



# GLOBAL EVENT

JOHANNESBURG SOUTH AFRICA



# FARA

Forum for Agricultural Research in Africa

# **Achieving Economies of Scale in the Africa Smallholders System through the Innovation Platforms**

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**GCARD 3 – Theme 4 – Sustaining the business of farming  
Johannesburg, South Africa**

# Seeing the picture....

## Smallholders System

Crude implements

Poor returns

**Low productivity**

low labor advantage

Low external input

Poor  
Access to  
technologies



Poor  
Natural  
Resource  
management

Poor  
market  
access

Mechanization  
is difficult

Unprofitable

Land fragmentation

**Peasant / subsistent**

Unsustainable livelihood

## Desired Change

**Competitive (price / Quality)**

Good Science

Sustainable  
Intensification

Smart  
marketing



**Competitive**

Benefit of  
scale



**Mechanized**


**Profitable  
Medium to  
large scale**

More jobs  
Processing &  
marketing


Professionalizing  
farming

Attractive livelihood

## Pathway for Change


 Organize practical linkages between research generation and users

 Invest in value chain development

 Invest in research


**Policy ...**

- ❖ support to SME
- ❖ Land tenure to free up agricultural lands
- ❖ Professionalize agriculture
- ❖ Moderate external influence
- ❖ Strengthen institutions

 Create alternative livelihood to farming, in processing, marketing etc.

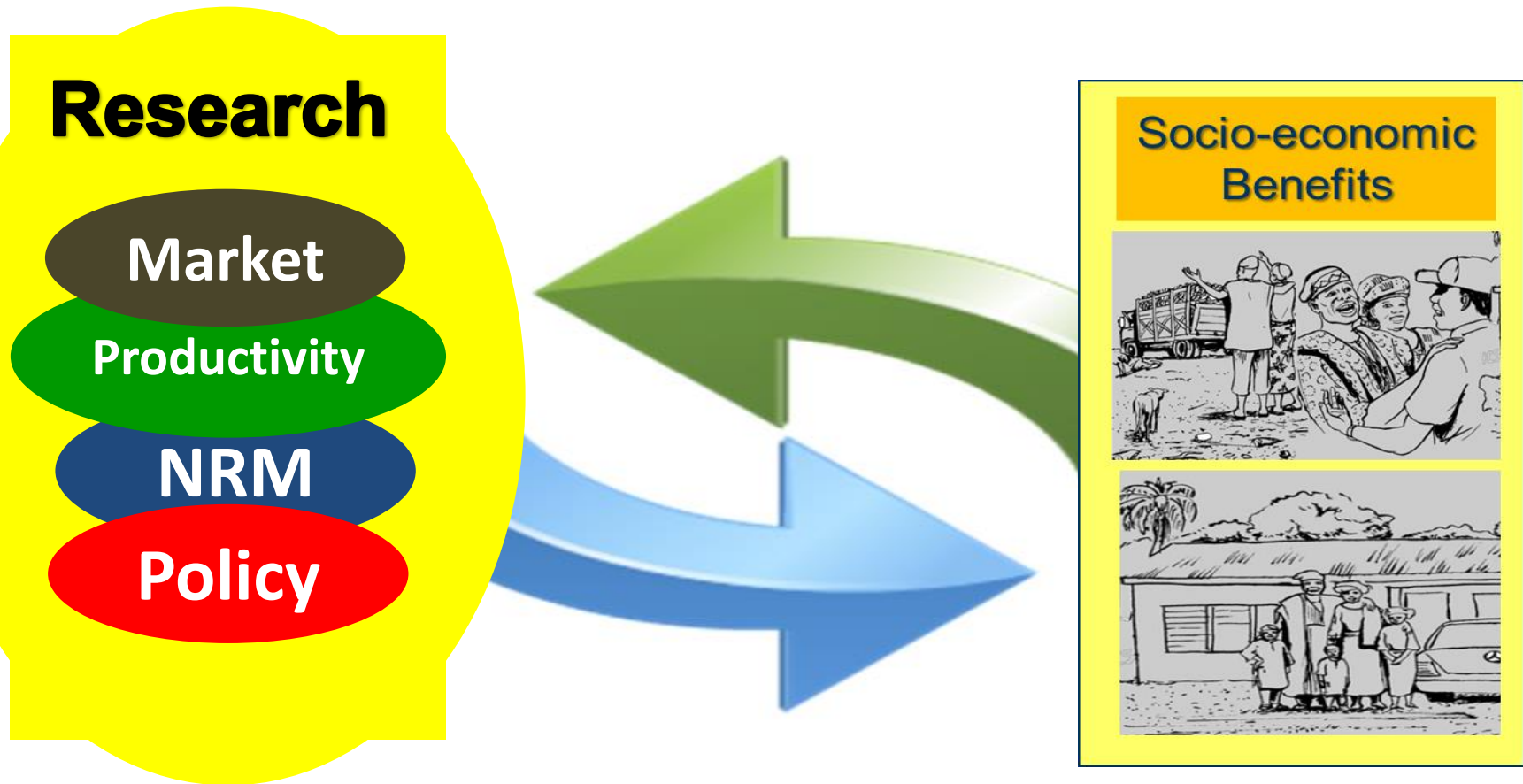
 **Mechanization**

 Affordable financing

 Transform the smallholders to Small and medium scale business

# The Root Problem...

**How to convert research outcomes into socio-economic benefits / real impact / development outcomes**



# Technological and Institutional Barriers

**Often untamed  
Institutional issues  
will prevent socio-  
economic benefits  
from the best-bet  
technologies**



## **Common institutional barriers**

- Land tenure
- Access to credit
- Access to information
- Availability of seeds
- Access to inputs
- Availability of fertilizer
- Market access
- Trade policies
- Product regulations
- infrastructure etc.

