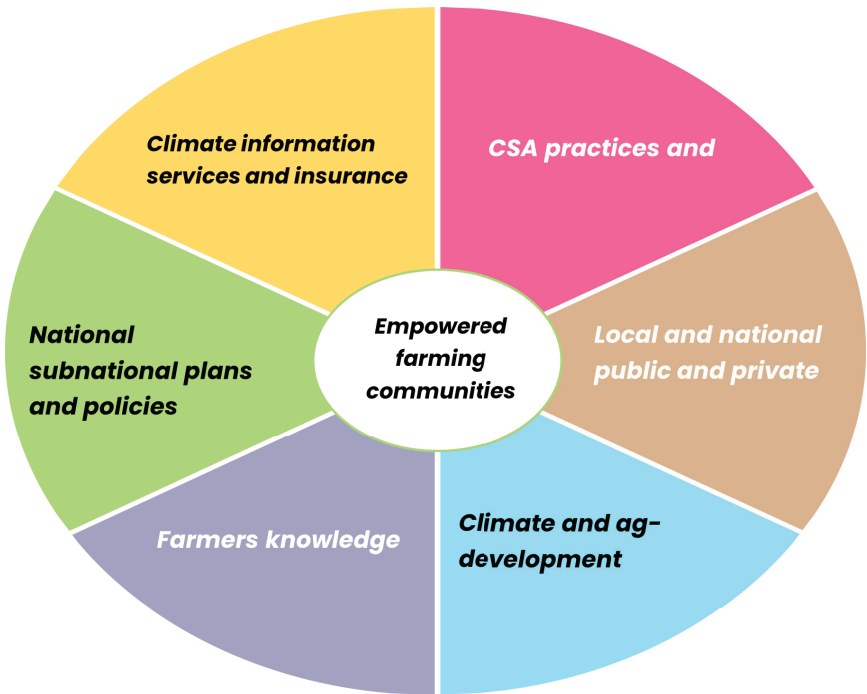


Figure 8: Key components of a CSV AR4D approach/model  
 Source: Aggarwal et al (2018).

As regards steps to be taken, they are based on stakeholder engagement and seldom follow a simple linear model. An outline of the steps in a typical CSV AR4D site is shown in Figure 9.

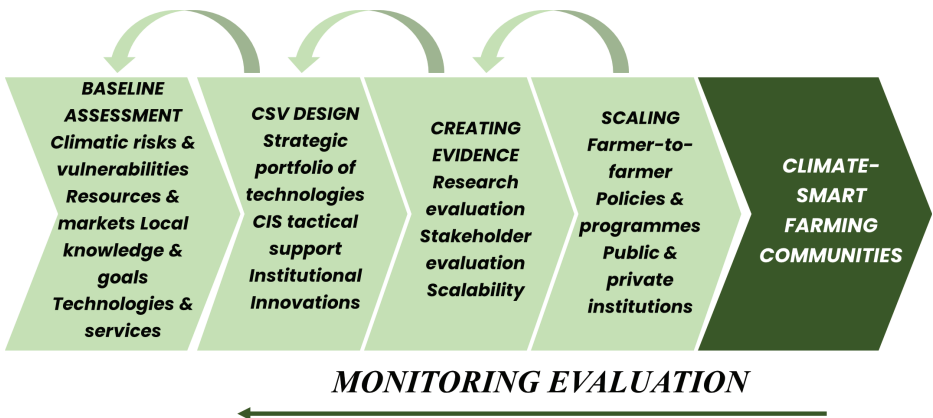


Figure 9: Outline of the steps in a typical CSV AR4D.  
 Source: Aggarwal et al (2018).

For the details of methods and examples of CSVs in Africa, interested people should consult Aggarwal et al (2018) titled “The Climate-Smart Village Approach: Framework of an Integrative Strategy for Scaling up Adaptation Options in Agriculture. Ecology and Society 23(1): 14. OR consult the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) (2016) publication - CSV Brochure PDF.

There is a lesson to be learned based on the finding of Aggarwal et al (2018) which indicated that “Climate-smart agriculture has shown promise at the local scale, but it has still not reached scale in most countries. Nevertheless, the CSV approach is a step further to overcome some of these challenges by being more integrative and inclusive.” Therefore, for the rethinking of the AR4D, which is the main subject of this report, there is a need for AR4D researchers to scale CSV approach/model to many other African countries.

## **Natural Resources Management**

### **Adoption of Soil health and fertilizer use strategy by AR4D Smallholder Farmers**

Soil health is a term which is widely used within discussions on sustainable agriculture to describe the general condition or quality of the soil resource. Soil management is fundamental to all agricultural systems, yet there is evidence for widespread degradation of agricultural soils in the form of erosion, loss of organic matter, contamination, compaction, increased salinity and other harms (European Commission, 2002).

Climate adaptation is facilitated by healthy Fertilizer and Soil Health in Africa. Soil requires fertilizer to be combined with other crop, soil, and water management practices (Wortmann and Stewart, 2021).

For farmers in developing countries who are starting from a very low resource base, access to inorganic fertilizers is essential to kick-starting their degraded systems, as well as to pesticides under frequent conditions of acute pest or disease problems. Action is needed today to reverse the downward spiral of low and inefficient fertilizer use, resulting in low yields and declining soil health.

In rethinking the AR4D, the issue of natural resources management

needs to be considered for smallholders in the innovation platforms. This is because to accelerate the role of fertilizer in building soil health to sustain farming and address climate change, it is recommended that there should be an agreement on a simple and compelling narrative. Soil health plays a role in climate change mitigation and adaptation, and improving soil health through mineral inputs seems an obvious investment with a high return. But farmers will not invest in soil health if there are no short-term incentives to make these investments, since changes in soil health and the services this delivers are only visible in the medium to longer term (IFDC, 2023).

In reassessing the AR4D, certain conditions need to be considered. For example, increasing productivity requires fertilizer and organic inputs in combination with additional measures, such as good agronomic practices, improved seeds, and other amendments.

Secondly, according to IFDC (2023), policy interventions that will create a favourable enabling environment need to be put in place to stimulate the uptake of fertilizer and soil health management recommendations. Redesigning fertilizer subsidies is crucial to make them smarter with respect to soil health management. Soil health is not only important for smallholder farming systems but also is a public good, and public investment in soil health, informed by actual quantification of these benefits, is thus required.

Thirdly, instead of a blueprint approach, soil health recommendations should always be localized, and context based. Several approaches can be followed to determine the best fertilizer recommendations while recognizing nutrient needs by crops and soil-specific properties. Site-specificity commonly requires an assessment of the soil fertility status of a particular field, and new data and analytical tools allow for the development of locally relevant recommendations at scale.

IFDC (2023) however, indicates that farmers are less likely to apply fertilizers where the risk of nonprofitable response is high, real or perceived. Raising the agronomic efficiency values for fertilizer to be profitable, an immediate need that addresses many of the challenges smallholder farmers are facing, would require motivating or encouraging farmers to invest in fertilizer. However, fertilizer application

needs to be tailored to specific farming conditions to increase yield, profitability, and nutrient use efficiency because of high heterogeneity across and within smallholder farms.

## **Adoption of Other Soil Management Practices (Cover crops, organic farming, etc.)**

Research has shown that the economic circumstances of smallholder farmers, render inputs unaffordable and as a result, a wide variety of alternative practices have been developed using variations in cropping and farming systems design as an alternative to industrially produced inputs such as fertilizer. The organic practices carried out by necessity, may contribute to improved soil health and sustainable practices but are generally insufficient in terms of production.

Therefore, the reassessment of the AR4D should not concentrate on the yields of commodity value chains alone but also consider sustainable production which will entail soil health and soil management practices. As a result, numerous and diverse farming approaches promote the sustainable management of soils with the goal of improving productivity, for instance, agroecology, which is discussed separately in section 5.5, conservation agriculture, organic farming, zero tillage farming and agroforestry.

According to FAO (2021), implementation of sustainable agricultural production practices such as conservation agriculture in its diverse forms, crop rotation, integration of perennials and agroforestry, and water resource management are crucial to improving productivity as well as the condition of natural resources and conserving ecosystem services. These practices also have climate adaptation, climate mitigation, and agricultural profitability co-benefits.

Similarly, climate-smart agricultural approaches that integrate natural resource management, such as agroforestry, no-till agriculture, forest and rangeland conservation and restoration, and improved water resources management, can help a food security activity support climate adaptation and mitigation objectives (Feed the Future, 2023).

All these practices are good strategies for improving soil health, and subsequently sustainable production, when incorporated into the

AR4D-IP model and adopted by smallholder farmers.

## **Agri-Food Systems**

### **Adoption of Agri-food Systems Strategy in the Reviewed AR4D**

To understand the importance of agri-food systems, Hall and Dijkman (2019) cited the definitions of agri-food systems by Grubinger et al (2010) and IPES (2015) as follows:

An agri-food system may be simply defined as the combination of activities and institutions around the production and consumption of a particular food item. These systems are complex, operating simultaneously at multiple levels of scale (from global to local) and time (particularly with respect to the timing of outcomes). Agri-food system activities include production, storage, processing, wholesaling, and consumption. In addition to these activities, an agri-food system also includes a complex “web of institutional and regulatory frameworks that influence those systems” (IPES, 2015).

An agri-food system has also been defined as “an interconnected web of activities, resources and people that extends across all domains involved in providing human nourishment and sustaining health, including production, processing, packaging, distribution, marketing, consumption, and disposal of food. The organisation of agri-food systems reflects and responds to social, cultural, political, economic, health and environmental conditions and can be identified at multiple scales, from a household kitchen to a city, county, state, or nation” (Grubinger et al., 2010).

These two definitions clearly show the importance of partnerships or multi-stakeholder partnerships in agri-food systems. However, agri-food system innovation will involve rethinking how research and innovation are deployed to transform the social, economic and environmental performance of the agriculture and food system (Hall and Dijkman, 2019).

There have been studies that noted the need to rethink food system governance to redirect food systems towards a more efficient, inclusive, and resilient pathway. Reardon et al (2017, 2018) paint a slight-

ly more mixed picture of the impact of food system transformation, suggesting that more stringent market demands can narrow the winners to those smallholders who have the resources to respond. The off-farm employment associated with transformation, however, has often provided the sector with exit options through the creation of jobs with low barriers to entry.

Ultimately, food systems involve complex challenges, whose scale and nature call for a systemic, multi-level and multi-stakeholder participatory approach across economic, social and environmental dimensions. Multi-stakeholder collaboration therefore needs to form an essential pillar of the food systems approach and its role in achieving a transition to sustainable food systems.

FAO (2017), Reardon et al (2017, 2018), Caron et al., (2018), and Swinburn et al (2019) also noted that the current food system transformation is the often-leading role of the private sector in driving innovation and change and setting direction.

Similarly, Reardon et al (2017 and 2018) and Willet et al (2019) also indicated that the urban market, the food industry firms that mediate access to the urban market, input supply chains, and agri-business firms that determine the development of input supply chains increasingly set the market incentives and conditions for the affordability and profitability of new farm technologies, and thus their adoption.

However, there have been debates about the appropriateness of food systems governance arrangements at a time when the environmental and social performance of food systems needs particular attention. This has led to the recognition that in setting new directions, they are not isolatable problems, but rather a set of interlocking issues and drivers (FAO, 2017, 2018; FAO et al., 2018; Caron et al., 2018; and Willet et al., 2019).

The proposed way to deal with this is the adoption of the idea of an agri-food system which has five domains, production, consumption, conditioning context, inputs and functionality (Hall and Dijkman, 2019). This is because according to FAO (2021), agri-food systems are broader than food systems, as these encompass the

entire range of actors and their interlinked value-adding activities in the primary production of food and non-food agricultural products, as well as in food storage, aggregation, post-harvest handling, transportation, processing, distribution, marketing, disposal and consumption.

The strategy which the IAR4D-IP Concept should therefore adopt, as part of the new emerging issues, is to include the concept of agri-food systems. This is because it has been argued that there is a need for the shift from innovation systems to system innovation perspectives that are emerging alongside the transformation agenda in which the whole system activities will include production, storage, processing, wholesaling, and consumption rather than in piecemeal.

Hall and Dijkman (2019) provided case studies of transition and transformation processes in the agri-food sector, and specifically in this report a case study related to Africa.

### **Case Study**

*Orange-fleshed sweet potato (OFSP)*

### **Challenge /Opportunity**

*Biofortified OFSP as a complementary approach to reducing VAD in sub-Saharan Africa.*

### **Innovation**

*Dissemination of research product through significant investment by philanthropic foundations in solving system and market failures at local levels, and community-based nutrition education .*

### **Impact Indication**

*Thus far, largely limited to project domain (as of 2019 but has gone beyond that as of 2024).*

### **Consequences**

*Significant improvement in the vitamin A status of the individuals who participated in the project-level intervention.*

### **Brief on the OFSP Case Study**

*VAD, a serious public health concern in many countries, can cause blindness and increase mortality. Breeding breakthroughs in the late 1990s in high-yielding OFSP varieties combined up to 50-fold increases in beta-carotene levels with drought tolerance and adaptation to local conditions. It was also identified that to combat VAD, these technological breakthroughs needed to be coupled with improved access to OFSP varieties and education to build awareness about the nutritional and health benefits of OFSP to improve the adoption, production and consumption of OFSP among rural households. Through the involvement of a major philanthropic foundation, significant investment has been directed to large advocacy and educational campaigns promoting household consumption of OFSP and associated value-chain development in countries where sweet potato is either the staple crop or an important secondary staple. To date, the primary evidence of OFSP impact comes from such interventions in Mozambique and Uganda, where investigation of scaling-up showed that the project led to OFSP adoption rates of 61 to 68% among project households, improved vitamin "A" knowledge at the household level and significantly increased (nearly doubled) vitamin A intake among targeted women and children (Lider and Dijkman, 2019).*

## **Establishment of Policies for Sustainable Agri-food Systems**

Hawkes and Parsons (2019) define agri-food systems policy as all the policies that influence food systems and what people eat. The many challenges faced (and created) by the food system indicate that food policy is not yet fit for purpose. Rethinking food policy presents a major opportunity to improve nutrition and health, protect the planet and contribute to economic and social prosperity, equitably.

Policies act on different parts of the food system in different ways. This is because most of them affect the private sector, input suppliers, farmers, fishers, horticulturalists, agribusinesses, distributors, traders, manufacturers, entrepreneurs, retailers and food service businesses in the food supply chain and all the businesses they rely on that make up so much of the food system. Since the state itself does not produce

food, the public sector often relies on the private sector to implement public policy. In turn, the private sector has a strong influence on policy development, lobbying for or against particular initiatives. The private sector also has its own policies, rules, standards, audits and accountability mechanisms that affect food.

However, the role of food policy in tackling these problems is gaining traction at many levels, but the persistence of food-related problems and increasing pressures on the food system make clear that a better policy is needed. If inadequately addressed, these problems will only get much worse (Hawkes and Parsons, 2019).

In the process of developing a fresh approach to food policy, Hawkes and Parsons (2019) described ten steps that decision-makers, advocates, the private sector and all food policy stakeholders can take to make food policy more effective, equitable and efficient.

1. **Take a systems approach:** Because all the elements of the food system interconnect, action in one part of it can reverberate throughout, from the local to the global. A systems approach means identifying these interconnections and understanding their impact across historically isolated policy areas. It also entails looking for shared solutions to food system problems. Swinburn et al (2019) gave the example of the Lancet Commission on Obesity (2019) that applied a systems perspective and found obesity had links to undernutrition and climate change.
2. **Understand the connections:** A systems approach means recognising that food policy is applied within multiple networks of connections. Connections exist between different parts of the food system itself; they also exist between the challenges produced by the system. Similarly, the impact of implementing policy decisions can have knock-on effects on other parts of the system (such as when the decisions of one country impact on another). Getting granular about these connections is essential to understand the intended and unintended consequences of policy decisions on what people eat.
3. **Recognise tensions and manage trade-offs.** The many different interests, goals and values in the food system produce numerous

tensions. There are ways to make the system work with greater synergy (see Steps 4–10 below), but these require negotiation and hard political choices. Power dynamics are part of the food system. Technical fixes alone cannot solve food policy conflicts.

