Agriculture in the Information Age

Market Information Intelligence Systems for Agrarian Development

**Presentation at Public-Private Dialogue Meeting
Botswana's Beef Value Chain
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Market Information Intelligence (MII) Systems for Agrarian Development

The request was that this **presentation** **focus** on:

- The importance of MII and MII systems

- The need for MII in the beef sector

- A short presentation / demo of our systems as examples of information and decision support systems for the agricultural sector

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INTRODUCTION

Who and What is Manstrat Agricultural Information Systems (MAIS)

- MAIS is a South African firm with 25 years experience in rendering consultancy and support services to the agricultural and other economic sectors within SA and the larger SADC region.

- We have a permanent staff complement of more than 30 people and an extended expert and consultant network of a further 50 experts.

- Over the past 25 years the firm has undertaken more than 350 projects and assignments for various governments, development agencies and the private sector within the region. Specialisation fields are agricultural development and agricultural training, SMME development and vocational training.

- We also have a good working knowledge of the agricultural sector in Botswana – numerous projects (most notably contracted by the Botswana MOA to undertake a Productivity Audit and Strategy for Agricultural Sector)

Our specific interest in Agricultural Information, Intelligence and Decision Support Systems

- Having realised that a lack of agricultural information and intelligence is one of the most important constraints to agricultural development in Africa (especially amongst smallholder farmers), Manstrat became involved in seeking solutions to address this need.

- We now have more than 10 years experience in the development, implementation and maintenance of **internet based** Agricultural Information and Decision Support Systems. We are the preferred service provider (and partner) of the SA Department of Agriculture in implementing such systems for its staff and constituency (farmers).

- MAIS currently has two Agricultural Information Systems namely:
    o Extension Suite Online (ESO) – to address information needs of Agricultural Advisors and Extension Officers
    o AgriSuite – to address the information needs of farmers directly

IMPORTANCE OF A MARKET INTELLIGENCE AND INFORMATION (MII) SYSTEM – Farmer perspective

What is Market Intelligence and Information (MII)

Market intelligence and information (MII) is important and is used to develop a knowledge and understanding of the market and how to access the market (including challenges in the operating environment influencing market access and cost of sales influencing price).
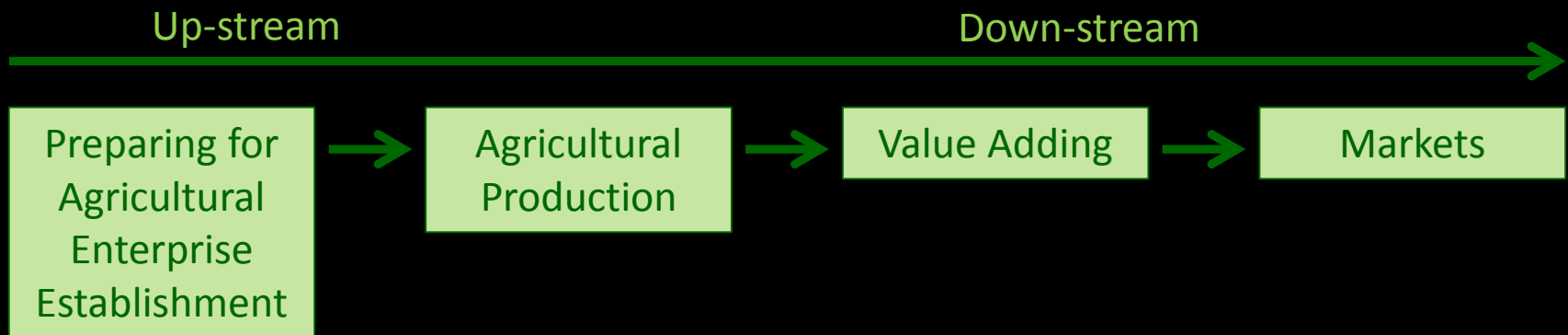
What is a MII System

A MII System usually consists of three components – namely:
- **Data** (to be sourced, collected and collated)
- **Intelligence** (software to process, analyse and interpret data into information)
- **Information** (useful information to be presented and disseminated to users to facilitate decisionmaking)

MARKET INTELLIGENCE AND INFORMATION (MII)