# from a global perspective...



# Achieving competitiveness in Africa smallholders system

## Use best technology package

- High productivity
- Low use of external input
- Easy to practice / low drudgery

## Mechanization of Africa smallholders system



Competitiveness

Price

Quality

## Provide affordable financing for agriculture and agro-based businesses

- Interest rate on agricultural loan should be in the single digit margin.
- Loan moratorium period should be friendly and production season based.

## Ensure standardization and market control

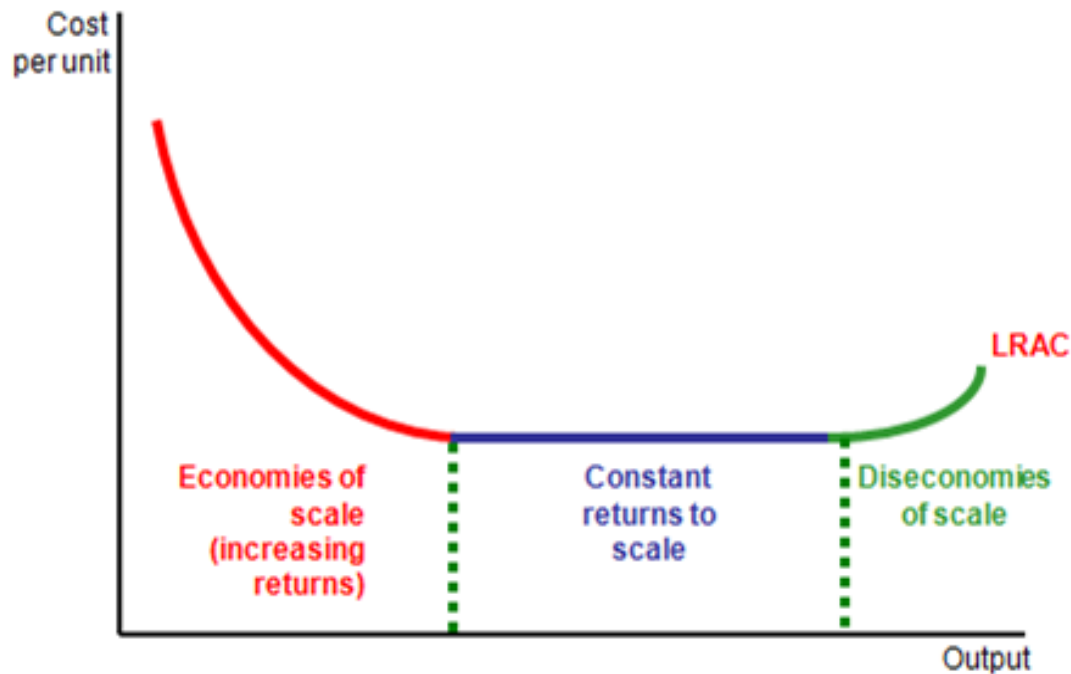
- Standardize commodity quality and control.
- Facilitate the development of markets.
- Moderate external commodity trade especially imports with tariffs.
- Encourage branding.

## Maximise the economy of scale

- Minimizing fragmentation of holdings
- Provide access to land (Land tenure policies)
- Investment in primary preparation of arable land



# Maximising the economies of scale



....the cost advantage that arises with increased output of a product.

..it arise because of the inverse relationship between the quantity produced and per-unit fixed costs;

Economies of scale may also be achieved from reduced variable costs per unit because of operational efficiencies; technological advantage (biological | machineries) and synergies and Linkages