4. **Make policies coherent.** Connections offer the potential for synergies as well as conflicts. Yet opportunities to reconcile policy objectives and promote mutually reinforcing policy actions are often missed. Coherent policy is a more efficient way of meeting different objectives and can expand political traction and breadth of support (e.g., nutrition and environmental advocates campaigning for sustainable diets).
5. **Embed food in all policies.** Food systems challenges are the product of many different policies. Ensuring that policies – even if seemingly unrelated to food – work to deliver food-related goals can be termed “food in all policies” (akin to “health in all policies”). For example, ensuring that social protection programmes are sufficient to enable access to a healthy diet.
6. **Join up the process of making food policy.** Because it involves people in numerous sectors with different objectives, different aspects of food policy are typically dealt with in a disparate and fragmented manner. Developing a more integrated approach to policy – such as devising a “national food policy”, bringing together different ministries with shared interests, or providing an integrated mechanism for private sector engagement has the potential to help fix the fragments. This will require a new type of governance.
7. **Advocate for better governance structures for the food system.** Fragmented governance structures perpetuate fragmented policymaking. Lack of any specific place within government to connect food policy means there is little opportunity for crossover. Moreover, lack of transparency over which food-related policy areas are being dealt with by which parts of government means outside stakeholders may have difficulty sharing ideas. Thinking through and implementing a different governance model for food policy will be necessary to take Steps 1–6.
8. **Use the Sustainable Development Goals (SDGs) as a framework.**

In 2015, the SDGs adopted by the UN's 193 government members acknowledged the complexity of development and the need for all policymaking to integrate economic, social and environmental considerations. They recognised that development was needed globally, not just in the poorer parts of the world. This integrated and inclusive approach envisioned by the SDGs can be used as the foundation of a more holistic approach to food policy. FAO (2016) also emphasized that the SDGs can also be a tool for pushing food higher up the governmental agenda, as food is fundamental to achieving many of the goals.

9. **Put people at the heart of policymaking.** Food systems challenges matter because they affect people. Currently, most food policy is done to people rather than with them. Engaging with people's real lives is essential if we are to understand the causes of problems and develop solutions that meet people where they are. There is a tremendous opportunity to design better food policies by listening to unheard voices. This people-centred approach is imperative if we are to address the huge inequity in the food system.
10. **Keep focused on finding solutions to specific problems.** Food policy is vast in scope and the food system is complex. Staying focused on specific problems and clear goals is vital. Food policymaking should always start with a clear food-related goal designed to improve people's lives and work back to identify solutions. Steps 1–9 provide guidance on how to do so.

## **Adapted crops / Forgotten foods / Indigenous commodities**

### **Adoption of adapted and forgotten foods/crops into the value chains of IAR4D-IPs**

As discussed in Chapter 4, several names have been given to adapted crops/foods which include forgotten crops, neglected crops and indigenous crops, but they are all referring to the same crops.

The United States Special Envoy for global food security, in 2024 indicated that global food security should be based on adapted crops.

Hence, in discussing how neglected crops can be part of the solution

in Africa, Lefebvre et al (2023) indicated that expanding the use of neglected crops can help to diversify agriculture and food systems and introduce a greater variety of foods into global supplies, including more nutritious cereals, fruits and vegetables, and roots and tubers while building resilience to climate change and providing employment and alternate sources of income for farmers. With parallel interventions and appropriate investments, including in additional agricultural production, diversification of food sources can help reduce consumer vulnerability and increase consumer price stability.

Thus, a true transformation of agrifood systems in Africa should begin with growing crops that can withstand more heat, less moisture, greater pest and disease pressure, and extreme weather events like droughts and floods, ensuring soil health to enable production of those crops while simultaneously favouring food security and nutrition.

An important opportunity in this regard is revitalizing indigenous and traditional food crops (ITFCs), many of which are highly nutritious, that currently are or have been in the past eaten regularly in Africa. Many ITFCs may be better suited to tolerate hot and dry conditions, since they have been adapting to the local environment for thousands of years.

In rethinking the AR4D, the 2021 global manifesto on forgotten crops/foods' actions will be useful to respond to the challenges. The immediate actions that were recommended include the following:

1. There should be an effective and comprehensive awareness campaign backed up by a sound knowledge management system to ensure that all in society recognise and value forgotten crops/foods for their nutritional, health, medicinal, cultural and environmental benefits.
2. There should be a compilation of inventories, detailed characterizations and assessments of the conservation status of forgotten crops in all regions of Africa at country level.
3. There should be policy and economic support for forgotten crops to promote economic development through the formation of farmer-based small and medium enterprises. The reintroduction of forgotten/neglected crops must be accompanied by policies

and practices that promote alignment with the broader sustainable development agenda.

4. There should be capacity development/strengthening activities for all the stakeholders to enable collective development of research and innovation agenda.
5. Partnership should be established for the development of forgotten crops to generate and share knowledge and technologies on forgotten crops, using interdisciplinary and participatory approaches. Example of such partnership is the Vision for Adapted Crops and Soils (VACS) initiative, launched in February 2024 by the U.S. State Department's Office of the Special Envoy for Global Food Security, in partnership with the UN Food and Agriculture Organization (FAO) and the African Union (AU).
6. More research and innovations are needed to evaluate and ensure the availability of nutrients in these crops, including examining the impacts of processing and storage on nutritional value. More investments and research are also needed to ensure and deliver scalability in their harvesting, processing, and distribution.

## **Agroecology**

### **Adoption of the Regenerative Agriculture Model into the IAR4D-IP Model**

A range of claims have been made by different researchers about the potential of regenerative agriculture to enhance the sustainability of food production, including the possibility that regenerative agriculture could form part of a climate change mitigation strategy.

Rhodes (2017) indicated that regenerative agriculture has been proposed as an alternative means of producing food that may have lower or even net positive environmental and/or social impacts.

Interest in regenerative agriculture is growing across the entire food value chain. It is a response to growing food insecurity and increasing threats from climate change, and a recognition that agriculture is part of the solution to the world's biggest challenges. Food and other products that are more friendly to the environment are also a big

trend among consumers in the United States of America and other countries, especially among Millennials.

In rethinking the AR4D, there is a need to develop technologies that can help farmers apply regenerative practices and research the best ways of applying regenerative agriculture in the field.

Syngenta Company indicated that more investment is needed to accelerate the widespread adoption of regenerative agriculture practices, and farmers, policymakers and agricultural companies need to work together. However, the transition cannot be left to farmers alone, as governments need to support them by rethinking existing farming policies to make regenerative agriculture economically attractive. Subsidies can be restructured to incentivize farmers to phase out soil-degrading practices in favour of approaches that build healthy, fertile soil while sequestering carbon.

Reports have shown that large food value chain companies are committing to source ingredients produced through regenerative practices. Nestlé is committed to source 50% of key ingredients through regenerative agricultural methods by 2030. PepsiCo is also committed to regenerative practices across 7 million acres by 2030.

Many partnerships are also being formed to help farmers adopt regenerative agriculture. Syngenta Group and The Nature Conservancy are collaborating on business practices to improve sustainability, including soil health, resource efficiency and habitat protection. Syngenta also work with many others, including the World Business Council for Sustainable Development, Solidaridad, Cargill, and Kellogg's.

The private sector also has an important role. Companies including Syngenta Group can take a lead by delivering a set of starter regenerative solutions that generate measurable results for farmers within one growing season.

A Transformative Partnership Platform on agroecology has been formed. It is composed of ICRAF, CIRAD, Biovision, CIFOR, the Food and Agriculture Organization (FAO), TMG Think Tank for Sustainability and UNEP. The partnership, which is being coordinated at international, national and local levels, connects research and development, science,

social movements and local knowledge, to inform donors and policy makers, and foster innovation.

## **Youth Bulge**

### **Strategies to address Youth Population Bulge in Africa**

In rethinking the AR4D, the issue of youth bulge must be taken seriously. According to Justin Yifu Lin (2012), the conventional approach for dealing with youth bulge is to make young people job ready. The idea is that young people's skills or more broadly, human capital needs to be increased to enhance their productivity in the labour market.

Different strategies have been proposed to mitigate youth bulge in Africa. According to Rangi (2022), agriculture has long been the dominant sector in much of Africa in terms of output, employment and export earnings. In fact, agriculture is arguably the most important business opportunity for the continent's young people to embrace.

This is especially true when thinking of young people's roles in agricultural value chains. There is a need to take a 'two-pronged' approach to enhancing their skills, not only in producing safer foods free from crop pests and diseases but also in involving them as village-based advisors. They could also combine these roles to tackle the ever-increasing food crisis (Rangi, 2022).

Similarly, Mueller and Thurlow (2019) indicated that Africa's fast-growing youth population has prompted worries about high unemployment and unrest among some, while others expect young people to provide the digital know-how and entrepreneurial spirit needed to transform Africa.

In a similar vein, Atakos et al (2013) reported on the discussion on the involvement of youth in agricultural innovation systems. The discussion focused on how to make agriculture attractive to the youth in rural areas. Youth associations were identified as an ideal entry point to reach out to young people and encourage them to embrace agriculture as a business. In Africa, the challenge of land ownership discourages young people from taking up agriculture and the fact that it is labour intensive means they are attracted more to white collar jobs, which are hard to come by.

However, Bell Okello, the Chair of Promoting Local Innovation in Ecological Oriented Agriculture (PROLINOVA, Kenya) noted at a workshop that youth involvement can be in any part of the agricultural value chain and not necessarily at the farm production level where they have to take a hoe and head to the farm. The youth need to be encouraged to study agricultural sciences, and they should be helped to learn practically. Research institutions were seen as good avenues for mentoring the youth and encouraging them to engage in agricultural Innovation.

Capacity building and strengthening partnerships have been reported to help to address the youth bulge and the growing demand on youth and their role in agriculture to feed the rising population. Two good examples/case studies of how capacity building and partnerships have been used to address youth bulge was described by Rangi (2022).

The first example/case study where CABI has extensively supported agricultural production, especially amongst smallholder farmers, including the youth in Africa and beyond, is the “Good Seed Initiative” which ran in East Africa from 2013 to 2016. The initiative sought to promote good production of quality African Indigenous Vegetables (AIVs) to improve the income of seed producers.

The project enabled women and youth in Uganda and Tanzania to engage in market-driven profitable value chains that required minimal capital and other factors of production. This was achieved by empowering women and youth with requisite skills for seed entrepreneurship of indigenous vegetables which continued to be in high demand.

The donor for the initiative was Irish Aid while the partners were Mukono Zonal Agricultural Research and Development Institute (MuZARDI), National Crops Resources Research Institute (NaCRRI), The World Vegetable Centre, Eastern and Southern Africa (AVRDC-ESA), INADES-Formation Tanzania (IFTz), Horticultural Research and Training Institute Tengeru (HORTITengeru).

The second example: In Uganda, where 70% of those unemployed are youths, CABI partnered with Ziobwe Agaliawamu Agri-business Training Association (ZAABTA) in the Luwero District. The project enabled youth to provide various services in major agricultural and profitable

value chains in the country. Implemented under PlantwisePlus, the training sought to increase the supply of safer food through enterprises driven by women and youth to meet the growing demand by consumers in rural, urban and peri-urban markets.

Rangi (2022) noted that helping young people to provide services as ‘village-based advisers’ will be an attractive option to youth, even if they wish to engage in this activity alongside regular farming activities.

However, according to Mueller and Thurlow (2019), to harness the advantages of Africa’s youth bulge, policies need to be rooted in evidence rather than in myth, and they need to be broadly inclusive rather than just youth-focused. Policies at the national and local levels that help farmers to adopt improved techniques and technologies, establish non-farm enterprises, and connect with growing urban markets can spur inclusive development and improve livelihoods for urban and rural people of all ages.



## Chapter 6

# Analysis of Additional Elements to the IAR4D-IP Partnership Models to Deliver African Agriculture

*Chapter 6 effectively underscores the critical role of partnerships and initiatives in rethinking the IAR4D concept to address the evolving challenges facing African agriculture. This chapter also highlights the need to strengthen and diversify partnership models within the Integrated Agricultural Research for Development (IAR4D) and Innovation Platform (IP) frameworks, aligning them more closely with emerging issues. Guided by the objectives outlined in CAADP-XP4 and insights from the concept note, this section could be further refined by:*

- 1. Leveraging Models like the Soil Initiative for Africa (SIA) and the Coalition of Action for Soil Health (CA4SH): Presenting these initiatives as models to support regional soil health projects within IPs, especially in areas impacted by severe soil degradation.*
- 2. Incorporating the Vision for Adapted Crops and Soils (VACS) Initiative: Showcasing VACS as a framework for expanding indigenous crop production through IPs, promoting resilient, climate-adapted food systems.*
- 3. Outlining an Implementation Framework: Proposing a structured framework that defines the roles of government, academia, the private sector, and international partners in coordinating, managing, and sustaining the IAR4D-IP models across Africa.*

## Importance of Partnerships and Initiatives in Rethinking the AR4D Concept

Different types of partnerships were discussed in Chapter 2 but there was no specific reference to the new emerging issues and challenges that were discussed in Chapters 4 and 5 which necessitate the discussion of this section.

According to Grow Africa (2013), Agriculture and agribusiness together could be a \$1 trillion sector in sub-Saharan Africa by 2030, up from \$313 billion in 2010. However, poor infrastructure, the lack of developed supply chains and insufficient financing contribute to low yields and unreliable supply from smallholder farmers, who make up the majority of the sector's production base. Therefore, improving the stability of the agricultural supply chain is also vital to attracting the much-needed foreign direct investment which can come through partnerships.

In providing reasons why there should be partnerships, ILAC (2010) indicated that three reasons are commonly identified in literature on partnership. The first reason is to gain access to resources (including knowledge) that are not available within a single organization. The second reason is to improve knowledge management across the boundaries separating organizations that share similar long-term goals (e.g., sustainable poverty reduction) but traditionally work in isolation. Finally, the third reason is to build the capacity to influence policies or economic activity by participating in social networks. However, from the experience of the Learning Laboratory Programmes, a fourth reason is established which is to create a safe and nurturing space for learning and innovation that is not present within one's own organisation.

Multi-stakeholder partnerships (MSPs) in agriculture denote a collective action of various institutions, such as the government, private companies, NGOs, and donors intended to support developing and improving agricultural value chains (Dentoni et al., 2018 and Tinarwo et al., 2018). Some researchers have also noted that MSPs can be a practical approach to solving economic, social, and environmental problems to achieve impact at scale (de Bakker et

al., 2019 and Totin et al., 2020). According to Eweje et al (2020), multi-stakeholder partnerships have also been considered fundamental to achieving the sustainable development goals (SDGs).

The primary goal of MSPs entails stimulating agricultural innovation and, through it, contributing to rural development to achieve the SDGs (Breeman, et al., 2015).

According to IFAD (2011), African agriculture is dynamic and involves a variety of stakeholders, challenges, alliances and risks. Therefore, Marco and Paul (2011) noted that

establishing effective partnerships can lead to new configurations of power and development opportunities, establishment of alliances, more effective work processes and ultimately market transformations.

At the European Union (EU)-African Union (AU) Summit in February 2022, on the role of research and innovation partnerships for development, Hans Stausboll, Director of Relations with Africa in the European Commission's Directorate-General for International Partnerships (DG INTPA) said "Strong scientific partnerships can act as catalysts for successfully tackling global challenges effectively, ranging from economic recovery, climate change, rapid population growth, etc."

## **Existing and New Partnerships Associated with Emerging Issues and Challenges in Delivering African Agriculture**

As new emerging issues and challenges occur in African agriculture, new partnerships and initiatives are also evolving to assist in solving such challenges. Therefore, this section describes the partnership models that are available for each emerging issue and challenge for the awareness of AR4D stakeholders in Africa. In addition, respondents were requested to suggest the most effective partnership model opportunities for the emerging issues and challenges that are needed to pursue broader roles in driving AR4D in Africa and how to institutionalize the partnership models. The results are presented in Table 5.

