“ICTs in Agriculture”
Agenda

• The Global State of Food and Agriculture
• Current State and Issues in the Region
• The Value-of ICTs
• Case Snapshots
• The Opportunities, Benefits and Recommendations
• The Way Forward
Over-Arching Tenets

• Inclusion
  – End to End Value Chain Enablement
• Return on Investment
• Regional Harmonization
• Agnosticism
The Global Scenario
Key Points for World Agriculture

- There are 870 million hungry people in the world and 98 percent of them are in developing countries. They are distributed as follows:
  - 578 million in Asia and the Pacific
  - 239 million in Sub-Saharan Africa
  - 53 million in Latin America and the Caribbean
  - 37 million in the Near East and North Africa
- The world population will likely increase to 9.2 billion in 2050
- Food production will need to nearly double by 2050 in developing countries.

http://www.wfp.org/hunger/who-are
Food security facts and figures: http://www.ifad.org/hfs/facts.htm
Key Points for World Agriculture

• About 40% of the world’s arable land is degraded to some degree and will be further affected by climate change.
• There are 500 million small farms in developing countries, supporting around 2 billion people.
• Gross Domestic Product (GDP) growth generated by agriculture is up to four times more effective in reducing poverty than growth generated by other sectors.
• Development aid to agriculture was 4.3% in 2008, compared with 18% in 1979.
• Poor people spend between 50% and 80% of their income on food.
Current State and Issues for Agriculture in the Region

- Isolation of small holder farmers
- Country disparities and under-collaboration
- Lack of cross-fertilization across sectors (particularly ICT and Agriculture)
- Limited/localized success in ICT and Agricultural efforts to-date
# Key Challenges – Specific to the Region

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<td>1</td>
<td>Price / Availability of Input supplies/ infrastructure</td>
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<td>2</td>
<td>Lack of up-to-date local information (farmers / production/ buyers/ research)</td>
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<td>3</td>
<td>Access to trained labour / technical human resource/ extension human resources</td>
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<td>4</td>
<td>Poor value chain communication (both within nodes / agencies, and among nodes / agencies)</td>
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<td>5</td>
<td>Credit / Budget/ Funding availability</td>
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<td>6</td>
<td>Lack of ICT/ ICT usage/ training</td>
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<td>7</td>
<td>Sustainability of market opportunities</td>
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<td>8</td>
<td>Praedial Larceny / Animal Attacks on livestock</td>
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<td>9</td>
<td>Inadequate storage/ packaging/ transport/ abattoir facilities</td>
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<td>10</td>
<td>Unstable sector policy/ priorities/ commitment by government</td>
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<td>11</td>
<td>Poor Animal and Farm Management Practices</td>
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<td>12</td>
<td>Limited range of fresh produce/ Inconsistency of supply/ Quality of Product / high price</td>
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<td>13</td>
<td>Farmers’ Commitment (Invest in Agriculture, Attending Training Courses, Adopting new fertilizers regime, Marketing Agreements, to form farmer groups)</td>
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AGRI-VALUE CHAINS AND THE ROLE OF ICTS
1. Gov Agencies
2. Farm Stores
3. Service Providers:
   • Livestock Association
   • Extension officers
   • Agricultural society
   • Int’l Organizations
4. Research Institutions
   • Animal Breeders
   • Training Institutions
5. Veterinarians
6. Water providers
7. Financiers (Agri Dev Bank)
8. Food/Nutrition Experts
9. Regulators (e.g. public health,)

1. Small Farmers
2. Large Commercial Farms

1. Butcher
2. Abattoir
3. Processors:
   • Milk
   • Meat
   • Food
4. Farmers
5. Value Added Intermediary
   • Packaging/Label
   • Traders
   • Transporters
   • Storage companies

1. Gov Agencies (Trade, foreign affairs, etc)
2. Wholesale/Retail
   • Fresh Markets
   • Supermarkets
   • Retail shops
3. Trade & Promotion Agencies
4. Exporters

1. Individuals
2. Restaurants
3. Hospitality industry
4. Households
5. School nutrition programs
6. Prisons
7. Military / Natl. Security
8. Hospitals
Flow of Value / Goods
Flow of Value / Goods

Flow of Information

Input Supply → Production → Post Production → Marketing → Consumption

Flow of Information

Flow of $
Flow of Information

**Technical info**
- Good agronomic practices
- Health and food safety
- Disease vector control

**Input commodity Information**
- Suppliers of input products
- Pricing information
- Commodity Availability

**Farmer Information**
- No of farmers
- Farmer acreages and crops

**Production Information**
- Production amounts
- Yields time
- Farming practices
The Challenges

Mechanism for restricting outgoing calls at a division of the Ministry of Agriculture
The Economic Opportunity

• The Caribbean regional food import bill was estimated in 2008 at US$4.0 billion.