**FARA Developed the**

**Integrated Agricultural Research for  
Development (IAR4D) Concept**

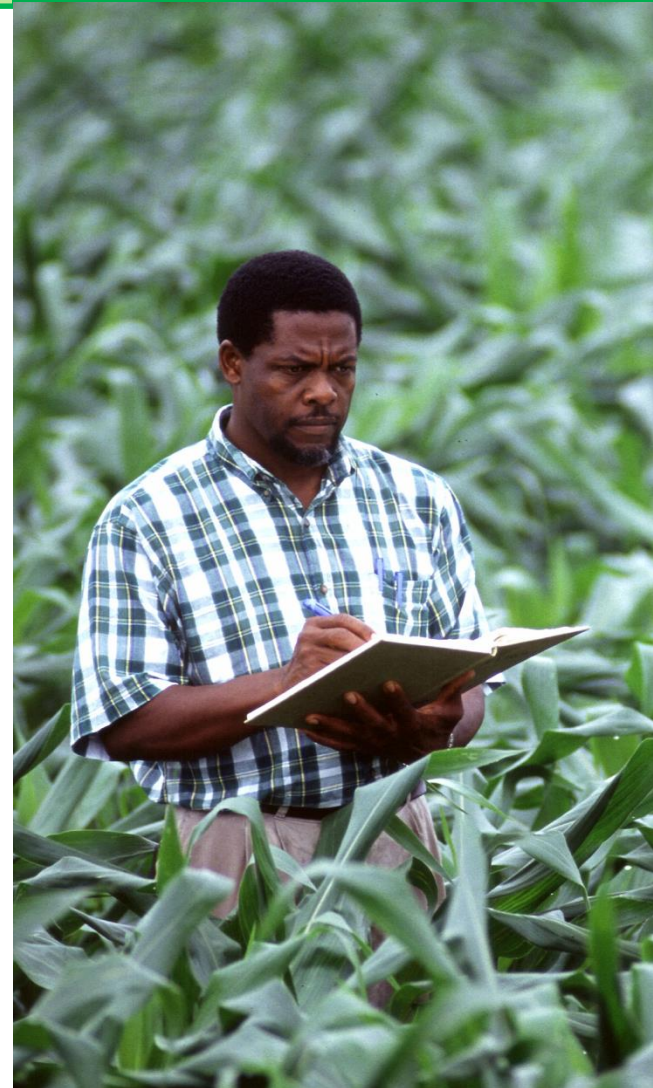
# IAR4D

- To mainstream a new way of doing business that ensures that research does not only lead to knowledge and publications, but also contributes to **change and innovation** for the betterment of people, while also preserving the natural resource base for future generations



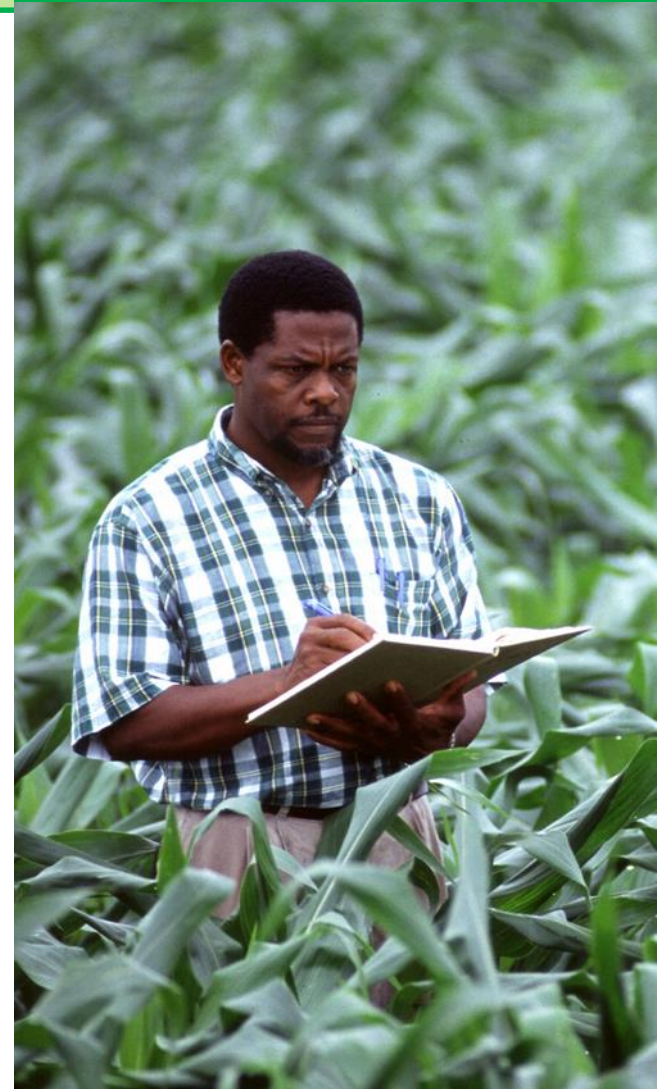
# IAR4D Concept

- IAR4D is designed to overcome the shortcomings of the traditional R&D systems.
- **IAR4D concept entails a multi-sectorial, multi-stakeholders orientation to agriculture**
- IAR4D is premised on the innovation systems.



# IAR4D concept

- **New research agenda that addresses interaction between NRM, production systems and agricultural markets and policies**
- **Institutional change for new partnerships involving all stakeholders in the agricultural innovation system**



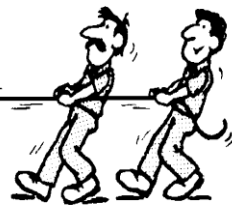
# Agricultural Innovation System

## Agricultural Innovation System (AIS)

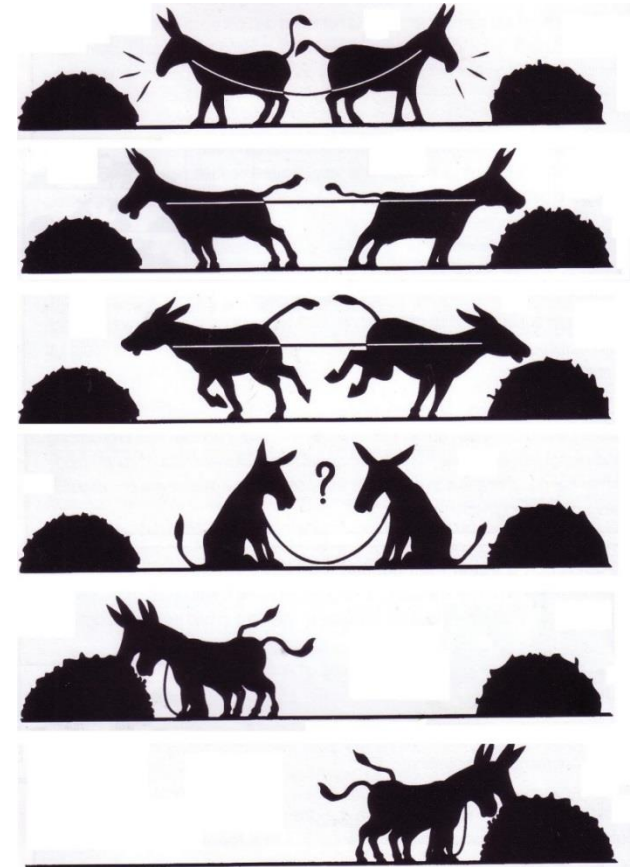
Is a collaborative arrangement that brings together several organizations and individuals working towards a desired change in agriculture. To interact and generates outcomes that benefit all stakeholders.

