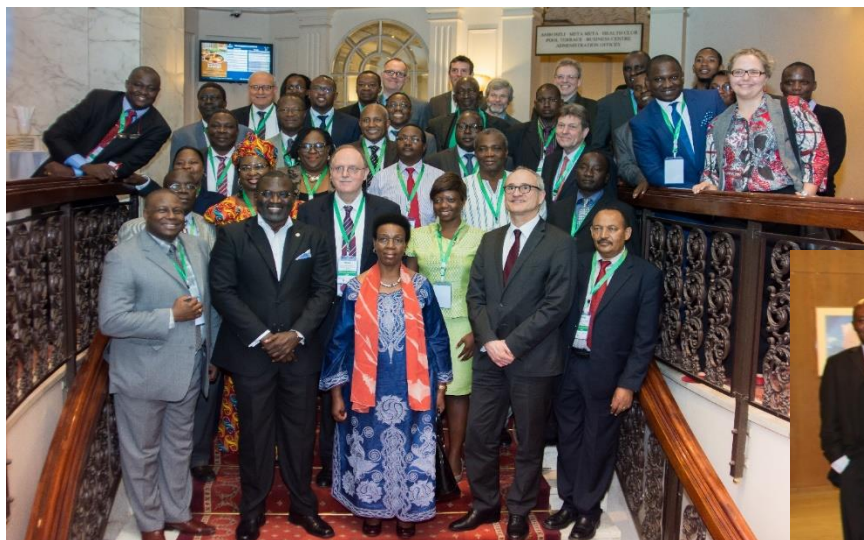# Highlights of 2017 PARI Research Activities

Dr. Oluwole Fatunbi (FARA)
Dr. Heike Baumüller (ZEF)