## Climate-Smart Agriculture Partnership/Initiatives

As part of the discussion on the state of CSA in Africa, it is pertinent to mention the roles of initiatives, alliances and local and international organization partnerships in the promotion of CSA.

International institutions, such as the World Bank, the African Development Bank (AfDB) have been at the forefront in trying to complement efforts by FAO to promote CSA in Africa. Other organizations, including the New Partnership for Africa Development (NEPAD) and the Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN), continue to work on promoting resilient and sustainable livelihoods for smallholder farmers in Africa. For instance, FANRPAN, in partnership with the International Development Research Centre (IDRC), the African Capacity Building Foundation (ACBF), the Norwegian Agency for Development Cooperation (NORAD) and the Rockefeller Foundation, is currently involved in several initiatives aimed at CSA in several African countries.

Some of the most important objectives of the FANRPAN CSA programme include conducting a comprehensive analysis of CSA policies, programmes and institutional arrangements in the earlier mentioned focal countries, generating CSA research-based evidence, and of the uptake and up-scaling of CSA practices as best practice in Africa (FANRPAN, 2012).

Similarly, NEPAD launched an alliance of diverse partners known as the Africa Climate-Smart Agriculture Alliance in 2014 tasked with reaching six million farming families through CSA processes (NEPAD, 2014). Broadly, the alliance seeks to contribute to helping 25 million farmers become more resilient and food secure by 2025. The World Bank also recognizes that scaling up CSA to adapt farming systems to climate change and mitigate the impact of climate change can help millions of farmers in low-income countries (Reichwage, 2014). The Bank is likewise actively involved in funding CSA initiatives in Africa and the rest of world. The World Bank's CSA work plan focuses on three main areas:

- Better use of existing knowledge
- Filling knowledge gaps

- Supporting global dialogue and action by investing in climate-smart agriculture.

All these initiatives by International Institutions in conjunction with National Organizations have the capacity to synergistically ensure resilient smallholder farming systems, thus safeguarding food security in the wake of climate change.

As a result of the importance and attention given to climate-smart agriculture, Williams et al (2015) also provided information on several alliances that have been formed and on many institutions that have been involved in CSA which include the following:

- National governments and relevant ministries and agencies, African Development Bank (AfDB), sub-regional and national development banks, private sector organizations, and NGOs.
- Partnerships networks: including the Africa CSA Alliance, the West Africa Alliance, the Global CSA Alliance and the Ecosystems Based Adaptation for Food Security Assembly (EBAFOSA).
- International Agricultural Research Centres: the Research Programme on Climate Change, Agriculture and Food Security ([CCAFS](#)) addresses the increasing challenge of global warming and declining food security on agricultural practices, policies and measures through a strategic collaboration between the Consultative Group for International Agricultural Research (CGIAR) and Future Earth. It is led by the International Center for Tropical Agriculture (CIAT).
- CCAFS is a collaboration among all the 15 CGIAR research centres and coordinates with the other CGIAR research programmes. CCAFS brings together the world's best researchers in agricultural science, climate science, environmental and social sciences to identify and address the most important interactions, synergies and trade-offs between climate change and agriculture. Learn more about our partners.
- The International Water Management Institute (IWMI) works as a think tank to provide science-based solutions, products and tools and to facilitate capacity strengthening and uptake of research

findings. IWMI has offices in Eastern, Southern, North and West Africa and leads the CGIAR Research Programme on Water, Land and Ecosystems (WLE) which combines the resources of 11 CGIAR centres, FAO and numerous national, regional and international partners to provide an integrated approach to natural resource management research. WLE promotes an approach to sustainable intensification in which a healthy functioning ecosystem is seen as a prerequisite to agricultural development, resilience of food systems and human well-being.

- United Nations Agencies: the United Nations Environmental Programme (UNEP) focuses on supporting the adoption of CSA through ecological approaches to increasing food productivity in agriculturally-dominated landscapes, whilst maintaining important services produced by natural habitats, such as forests, wetlands and rangelands. Healthy ecosystems provide services, including for example water (quality and quantity), nutrients, energy, and pollinators that underpin agricultural productivity, particularly in smallholder-dominated landscapes. The actual economic value of such ecosystem services is still underestimated. Recent economic valuation studies underline the importance of a better understanding and inclusion of Natural Capital and Ecosystem Services when developing plans for a more sustainable productive sector. Examples of such emerging studies include the upcoming study on The Economics of Ecosystem Services and Biodiversity for Agriculture and Food production (TEEB-AgF) and the Economics of Land Degradation study (ELD). UNEP was also instrumental in the formation of EBAFOSA, a pan-African policy framework and implementation platform, a solutions space bringing together key stakeholders and actors along the entire EBA-driven agriculture value chain, to forge partnerships aimed at up-scaling EBA-driven agriculture and its value chains into policy & implementation through a country-driven process to ensure food security, climate adaptation, enhanced productivity of ecosystems and link to supply and demand-side value chains.
- FAO is committed to supporting CSA initiatives at all levels and scales. It implements a large portfolio of projects that is aimed

at increasing agricultural productivity and adaptation to climate change in Africa. FAO is also continuing to develop methods, tools, approaches and information that assist in the adoption of CSA and the development of appropriate policy frameworks. It also supports countries in their application. CSA is a major area of work under its current strategic programme. FAO also supported NEPAD to facilitate the establishment of the African CSA Alliance and, at the regional level, FAO is also supporting the regional alliances, including the West African CSA Alliance. FAO has supported linking the national, regional and continental CSA agendas to the National and Regional Agricultural Investment Programmes and the NEPAD Comprehensive Africa Agricultural Development Programme (CAADP). The FAO country representations are working with the relevant national authorities to facilitate these programmes, and particularly to promote integration of the CSA approach in the national agricultural development strategies and National Adaptation Plans (NAPs).

- AICCRA. The Accelerating Impacts of CGIAR Climate Research for Africa (AICCRA) project contributes to the construction of an African future that is climate-smart and driven by science and innovation in the agricultural field. It is led by Alliance of Bioversity International and CIAT and supported by a grant from the World Bank's International Development Association (IDA). AICCRA works to increase access to climate-smart agriculture (CSA) technologies for millions of smallholder farmers across Africa. When farmers have improved access to technology and advisory services, they can plan for climate-related events, thereby safeguarding their livelihoods and ensuring food security. However, women farmers and other marginalised groups, do not access the climate information and climate-smart technology and practices to the same extent as men due to entry, structural and systemic barriers. To address this disparity, AICCRA adopts a socially inclusive and gender-transformative approach, working to understand the power dynamics and social contexts that influence the scaling of CSA and climate information services (CIS). Explore AICCRA's work at [aiccra.cgiar.org](http://aiccra.cgiar.org).

## Fertilizer and Soil Health

### i Soil Initiative for Africa (SIA)

This is an initiative that is being coordinated by the African Union (AU) Development Agency-NEPAD (AUDA-NEPAD), which is Africa's first-ever continental technical and development agency. The foundation of AUDA-NEPAD is built on the New Partnership for Africa's Development (NEPAD) that was established as Africa's continental renewal and development programme by the AU in 2001 and championed through the then NEPAD Secretariat, based in Midrand, South Africa.

To address Africa's soil health and associated food security crisis, the African Union Commission (AUC) tasked the Forum for Agricultural Research in Africa (FARA) and the other ex-Pillar 4 agencies in collaboration with specialised agencies, especially the Food and Agriculture Organization of the United Nations (FAO), to develop a long-term framework for a Soil Initiative for Africa (SIA). The SIA Framework is to improve and maintain the health and productivity of Africa's soils across all agricultural sub-sectors (e.g. arable, fisheries (inland), forestry and livestock).

To ensure the SIA is effectively implemented, the African Fertilizer and Soil Health (AFSH) Action Plan (2024-2034) was developed. The 10-year plan details the actions to be implemented within the first decade of the SIA Framework with an emphasis on addressing the outcomes of the Africa Fertilizer and Soil Health Summit held in March 2024. The AFSH Action Plan includes specific actions to launch and implement the SIA Framework and support improved agricultural productivity through improved soil health and balanced and efficient fertilizer (organic and inorganic) use. The SIA Framework will continue through the implementation of subsequent 10-year Action Plans, following a review of progress and lessons learnt during the first 10 years of implementation.

The vision of the AFSH Action Plan is to accelerate inclusive agricultural growth and transformation and contribute to ending hunger and poverty. The key strategy to successfully implement the AFSH Action Plan is to harness multi-stakeholder partnerships and investments to drive policies, finance, markets, research and development (R&D), ex-

tension and capacity for efficient use of fertilizer and sustainable soil health management.

## ii **Coalition of Action for Soil Health (CA4SH)**

The Coalition of Action for Soil Health is rooted in the UN Food Systems Summit in 2021 and anchored in the United Nations Convention to Combat Desertification (UNCCD), because of the glaring need for a focus on soils as part of the food systems transformation process.

The main objective of the CA4SH is to improve global soil health by addressing critical implementation, monitoring, policy, and public-private investment barriers that constrain farmers from adopting and scaling out healthy soil practices. The coalition advocates for multi-stakeholder partners to facilitate the adoption and scaling of a global mechanism and processes.

This will be done to guide and catalyse public and market-based private sector investments in soil health with positive outcomes for economic returns and growth, improved productivity and rural livelihoods, climate action and nature. In addition, the CA4SH aligns with and leverages the work of the United Nations Convention to Combat Desertification.

## **Agri-food Systems**

According to UNEP, FAO and UNDP (2023), food systems stakeholders considered for a multi-stakeholder initiative can be categorized as follows:

- Public sector, including national and subnational institutions.
- Private sector, including associations of small and medium-sized agrifood enterprises,
- large agribusinesses and inputs, business and financial service providers.
- Civil society, including community-based, grassroots, Indigenous Peoples' groups and
- non-governmental organizations, consumers and citizens associations.

- Organizations representing small, medium and large producers (farmers, pastoralists, fisherfolks, forest dwellers).
- Other food systems workers, including informal actors.
- International community, including development partners and donors.
- Academia and knowledge institutions, including those funded by and responding to the
- research interests of the other stakeholders.
- Media

According to Bandura and Girgvliani (2024), collaborations between international organizations and philanthropy can make a significant impact on food systems by ensuring sustainable and equitable access to food across the several recent initiatives exemplify the opportunities presented by such cooperative efforts. According to them, examples of Partnership Model Opportunities for Agri-food Systems are as follows:

### **i Global Alliance for Improved Nutrition (GAIN)**

GAIN aims to improve nutritional outcomes by encouraging PPPs that enhance access to nutritious foods. Its activities include supporting small and medium-sized enterprises in the food sector, advocating for effective policies, and implementing nutrition programmes in communities at risk. For example, GAIN Nordic Partnership with Danish and Ethiopian organizations aims to improve dairy nutrition for Ethiopia's low-income consumers. This project focuses on producing fortified, low sugar yogurt affordable for families, especially targeting children and malnourished mothers.

### **ii Increasing Food Safety for Food Security (FS4FS) Programme**

The FS4FS initiative focuses on boosting food safety standards worldwide to ensure that food systems are secure, resilient and capable of contributing to the global food security agenda. The organization has been instrumental in Africa, where the US Department of Agriculture

(USDA), in collaboration with the US Agency for International Development (USAID) and the US Food and Drug Administration (FDA), has initiated a five-year programme, investing \$15 million to enhance food safety capacity across the continent.

### iii **Global Food Safety Initiative (GFSI)**

GFSI is a business-driven initiative engaging stakeholders from various sectors to promote continuous improvement in food safety management systems. It fosters knowledge exchange, establishes industry-wide standards, and encourages innovative food safety practices.

Building inclusive partnership models that include philanthropy, and international organizations can secure more funding and enable innovation in food systems.

### **Adapted Crops/Foods**

The Vision for Adapted Crops and Soil (VACS) is the latest wave in the development thought for Africa's agriculture, food, and nutrition security. The brain behind VACS is Dr Carry Fowler, the US special envoy for global food security. Since the beginning, he has aligned his thoughts with the thoughts and actions of the African Union Commission (AU) and the Food and Agricultural Organization of the United Nations (FAO). The VACS has also drawn inputs from several other organizations, such as the Forum for Agricultural Research in Africa (FARA), the CGIAR, AGRA, the Rockefeller Foundation, universities in the US and Africa, and ancillary organizations (Fatunbi, 2024).

The objectives of VACS are to foster sustainable and resilient food systems in Africa and other parts of the world. VACS seeks to boost agricultural productivity and nutrition by developing diverse, climate-resilient crop varieties and building healthy soils.

Fulfilling this vision will certainly require identifying indigenous or adapted food crop commodities with highly competitive nutrient content and the capacity to adapt to the known and projected vagaries of climate change as well as having the potential to contribute to the desired food systems transformation in Africa.

However, on 9th July 2024, an initiative to build resilient agrifood sys-

tems grounded in diverse, nutritious, and climate-adapted crops grown in healthy soils, marked another milestone through a new partnership between the Food and Agriculture Organization of the United Nations (FAO) and CIMMYT, a CGIAR Research Centre.

FAO and CIMMYT have signed a Memorandum of Understanding establishing a Partnership for the Vision for Adapted Crops and Soils (VACS) initiative. The Partnership will play a pivotal role, leading efforts to coordinate, grow, and strengthen the VACS movement across a wide range of public and private stakeholders.

FAO-CIMMYT partnership aims to boost farm productivity and nutrition.

Since its launch, the VACS initiative has supported many activities, including the Quick Wins Seed Systems Project in Africa, which promotes the adoption of climate-resilient dryland grains and legumes and helps smallholders access seeds of local nutritious crops, such as pearl millet, finger millet, and mung bean, and connects them with markets and agri-services. Meanwhile, the VACS Fellows programme trains African breeding professionals, strengthening regional agrifood systems. In Central America, the InnovaHubs partner with CGIAR, Mexico, and Norway to connect farmers with markets, technologies, and high-quality seeds. FAO, through its work, including as part of the International Network on Soil Fertility and Fertilizers (INSOILFER) and the Soil mapping for resilient agrifood systems (SoilFER) project, assists members with the implementation of sustainable and balanced soil fertility management for food security and the promotion of actions to enhance the link between nourished healthy soils and opportunity crops.

Leveraging on the expertise and mandates of both CIMMYT and FAO, the new joint VACS Partnership will support, coordinate and amplify the impact of all stakeholders of the VACS movement, public and private, through the following functions:

- **Strategy:** The Partnership will develop and maintain a VACS strategy, including by defining its mission, objectives, and approach.
- **Resource Mobilization:** The Partnership will work with public and

private sector donors to increase investments in VACS-aligned work.

- Donor and Implementer Coordination: The Partnership will coordinate work among major VACS donors and implementers, including by coordinating the VACS Implementers' Group.
- Stakeholder Engagement: The Partnership will strengthen ties across public and private stakeholders to catalyse action in support of VACS, including by coordinating the VACS Community of Practice and the VACS Champions programme.
- Shaping the Policy Environment: The Partnership will coordinate the development of a VACS policy agenda and work to advance it at the local, national, and multinational levels.
- Communications: The Partnership will elevate the importance of diverse crops and healthy soils as a fundamental means of advancing a range of sustainable development goals.
- Results Management: The Partnership will develop and maintain a results management framework to track progress in achieving VACS objectives.

## Agroecology

### The Transformative Partnership Platform (TPP)

In 2019, several key meetings and events delved into the evidence on agroecological food system transformation. At one of these, CGIAR centres and French research institutions teamed up to create an initiative aimed at addressing important knowledge gaps about agroecological transitions. They then produced a call for action on the issue, stressing the need for change in how this kind of research is done.

The TPP is composed of ICRAF, CIRAD, Biovision, CIFOR, the Food and Agriculture Organization (FAO), TMG Think Tank for Sustainability and UNEP. Coordinating at international, national and local levels, the partnership connects research and development, science, social movements and local knowledge, to inform donors and policy makers, and foster innovation.