If we want to facilitate Access to the Agricultural Economic Main Stream

SMALLHOLDER FARMERS WILL HAVE TO BE ASSISTED TO MANAGE THE TOTAL AGRICULTURAL ENTERPRISE VALUE CHAIN

Up-stream   Down-stream

| Preparing for Agricultural Enterprise Establishment | → | Agricultural Production | → | Value Adding | → | Markets |

MARKET INTELLIGENCE AND INFORMATION (MII)

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We can substantially advance Agrarian Reform if we can provide knowledge and information across the spectrum of the Agricultural Enterprise Value Chain

Preparing for production
- Farm information
- Farmer Information
- Land Use Information
- Land Conservation Information
- Government and Agricultural Information
- Agricultural Services Information
- Soil Information
- Climate Information
- Water Information

Production
- Farm Related Production Data
- Support Needs Information
- Financial Information
- Land Use Information
- Land Conservation Information
- Government and Agricultural Information
- Agricultural Services Information
- Plant Production Information
- Animal Production Information
- Suppliers Information
- On-sellers Information

Value-adding
- Buyers Information
- Processing Information
- Transport Information
- Packaging Information
- Grading Information
- Branding Information
- Plant Production Information
- Animal Production Information
- Suppliers Information
- On-sellers Information
- Financial Information

Markets
- Formal Market Information
- Financial Information

BOTSWANA BEEF VALUE CHAIN MAP

National Component of the Value Chain
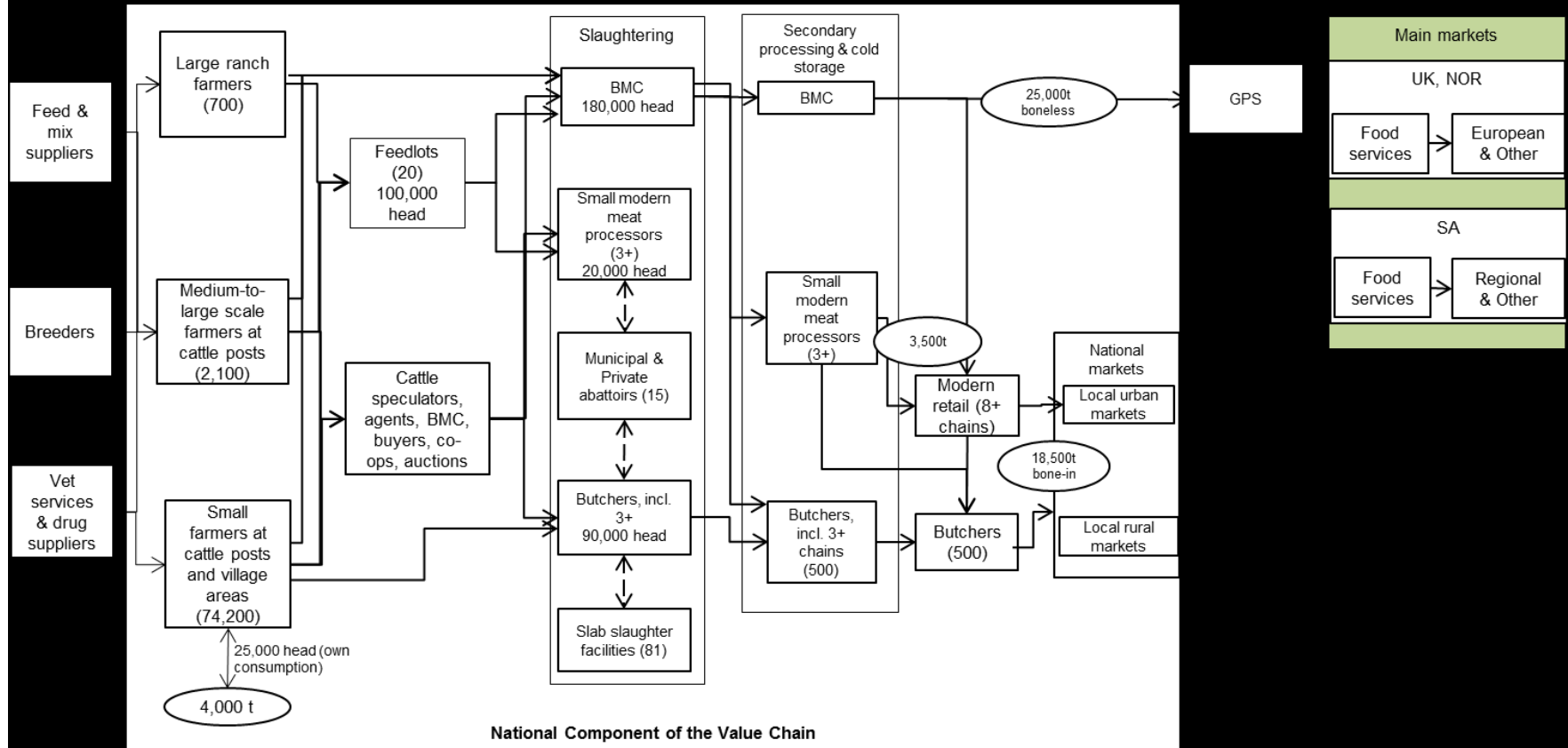
Supporting functions (bottom bars):
- Vet . Inspection
- Transport
- Finance
- Tracking & disease control
- Extension
- Education & Training
- Research