PARI Annual Research and Planning Meeting, 8-9 February, Cotonou, Benin
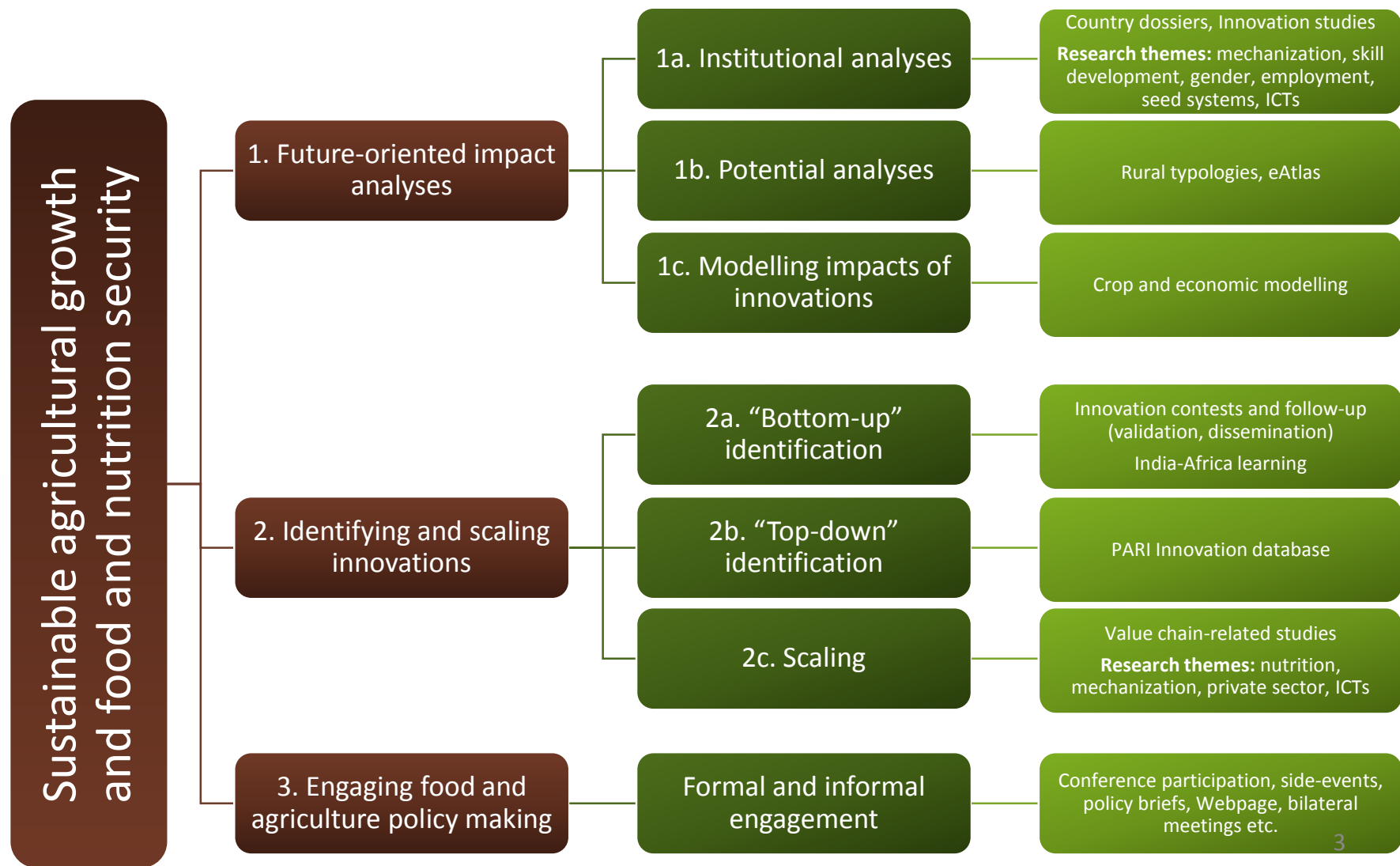
The growing PARI Team