*Working Together,*

**PULLING TOGETHER**



*Delivering Together*



# Attributes of Agricultural Innovation System

1. An innovation system incorporates the **invention system**, as well as the complementary economic processes required to turn invention into innovation and subsequent diffusion and utilization.
2. Innovation systems do not occur automatically.. often it is a problem situation that defines a particular innovation opportunity



# Attributes of Agricultural Innovation System

- 3. Innovation systems are created for a purpose they will change in content and patterns of interaction as the problem situation evolves and**
- 4. They are constructed at micro and macro levels. The most relevant innovation system is the one that is constructed to address a particular problem.**

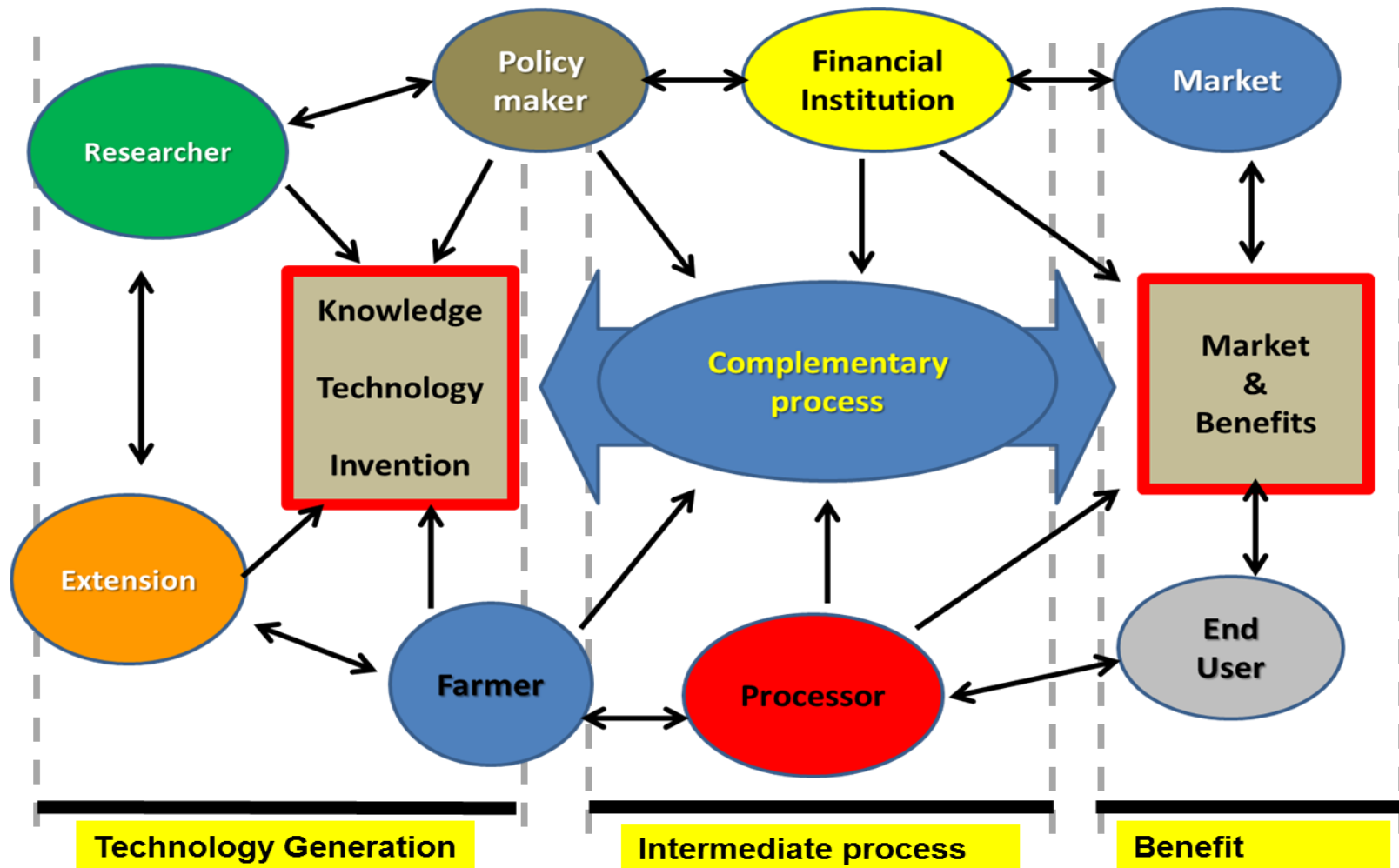




# What is an Innovation Platform?

- **An Innovation Platform is a physical or virtual forum established to facilitate interactions, and learning among stakeholders selected from a commodity chain analysis.**
- **Their interaction leads to participatory diagnosis of problems; joint exploration of opportunities and investigation of solutions leading to the generation of agricultural innovation along the targeted commodity chain**