The Transformative Partnership Platform on Agroecological Approaches to Building Resilience of Livelihoods and Landscapes (Agroecology TPP) aims to foster transitions to more sustainable agricultural and food systems. It seeks to do so by accelerating and co-ordinating the actions of a range of institutions that are already working on agroecology across various scales, contexts and locations.

The Agroecology TPP aims to centre the co-creation of place-based knowledge with national and local partners and use this to inform global priorities and trajectories. With funding secured from the CGIAR research programme (CRP) on Forests, Trees and Agroforestry (FTA) and the French research institutions (CIRAD, IRD and INRAE), the World Agroforestry (ICRAF) has invested in the platform which has in turn been generating considerable further interest among a range of other bodies. It is overseen by a Steering Committee made up of representatives of supporting partners and is guided by an Advisory Group. The AE-TPP has two Co-convenors, and a Secretariat is provided by CIFOR-ICRAF.

To further enhance the partnership models to address the emerging issues and challenges, stakeholder respondents provided their views and suggestions on effective partnership models opportunities to address those emerging issues and challenges and how to institutionalize them as presented in Table 5.

**Table 5: Respondents' Suggestions on the most effective partnership model opportunities that are needed to pursue broader roles in driving AR4D in Africa and How to Institutionalize the Partnership Models**

*See next page for Table 5.*

Emerging Issues and Challenges	Partnership Model Opportunities	How to institutionalize
<p><b>1</b></p> <p><b>Climate Change/ Climate-Smart Agriculture/ Climate-Smart Village</b></p>	<ul style="list-style-type: none"> <li>• Continental, regional and international partnership</li> <li>• Global, continental and national</li> <li>• Global, continental and national partnership models</li> <li>• Global, continental, national partnerships</li> <li>• Institutional</li> <li>• Mobilise more funds from the subnational, more advocacy to encourage ownership</li> <li>• Multi-stakeholder partnerships</li> <li>• Multi-stakeholder Platforms &amp; Public-Private Partnerships</li> <li>• Multistakeholder Public Private Partnership Platforms that use data-driven digital platforms for delivery of bundled services to address existing and emerging challenges</li> <li>• Research extension partnerships</li> <li>• Strengthening and establishment of IPs giving the training and capacity building in relation with present situations.</li> <li>• There must be robust monitoring of the model and resources put for capacity building</li> </ul>	<ul style="list-style-type: none"> <li>• Advocacy and inclusiveness</li> <li>• Clear Governance Structures</li> <li>• Anchor Stakeholders and Champions</li> <li>• Inclusivity and Representation; Joint Planning and Resource Mobilization</li> <li>• Climate change</li> <li>• Digital and innovation data-driven hubs for decision-making and informing policy changes</li> <li>• Government intervention and private partnership</li> <li>• Involvement of farmers both at IP and R4D level</li> <li>• Involvement of local institutions</li> <li>• National organizations must take ownership of the partnerships</li> <li>• National ownership</li> <li>• There must be more lobbying for policy makers</li> </ul>

2	<b>Natural Resources Management (Soil health and Fertilizer usage)</b>	<ul style="list-style-type: none"> <li>• Advocacy and inclusiveness</li> <li>• Community-based partnership</li> <li>• Global, continental and National partnership models</li> <li>• Initiatives and donors to provide funding partnerships</li> <li>• Institutional</li> <li>• Mobilization and proper management of agricultural resources</li> <li>• Multi-stakeholder partnership</li> <li>• Multi-stakeholder Platforms &amp; Public-Private Partnerships; Academic and Research Institution Collaborations; Government-Led Initiatives and Policy Support</li> <li>• Multistakeholder Public-Private-Partnerships</li> <li>• Digital innovation hubs for bundled service providers to farmers</li> <li>• Resource mobilization</li> </ul>	<ul style="list-style-type: none"> <li>• Encourage local ownership</li> <li>• Government intervention and private partnership</li> <li>• Involvement of farmers both at IP and R4D level</li> <li>• Policy and regulatory framework for supporting private sector access to finance to increase fertilizer production and smart subsidies to increase access to fertilizers by farmers; Capacity building and training, digital platforms for monitoring soil health indicators</li> <li>• Purpose and Governance; Collaborative Decision; Capacity Building; Strategic Alliances; Policy Alignment; Resource Mobilization</li> <li>• Through Agricultural Research Institutes</li> </ul>
---	--	---	---

3

**UN Agri-Food  
Systems**

- Advocacy and inclusiveness
  - Institutional
  - International Partnership
  - IP is the best where all stakeholders are brought together
  - Multi-stakeholder partnership
  - PPP
  - Multi-stakeholder Platforms
  - Research Consortia
  - North-South and South-South Collaborations
  - Business Incubation Platforms
  - Inter-Agency collaboration, policy and advocacy networks
  - Climate and environmental coalitions
- Awareness and advocacy, Policy and regulatory framework
  - Capacity building and training, Monitoring and Evaluation
  - Global, continental and National
  - Involvement of farmer both at IP and R4D level
  - More funding
  - Same as above
  - Through Non-governmental organizations

4	<b>Adapted Crops/ Forgotten Crops or Foods</b>	<ul style="list-style-type: none"> <li>• Advocacy and Inclusiveness</li> <li>• Community-based models</li> <li>• Institutional</li> <li>• Multi-stakeholder partnership</li> <li>• Research of crops that can match with situations</li> <li>• There should be a consortium, national, regional continental and international partnerships</li> <li>• Though evaluation</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness creation, capacity building and training, enabling policies and M&amp;E</li> <li>• Global, continental and national</li> <li>• Global, continental and national partnership models</li> <li>• Improved crop varieties</li> <li>• Intervention</li> <li>• Local ownership</li> <li>• Re-introduction of up to date to farmers at IP level</li> </ul>
5	<b>Agro-Ecology/ Regenerative Agri- culture</b>	<ul style="list-style-type: none"> <li>• Community-based data driven digital platforms to assess, monitor relevant indicators in local context</li> <li>• Institutional</li> <li>• International partnership</li> <li>• IP establishment</li> <li>• Local ownership</li> <li>• Multi-stakeholder partnership</li> <li>• National</li> <li>• Using multistakeholder partnership, agricultural research partnership</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness creation, capacity building and training, enabling policies and M&amp;E, networking and community building</li> <li>• Intervention</li> <li>• Involvement of farmers both at IP and R4D level</li> <li>• Local advocacy</li> <li>• Through direct meeting</li> </ul>

6	<b>Biodiversity</b>	<ul style="list-style-type: none"> <li>• Awareness</li> <li>• Community-based biodiversity coalition models</li> <li>• General partnership</li> <li>• Institutional</li> <li>• Multi-stakeholder partnership</li> <li>• national and international partnership</li> <li>• Research partnership</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness creation, capacity building and training, enabling policies and M&amp;E</li> <li>• Direct contact with all stakeholders</li> <li>• Intervention</li> <li>• Involvement of farmers both at IP and R4D level</li> <li>• Local ownership</li> </ul>
7	<b>Youth population bulge and employment in agriculture</b>	<ul style="list-style-type: none"> <li>• General partnership</li> <li>• Inclusive Business Incubation Platforms, Digital and Innovation hubs</li> <li>• Inclusiveness and Technology</li> <li>• Institutional</li> <li>• IP establishment</li> <li>• Multi-stakeholder partnership</li> <li>• Public-private partnership</li> </ul>	<ul style="list-style-type: none"> <li>• Advocacy</li> <li>• By regular meeting</li> <li>• Intervention</li> <li>• Involvement of youth both at IP and R4D level</li> <li>• Policy and regulatory frameworks, inclusive focus, Awareness and advocacy, Establishing Incubation centres, Capacity and capability building, technology and innovation support, market access and linkages, networking, Monitoring and evaluation</li> </ul>

## Other Existing and New Multi-stakeholder Partnerships and Initiatives

To find out if stakeholder respondents were aware of some existing multi-stakeholder partnerships and initiatives, they were requested to indicate yes or no to the awareness of the partnerships. The result shows that there are many existing and new partnerships and initiatives not known to many of the stakeholders as shown in Figure 10.

However, the other existing and new multi-stakeholder partnerships and initiatives are described with their functions and where they are operating as described in literature. This is to create awareness for researchers in rethinking the AR4D.

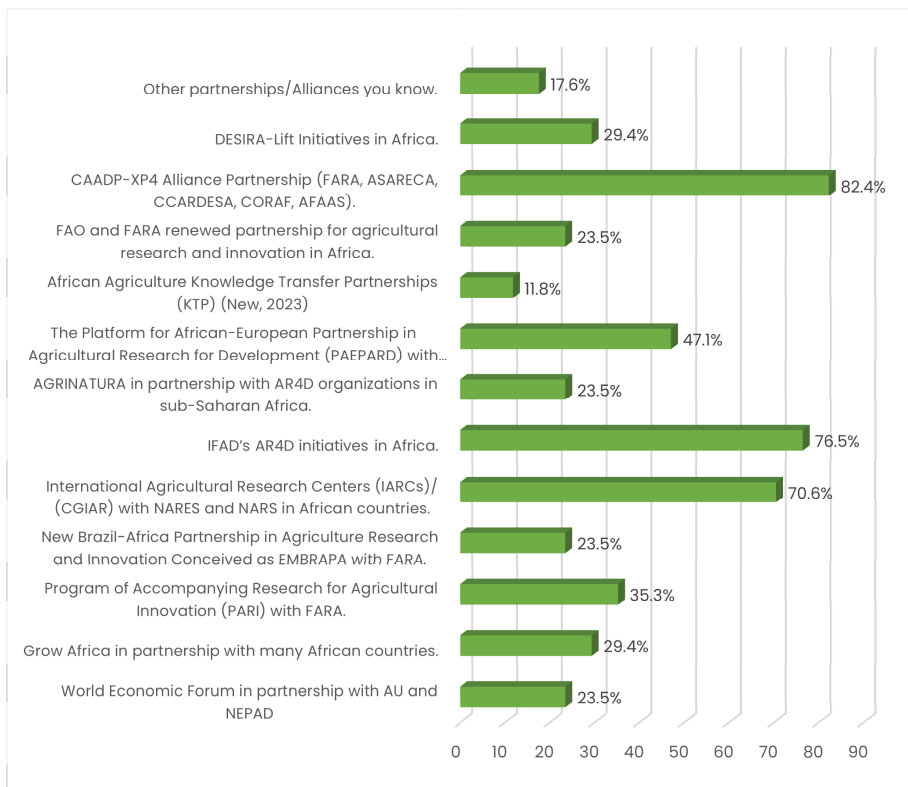


Figure 10: Respondents' Level of Awareness of Multi-stakeholder Partnership Models (%)

Source: Survey, 2024

The following are some of the existing and new multi-stakeholder partnerships and initiatives related to agriculture in Africa.

#### **i. World Economic Forum and Grow Africa**

The World Economic Forum is an international organization for public-private cooperation, that works to address major global challenges through multi-stakeholder dialogue and partnership. The Grow Africa partnership serves as an outstanding example of this approach. The Grow Africa, which is a partnership aimed at increasing investment in African agriculture, was co-founded in 2021 by the World Economic Forum in partnership with the African Union (AU) and the New Partnership for Africa's Development (NEPAD). The partnership works to fulfil the ambitious goals set by African leaders to transform agriculture and achieve food security on the continent through increased investment, partnership, and improvements to the enabling environment.

#### **Grow Africa's Work**

Grow Africa's work focuses on four areas:

1. **Connecting commercial partners:** Links stakeholders along respective value chains including both private-private and public-private to develop well-functioning and financially sustainable markets.
2. **Improving inclusive and responsible business models:** Helps Grow Africa partners to tap into best practices and new innovative business models, particularly related to working with smallholder farmers. Identifies systemic constraints to responsible private-sector investment and convenes working groups to develop solutions. Facilitates knowledge sharing through a variety of channels, including communities of practice and an annual investment forum.
3. **Connecting to finance:** Facilitates agribusiness access to financial service providers and funding partners. Contributes to the development of holistic solutions to reduce business risk and combine different types of financial products specific to the agriculture sector.

4. Improving the business environment: Engages governments and works in coordination with the AU and NEPAD and with the New Alliance to improve policies and investments in the enabling environment to accelerate responsible and inclusive private investment in agriculture.

As of 2012, 12 countries were participating in Grow Africa: Benin, Burkina Faso, Côte d'Ivoire, Ethiopia, Ghana, Kenya, Malawi, Mozambique, Nigeria, Rwanda, Senegal, Tanzania. However, other countries have been reported to be interested in becoming partners. They include Angola, the Democratic Republic of Congo (DRC), Liberia, Madagascar, Mauritania, the Republic of the Congo, Somalia, South Sudan, Togo and Zimbabwe.

Grow Africa supports the development of multi-stakeholder platforms that address the sector as a whole or focus on specific commodity value chains. These regional and country-specific

platforms are key to accelerating agricultural transformation. Their success depends on the right players being involved from the outset and on being recognized and supported by governments as an instrument for executing the national agricultural agenda.

The Grow Africa Secretariat focuses on scaling and accelerating agricultural transformation by linking relevant players and promotes the work of the platforms it supports at senior national and continental government levels. In addition, Grow Africa and its partners produce and commission best-practice and "how-to" guides on topics ranging from engaging effectively with smallholder farmers to setting up a multi-stakeholder platform.

At continental level, Grow Africa coordinates and feeds input from the private sector into a continent-wide annual review of progress against specific commitments made by governments, donors, and the private sector (Country Cooperation Agreements) in support of CAADP.

At a regional and national level, the Grow Africa Secretariat supports the development of crop-specific, value-chain platforms for initiatives with high potential for transforming agriculture in specific countries or regions. The Secretariat identifies and convenes

relevant stakeholders for these platforms, from agribusinesses to finance and technical partners.

At national level, the Grow Africa Secretariat works in three ways: it convenes private-sector organizations through platforms that enable the sector to speak with one voice to government; it facilitates dialogue between the private sector and government entities to identify public investment and policy actions that can stimulate private-sector investment to meet national economic and social targets for the sector; and it supports the implementation of investment commitments by linking Letter of Intent companies to appropriate partners and to relevant value-chain platforms and initiatives.

## **li. Program of Accompanying Research for Agricultural Innovation (PARI)**

The Program of Accompanying Research for Agricultural Innovation (PARI) brings together partners from Africa, India and Germany to conduct research on sustainable agricultural development, food systems transformation, and food and nutrition security in Africa and India. The programme is supported by the German Federal Ministry for Economic Cooperation and Development (BMZ).

### **PARI Objectives**

PARI brings together partners from Africa, India and Germany to conduct research on sustainable agricultural development, food systems transformation, and food and nutrition security in Africa and India. To this end, PARI pursues the following strategies:

1. Analysis of the potential and impact of innovations (which innovations to invest in, where and for whom – considering women, youth, small-scale producers),
2. Identification and assessment of supportive measures to strengthen framework- and policy conditions for the generation and dissemination of promising innovations in food systems and rural areas, and
3. Engaging food, nutrition, agriculture and rural areas' science partners and policy makers to inform reforms and investment

decisions that can improve job creation and food and nutrition security.

PARI core partners are the Centre for Development Research, University of Bonn, the Forum for Agricultural Research in Africa (FARA) and the University of HOHENHEIM.

### **iii. AGRINATURA**

AGRINATURA is an Association of European Universities and Research Centres. AGRINATURA draws on diverse multi- and inter-disciplinary expertise and experiences both in Europe and elsewhere. As a member of EFARD, it implements selected programmes on its behalf. It works through strategic partnerships with agricultural research and development (ARD) organizations and is especially active in sub-Saharan Africa but recognises the global nature of emerging agricultural issues which affect Europe too. The complex links, such as between food and energy security, require multi-sectoral solutions and inter-continental cooperation.