BENEFITS OF A MII SYSTEM

- Improved **market and customer orientation** – assist especially smallholder farmers to become business and market orientated – to focus externally.

- Sharing information on all **market opportunities** – with guidelines how to access such markets.

- Better **market selection** & positioning - understanding market requirements will help farmers to select best suited markets.

- Improved decisionmaking on actions needed to **overcome constraints** in accessing such markets

- Improved decisionmaking re means to **increase profits** (increasing production and productivity and/or by reducing cost of sales

- Improved decisionmaking re linkages with upstream & downstream roleplayers to **reduce cost of sales**

COST OF SALES COMPONENTS IN THE BEEF VALUE CHAIN

Primary & Secondary production inputs
- Feed and nutrition
- Veterinary services and product
- Finance
- Feedlots

Aggregation and Transport costs
- Cattle trucks, trains
- Kraals, auction pens, loading facilities
- Buyers, auctions, speculators, agents.

Slaughtering costs
- BMC
- Other abattoirs
- Slab slaughter facilities

Processing and cold storage costs
- BMC
- Processing plants
- Chilling and cold storage facilities

Markets - Distribution and Sales costs
- Export
- Wholesale
- Retail

POTENTIAL ROLE OF MARKET INTELLIGENCE AND INFORMATION IN THE BEEF SECTOR

Examples of MII in the Beef Sector that will increase farmer's viability, feasibility and profitability:

- Information on potential markets – both local and export markets (location, access requirements re volumes, quality, packaging, consistency, traceability, health and safety, etc.)
- Information on market and trade trends – supply and demand figures, prices, price fluctuations and price trends, etc.
- Information on roleplayers and stakeholders rendering services down the value chain (e.g. feed providers, veterinarians, cooperatives, auctioneers, feedlots, agricultural centres, transport businesses, abattoirs, processing facilities, cold storage facilities, etc.)
- For each of the above industry stakeholders provide the following geo-referenced information (contact details; location and geographical area of service rendering; capacity and price structure; etc.)
- Link information datasets in MIIS to project production potential / expectations, financial feasibility, etc. (e.g. climatic data, grazing potential, distance from markets, availability of support services, etc.)

Manstrat Agricultural Information Systems (MAIS)