# Dimensions of Interaction on an Innovation Platform



# Implementing IAR4D on an IP



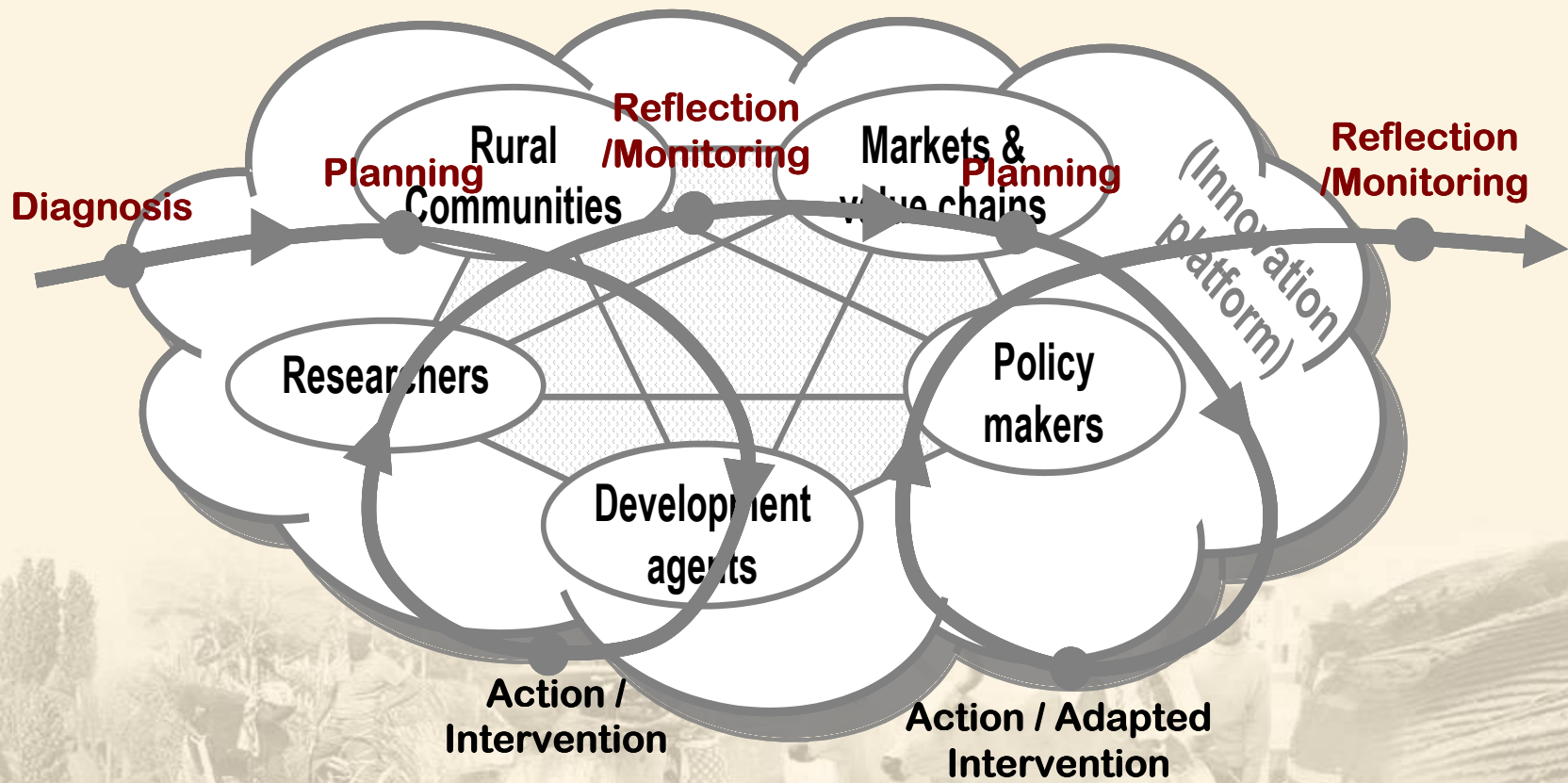
- a. IAR4D simultaneously addresses research and development as a fused continuum for generation of innovation.**
  
- b. All stakeholders on an IP have a contribution and benefits which sustain their interest and continued participation.**
  
- c. Innovation generated using IAR4D will benefit all stakeholders on the platform.**

# Implementing IAR4D on an IP



- d). IAR4D engages the policy makers at different levels all along the process of R&D till innovation is generated.**
  
- e). IAR4D demands investment by partners, which is followed by returns on the investment.**
  
- f). IAR4D ensures a smooth public-private partnership in ARD.**

# IAR4D offers Iterative Learning



# Phases of Innovation Platform

## Phase 1

Understanding problems from systems analysis and market chains approaches  
Problems, linkages, interests, ideas

## Phase 2

Systems improvements, value addition and market opportunities  
Improving productivity and creating value