AGRINATURA acts in partnership with its international collaborators such as the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM). It seeks to nurture scientific excellence through joint research, educational and training programmes and projects, and advocates greater support for agricultural research and educational programmes that contribute to the achievement of the Millennium Development Goals and the new agenda of Sustainable Development Goals.

Much of AGRINATURA's collaboration with partner organizations has involved multi-stakeholder partnerships to facilitate and advocate for demand-led ARD. This has raised awareness of the importance of such approaches among research and development organizations, governments, development partners, and other actors in agricultural innovation systems.

### **iv. The Platform for African European Partnership in Agricultural Research for Development (PAEPARD)**

PAEPARD demonstrates Europe's engagement with promoting

demand-led agricultural research. PAEPARD is a joint initiative of FARA and EFARD and is funded by the European Commission (EC). AGRINATURA represents EFARD in the initiative and contributes to most activities. PAEPARD aims to increase the involvement of African organizations in European agricultural research programmes and of organizations from civil society and the private sector in agricultural research. It works with consortia of partners interested in specific research themes by identifying relevant research questions, funding sources and preparing research proposals. Agricultural innovation facilitators, who receive training through the project, act as neutral agents to help achieve consensus amongst stakeholders with differing expectations and ways of working.

PAEPARD project partners have been able to demonstrate to the EC the need for continuous investment in the project to be able to generate the evidence that multi-stakeholder partnerships can work for the benefit of farmers and other end-users.

#### **v. African Agriculture Knowledge Transfer Partnerships (KTP)**

The African agriculture strand of the Knowledge Transfer Partnership (KTP) scheme supports a partnership between:

- a UK registered higher education or further education institution, research and technology organisation (RTO) or Catapult (which we will refer to as the 'UK knowledge base')
- an African business or not-for-profit organisation (which we will refer to collectively as the 'business partner')
- a knowledge base in Africa (which we will refer to as the 'African knowledge base')

Each application must be led by a UK registered knowledge base, working with an African business partner and African knowledge base.

The African business and knowledge base must both be based in one of the following countries:

- Republic of Ghana

- Federal Republic of Nigeria
- Republic of Kenya
- Republic of South Africa

The partnership will bring new skills and the latest academic thinking into the business partner to deliver a specific, strategic innovation project.

The project must be in one of the following areas:

- primary crop and livestock production, including aquaculture
- non-food uses of crops, excluding ornamentals
- challenges in food processing, distribution or storage, and value addition such as through a change in the physical state or form of the product
- improving the availability and accessibility of safe, healthy and nutritious foods

If you are from a knowledge base that has not yet developed a project, get started by reading the KTP guidance.

## **vi. Global Gateway Strategy**

At the end of 2021, the European Commission launched the Global Gateway strategy aimed at developing partnerships and supporting long-term, sustainable projects in partner countries in the European neighbourhood, Africa, Latin America and the Caribbean, and Asia. Between 2021 and 2027, the EU, through a Team Europe approach, plans to mobilise up to €300 billion in investment for infrastructure and development projects in the fields of digital technology, climate and energy, transport, health, education and research.

The implementation of this strategy is based on regional partnerships, in particular with Africa through the Global Gateway Africa-Europe Investment Package, which was announced in 2022 at the EU-AU summit and aims to mobilise at least €150 billion in investment by 2027, representing around 50% of the amount that Global Gateway aims to mobilise.

The EU-AU Summit in February 2022 also launched the development of the AU-EU Innovation Agenda, which was finally adopted in July 2023 and aims to transform and increase the innovation capacities and achievements of European and African researchers and innovators into tangible results. Supported by the Global Gateway strategy, it should be the pillar of cooperation in science, technology and innovation between Africa and Europe for the next decade.

Nienke Buisman, Head of Unit for International Cooperation at the Directorate-General for Research and Innovation (DG RTD), also highlighted the “global approach to R&I”, the European strategy for international cooperation in R&I. “The global approach is not just a strategy, but also defines a number of actions, and cooperation with Africa is seen as a priority”, she explained, taking the example of the launch of the Africa Initiative as part of the Horizon Europe programme to stimulate cooperation between European and African researchers.

#### **vii. FAO and FARA Renewed Partnership for Agricultural Research and Innovation in Africa**

FAO and the Forum for Agricultural Research in Africa have renewed their long collaboration agreement. On 30 March 2023, in Accra, Ghana, the Food and Agriculture Organization of the United Nations (FAO) signed a five-year partnership agreement with the Forum for Agricultural Research in Africa (FARA) as part of the two organizations’ long collaboration.

The new partnership is expected to facilitate greater collaboration, focusing on capacity development for agricultural innovation systems, agriculture policy and advocacy, including the domestication of the Common African Agroparks (CAAPs) initiative, agrifood systems transformation at the country and regional level, climate-smart agriculture and agroecology-based production system, youth empowerment, response to crises, among others.

The partnership aims to contribute to achieving the Malabo Commitment on food security and agricultural transformation through leveraging science and innovation in the framework of the AU Com-

prehensive Africa Agriculture Development Programme (CAADP).

This partnership will also support the 2030 Agenda for Sustainable Development and the 2063 Agenda of the African Union through the transformation to more efficient, inclusive, resilient and sustainable agrifood systems for better production, better nutrition, a better environment, and a better life, leaving no one behind.

The six key areas under this renewed cooperation include capacity development for agricultural research and innovation systems, agriculture policy and advocacy, youth empowerment, response to crises, knowledge co-creation, exchange and data sharing, and joint resource mobilization and partnerships development.

#### **viii. DeSIRA-LIFT**

DeSIRA-LIFT (Leveraging the DeSIRA Initiative for agri-food systems transformation) is a service facility supporting the DeSIRA Initiative (Development of Smart Innovation through Research in Agriculture, in short DeSIRA) funded by the European Commission.

DeSIRA-LIFT seeks to enhance an inclusive, sustainable and climate-relevant transformation of rural areas and of agri-food systems, by linking better agricultural innovation with research for more developmental impact. It supports actions in low- and middle-income countries (LMICs) to strengthen the resilience of their agri-food systems, the relevance of the national and regional research and innovation systems, and the coherence and efficiency of their agricultural public research and extension services related to climate change challenges.

The main objective is to enhance the impact of the DeSIRA Initiative by providing on-demand services to DeSIRA project holders and partners. DeSIRA-LIFT includes three service areas aligned to the three DeSIRA Pillars:

Service Area 1 supports DeSIRA Pillar 1 projects to enhance their impacts on climate-oriented innovation systems in line with more sustainable food system transitions.

Service Area 2 supports the Comprehensive Africa Agriculture De-

velopment Programme (CAADP) ex-pillar IV organizations in their Agricultural Knowledge and Innovation Systems (AKIS) related roles.

Service area 3 is providing support to policy makers on themes related to agricultural research for development (AR4D) and innovation policies and programming. DeSIRA-LIFT is implemented by member organisations of the Agrinatura and EFARD networks.

CIRAD leads the Service Area 1 (SA1) in collaboration with the School of Agriculture at the University of Lisbon to coordinate the design and deployment of on-demand capacity-development service for the 70 projects under pillar 1 of DeSIRA implemented in around 50 countries in Africa, Asia and Latin America.

#### **ix. The Pan-Africa Bean Research Alliance (PABRA)**

Among prominent existing partnerships in Africa is the Pan-Africa Bean Research Alliance.

For more than two decades, the Pan-Africa Bean Research Alliance (PABRA), a partnership developed and facilitated by the International Centre for Tropical Agriculture (CIAT) – a CGIAR Research Centre – has fostered a pan-African research and development partnership to strengthen the common bean value chain. Common beans are important food legumes and contribute to food and nutrition security, income generation and enhance production systems in over 31 countries in sub-Saharan Africa. Over the last 20 years, PABRA has built a multi-stakeholder partnership network across 31 countries including farmers, research institutions, private sector stakeholders, NGO, and governments. PABRA has recounted a number of success stories, useful experiences, lessons, and challenges that still need to be overcome.

PABRA's vibrant network model is increasingly recognized for its high impact on bean research for development including its ability to leverage partnerships into many types of co-investments. As pressure intensifies on international research institutions to demonstrate effective partnership engagements and outcomes at scale, PABRA model is a vivid example where common issues

are diagnosed, participatory designs explained, solutions shared, experiences, key success factors, and lessons learned.

The diversity of partners and projects are a core strength when it comes to achieving impact, yet often do not fit neatly into research-for-development categories. Often extolled for their importance in scaling up impact, the art of creating and maintaining complex networks is still unfamiliar to many. This model showcases the 'nuts and bolts' of how the PABRA network operates including core principles, governance structures, and activities so that these can inform counterpart programmes focused on other commodities and geographies.

## **Multistakeholder Partnerships at Different Government Levels**

In rethinking AR4D, it is essential for stakeholders to be aware of the different multi-stakeholder actors at each level of the partnership model, that is, from continental, regional, national and local levels. This is because it enhances forming strong multi-stakeholder partnerships. Table 6 shows the suggestions of the respondents. However, depending on the emerging issues or challenges to be addressed, there may be different actors for the partnership model.

**Table 6: Respondents' Suggestions on Model of Partnerships for the Governmental layers for IAR4D-IP to Effective Innovations Generation**

Layers of Government	Model of Partnership
Local (within a State/ geopolitical zone)	Community IPs, IAR4D-IP, Institutional, IP, Limited, Local Communities, farmers, local extension, Local government dialogue, Multi-Stakeholder Partnership model, National Ministries, ADPs and Agencies, National multi-stakeholder partnership, NEPAD, SROs and government, Networking
National (within your country)	Government, private organizations, Universities, Research organizations, IAR4D-IP, Institutional, Limited, Ministry of Agriculture, Animal Industry and Fisheries (MAA-IF), MSPs  Multi-stakeholders' partnership, National IPs, National Ministry and Agencies, National partnership, Public-Private Partnership (PPP) Model, SROs and government, Virtual meeting
Regional (other countries within your sub-region)	All organisations, Collaborative Partnership Model, Continental partnership, East African community, ASARECA, General partnership, IAR4D-IP, Multi-stakeholders' partnership, Networking, Regional organizations, Regional Economic Communities, SROs, Sub-regional Organizations, such as ASARECA, CORAF and CCARDESA, Virtual Meeting

Global (countries outside your Region, North-South, South-South etc.)	All organisations, AU, NEPAD, Commonwealth of Learning, Lifelong learning for farmers Model, Continental Organizations, General, Global development innovation partnership, Global partnership  International Research Centres, CGIAR such as IITA, Meetings Advocacy, Multi-stakeholders' partnership, Networking
---	--

In addition to the respondents' suggestions, there was also a good example from literature provided by AUDA-NEPAD (2023) in addressing Africa's soil health challenges. This is because effective implementation of the Soil Initiative for Africa (SIA) Framework requires strong multi-stakeholder partnerships. As such, African stakeholders within and across national and regional borders will be encouraged to collaborate on relevant soil interventions. Likewise, development partners will be encouraged to support activities relevant to the SIA framework and to do so with other development partners. The implementation of the SIA Framework is to be a decentralised process with different partners implementing different aspects of the SIA according to their strengths, mandates, and comparative advantages. Figure 11 shows the example of partnerships involving all stakeholders at different levels for soil health in Africa.

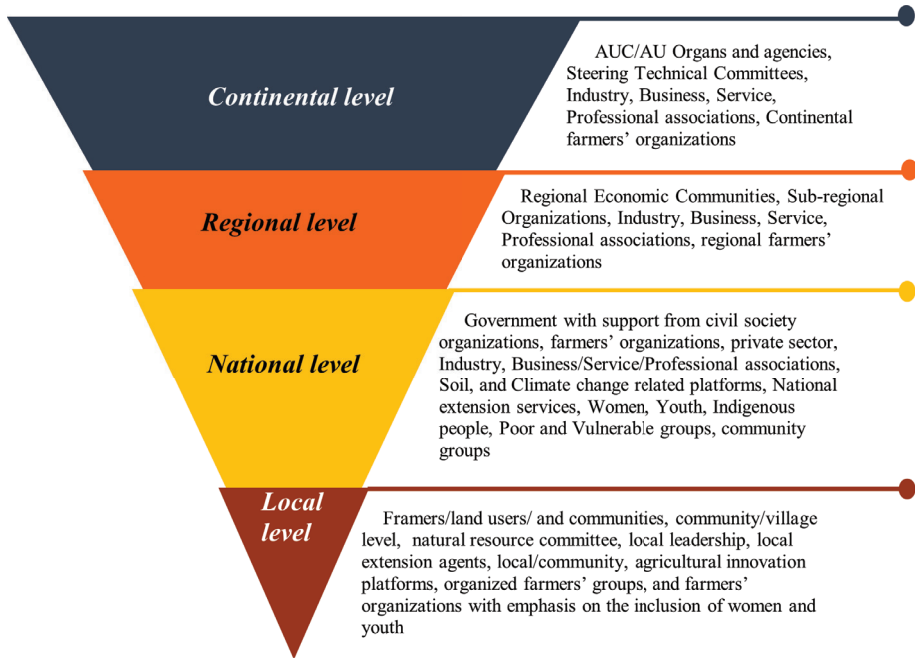


Figure 11: Partnerships Involving all Stakeholders at Different Levels  
 Source: AUDA-NEPAD (2023)

# Institutionalizing the IAR4D Partnership Models

*This chapter discusses the importance of sustainability of multi-stakeholder partnerships in rethinking the IAR4D-IP Concept through the process of institutionalization. This is because as discussed in Chapter 3, one of the major challenges of the AR4D-IP Concept and its partnerships in Africa is the inability to sustain multi-stakeholder partnerships due to lack of institutionalization.*

## Concept of Institutionalization

Institutionalization is understood as “a process through which new ideas and practices are introduced, accepted and used by individuals and organizations so that these new ideas and practices become part of ‘the system’ (PROLINOVA 2010).

To institutionalize hard and soft innovations along commodity value chains, IPs adopt semi-permanent configurations capable of sustaining collaborations and or re-establish them in case of recession. Management of IPs should look beyond the project mentality that created them. An IP such as Kashekuro Banana Innovation Platform (KABIP) in Uganda has outgrown her commodity entry point to embrace issues of education and health.

IP management tasks ought to go beyond having an eye on the interface to the surrounding, immediate, and more permanent structures

of the collaborating organizations (Sydow, 2021).

According to Anandajayasekeram et al (2009), it is important to institutionalize the concept of IPs and move away from a fragmented 'piecework' approach. Institutionalization refers to the permanent integration or mainstreaming of processes and perspectives within multi-stakeholder contexts for the purpose of guiding their mandated activities.

Well established linkages between the various actors of the IP value chain promotes more innovative activities and helps in sustaining the IP (Schut et al. 2019), which in turn promotes institutionalization of the IP and the partners.

Linkages with public sector and private sector institutions and NGOs can be facilitated and strengthened by setting up a promotion council. This will also help in carrying out capacity development activities, such as trainings, field visits, workshops, multistakeholder meetings etc. and can enhance the level of institutionalization (Dominic and Gupta., 2019).

Dominic and Gupta (2019) concluded in their study that to promote institutionalization, the public sector should support interactions, collective actions, and broader public-private partnership programmes. The public sector might be better suited to a bridging or facilitative role between smallholders and other actors.

In reference to institutionalization of food systems multi-stakeholders' partnerships, Alliance of Bioversity & the International Center for Tropical Agriculture (2022) indicated that even though long-term MSC initiatives on food systems are usually independent, they generally show some level of institutionalization. However, according to Pattberg and Widerberg, (2014), this requires three key interrelated elements.

**Legal form** – The form should be flexible enough to allow easy entry of new actors necessary for infusing capacities and energies to address emerging issues. A locally registered constitution prescribing basic rules of engagement is critical to establishing a governance structure. For example, IPs that are not formerly registered cannot be allowed to open bank accounts.

**Governance** – there is the need to build the capacity of MSP leaderships in a simple but effective way.

Transparent and accountable leadership, fair distribution of IP resources are key antecedents for trust, cooperation, and common understanding necessary for sustainable and resilient entities.

