Increasing Resilience Through Improved On-Farm Storage

Speakers

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Clara Cohen

Clara Cohen serves as senior science policy adviser with USAID’s Bureau for Food Security, Office of Agricultural Research and Policy. She leads Office activities focusing on human and institutional capacity development and has contributed to the design and launch of several new programs emphasizing research and education system strengthening. She has conducted research on leguminous cover crops at the Rodale Institute Research Center and served as a Peace Corps aquaculture volunteer in Guatemala. She holds a BA in biology from Swarthmore College and a PhD in plant physiology, with minors in molecular biology and soil science, from Cornell University.
T. Grady Roberts

T. Grady Roberts is a Professor in the Department of Agricultural Education and Communications at the University of Florida. He serves as the Executive Director for the Global Education Lab of the University of Florida as well as its Director of Educational Activities. The University of Florida is a consortium partner of the USAID-funded Feed the Future project, Innovations for Agricultural Training and Education (InnovATE), and Dr. Roberts is an InnovATE contributor. Dr. Roberts’ research interests include global education, experiential learning, and teaching and learning in university settings. He received his B.S., MAg. and PhD in Agriculture Education from the University of Florida.
Wayne Ganpat is the Head of the Department of Agriculture and Economics and a Senior Lecturer in Agricultural Extension and Communications at the University of the West Indies (UWI), St Augustine, Trinidad and Tobago. Dr. Ganpat has vast experience linking academics with industry-relevant outcomes and competencies. Prior to joining the UWI, he worked as an Extension Officer in the government extension service for over 20 years and left as the Deputy Director of Extension Services. He has worked as a consultant for governments in most Caribbean countries over the last 20 years doing work both in extension and communications. He earned a BSc., MSc., and PhD in Agricultural Extension from UWI.
Seth Heinert sits on the board of directors for the Indigenous Education Foundation of Tanzania (IEFT) where he works primarily as the liaison to the IEFT Youth Board and Youth Network. He began his professional relationship with IEFT as an agriculture and biology teacher and school administrator at the Orkeeswa Secondary School in rural Tanzania. Mr. Heinert is currently a PhD candidate at the University of Florida in the Department of Agricultural Education and Communication. His research focus is on human capacity development through systems of agriculture education and training.
Strengthening Agricultural Education and Training Systems through Building Linkages

Dr. Grady Roberts
University of Florida
Why look at the whole system?
Everyone’s an expert?

Apprenticeship of observation (Darling-Hammond)

- K-12 - 13 years
- BS - 4 years
- MS - 2 years
- PhD - 3-4 years
- Professional Degree - 3-6 years
Overview

AET is a System with many interconnected components (internal and external)

Linkages

1. Theoretical and practical instruction
2. AET and industry
3. AET at different levels
4. AET at different types of institutions
5. AET and extension

Addressing only one piece of the system may not yield desired results.
Systems Thinking

“Sets of elements standing in interrelation.”
- von Bertalanffy (1968)

Complex systems have many interdependent components that influence each other.
- Changes to one part of the system impacts other parts of the system.

Interconnectedness
Systems Thinking—A Biological Example

Human Body
- Skeletal
- Nervous
- Muscular
- Cardiovascular
- Digestive
- Respiratory
- Endocrine

AET System

Formal Education Institutions
- Primary
- Secondary
- Tertiary/Post-secondary
- University/Higher Education

Nonformal Education Institutions
- Extension
- NGOs
The System

Agricultural Education and Training System

Supply
- Primary School
- Lower Secondary & Secondary School
- Post-Secondary, Non-Tertiary, Vocational, Technical School

Demand
- Inputs
- Production
- Harvesting
- Processing
- Distribution

Labor Market

Formal Education
- Tertiary, short-cycle tertiary, bachelor’s, master’s, doctoral degrees

Nonformal Education
- Extension Activities/Workforce Development

Informal Education
- Everyday and self-guided learning

Image source: InnovATE
Linkage #1 - Theory and Practice

- Classroom instruction—theoretical
- Laboratory and field instruction—practical and hands-on
Linkage #1 - Theory and Practice

Facilities
- Laboratories
- Greenhouses
- Fields
- Food Processing
- Mechanization
- Barns
- Etc.

Considerations: Initial construction, maintenance, modernization, and upkeep
Linkage #1 - Theory and Practice

Personnel
- Instructional staff
- Management staff

Considerations: staff professional development for technical skills and pedagogy

Gender: will male and female staff/students have same opportunities in practical experiences?
Linkage #1 - Theory and Practice

Coordination

▶ Curriculum

▶ Within institution: Instructional personnel—classroom and lab

▶ Beyond institution: Instructional personnel and field experience coordinators

▶ Agricultural production cycles

Considerations: professional development, curricula reform
Linkage #1 - Theory and Practice

Mr. Heinert’s experiences at the Orkeeswsa School in Tanzania
What examples have you all seen about linking theory and practice?
Linkage #2 - AET and Industry

Assumption: Career/vocational education should be designed to meet workforce needs.