Nairobi, Feb. 2015

Bonn, Dec. 2015

Nairobi, Dec. 2016

PARI Research Focus

Sustainable agricultural growth and food and nutrition security

1. Future-oriented impact analyses

- **1a. Institutional analyses** → Country dossiers, Innovation studies. **Research themes:** mechanization, skill development, gender, employment, seed systems, ICTs
- **1b. Potential analyses** → Rural typologies, eAtlas
- **1c. Modelling impacts of innovations** → Crop and economic modelling

2. Identifying and scaling innovations

- **2a. "Bottom-up" identification** → Innovation contests and follow-up (validation, dissemination). India-Africa learning
- **2b. "Top-down" identification** → PARI Innovation database
- **2c. Scaling** → Value chain-related studies. **Research themes:** nutrition, mechanization, private sector, ICTs

3. Engaging food and agriculture policy making

- **Formal and informal engagement** → Conference participation, side-events, policy briefs, Webpage, bilateral meetings etc.

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PARI Research in Phase 1 (2015-17)

1. **Stock-tacking**
   a) Understanding the innovation environment
   b) Identifying and documenting promising innovations
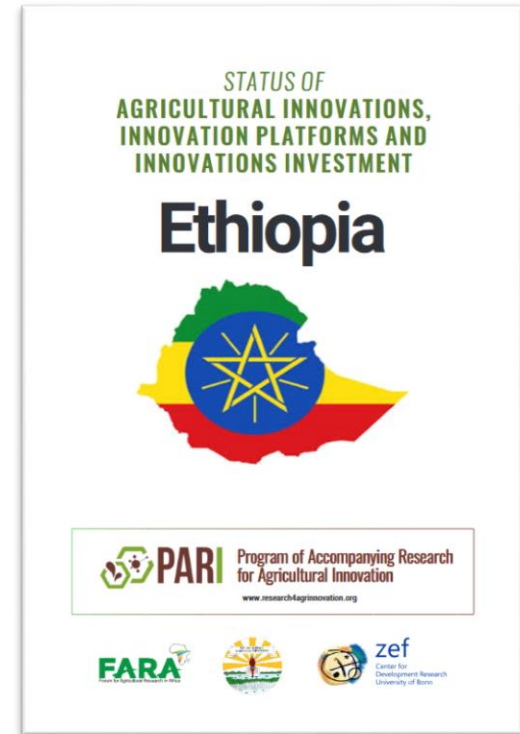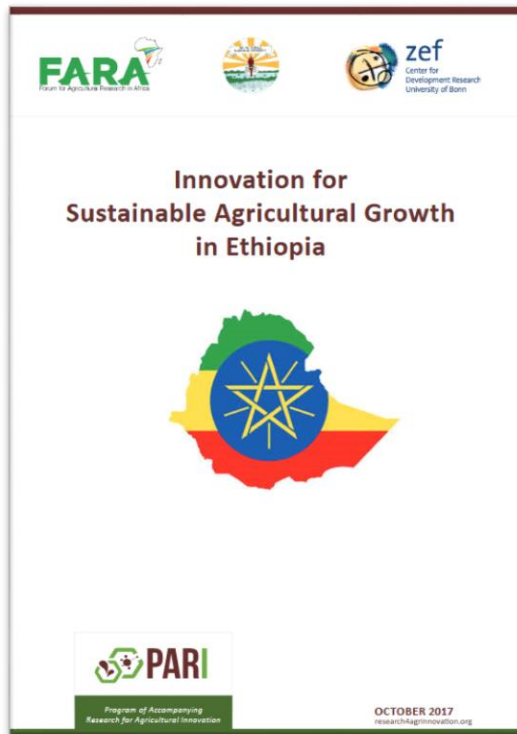   – Research-based innovations
      – Farmer innovations

2. **Potential Analyses**
   a) Identifying innovation opportunities in selected value chains
   b) Mapping high-potential areas for investment
   c) Assessing the impact of innovations

3. **Improving the framework conditions for innovations**

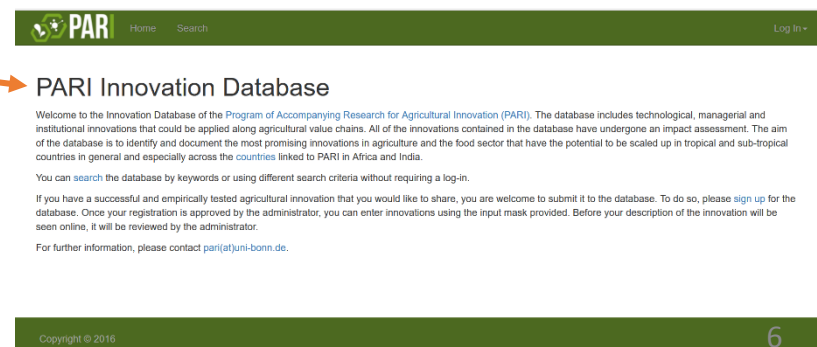# 1a) Understanding the innovation environment

- Country Dossiers (updated in Oct. 2017) plus summary
- National innovation studies by the African PARI partners