Planning is key for IPs to track progress, assess risks, and iterate direction towards a common goal. Participatory business planning and reporting are necessary tools for forward thinking and accountability.

IPs bring together different actors of varying personal and organizational backgrounds. To understand relational dynamics of actors in a network, one needs to recognize the diverse organizational normative and value systems. Such systems define cultural orientations of actors thereby shaping the nature and direction of their relationships. A common normative and value system in managing power relations is critical throughout the life of a platform (Nederlof & Pyburn, 2012).

Hofstede (2011) described power distance as a situation where less powerful members in a given institution admit, expect and accept that power is unequally distributed and that such distribution affects all aspects of human collaboration. Power distance can be determined by differences in education, economic or positions of authority. For example, management should be able to regulate the relationship between; the uneducated and highly educated, the poor and the rich, as well the weak and the strong; for the common good of an IP.

**Funding** – IPs serve as forums for social and economic community transformation. They transcend commodity value chains to address issues of health, education, and security. This diverse scope presents multiple funding opportunities. In maturity, IPs should look more internal than external for funding, i.e. fees on collective marketing, and royalties on branded innovations. However, IPs lack the capacity to identify and raise funding. In addition, they lack accountability and transparency mechanisms necessary for donor trust and sustainable collaborations.

As regards the issue of institutionalization of partnerships, respondents of this study provided their suggestions on the existing and new multi-stakeholder partnerships as shown in Table 7.

**Table 7: Respondents perception on How to Institutionalize the suggested partnerships and Alliances**

Partnerships and Alliances		How to institutionalize the Partnerships
1	World Economic Forum in partnership with AU and NEPAD	<ul style="list-style-type: none"> <li>• Define partnership, develop operational framework, secure funding, build capacity</li> <li>• Multi-stakeholder partnership (MSP)</li> <li>• Proper coordination</li> <li>• Role model meetings</li> <li>• Strategic alignment around shared vision, common goal and objectives, formalization of agreement, establishment of governance, technology and innovation-digital platforms, action planning and budgeting, resource allocation, capacity development, implementation, monitoring and evaluation</li> </ul>
2	Grow Africa in partnership with many African countries	<ul style="list-style-type: none"> <li>• Advocacy</li> <li>• Define partnership, develop operational framework, secure funding, build capacity</li> <li>• Establish a coordinating Grow Africa Secretariat, Governance, Secure political commitment, Action planning, Resource mobilization, Promote knowledge sharing, Implementation, M&amp;E</li> <li>• Inclusion of the model in academic curriculum</li> <li>• Intervention</li> <li>• MSP</li> </ul>

3	<p><b>Program of Accompanying Research for Agricultural Innovation (PARI) with FARA.</b></p>	<ul style="list-style-type: none"> <li>• Advocacy</li> <li>• Consistent engagement with various actors</li> <li>• Coordination</li> <li>• Define partnership, develop operational framework, secure funding, build capacity</li> <li>• Define the programme objectives and scope, alignment with FARA mission, Establishment of advisory committee consisting of representatives from stakeholder groups, develop implementation plan, resource mobilization, implementation, M&amp;E</li> <li>• Establish a Clear Governance Structure: Joint Steering Committee; Develop a shared vision and mission statement; joint strategic planning sessions to align PARI and FARA strategic objectives, identify priority areas; joint prioritization of research agenda; Enhance Capacity Building and Knowledge Sharing; Engage with policymakers at national, regional, and international levels to advocate for supportive policies and frameworks</li> <li>• MSP</li> </ul>
4	<p><b>New Brazil–Africa Partnership in Agriculture Research and Innovation Conceived as EMBRAPA with FARA</b></p>	<ul style="list-style-type: none"> <li>• Coordination</li> <li>• Define the programme objectives and scope, alignment with FARA mission, develop detailed implementation plan, resource mobilization, implementation, M&amp;E and ensure scalability and sustainability</li> <li>• MSP</li> <li>• Wider coverage</li> </ul>

5	<b>International Agricultural Research Centres (IARCs)/ (CGIAR) with NARES and NARS in African countries</b>	<ul style="list-style-type: none"> <li>• Coordination</li> <li>• Define clear objectives and scope, harmonize research agendas, establish formal framework, develop detailed plans, resource mobilization, leverage technology and innovation using digital tools, implementation, ensure scalability and sustainability, raise awareness and support, facilitate exchange programmes, address policy and regulatory issues</li> <li>• Define partnership, develop operational framework, secure funding, build capacity</li> <li>• MSP</li> </ul>
6	<b>IFAD's AR4D initiatives in Africa</b>	<ul style="list-style-type: none"> <li>• Better funding</li> <li>• Define clear objectives and scope, align with existing frameworks, establish advisory committee, develop detailed plan, leverage technologies including digital innovation hubs, ensure scalability and sustainability, awareness creation and advocacy, address policy and regulatory issues, establish regional hubs, facilitate exchange programmes, M&amp;E</li> <li>• Define partnership, develop operational framework, secure funding, build capacity</li> </ul>
7	<b>AGRINATURA in partnership with AR4D organizations in sub-Saharan Africa</b>	<ul style="list-style-type: none"> <li>• Define clear objectives and scope, align with existing frameworks, set up regional hubs or offices to coordinate AGRINATURA's initiatives across SSA, develop detailed plans, capacity building, facilitate exchange programmes and conduct regular M&amp;E.</li> <li>• MSP</li> </ul>

8	The Platform for African-European Partnership in Agricultural Research for Development (PAEPARD) with FARA	<ul style="list-style-type: none"> <li>• Define clear objectives and scope, establish joint working groups, align with FARA’s mission and strategy, develop a formal framework, address policy and regulatory issues, leverage technology, facilitate exchange programmes, ensure scalability and sustainability, M&amp;E</li> <li>• MSP</li> </ul>
9	African Agriculture Knowledge Transfer Partnerships (KTP) (New, 2023)	<ul style="list-style-type: none"> <li>• MSP</li> <li>• Policy support from governments, standardization, awareness creation, community engagement, establish partnerships, capacity building, resource mobilization, scaling up, knowledge sharing, M&amp;E</li> </ul>
10	FAO and FARA renewed partnership for agricultural research and innovation in Africa	<ul style="list-style-type: none"> <li>• Better funding</li> <li>• Coordination</li> <li>• Formalize the partnership, establish a joint steering committee, policy advocacy, identify collaborative projects, resource mobilization, capacity building, knowledge sharing and communication, M&amp;E</li> <li>• MSP</li> </ul>
11	CAADP-XP4 Alliance Partnership (FARA, ASARECA, CCARDESA, CORAF, AF-AAS)	<ul style="list-style-type: none"> <li>• Coordination</li> <li>• Define partnership, develop operational framework, secure funding, build capacity</li> <li>• Establish formal partnership agreement, engage SROs, joint planning and coordination, resource mobilization, implementation of collaborative projects, capacity building and training, knowledge sharing and communication, advocacy and policy influence, monitoring and evaluation</li> <li>• Inclusiveness</li> </ul>

12	<b>DESIRA-Lift Initiatives in Africa</b>	<ul style="list-style-type: none"><li>• Adaptation to local context, stakeholder engagement, partnership establishment, resource mobilization, capacity building, technology adoption and innovation, knowledge sharing and communication, policy advocacy, monitoring and evaluation</li><li>• MSP</li><li>• Youth engagement</li></ul>
----	--	--



## Chapter 8

# Conclusions and Recommendations

## Conclusions

This study explored the possibilities for rethinking the Integrated Agricultural Research for Development and innovation platform (IAR4D-IP) concept in the light of new challenges that particularly influence food production in Africa, which include climate change, agri-food systems, soil health and fertilizer supply, and use efficiency, social movement for agroecology, regenerative agriculture, and youth bulge. Similarly, with a decade and a half of the IAR4D-IP Concept, some conclusions and recommendations can be made which call for the rethinking of the concept.

The study established and supported the views of the authors of the First and Second White Papers that IP has become a household name in major agricultural research projects and has stood strong, yielding measurable successes in terms of livelihood change for key stakeholders. Based on the survey conducted, major stakeholders perceived that the IAR4D-IP Concept is still relevant to the four defining principles.

It was however established from both literature and the stakeholders' survey that the rethinking of the IAR4D-IP Concept is right now and without such rethinking the IAR4D-IP Concept may no longer

contribute significant measurable yield success as it used to be in transforming the livelihoods of smallholder farmers due the emerging issues and new challenges. It is also important to consider, the increasing emerging issues and challenges which can affect food and nutrition security if care is not taken.

The study established that there are new challenges and emerging issues affecting the IAR4D but in rethinking the IAR4D, there are strategies that IAR4D researchers should adopt to address the emerging issues and new challenges. For example, the adoption of climate-smart agriculture and climate-smart village in addressing the problem of climate change, agri-food systems with adequate policies, soil health technologies and innovations, regenerative agriculture and adoption of adapted/forgotten crops into AR4D system and issue of ICT revolution/AI.

The study established that Agri-food system innovation will involve rethinking how research and innovation are deployed to transform the social, economic and environmental performance of the agriculture and food systems. This is because it was found that food systems transformation requires continuous collaboration among food systems actors, including governmental and non-governmental stakeholders.

It was discovered from the study that the rethinking of the agricultural systems has long been considered but focused more on the crop yield and productivity. However, the new thinking should change from a crop productivity and profitability focus to a broader set of goals and targets, with a specific focus on sustainability, climate change mitigation, rehabilitation of degraded land, and restoration of environmental services, including biodiversity, driven by ever-increasing evidence that agricultural systems are operating beyond planetary boundaries on a global scale which must be considered in the IAR4D-IP Concept.

The study also established that partnerships in the IAR4D Concept are vital for fostering innovation as they bring together diverse expertise, resources, and knowledge to tackle complex challenges, bridge urban-rural divides, and create policies that support inno-

vation. Collaboration enables the development and dissemination of new technologies, improves market access, and addresses global agricultural issues. In short, partnerships are the catalysts that drive innovation, ensuring a more sustainable and productive future for agriculture.

It was however discovered that partnerships have different forms, levels, and scopes, depending on the purpose, context, and resources of the partners. Partnerships enable innovation by combining diverse perspectives, skills, experiences, and resources to address complex problems and create novel solutions.

One important issue that this study also established is the current world interest in the adapted/forgotten/neglected/indigenous crops/foods. It has been discovered that expanding the use of these crops can help to diversify agriculture and food systems and introduce a greater variety of foods into global supplies, including more nutritious cereals, fruits and vegetables, and roots and tubers while building resilience to climate change and providing employment and alternate sources of income for farmers in Africa. Due to the interest, partnerships have started springing up for their inclusion in agri-food systems.

With partnerships being formed to solve African agricultural challenges and emerging issues, based on the finding of this study, it can be concluded that without adequate institutionalization of the partnerships, innovative activities and the sustainability of the partnerships may drastically be affected.

One important conclusion from this study is that policy has major roles to play in the rethinking of the IAR4D-IP Concept because all the strategies for emerging issues and partnerships supporting them require strong policies at different levels.

The study concluded that Africa's fast-growing youth bulge has prompted worries about high unemployment and unrest which may cause a "demographic bomb", because a large mass of frustrated youth is likely to become a potential source of social and political instability unless the youth embrace agriculture which is the most important business opportunity for the continent's young people.

## Recommendations

Based on the conclusions, the following recommendations are made:

In rethinking the IAR4D-IP Concept, the approaches should be the ones that will work across the innovation system for agriculture from early-stage development to product development to large-scale deployment, where research efforts are targeted towards end-user needs and underpinned by robust partnerships with private, public and civil society actors to ensure adoption and societal outcomes. The approach also implies working on the institutions and incentives that ensure uptake and scaling.

There is a need to apply people-centred sustainable development, including agri-food system approach, as a research paradigm in rethinking the IAR4D-IP concept, for researchers to be more successful in producing knowledge that is useful to entrepreneurship stakeholders. Without such rethinking, the previous AR4D scientific approaches and logic may limit the contribution that agricultural IAR4D can make toward solving the current agricultural emerging issues and challenges. This is because what is required of the rethinking of the IAR4D-IP concept/model is to increase its impact in development with innovation pathways, desired milestones and targets.

Based on the finding of this study according to which many of the initiatives and partnerships are not known to IAR4D stakeholders, there is, in rethinking the IAR4D, a strong need for awareness creation of existing and new initiatives and partnerships available for emerging issues and challenges by continental, regional and national agencies, such as FARA, SROs, RECs etc. That is one of the usefulness of this report in providing useful information on available partnership models which are presented in Chapter 6.

In rethinking the IAR4D, researchers should include the adoption of strategies for solving emerging challenges, such as climate-smart agriculture, climate-smart village, agri-food systems, inclusion of adapted/forgotten crops, fertilizer and soil health, adoption of regenerative agriculture and ICT/AI for youths as described in Chap-

ter 5 of this report.

The strong interest in adapted crops/forgotten crops calls for a special attention to these crops in rethinking the IAR4D and especially for IP stakeholders. This is because these crops have been found to be useful in building resilience to climate change and providing employment and alternate sources of income for farmers and other stakeholders for agri-food systems in Africa.

For all the strategies and partnership models proposed in this report to have positive impacts, the issue of institutionalization must be paramount in rethinking the IAR4D-IP Concept but with anything less than that, many of the partnerships will not be sustainable. However, the following are also essential:

- Process facilitation as a core element of the IAR4D concept should be institutionalized at the IAR4D level with clear performance indicators.
- FARA should take responsibility for building the capacity of MSP actors in process facilitation.
- FARA should secure funding for process facilitation of existing MSPs into the foreseeable future until such a time when they are fully established and capable of mobilizing their own resources.
- IPs should align activities with government policies, encourage collaboration and access to government resources with a view of establishing sustainable structures. It should be remembered that IPs lack solid organizational base to mobilize and control resources on their own, therefore, aligning IP activities to government programmes and policies is one strong avenue for ensuring sustainability.
- IPs should constantly elaborate their mission, goals and objectives to enhance common understanding and a coherent direction amongst its members.

National governments in Africa must provide adequate and useful policies to legitimized and legalized partnership models that are available for the improvement of agricultural research for devel-

opment. Policies at the national and local levels that help farmers to adopt improved techniques and technologies, establish non-farm enterprises, and connect with growing urban markets can spur inclusive development and improve livelihoods for urban and rural people of all ages.

To avoid a potential source of social and political instability because of youth bulge in Africa, encouraging young people to engage in agriculture as a profession may be an attractive option to the youth, and this should be done wholeheartedly. Also, capacity building and strengthening partnerships have been reported to help to address the 'youth bulge', and the growing demand on youth and their role in agriculture to feed the rising population. They should also be encouraged to study agricultural science and to get involved in any part of the agricultural value chain.

## BIBLIOGRAPHY

Adaptive leadership in ARD (2018) pdf: A brief.

Adekunle, A, Obi, A., Ajayi, T., Mugabo, J. and Fatunbi, O. (2013). Lessons and Impact of Partnerships: Experiences from FARA's Initiatives in Africa. Forum for Agricultural Research in Africa (FARA), Accra, Ghana.

Agboton, S.M., S`ewad`e, P.L., Ayanan, M.A.T. (2018). Successes and challenges in tackling constraints in soybean processing through multi-stakeholder innovation platforms in Agricultural Research for Development: Evidence from the consortium Soja du Bénin. African. Journal of Rural Development (AFJRD) 3 (1): 579–595.

Aggarwal, P. K., R. Zougmore, and J. Kinyangi. (2013). Climate-smart villages: a community approach to sustainable agricultural development. CGIAR Research Programme on Climate Change, Agriculture and Food Security (CCAFS), Copenhagen, Denmark.

Aggarwal, P. K., A. Jarvis, B. M. Campbell, R. B. Zougmore, A. Khatri-Chhetri, S. J. Vermeulen, A. Loboguerrero, L. S. Sebastian, J.Kinyangi, O. Bonilla-Findji, M. Radeny, J. Recha, D. Martinez-Baron, J. Ramirez-Villegas, S. Huyer, P. Thornton, E. Wollenberg, J.