## Phase 3

Setting in place innovations

- new products
- new technologies
- new institutions
- new marketing outlets

Local participants

R&D Organisations

Private sector

Interest

Leadership

Interest

Collaboration

Facilitation

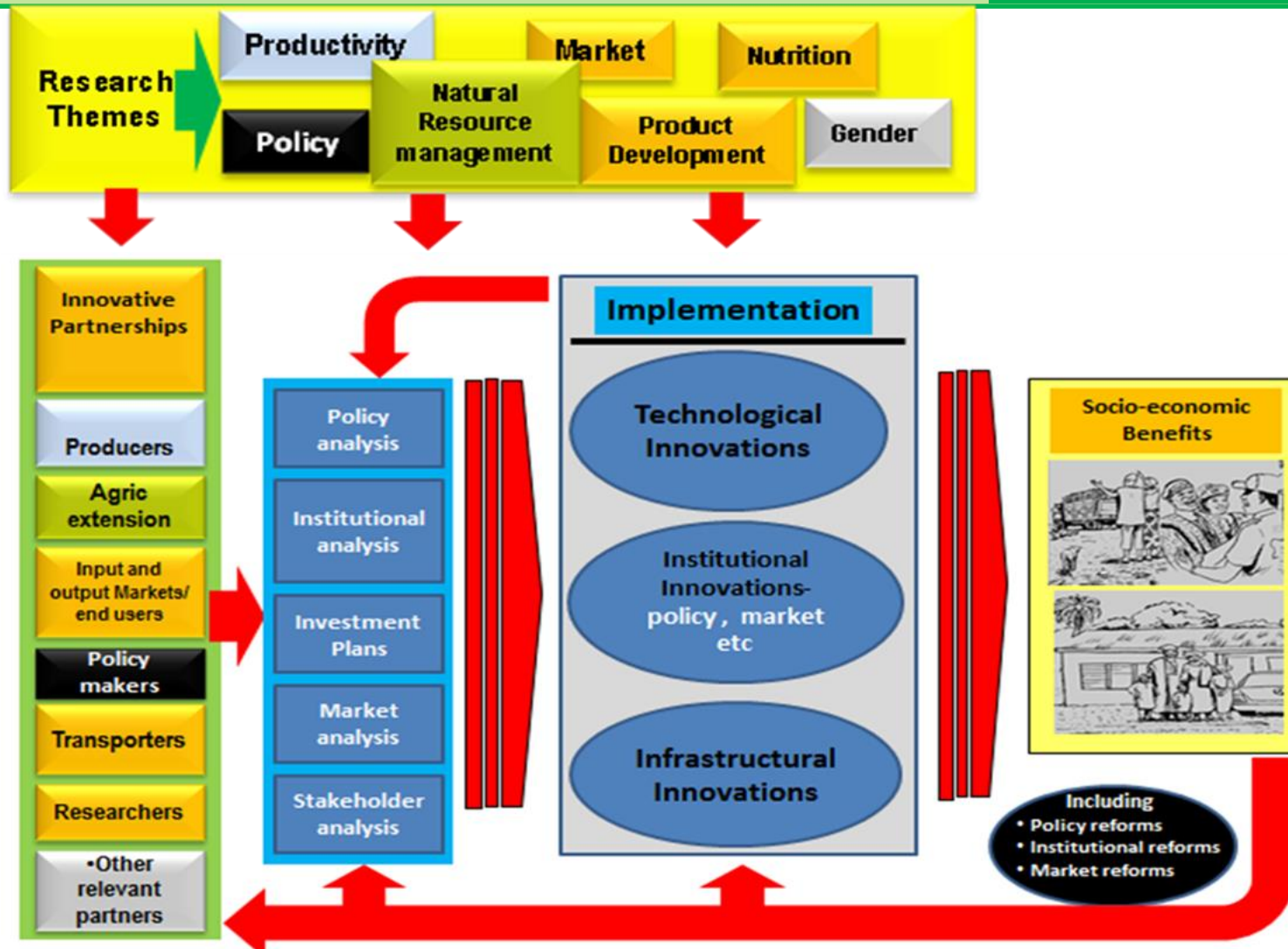
Collaboration

Ownership

Backstopping

Commercial opportunity and farmer support

# Transforming Knowledge and Skills to Innovation



# How the IP Triggers Economies of Scale with the Smallholders

## Economies of Scale

**Internal Economy of Scale**  
(Reduce cost & Increase production)



**Foster Specialization**

- Lower input cost
- Best technologies
- Machineries

**Organizational techniques**

**Continuous learning**

**External Economy of Scale**  
(Expansion in scope)



**Infrastructural development**

- Enabling policy
- Trade policy
- Market

**Functional institutions**

**Continuous learning**



# Why IAR4D is Suitable for Africa



- **All inclusive partnership arrangement to address technological and non-technological issues.**
- **IAR4D links all kinds of research endeavors (blue sky, strategic, basic and adaptive research) for the benefit of the stakeholders.**
- **IAR4D ensures an effective engagement and capacity strengthening of the NARS.**