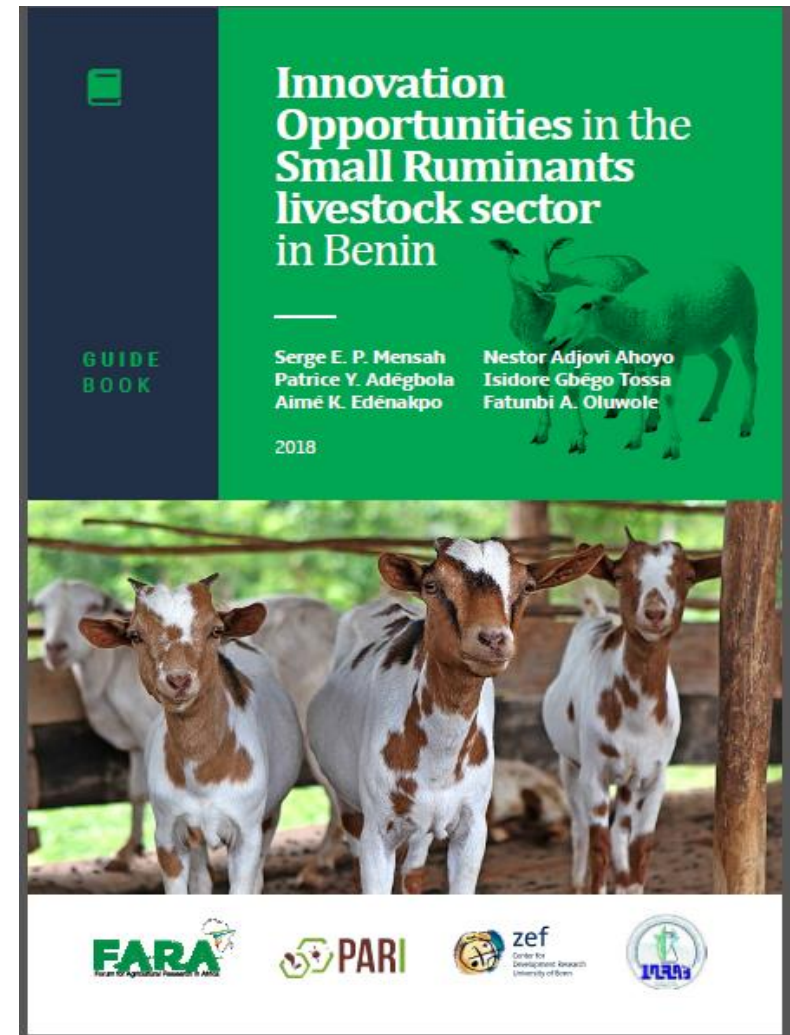# 1b) Identifying and documenting promising innovations

- **Farmer innovation contest**
  - Ethiopia, Kenya, Malawi, Zambia (2016)
  - Cameroon, Mali (2017)

- Studies on **grassroots and high-tech innovation in India** (incl. study visit to India) (SRISTI, ICRIER)

- **PARI Agricultural Innovation Database**
  To document technological, managerial and institutional **innovations** that can be applied along **agricultural value chains** and have the potential to be **scaled up**