Hansen, P. Alvarez-Toro, A. Aguilar-Ariza, D. Arango-Londoño, V. Patiño-Bravo, O. Rivera, M. Ouedraogo and B. Tan Yen. (2018). The climate-smart village approach: framework of an integrative strategy for scaling up adaptation options in agriculture. Ecology and Society 23(1):14. <https://doi.org/10.5751/ES-09844-230114>.

Alliance of Bioversity & International Center for Tropical Agriculture, United Nations Environment Programme and WWF. National and Subnational Food Systems Multi-Stakeholder Mechanisms: An Assessment of Experiences; 2021. Available from:[www.oneplanetnetwork.org/knowledge-centre/resources/national-and-subnationalfood-systems-multi-stakeholder-mechanisms](http://www.oneplanetnetwork.org/knowledge-centre/resources/national-and-subnationalfood-systems-multi-stakeholder-mechanisms).

Allcott, H., & Mullainathan, S. (2012). External validity and partner selection bias (Working Paper No. w18373). National Bureau of Economic Research.

Ana Maria Loboguerrero Rodriguez, Bruce Campbell and Alberto Millan

(2021). More, but not of the same: New funding for a new type of AR4D needed. *The International Journal of Rural Development* Vol. 55.

Atakos, V., Mungai, C. and Recha J. (2013). **The involvement of youth in agricultural innovation systems.** [Agricultural Innovation Systems in Africa \(AISA\)](#) workshop held in Nairobi, Kenya, June 16, 2013. CGIAR Climate Change, Agriculture and Food Security Research Programmes.

AUDA-NEPAD (2023). Addressing Africa's soil health challenges through the ten-year African Fertilizer and Soil Health Action Plan (2024-2034) and the longer-term Soil Initiative for Africa Framework Briefing Note, December 2023.

Bandura, R. and Girgvliani, S. (2024). Partnership Opportunities to Transform Food Systems. Centre for Strategic and International Studies (CSIS), Washington D, C. United States of America

Bayalal J, Zougmore, R, Djibril S. Dayambal and Olivier, A. (2017). Editorial for the Thematic Series in Agriculture & Food Security: Climate-Smart Agriculture Technologies in West Africa: learning from the ground AR4D experiences. *Agric & Food Security* 6:40.

Bie, S.W. (2001). The 1990s: An important decade for agricultural research in developing countries. In: ISNAR Annual report 2000: Reflecting on an important decade for agricultural research in developing countries. International Service for National Agricultural Research, The Hague.

Campbell, B. M., S. J. Vermeulen, P. K. Aggarwal, C. Corner-Dolloff, E. Girvetz, A. M. Loboguerrero, and E. Wollenberg (2016). Reducing risks to food security from climate change. *Global Food Security* 11:34-43. <http://dx.doi.org/10.1016/j.gfs.2016.06.002>

Caplan, Ken Joe Gomme, Josses Mugabi and Leda Stott (2007). Assessing Partnership Performance: Understanding the Drivers for Success. Building Partnerships for Development [www.bpdws.org](http://www.bpdws.org).

Caron, P., Ferrero y de Loma-Osorio, G., Nabarro, D. et al. (2018). Food Systems for Sustainable Development: Proposals for a Profound Four-Part Transformation. *Agronomy for Sustainable Development* 38 (4): 41. <https://doi.org/10.1007/s13593-018-0519-1>

Chambers, R. and Jiggins, J. (1987). Agricultural Research for resource-poor farmers. Part I: Transfer-of-Technology and Farming Systems Research. Part II: A parsimonious paradigm. *Agric. Administration and Extension* 27: 35–52 (Part I) and 27: 109–128 (Part II).

Collinson, M.P. (ed.) (2000). *A history of Farming Systems Research*. CABI Publishing, New York & FAO, Rome.

Creech Elizabeth (2017). *Saving Money, Time and Soil: The Economics of No-Till Farming*. Natural Resources Conservation Service in [Conservation](#) Nov 30, 2017.

Deaton, A. (2010). Instruments, randomization, and learning about development. *Journal of Economic Literature*, 48, 424–455.[doi:10.1257/jel.48.2.424](#)

de Bakker, F.G.A., Rasche, A., Ponte, S. (2019). Multi-stakeholder initiatives on sustainability: a cross-disciplinary review and research agenda for business ethics. *Bus. Ethics Q.* 29 (3), 343–383.

Dentoni, D., Bitzer, V., Schouten, G., 2018. Harnessing wicked problems in multi-stakeholder partnerships. *J. Bus. Ethics* 150 (2), 333–356.

Dixon, J., A. Gulliver and D. Gibbon (2001). *Farming systems and poverty: Improving farmers' livelihoods in a changing world*. FAO and World Bank, Rome and Washington.

Dominic, D. M. and Gupta, J. (2019). Institutionalization of dairy innovation platforms: A study on Samagra project in Kerala. *Indian J Dairy Sci* 72(5): 542–546.

Dusengemungu, L., P. Kibwika and F. Birungi Kyazze (2015). Assessing the capacity for effective multi-stakeholder participation in innovation platforms: The case of Research-Into-Use Project in Rwanda. *African Journal of Rural Development*, 1(1): 1 – 11.

Eneku GA, Wagoire WW, Nakanwagi J, Tukahiriwa J.M.B. (2013). Innovation platforms: A tool for scaling up sustainable land management innovations in the highlands of eastern Uganda. *African Crop Science Journal* 21(1), 751–760.

European Commission (2002). Communication of 16 April 2002 from the Commission to the Council, the European Parliament, the Econom-

ic and Social Committee and the Committee of the Regions: towards a thematic strategy for soil protection [COM (2002) 179 final]. Brussels, Belgium: European Commission.

Eweje, G., Sajjad, A., Nath Shobod, D., Kobayashi, K., 2020. Multi-stakeholder partnerships: a catalyst to achieve sustainable development goals. Mark. Intell. Plan. Forthcoming.

FAO (2005). Glossary: [http://www.fao.org/ag/wfe2005/glossary\\_en.htm](http://www.fao.org/ag/wfe2005/glossary_en.htm)

Global Forum for Agricultural Research (GFAR) and ILAC (2010). Inclusive Partnerships for Agricultural Research for Development. GFAR Workshop Report 3<sup>rd</sup> and 4<sup>th</sup> February 2010, Nairobi, Kenya.

FAO (2009). Climate Change in Africa: The Threat to Agriculture. FAO Regional Office for Africa. [fao-ro-africa@fao.org](mailto:fao-ro-africa@fao.org)

FAO (2013). Climate-smart agriculture sourcebook. Rome, Italy: Food and Agriculture Organization of the United Nations (FAO).

FAO (2013a). Climate-Smart Agriculture: Sourcebook. Rome, Italy: Food and Agriculture Organization of the United Nations. <http://www.fao.org/3/a-i3325e.pdf>.

[FAO \(2015\)](#). Healthy soils are the basis for healthy food production. 2015 Year of Soil. FAO, Rome.

FAO (2016) Public-private partnerships for agribusiness development – A review of international experiences, by Rankin, M., Gálvez Nogales, E., Santacoloma, P., Mhlanga, N. & Rizzo, C. Rome, Italy.

FAO (2016). Key to achieving the 2030 Agenda for Sustainable Development. Rome: FAO, Rome.

FAO (2017). The Future of Food and Agriculture: Trends and Challenges. Rome.

FAO. (2018). Transforming Food and Agriculture to Achieve the SDGs: 20 Interconnected Actions to Guide Decision-makers. Rome.

FAO, IFAD (International Fund for Agricultural Research), UNICEF, WFP (World Food Programme) and WHO (World Health Organization). (2018). The State of Food Security and Nutrition in the World 2018: Build-

ing Climate Resilience for Food Security and Nutrition. FAO, Rome.

FAO (2017). Tracking Adaptation in Agricultural Sectors. FAO, Rome, Italy.

FAO (2018). Climate-smart agriculture training manual – A reference manual for agricultural extension agents. Rome. 106 pp. Licence: CC BY-NC-SA 3.0 IGO.

Food Agriculture Natural Resources Policy Analysis Network (FANRPAN) (2013). Engaging Youth in Climate-Smart Agriculture. Policy brief series. Issue No. 1: Volume XII. JSTOR collection. [https://www.jstor.org/stable/resrep00704?seq=4#metadata\\_info\\_tab\\_contents](https://www.jstor.org/stable/resrep00704?seq=4#metadata_info_tab_contents).

FAO (2021). “Small Family Farmers Produce a Third of the World’s Food.” Last modified April 23, 2021. <https://www.fao.org/news/story/en/item/1395127/icode/>.

FAO (2021). The State of Food and Agriculture. Making agrifood systems more resilient to shocks and stresses. Rome: [doi:10.4060/cb4476en](https://doi.org/10.4060/cb4476en) ISBN 978-92-5-134329-6. S2CID 244548456.

FAO (2021). The State of World’s Land and Water Resources for Food and Agriculture: Systems at Breaking Point. FAO, Rome.

Fatunbi, A.O. and Adekunle, A.A. (2013). A Partnership Approach for Effective Engagement of the Private Sector in Agricultural Research and Development. World Journal of Agricultural Sciences 9 (1): 53-59.

Fatunbi A.O, J. Ekong, M. Dhamankar and AA Adekunle (2017). Integrated Agricultural Research for Development (IAR4D): Revisiting Concept, Practice and Upscaling. Forum for Agricultural Research in Africa (FARA), Accra Ghana.

Feed the Future (2023). Natural Resources Management. U.S. Government’s Global Food Security Strategy Activity Design Guidance. [www.feedthefuture.gov](http://www.feedthefuture.gov) and [www.agrilinks.org](http://www.agrilinks.org).

Freeman, R. E. (2010). Strategic management: A stakeholder approach. Cambridge University Press.

Golzynski D. How to establish a Food Policy Council. Michigan Department of Community Health n.d. Available from: <https://sustainablelect.org>.

[org/fileadmin/media/Content/For\\_resources/Public\\_Services/1.How\\_to\\_Establish\\_a\\_FPC.pdf](http://org/fileadmin/media/Content/For_resources/Public_Services/1.How_to_Establish_a_FPC.pdf).

Growing Africa: Unlocking the Potential of Agribusiness March 2013.

Grow Africa: (2016). Partnering to Achieve African Agriculture Transformation. Prepared by the World Economic Forum in collaboration with A.T. Kearney.

Grubinger, V., Berlin, L., Berman, E., Fukagawa, N., Kolodinsky, J. Neher, D., Parsons, B., et al. (2010). Food Systems. Transdisciplinary Research Initiative (TRI), Spire of Excellence Proposal. University of Vermont, Burlington.

Haki Pamuk & Fedes Van Rijn (2019) The Impact of Innovation Platform Diversity in Agricultural Network Formation and Technology Adoption: Evidence from Sub-Saharan Africa, *The Journal of Development Studies*, 55:6, 1240-1252, DOI:10.1080/00220388.2018.1453606.

Hall, A.W. Janssen, E. Pehu and R. Rajalahti (2006). Enhancing agricultural innovation: How to go beyond the strengthening of research systems. World Bank, Washington.

Hall, A., Dijkman, J., Taylor, B., Williams, L. And Kelly, J. (2016). Synopsis: Towards a Framework for Unlocking Transformative Agricultural Innovation. Discussion Paper 1. Commonwealth Scientific and Industrial Research Organisation (CSIRO), Canberra.

Hall, A. and Dijkman, J. 2019. Public Agricultural Research in an Era of Transformation: The Challenge of Agri-Food System Innovation. Rome and Canberra: CGIAR Independent Science and Partnership Council (ISPC) Secretariat and Commonwealth Scientific and Industrial Research Organisation (CSIRO), IX + 67 pp.

Hawkes C and Parsons K. (2019.). Rethinking Food Policy: A Fresh Approach to Policy and Practice. Brief 1: Tackling Food Systems Challenges: The Role of Food Policy. London: City University of London; 2019. Available from: [www.city.ac.uk/\\_data/assets/pdf\\_file/0005/570443/7643\\_Brief-1\\_Tackling-food-systems-challenges\\_the-role-of-foodpolicy\\_WEB\\_SP.pdf](http://www.city.ac.uk/_data/assets/pdf_file/0005/570443/7643_Brief-1_Tackling-food-systems-challenges_the-role-of-foodpolicy_WEB_SP.pdf).

Hawkes C, Parsons K. (2019). Tackling Food Systems Challenges: The

Role of Food Policy. In: Rethinking Food Policy: A Fresh Approach to Policy and Practice. London: Centre for Food Policy; Brief 1. 2019.

Heckman, J. J., Smith, J. & Clements, N. (1997). Making the most out of programme evaluations and social experiments: Accounting for heterogeneity in programme impacts. *The Review of Economic Studies*, 64(4), 487–535. doi:10.2307/2971729

Hemmati, M. (2012). Multi-stakeholder processes for governance and sustainability: beyond deadlock and conflict. Routledge.

Hudson, B. (2003). Assessing Strategic Partnership: Partnership Assessment Tool (<https://www.researchgate.net/publication/265039661>)

ICRA (International Centre for Development-oriented Research in Agriculture). (2009). Collective Innovation Resource Book. Pretoria (South Africa) and Wageningen (The Netherlands).

IFAD. (2011) Private-Sector Strategy: Deepening IFAD's engagement with the Private Sector

IFAD (2017). Building partnerships for enhanced development effectiveness – a review of country-level experiences and lessons. Evaluation synthesis. Partnership Approach Paper.

IFDC (2023). Fertilizer and Soil Health in Africa: The Role of Fertilizer in Building Soil Health to Sustain Farming and Address Climate Change. INTERNATIONAL FERTILIZER DEVELOPMENT CENTRE PO BOX 2040 | MUSCLE SHOALS, AL 35662 | USA

Independent Science and Partnership Council (ISPC) (2015). Strategic study of good practice in AR4D partnership. Rome, Italy. CGIAR Independent Science and Partnership Council (ISPC), xiii + 60pp + annex 50pp.

Institutional Learning & Change (ILAC) (2009). Partnering in International Agricultural Research for Development: Lessons from the ILAC Learning Laboratory. ILAC Working Paper 10.

International Livestock Research Institute (2007). ILRI's Partnership Strategy and Management System. ILRI, Nairobi, Kenya

IPES (International Panel of Experts on Sustainable Food Systems).

(2015). *The New Science of Sustainable Food Systems: Overcoming Barriers to Food Systems Reform*. Brussels.

Johns Hopkins Center for a Livable Future. *Funding Food Policy Councils: Stories from the Field*. Baltimore; 2015. Available from: [https://assets.jhsph.edu/clf/mod\\_clfResource/doc/FundingFPCsStoriesfromtheField\\_6-12-15.pdf](https://assets.jhsph.edu/clf/mod_clfResource/doc/FundingFPCsStoriesfromtheField_6-12-15.pdf).

Justin Yifu Lin (2011). "[New Structural Economics: A Framework for Rethinking In Development](#)," *World Bank Research Observer*, 26 (2): 193–221.

Kusters K, Buck L, De Graaf M, Minang P, van Ooten C, Zagt R. 2017. Participatory planning, Monitoring and Evaluation of Multi-stakeholder platforms in Integrated Landscape Initiatives. *Environmental Management*, 1-12 Available at: <http://doi.org/10.1007/s00267-0847-y>.

Leeuwis, C. and Van den Ban, A. (2004). *Communication for Rural Innovation: Rethinking Agricultural Extension*. Blackwell Science, Oxford, UK.

Lefebvre, L., Laborde, D. and Piñeiro, V. (2023). Bringing back neglected crops: A food and climate solution for Africa. *IFPRI Blog*: Issue Post June 5, 2023.

Lidder, P. and Dijkman, J. (2019). Orange-Fleshed Sweet Potato in Sub-Saharan Africa. In Kelly, J., ed., *Public Agricultural Research and Development in an Era of Transformation: The Challenge of Agri-Food System Innovation*. Resource Document I: Case Studies. CGIAR Independent Science and Partnership Council (ISPC) Secretariat and Commonwealth Scientific and Industrial Research Organisation (CSIRO), Rome and Canberra.