• World Food retail industry is approximately $4 trillion annually (2011)

• Share in world agricultural exports was 0.3% in 2004

• Strengthening Linkages to the Tourism Sector(other sectors, professional services etc)

• Encouraging Gov’ts to use their market power to help create more sustainable markets
CASE SNAPSHOTS
Website URL: http://www.dmarketmovers.com
Service Countries/Region: Trinidad and Tobago
Owner/Administrator: David Thomas, Rachel Renje
Head Office Location: Market Movers, Barataria, Trinidad
Phone Number (1): 868-221-5042; 868-708-7623; 868-784-2473
Email Address: marketmovers14@yahoo.com

Description

d'Market Movers is a small-scale organic produce delivery service that strives to continuously improve its standards by sourcing items that are greenhouse grown. Items include fruits, vegetables, dried goods, dairy and eggs and meat and seafood.

Services

Online retail market
Retail prices for organic produce
Online shopping cart to purchase produce online
Goods delivery
Trini Trolley

Website URL: https://www.trinitrolley.com
Service Countries/Region: Trinidad, Caribbean
Head Office Location: P.O. Box 7584, Claxton Bay, Caroni, Trinidad And Tobago
Phone Number (1): 868-298-4151
Email: support@trinitrolley.com

Description

Originally envisioned as a convenient form of shopping for locals, this online retailer has not only become the largest e-commerce business in the country, but has also expanded its doorstep delivery services to the rest of the Caribbean as well as internationally. Among the 16 departments, grocery is of greatest demand.

Services

• Delivery of Groceries (including fresh fruit and vegetables) to your doorstep
• Flexible payment options (Gift Cards, credit cards, cash on delivery)
• Streamlined on-line shopping cart experience
• FedEx shipping available
• Gift wrapping available
Jamaica Agricultural Marketing Information System (JAMIS)

Website URL: http://www.ja-mis.com
Service Countries/Region: Jamaica
Owner/Administrator: The Ministry of Agriculture & Fisheries, Agricultural Market Information Division and the Rural Agricultural Development Authority’s (RADA) Marketing
Phone Number (1): 876-276-7076

Description
According to the website, JAMIS is a service that provides unbiased market information (prices, availability quantities, market reports, etc.) on over 50 agricultural products from farms to supermarkets and everywhere in between. This public service also provides a virtual shopping cart and an extensive archive of data from previous years.

This platform is considered a comprehensive service offering for all the Jamaican agricultural and agro-processing sectors, a service that can be leveraged by all value chain players to make effective management, production and marketing decisions.

Services
JAMIS serves to compile and disseminate this information that will aid producers, purchasers, consumers, and distributors in the sale and purchase of agricultural commodities nationally and internationally. This information includes:

- Weekly wholesale and retail commodity prices from farmgate, municipal markets, etc.
- Market Reports
- Commodity quantity and price data archives
- Produce grading manuals and reports
- Virtual shopping cart for consumers
RADA Extension Service – Provision of ICTs to Extension Officers

Website URL: http://www.agriculture.gov.tt/
Service Countries/Region: Jamaica
Head Office Location: Hope Gardens, Kingston 6, Jamaica, W.I
Phone Number (1): 1-876-977-1158 - 63

Description
RADA in its thrust to enhance its extension service through the collection of real-time and accurate data, has equipped its extension officers with Tablet PCs that they use to remotely access RADA databases that store farmer and production data. RADA purchased 130 Huawei Media 7 Lite Tablets on June 21, 2013 as part of a resigned CUG/ICT contract between the two organisations.

Services
- Real-time (or close to real-time) ability of extension officers to access and update farmer and production information while they are on their field and interacting with producers.
- to increase the productivity of extension officers and RADA’s ability to maintain accurate and up to date farmer and production data
- Provides better data for sector planning, policy and value chain stakeholder use.
Additional Perspectives

• Engage stakeholders from a market perspective – return on investment

• The need to enable / empower farmer groups and argi-processor associations
  – Member management and production aggregation (Xhuma Green)
  – The need to enable small holders to receive payment electronically (incl. mobile)

• The potential of open data - the case of St. Kitts
DISCUSSION
Benefits of Applying ICTs to Agriculture

- Creating Markets and Easing Market Dysfunction
- Monitoring and Forecasting of Natural Hazards
- Facilitating Indigenous Research and Development
- ICTs to give better Information to Regional Transport Systems
- ICTs for Spatial Analysis and Management
- Increasing the productivity of farming and coordination of the agri-food value chain
- Increasing the attractiveness of Agriculture to a new range of stakeholders, capacities and skillsets
- Etc., etc....
Recommendations for ICT Incorporation

- Advancing ICT Infrastructure and Applications in the Region
- Build an enabling environment for producers to be able to sell their produce on-line
- Strengthening Linkages to the Tourism and other sectors
- Enable interactions across the entire value chain
- Greater Engagement “on the Ground”
- Presenting Information for Audience Reception
- Enhance ICT accessibility, and bridge the fields of ICT and Agriculture by ensuring collaboration between practitioners
How do we get there?

- Engagement & Messaging
- Awareness & Buy In
- Capacity Building & Action

Stakeholders
- Policy makers
- Telecoms Companies / Regulators
- Farmers / Farmer Organisations
- Direct Value Chain Stakeholders
- Financial
- Innovators/ICT’s

Build a Culture of Confidence and Innovation
DISCUSSION
• Thank You!