2a) Identifying innovation opportunities in selected value chains

- **Value chain-related studies** in selected countries
  - **in 2016:** cowpea, groundnuts, maize, mango, potato, rice, small ruminants, soybean, sweet potato, tomato
  - **in 2017:** dairy, groundnut, maize, olive oil, poultry, potato, rice, soy, wheat
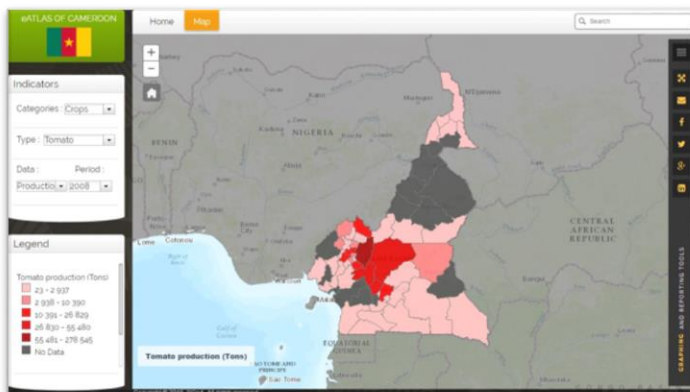
2b) Mapping high-potential areas
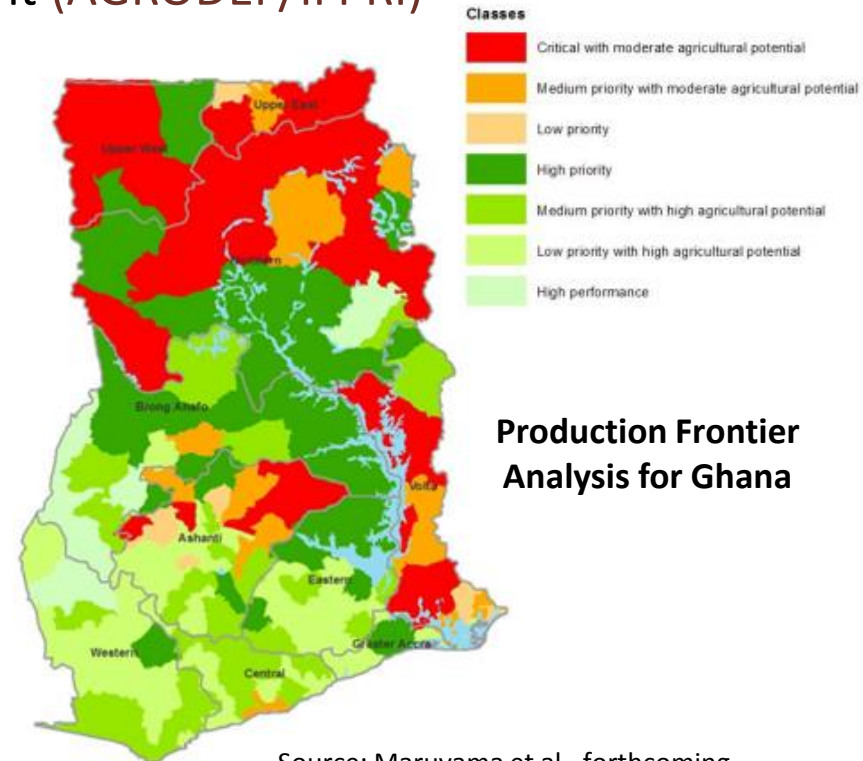
- **Production frontier analysis**
  micro-level maps to estimate where the agricultural revenue frontier lies and how far each producer is from it (AGRODEP/IFPRI)

- **eAtlas**
  GIS-based mapping tool with highly disaggregated data on agricultural, socio-economic and bio-physical indicators (AGRODEP/IFPRI)

Classes

- Critical with moderate agricultural potential
- Medium priority with moderate agricultural potential
- Low priority
- High priority
- Medium priority with high agricultural potential
- Low priority with high agricultural potential
- High performance