Lipper, L., Thornton, P., Campbell, B. (2014). Climate-smart agriculture for food security. *Nature Clim Change* 4, 1068–1072. <https://doi.org/10.1038/nclimate2437>.

Luis Fernando Gutierrez Cano, Jhon Wilder Zartha Sossa (2023). [Agri-cultural innovation system: analysis from the subsystems of R&D, training, extension, and sustainability](#). *Sustainable Food System* vol 7.

Marc Schut, Josey Kamandaş, Andreas Gramzow, Thomas Dubois, Dietmar Stoian, Jens A. Andersson Iddo Dror, Murat Sartas Remco Mur,

Shinan Kassam, Herman Brouwer, André Devaux, Claudio Velasco, Rica Joy Flor, Martin Gummert, Djuna Buizer, Cynthia Mcdougal, Kristin Davis, Sabine Homann-Kee Tui and Mark Lundy (2018). Innovation Platforms in Agricultural Research for Development: Ex-ante Appraisal of the Purposes and Conditions Under Which Innovation Platforms can Contribute to Agricultural Development Outcomes. Cambridge University Press 2018., online.

Makini F, Kamau G, Makelo M, Adekunle W, Mburathi G, Misiko M, Dixon J. 2013. Operational field guide for developing and managing local agricultural innovation platforms.

Marco F. and Paul C. (2011) Public-Private Partnerships and Sustainable Agricultural Development. *Sustainability*, 3, 1064-1073.

Mangeni, B. (2019). The Role of Public-Private Partnerships (PPPs) in Ensuring Technology Access for Farmers in sub-Saharan Africa. *African Journal of Food, Agriculture, Nutrition and Development* 19(1):14137 – 14155.

Maryono Maryono, Aditya Marendra Killoes, Rajendra Adhikari, Ammar Abdul Aziz (2023). Agriculture development through multi-stakeholder partnerships in developing countries: A systematic literature review. *Agricultural Systems*. <https://doi.org/10.1016/j.agsy.2023.103792>.

Masoumi, A.F. (2022). *Agri-Food Systems: What It Is & How It Works*. A Brief

McGeown C. Citizens' assemblies won't save us. *Green European Journal*. 26 May; 2021. Available from: [www.greeneuropeanjournal.eu/citizens-assemblies-wont-save-us](http://www.greeneuropeanjournal.eu/citizens-assemblies-wont-save-us).

Mueller, V. and Thurlow, J. (2019). *Youth and Jobs in Rural Africa: Beyond Stylized Facts*. International Food Policy Research Institute (IFPRI), Washington DC. and Oxford University Press, Great Clarendon Street, Oxford, OX2 6DP, United Kingdom

Muller C, Salgado R, Duran M, Le Coq JF, de Varax M, Gamba-Trimiño C, Howland F, Chia E, Gallardo O., Andrieu N., (2018). Innovation Platform for Climate-Smart Agriculture in Honduras. CCAFS Policy Brief. Wageningen, the Netherlands. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).

Mulema, A.A. (2012). Organization of Innovation platforms for Agricultural Research and Development in the Great Lakes Region of Africa. *Community Development Journal* 51(2): 212- 228.

Nederlof, E.S. (2006). Research on agricultural research: Towards a pathway for client-oriented research. Published PhD dissertation. Wageningen, The Netherlands.

Nederlof, Suzanne, Mariana Wongtschowski and Femke van der Lee (eds). 2011. Putting heads together. Agricultural innovation platforms in practice. Bulletin 396, KIT Publishers

Nederlof, S., and Pyburn, R. (2012). One finger cannot Lift a Rock: Facilitating Innovation Platforms to Trigger Institutional Change in West Africa. *Agricultural and Food Sciences Environmental Science Economics*. <https://www.reserachgate.net>

Newton P, Civita N, Frankel-Goldwater L, Bartel K and Johns C (2020) What Is Regenerative Agriculture? A Review of Scholar and Practitioner Definitions Based on Processes and Outcomes. *Front. Sustain. Food Syst.* 4:577723. doi: 10.3389/fsufs.2020.577723.

Nyuor AB, Donkor E, Aidoo R, Buah SS, Naab JB, Nutsugah SK, et al. Economic impacts of climate change on cereal production: implications for sustainable agriculture in Northern Ghana. *Sustainability*. 2016; 8:724. doi:10.3390/su8080724.

[Osorio-García, A. M., L. Paz, F. Howland, L. A. Ortega, I. Acosta-Alba, L. Arenas, N. Chirinda, D. Martinez-Baron, O. Bonilla Findji, A. M. Loboguerrero, E. Chia & N. Andrieu \(2020\). Can an innovation platform support a local process of climate-smart agriculture implementation? A case study in Cauca, Colombia. \*Agroecology and Sustainable Food Systems\* 44\(3\).](#)

Ouassif, Amal EL (2021). [Challenge of the Youth Bulge in Africa and the Middle East - Migration and The H0Cy8fZ.pdf \(africa-portal.org\)](#) NATO South Hub, Policy Centre for the new South.

Putaa, H., Chachage, B., Pasape, L. (2018). Review of the factors contributing to the sustainability of the agricultural innovation platform. *International Journal of Agronomy and Agricultural Research (IJAAR)* 12(5): 85-99.

Pamuk, H., Bulte, E., & Adekunle, A. (2014). Do decentralized innovation systems promote agricultural technology adoption? Experimental evidence from Africa. *Food Policy*, 44, 227–236. doi:10.1016/j.foodpol.2013.09.015.

Pamuk, H., Bulte, E., Adekunle, A., & Diagne, A. (2015). Decentralised innovation systems and poverty reduction: Experimental evidence from Central Africa. *European Review of Agricultural Economics*, 42(1), 99–127. doi:10.1093/erae/jbu007.

Pattberg P and Widerberg O. Transnational Multi-Stakeholder Partnerships for Sustainable Development. Building Blocks for Success. IVM Report, R-14/31. Amsterdam: Institute for Environmental Studies; 2014. Available from [https://www.researchgate.net/publication/281268765\\_Multistakeholder\\_Partnerships\\_Building-Blocs\\_for\\_Success](https://www.researchgate.net/publication/281268765_Multistakeholder_Partnerships_Building-Blocs_for_Success)

Porter, J. R., L. Xie, A. J. Challinor, K. Cochrane, S. M. Howden, M. M. Iqbal, D. B. Lobell, and M. I. Travasso. 2014. Food security and food production systems. Pages 485–533 in C. B. Field, V. R. Barros, D. J. Dokken, K. J. Mach, M. D. Mastrandrea, T. E. Bilir, M. Chatterjee, K. L. Ebi, Y. Otsuki Estrada, R. C. Genova, B. Girma, E. S. Kissel, A. N. Levy, S. MacCracken, P. R. Mastrandrea, and L. L. White, editors. *Climate Change 2014: impacts, adaptation, and vulnerability. Part A: global and sectoral aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press, Cambridge, UK and New York, New York, USA.

PROLINOVA (Promoting Local Innovation). (2010). Institutionalization of Participatory Innovation Development: experiences of the Provincial Department of Agriculture, Takeo Province, Working paper 31, Cambodia.

Pyburn R, Mur R. 2014. Making a sense of practice. In: Sanyang S, Pyburn R, Mur R, and Audet-Belanger. Eds. *Against the grain and to the roots: Maize and cassava innovation platforms in West and Central Africa*. Arnhem. LM Publishers p. 29–50.

Rangi, D. (2022). *A double Win: Revolutionizing African Agriculture to Empower Youth and Sustain the Continent's Development*. A review, July 14, 2022. CABI.

Ramirez-Villegas J, Thornton P.K (2015). Climate change impacts on African crop production. CCAFS Working Paper no 119 CGIAR Research Programme on Climate Change, Agriculture and Food Security (CAAFS) Copenhagen, Denmark. [www.ccafs.cgiar.org](http://www.ccafs.cgiar.org).

Reardon, T., Lu, L. and Zilberman, D. (2017). Links among Innovation, Food System Transformation, and Technology Adoption, with Implications for Food Policy: Overview of a Special Issue. *Food Policy*, 83 (February), pp. 285–288. <http://dx.doi.org/10.1016/j.foodpol.2017.10.003>.

Reardon, T., Echeverria, R. G., Berdegue, J. A., Minten, B., Liverpool-Tasie, L. S., Tschirley, D. And Zilberman, D. (2018). Rapid Transformation of Food Systems in Developing Regions: Highlighting the Role of Agricultural Research and Innovations. *Agricultural Systems*, 172. Article in press. <https://doi.org/10.1016/j.agry.2018.01.022>.

Sara Boettiger, Nicolas Denis, and Sunil Sanghvi (2017). "Successful agricultural transformations: Six core elements of planning and delivery," McKinsey and Company, December 2017.

Sasson A. (2012). Food security for Africa: an urgent global challenge. *Agric Food Secur.* 2012; 1:2. doi:10.1186/2048-7010-1-2.

Sartas, M., Schut, M., Hermans, F., Asten, P., Leeuwis, C., 2018. Effects of multi-stakeholder platforms on multi-stakeholder innovation networks: implications for research for development interventions targeting innovations at scale. *PLoS One* 13 (6), e0197993.

Schut, M. (2017). The Sustainability and Success of Innovation Platforms. Article 2017 <https://www.researchgate.net/publication/321849369>

Schut M, Kamanda J, Gramzow A, Dubois T, Stoian D, Andersson JA, Dror I, Sartas M, Mur R, Kassam S, Brouwer H (2019) Innovation platforms in agricultural research for development: Ex-ante appraisal of the purposes and conditions under which innovation platforms can contribute to agricultural development outcomes. *Exp Agric* 55: 575-96

Susan Kaaria, Roger Kirkby, Robert Delve, Jemimah Njuki, Emily Twinamasiko<sup>4</sup> and Pascal Sanginga (2004). Enhancing Innovation Processes and Partnerships. Synthesis Paper.

Swinburn, B. A., Kraak, V. I., Allender, S., Atkins, V. J., Baker, P. I., Bogard, J. R., Brinsden, H., et al. (2019). The Global Syndemic of Obesity, Undernutrition, and Climate Change: The Lancet Commission Report. *The Lancet*, 393 (10173), pp. 791–846.

Stoop, W.A. (2002). A study and comprehensive analysis of the causes for low adoption rates of agricultural research results in West and Central Africa: Possible solutions leading to greater future impacts: The Mali and Guinea case studies. A study commissioned by the Interim Science Council. CGIAR, Washington and FAO, Rome.

Swaans K, Boogaard B, Bendapudi R, Taye H, Hendrickx S, Klerkx L. 2014. Operationalizing inclusive innovation: lessons from innovation platforms in livestock value chains in India and Mozambique. *Innovation and Development* 4(2), 239–257.

ten Berge, H.F., Hijbeek, R., van Loon, M.P., Rurinda, J., Tesfaye, K., Zingore, S., Craufurd, P., van Heerwaarden, J., Brentrup, F., Schröder, J.J., and Boogaard, H.L. (2019). Maize crop nutrient input requirements for food security in sub-Saharan Africa. *Global Food Security*, 23:9–21.

Tenywa, M.M., Rao, K.P.C., Tukahirwa, J.B., Buruchara, R., Adekunle, A.A., Mugabe, J., Wanjiku, C., Mutabazi, S., Fungo, B., Kashaija, N.I., M., Pali, P., Mapatano, S., Ngaboyisonga, C., Farrow, A., Njuki, J. and Abenakyo, A. (2011). Agricultural Innovation Platform as a Tool for Development Oriented Research: Lessons and Challenges in the Formation and Operationalization. *Journal of Agriculture and Environmental Studies* 2 (1): 117–146.

Tinarwo, J., Babu, S.C., Iyappan, K., 2018. Improving Food System Resilience through Better Governance Lessons from Multi-Stakeholder Partnerships in Zimbabwe. The International Food Policy Research Institute (IFPRI), Washington DC.

Totin, E., van Mierlo, B., Klerkx, L., 2020. Scaling practices within agricultural innovation platforms: between pushing and pulling. *Agric. Syst.* 179, 102764.

The Global Conferences on Agricultural Research for Development (GCARD) (2010). Transforming Agricultural Research for Development (AR4D) Systems for Global Impact, <http://www.egfar.org>

Timberlake, T.P., et al. (2022). "A Network Approach for Managing Ecosystem Services and Improving Food and Nutrition Security on Smallholder Farms." *People and Nature* 4 (2): 563–575.

UNEP, FAO and UNDP (2023). *Rethinking Our Food Systems: A Guide for Multi-Stakeholder Collaboration*. Nairobi, Rome and New York. <https://doi.org/10.4060/cc6325en>

USAID. 2021. "USAID Convenes Industry Brainstorm on Regenerative Agriculture." Last modified May 21, 2021. <https://greeninvestasia.com/usa-aid-convenes-industry-brainstorm-on-regenerative-agriculture>

van Rijn, F., Ephraim, N., & Adekunle, A. (2015). The impact of agricultural extension services on social capital: An application to the Sub-Saharan African Challenge Programme in Lake Kivu region. *Agriculture and Human Values*, 32(4), 1–19. World Bank. (2007). *World development report 2008: Agriculture for development*. Washington, DC.

Willett, W., Rockström, J., Loken, B., Springmann, M., Lang, T., Vermeulen, S., Garnett, T., et al. (2019). Food in the Anthropocene: The EAT–Lancet Commission on Healthy Diets from Sustainable Food Systems. *The Lancet*, 393 (10170), pp. 447–492.

World Bank (2009) *Africa's development in a changing climate*.

World Bank, *World Development Report 2011: Conflict, Security, and Development*. Washington, DC.

Wortmann, C.S., and Stewart, Z. 2021. Nutrient management for sustainable food crop intensification in African tropical savannas. *Agronomy Journal*, 113(6):4605–4615.

Zou, T., Zhang, X., and Davidson, E.A., 2022. Global trends of cropland phosphorus use and sustainability challenges. *Nature*, 611(7934):81–87.

Zougmore R, Jalloh A, Tioro A. (2014). Climate-smart soil water and nutrient management options in semiarid West Africa: a review of evidence and analysis of stone bunds and zaï techniques. *Agric Food Secur.*3:16.

## Paper Summary

The Third White Paper on Integrated Agricultural Research for Development and Innovation Platforms (IAR4D-IP) reflects on 15+ years of implementing multi-stakeholder innovation systems in African agriculture. Building on the first two white papers, it reviews lessons learned, evaluates current challenges, and proposes ways to adapt the IAR4D-IP model to emerging development needs.

The IAR4D concept moves beyond traditional linear research models by promoting collaborative, inclusive innovation among farmers, researchers, policymakers, and the private sector. Central to this is the Innovation Platform (IP), which enables actors along agricultural value chains to co-create solutions, improve market access, and increase productivity.

The paper categorizes various types of partnerships—research, value chain, advocacy, and public-private—and identifies key success factors such as trust, shared vision, good leadership, and effective communication. It also presents case studies illustrating how IPs have driven impact across Africa.

Given new challenges like climate change, degraded soils, food system transformation, and youth unemployment, the paper calls for a rethinking of the IAR4D-IP model. It recommends integrating climate-smart agriculture, promoting indigenous crops, regenerative practices, and youth engagement into IAR4D initiatives, and urges the institutionalization of IAR4D-IP at national and regional levels. Calling for sustained learning, investment, and inclusive partnerships to drive agricultural innovation and development in Africa



### **Forum for Agricultural Research In Africa**

*Headquarters No. 7 Flower Avenue, New Achimota-Mile 7*

*PMB CT 173, Accra, Ghana*

*Tel +233 (0) 302 772823 / 779421*

*Fax +233 (0) 302 773676*

*Email: [info@faraafrica.org](mailto:info@faraafrica.org)*

*[www.faraafrica.org](http://www.faraafrica.org)*

**ISBN: 978-9988-51-306-1**



9 789988 513061