Update on Impact Assessment at IITA and Humidtropics

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Outline

• Background
• Humidtropics
• IITA Social science
  – IA strategy
  – Impact of Cassava Interventions
• Challenges IA
Humidtropics Framework

Better livelihood opportunities in a sustainable environment

SOs
- Livelihoods Improvement
- Sustainable Intensification
- Women & Youth Empowerment
- Systems Innovation

IDOs
- Income + Nutrition
- Productivity + Environment
- Gender + Youth
- Innovation

Flagship Projects
- Tier 1
  - West Africa humid lowlands
  - East and Central Africa humid highlands
  - Central Mekong
  - Central America and Caribbean
- Tier 2
  - West Africa Moist Savanna
  - Southern Africa Moist Savanna
  - Northern Andes Transect
  - Indonesian Humid Lowlands

SRTs
- Systems Analysis and Global Synthesis
- Integrated Systems Improvement Productivity x NRM x Institutions
- Scaling and Institutional Innovation

A member of CGIAR consortium
Humidtropics - Theory of Change

Strategic Objectives

A) Ineffective Institutions
   Low NR Integrity
   Low Productivity

B) Systems Innovations

C) High NR integrity
   High productivity

Poverty Status (SLO 2)

Ecosystem Integrity (SLO 4)

Destitute

Wealthy

Degrade

Healthy

All Four SLOs

A1

A2

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Humidtropics - Impact Pathway

Development of change coalitions of systems actors at farm, institutional and landscape levels, differentiated by gender and age, to:

- identify and prioritize problems & opportunities (change +/-)
- invest, test and experiment with tradeoffs between alternative options. (change +/-)
- learn and share their knowledge (change +/-)

Enabling IDO6
Systems Capacity to Innovate
(change +/-)

Enabling IDO5
Women & Youth Empowerment and Capacity to Participate (change +/-)

Social Innovations in Institutions and Markets

Systems Interventions

Technical Innovations in Production System

Technical Innovations in NRM

IDO3: Systems Productivity (change +/-)

IDO4: Environment (change +/-)

IDO2: Nutrition (change +/-)

IDO1: Income (change +/-)

SLOs 1, 2 and 3: Livelihoods (change +/-)

SLO 4: Ecosystem Integrity (change +/-)
Humidtropics IA plans

• Conduct Situation analysis and Baseline studies
• Monitor Key performance indicators
• Conduct ex-post Impact assessment in the Action areas
• Partner with other CRPs
IITA Impact assessment Strategy
Six Interlinked Objectives

STRATEGIC STUDIES
- Ex-ante evaluation (SO1)
- Geospatial analyses (SO5)
- Input and output markets (SO4)
- Poverty dynamics, determinants, and escape pathways (SO2)

IMPACT EVALUATION
- Economic and poverty impact (SO6)
- # of people lifted out of poverty (SO6)

OUTCOME EVALUATION
- Adoption among men and women of new technologies (SO3)
- Productivity/income gains from adoption (SO3)

Figure: Social Science and Agribusiness R4D: Process and Functions
Objective 1: Ex ante impact assessment and forecasting for priority setting

- Define priorities for efficient allocation of scarce resources
- Identify future plausible scenarios to guide present investment in addressing future problems
Objective 2: Poverty dynamics: determinants and pathways, household panel data

- Social, economic & technological trends and dynamics
- Farmers’ typologies
- Pathways out poverty
Objective 6: Ex-post impact evaluation for accountability and learning

- Develop frameworks and methodologies for impact evaluation
- Assess the impact of aR4D and genetic resource conservation
- Track IITA’s contribution to poverty reduction (#people lifted out of poverty)
R4D and Poverty Reduction

aR&D Investments

Technological Change

Productivity
- Home consumption
- Cash incomes
- Health/Nutrition

Poverty
- Labor demand & wages
- Non-farm earnings
- Economy-wide effects

Aggregate production
- Consumer prices
Elements of the Action Plan

1. Measurement of poverty: $1.25/day/person

2. Geographic target through adoption domains - SSA: All IITA project sites and where there is prior information about the large-scale use of IITA technologies.

3. Data: Secondary sources (mainly LSMS) and nationally representative surveys (both cross-sectional and Panel)

4. Partnership – multidisciplinary team at IITA, ARIs, National partners (National bureau of statistics, NARS), CRPs, IFAD (Statistics and Studies for Development Division), Worldbank (LSMS/ISA), SPIA etc......
Does a cassava research-for-development program have impact at the farm level? Evidence from the Democratic Republic of Congo

Rusike et al., (2014) Food Policy 46; 193–204
This paper evaluates the impact of a cassava research-for-development program on farm level outcomes.

The outcomes: household participation in cassava markets, adoption of improved varieties, plot level yields and household food adequacy.

The study test whether the R4D program has a statistically significant effect on outcomes of interest and if these are not driven by selection on unobservables.

The program was implemented in the Democratic Republic of Congo from 2001 to 2009.
The study employ a number of techniques to farm survey data collected during 2009 cropping season

Estimation using propensity score matching
- Rosenbaum bounds on treatment effects,
- Altonji et al. method of selection on observables and unobservables
- Endogenous switching regression.
Results and conclusions

• There are statistically significant positive effects on:
  – Household participation in cassava markets,
  – Adoption of improved varieties and crop management practices
  – Household food adequacy

• However, there was no statistically significant effects on yields and profits.

• Bias due to selection on unobservable is not severe enough to invalidate the impact estimates.
Results and conclusions

• The significant program effects on market participation, variety adoption, and food adequacy merit further promotion of the program.

• These positive outcomes tend to be pre-conditions for realizing long-term yield and profit benefits.
Some Planned IA Studies

- Impact of adoption of Improved maize in Nigeria and other SARD-SC countries (Mali, Ghana and Zambia)
- Impact of improved Cowpea in Nigeria (with SPIA using LSMS-ISA data)
- Impact of cleaned planting material of Yam in Ghana and Nigeria
- Impact of Striga resistant/tolerant maize and cowpea in Kenya and Nigeria
- Adoption and Impact of cowpea storage bags in Nigeria, Burkina Faso, Ghana, Uganda and Tanzania (With Purdue University)
Challenges

• Selection Bias and confounding factors – especially on past and on-going programs – attribution problems

• Difficulties in transitioning into experimental methods

• Data quality – noise in some variables such as plot level yields in RTB crops

• Track poverty reduction (#people lifted out of poverty)
THANK YOU FOR LISTENING