Production Frontier Analysis for Ghana

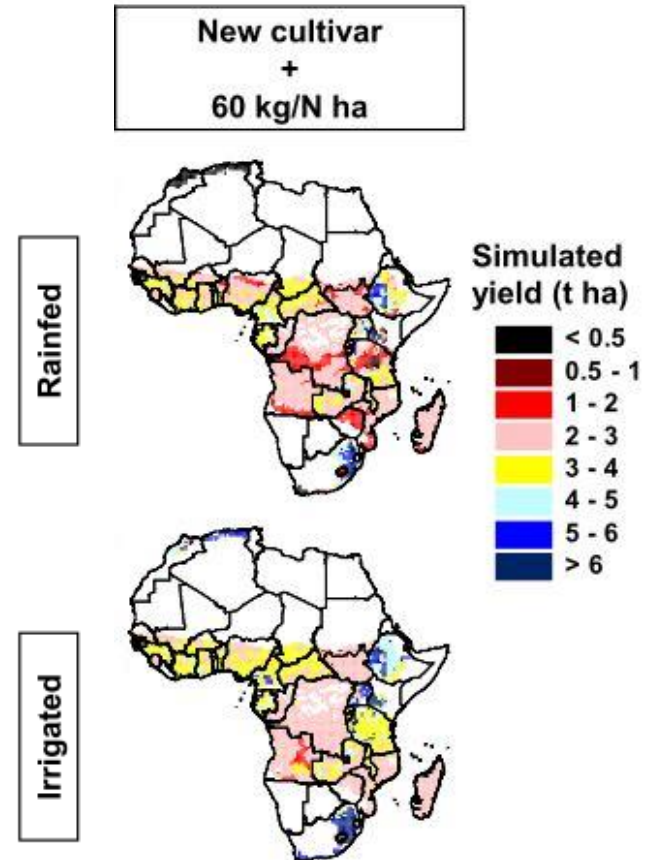Source: Maruyama et al., forthcoming

eAtlas for Cameroon

2c) Assessing the impact of innovations

- **Modelling…**
  - … **yield impacts** of technology packages for **maize** in specific countries and across Africa (crop modelling) (ZEF/INRES)
  - … the **economy-wide impacts** of the technology packages in specific countries (economic modelling) (AGRODEP/IFPRI)

- **Impact studies**
  - Labour and income effects of **tractor use** in Zambia (UHOH)
  - Effectiveness and costs of a **solar milk-cooling system** for smallholders in Kenya and Tunisia (UHOH)
  - Improving **dairy cattle nutrition** in smallholder systems in Africa (UHOH)

New cultivar
+
60 kg/N ha

Rainfed

Irrigated

Simulated yield (t ha)

- < 0.5
- 0.5 - 1
- 1 - 2
- 2 - 3
- 3 - 4
- 4 - 5
- 5 - 6
- > 6

Source: Rezaei and Gaiser, 2017

3) Improving the framework conditions for innovations

Thematic research in 2017

- Access to **agricultural inputs** (IER, Weltzien)
- **Employment** in agricultural value chains (UCAD)
- Domestic and international **marketing** (STEPRI, DAR, INRAT)
- **Gender dimension** of value chain innovations (ZEF)
- **Private sector engagement** in food and agriculture (ZEF)
- Smallholder **mechanization** (UHOH, INRAB, INERA)
- **Skill development** in Africa and India (ZEF, ICRIER, EDRI)
- **Personalized nutrition** and its applicability in rural areas of Africa (TUM, INRAB)

3) Improving the framework conditions for innovations

Policy engagement in 2017

- 2 national policy roundtables in Africa (Ghana, Ethiopia)
- Input into the BMZ Food Security conference and the Berlin Charter (April)
- Input into the African Green Revolution Forum, Côte d'Ivoire (September)
- Input into the direction of the 'One World, No Hunger' Initiative
- Study visit of African partners to India (October)
- Study on success stories in policy engagement
- Regular formal and informal bilateral policy engagement
- Policy and Country Briefs

Summary:
PARI Research 2017 by country

Tunisia:
Dairy value chain (UHOH)
Durum wheat (INRAT)
Olive oil (INRAT)

Benin:
Mechanization (INRAB)
Poultry (INRAB)
Nutrition (TUM, INRAB)
Employment (UCAD)