# Why IAR4D is Suitable for Africa

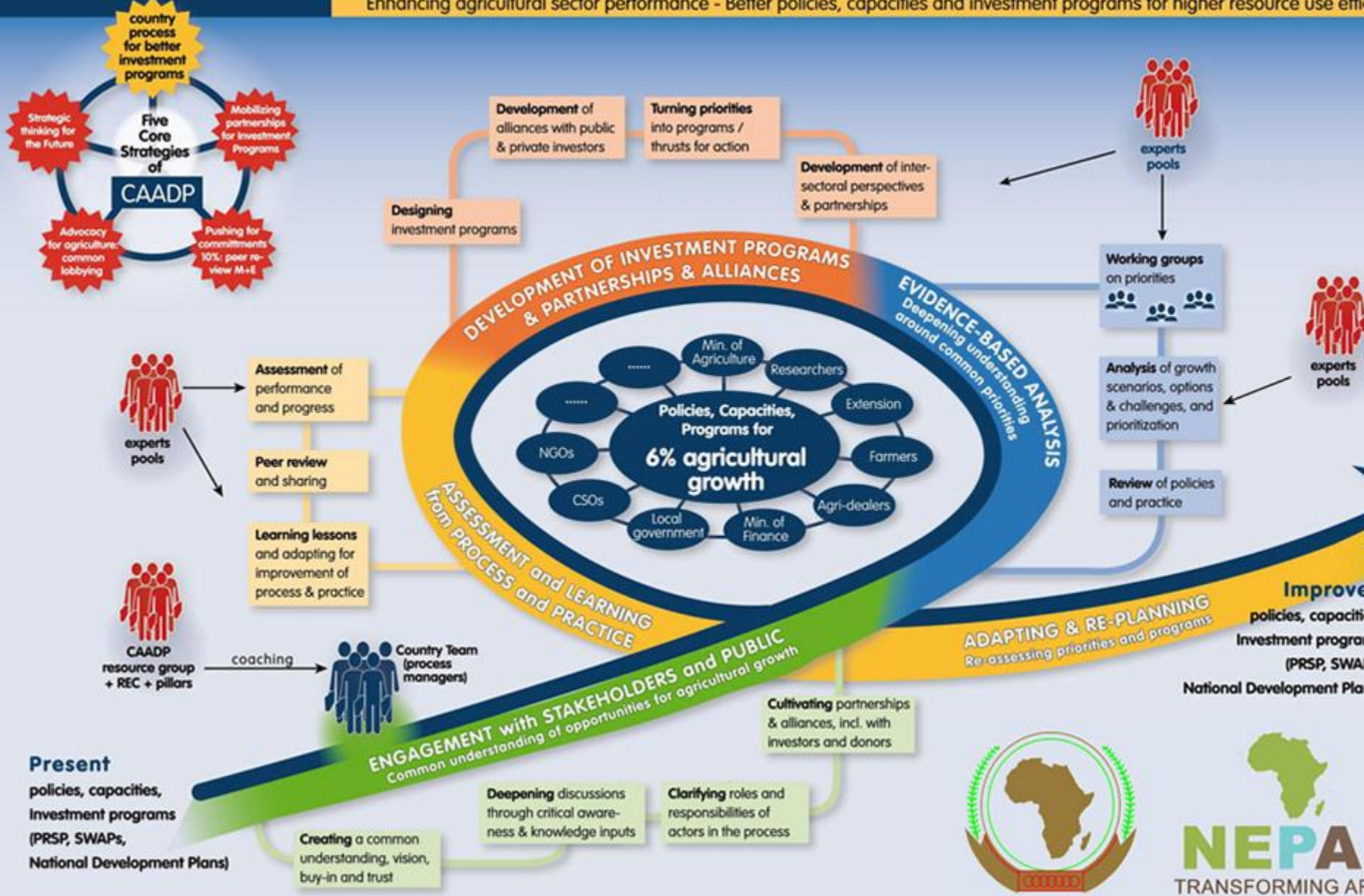


- **IAR4D delivers benefits through its unique partnerships.**
- **IAR4D easily achieves a change in mindsets of the stakeholders.**
- **IAR4D fits in within the CAADP framework for continental agricultural development.**

# CAADP

## The CAADP Country Process

Enhancing agricultural sector performance - Better policies, capacities and investment programs for higher resource use efficiency



# The Proof IAR4D Concept



## IAR4D Proof of Concept Documents

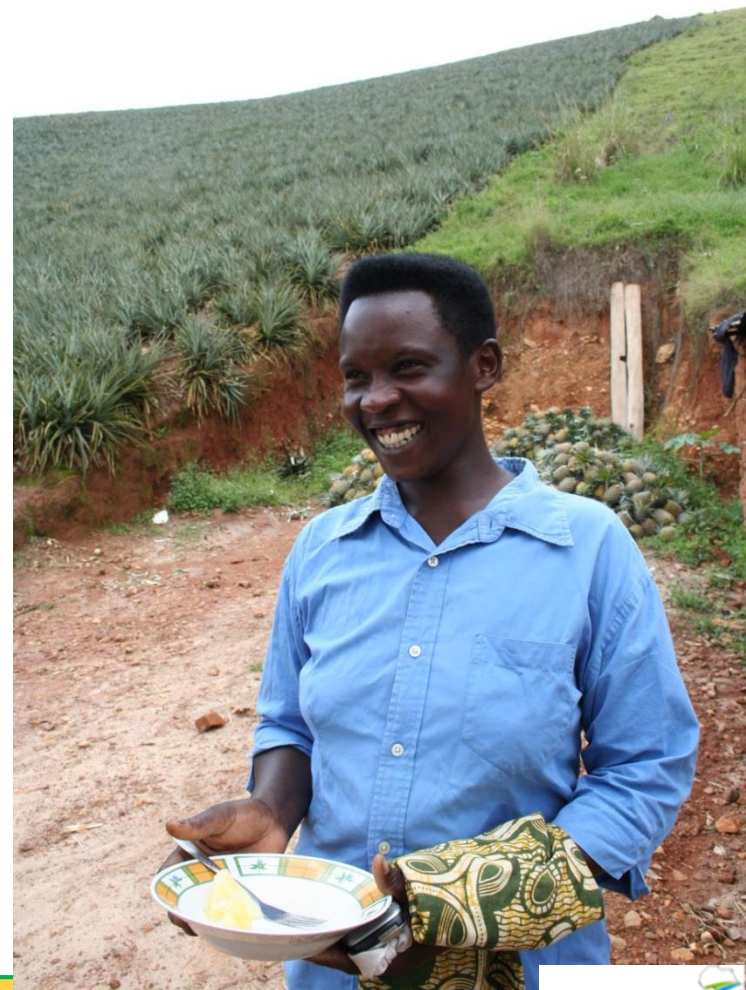
# Excerpts from Proof of Concept Analysis