- Supply and Demand
- Curriculum Relevance
- Field Experiences and Internships
Consideration: do accurate data exist to show the supply and demand?
Linkage #2 - AET and Industry

Educational Pipeline

- Unskilled labor
- Workers with basic skills
- Semi skilled workers
- Skilled workers
- Highly skilled professionals
- Skilled workers with job specific training

Image Source: InnovATE
Linkage #2 - AET and Industry

Curriculum Relevance

Consideration: Has anyone mapped the career pathways in the country?
Linkage #2 - AET and Industry

Curriculum Relevance

▶ Advisory committees

▶ Periodic re-examination of curriculum

▶ Professional development for instructional staff

Consideration: administrative and bureaucratic processes for curricula reform
Linkage #2 - AET and Industry

Field Experiences and Internships

- Short term and long term experiences
- Instructional staff interact with industry representatives and vice versa
- Students are more career-ready

Considerations: building relationships and expectations

Gender: does gender impact the types of acceptable jobs within a culture?
Linkage #2 - AET and Industry

- Dr. Ganpat’s experiences at the University of the West Indies in Trinidad and Tobago
Discussion

What examples have you all seen about linking AET and industry?
Linkage #3 - AET Levels

UNESCO Education Levels

- Level 1 - primary
- Level 2 - lower secondary
- Level 3 - secondary
- Level 4 - post-secondary (non-tertiary)
- Level 5 - short cycle tertiary
- Level 6 - bachelor’s or equivalent
- Level 7 - master’s or equivalent
- Level 8 - doctoral or equivalent.
Linkage #3 - AET Levels

- Secondary
- Tertiary (Diploma)
- University (BSc)
- University (Grad)

AET
Linkage #3 - AET Levels

Educational Pipeline

- Workers with basic skills
- Semi skilled workers
- Skilled workers
- General Secondary
- Technical/Vocational Secondary
- Tertiary education
- Skilled workers with job specific training
- Highly skilled professionals

Image Source: InnovATE
Linkage #3 - AET Levels

- Matriculation of students
- Curriculum alignment
- Instructional staff preparation

Considerations: formal vs. informal interactions; multiple ministries

Gender: do males and females have same access?
Linkage #3 - AET Levels

- Mr. Heinert’s experiences at the Orkeeswsa School in Tanzania
What examples have you all seen about linking AET institutions at different levels?
Linkage #4 - Types of AET Institutions

- Government
- Private
- Parochial
- NGO
- Other?

Instruction in native language or other language?

San Francisco School, Paraguay
Image Source: G. Roberts
Linkage #4 - Types of AET Institutions

- Curriculum comparisons
  - Required to follow the same government curriculum?
- Synergy or overlap in programs?
- Quality (or perceptions of quality)

Considerations: creating opportunities for interactions

Gender: do males and females have the same access?
Linkage #4 - Types of AET Institutions

- Dr. Ganpat’s experiences at the University of the West Indies in Trinidad and Tobago
Discussion

- What examples have you all seen about linking different types of AET institutions?
Linkage #5 - AET and Extension

A personal pathway to career success

Informal Education
Life experiences

Nonformal Education
Extension

Formal Education
AET
Linkage #5 - AET and Extension

- Extension types
  - Government
  - Private
  - Pluralistic

- Government
  - AET - Ministry of Education
  - Extension - Ministry of Ag

- Extension employees - AET graduates?
Linkage #5 - AET and Extension

- Recurring extension programs (topics) - a signal for curriculum reform in AET?
- Research and extension

Considerations: co-location of facilities; field experiences for students; understanding of workforce needs

Gender: do males and females have defined roles in AET and extension?
Linkage #5 - AET and Extension

- Dr. Ganpat’s experiences at the University of the West Indies in Trinidad and Tobago
Discussion

What examples have you all seen about linking AET and extension?
Summary

AET is a System with many interconnected components (internal and external)

Linkages
1. Theoretical and practical instruction
2. AET and industry
3. AET at different levels
4. AET at different types of institutions
5. AET and extension

Addressing only one piece of the system may not yield desired results.
Implications for Donors

► Policy - educational reform and curricula

► HICD - individual - professional development for pedagogy

► HICD - institution - facilities investment; processes for curriculum reform

► HICD - institution - structure/system for connecting all types of AET institutions together and with extension
Example AET System

Dr. Wayne Ganpat
The University of the West Indies
Trinidad and Tobago
Example AET System

Mr. Seth Heinert
Orkeeswa School
Tanzania
Run by an NGO in Kenya
Again in Kenya
In Kenya
NGO; KIND (Kids in Need of Direction)
Inside the Bus!
Mobile Learning Unit (MOA in Trinidad)
Gov’t Extension officers in Belize at training session
Inside the bus again
Small Mayan farmer in Belize project run by an NGO and supported by the MOA (Belize)
Masai farmer in Kenya using mobile device to get information
My picture which I am proud of!
Small farmer shade house in Costa Rica
Masai farmers hosting a field day for visitors to their farm
Bananas in Costa Rican production line
Needs assessment in Belize
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1. AET is a system with many complex pieces and linkages.

2. Only working with one piece of the system may not have the sustainable impacts you desire.

3. Investing in building the capacity of instructors is important.

4. Linking AET and extension is an important, but often neglected, linkage in the system.

5. All systemic changes must begin with a good understanding of the current situation and cultural context.
Questions
and Answers
Continue the conversation

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