Burkina Faso:
Mechanization (INERA)
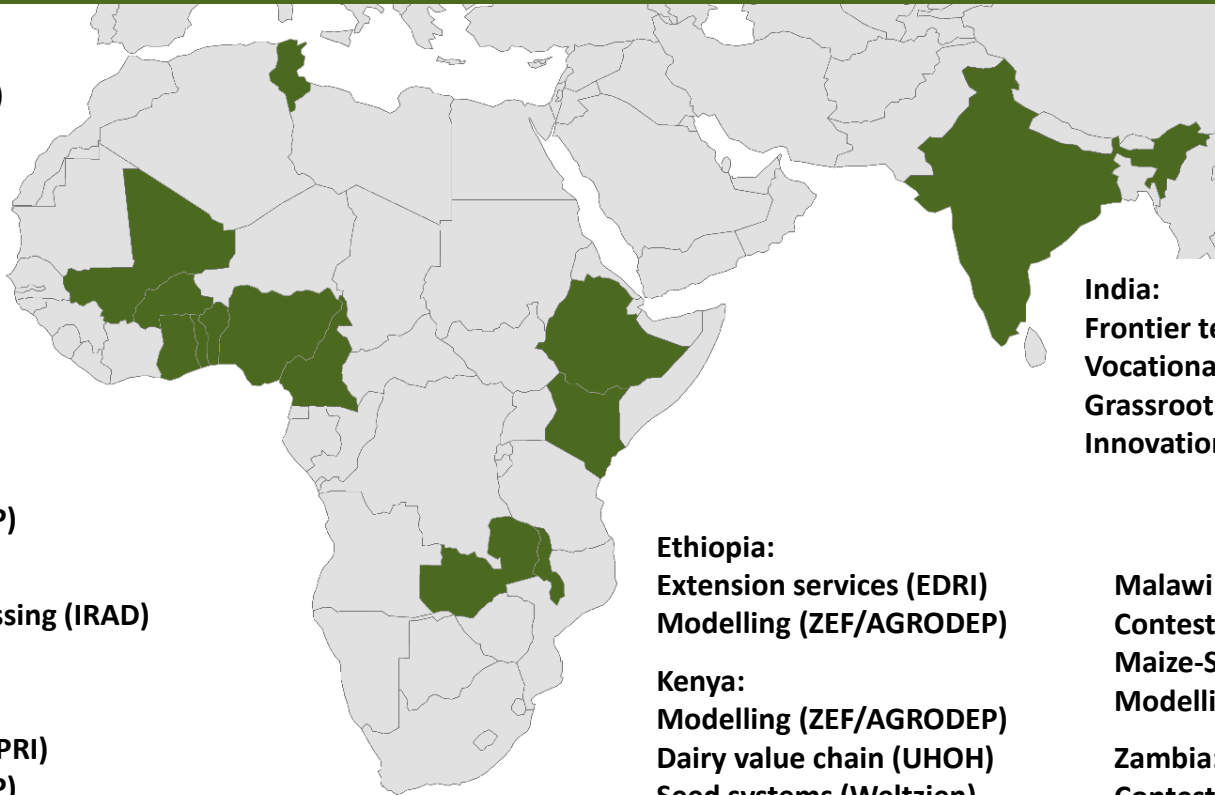**Modelling (ZEF/AGRODEP)**

Cameroon:
Potato breeds and processing (IRAD)
Innovation contest

Ghana:
Rice marketing (CSIR-STEPRI)
Modelling (ZEF/AGRODEP)
Mechanisation (UHOH)

Mali:
Smallholder access to inputs (IER)
Innovation contest
Seed systems (Weltzien)

Nigeria:
Modelling (ZEF/AGRODEP)
Dairy industry (ARCN)

Togo:
Peanut, soy (ITRA)
Animal traction (ITRA)

Ethiopia:
Extension services (EDRI)
Modelling (ZEF/AGRODEP)

Kenya:
Modelling (ZEF/AGRODEP)
Dairy value chain (UHOH)
Seed systems (Weltzien)
Grassroots innovation (SRISTI)

India:
Frontier technologies (ICRIER)
Vocational training (ICRIER)
Grassroots innovation (SRISTI)
Innovation database (SRISTI)

Malawi:
Contest follow-up (DAR)
Maize-Soybean Nsima (DAR)
Modelling (ZEF/AGRODEP)

Zambia:
Contest follow-up (ZARI)
Mechanisation (UHOH)

All African PARI partner countries:
eAtlas (IFPRI)
Production frontier analysis (IFPRI)
PARI Agricultural Innovation database
Success stories of policy engagement (FARA)

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ICT Tools

- eAtlas (IFPRI)
  http://eatlas.resakss.org/index.html

- PARI Agricultural Innovation Database (ZEF)
  http://database.research4agrinnovation.org

- Innovation Platform Agribusiness Portal (FARA)
  http://ipabp.org/

- App: Timetracker (UHOH)
  http://timetracker.cc

- App: Personalized nutrition (TUM)
  http://research4agrinnovation.org/publication/smartphone-app-food-recommender/

- PARI website upgrade – country pages

For further information

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