- **Does IAR4D Works**

Average income of individuals participating is \$1,362.72 an average of \$3.73 / day

Compared to the baseline income of \$588.44 which translate to \$1.61

**Percentage effect = \$ 231%**



# Excerpt from Proof of Concept Analysis

**Does IAR4D deliver more than the conventional approaches.**

- **Income of women increase by 326%**
- **Food security improved by 324%**
- **Wealth distribution 5%**
- **Household income increased by 232%**
- **Income inequalities decreased by 6% (Gini Coefficient)**
- **Productive assets value increased**



# Excerpt from Proof of Concept Analysis

**How sustainable and useable is the IAR4D approach outside the test environment ?**

- **Spread / beneficiary estimation (Economic surplus Model) indicated a reach in the excess of 10 million ARD stakeholders across the continent.**



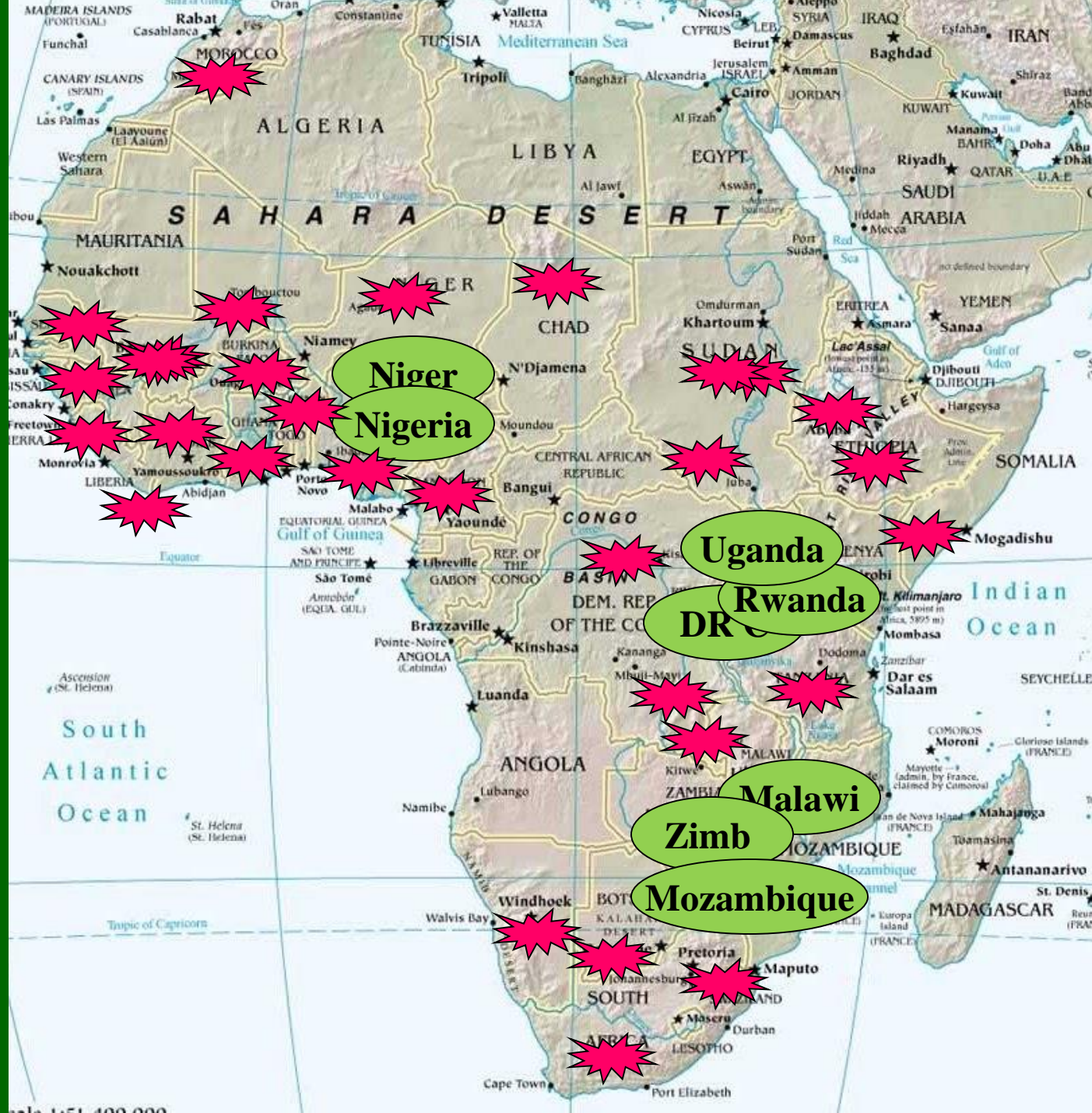
# Success stories of IAR4D & IP in Africa



[https://issuu.com/fara-africa/docs/success\\_story\\_from\\_ssa\\_cp\\_transform](https://issuu.com/fara-africa/docs/success_story_from_ssa_cp_transform)



**IAR4D is  
spreading  
In various  
Countries**



# Conclusion

- Achieving the economies of scale is vital to realize the desired future for Africa agriculture.
- **Expansion of farm holding are nor realizable in the short to medium term.**
- Increasing farm output with reduced cost is achievable with the use of best bet technologies and smart institutional arrangement.
- **The IAR4D concept and its implementation on the IP is providing a useful framework for achieving economies of scale in the smallholders system.**
- Achieving economies of scale through large commercial farm holdings as observed in the West is possible in Africa with supportive land tenure policies and investments.



# Thank you for the attention

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