1) **EXTENSION SUITE ONLINE (for Extensionists and Agricultural Advisors)**

2) **AGRISUITE (for Farmers)**
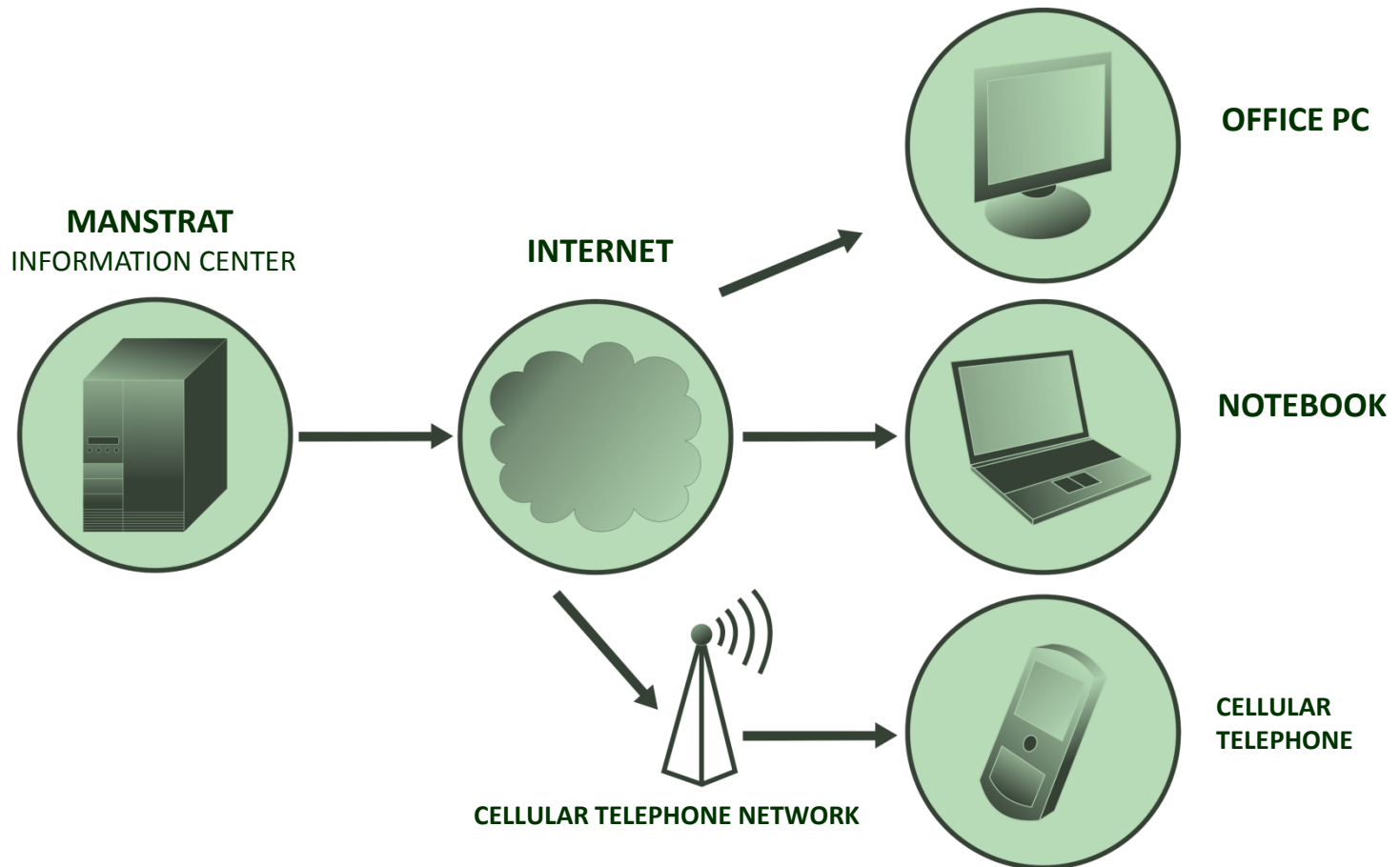
EXTENSION SUITE ONLINE

What is ESO

- ESO is an internet based agricultural information and intelligence system aimed at assisting Agricultural Advisors (e.g. Extension Officers and Veterinary Assistants) in rendering an improved service to farmers. To this end it builds their capacity and provides them with a wide range of agricultural information and intelligence spanning both the technical (production) and economic (market) fields.

- ESO has been implemented in SA for the past 5 years with a total of 4 200 registered users (3 500 Extension Officers).

- It has been widely acclaimed as a huge success and the SA Government is now renewing our service contract for a further 5 year term. An evaluation of ESO (undertaken jointly with the SA Ministry of Agriculture) revealed the following as the impact , importance and benefits gained from an information and intelligence system such as ESO

Please refer to the short demonstration of ESO to see the approach and range of information and support provided.

EXTENSION SUITE ONLINE

Distribution of Information

CONCLUSION

ESO made a difference

Extension Suite Online has made a profound impact on the lives of Extension Practitioners and those that they serve and it has greatly improved the relationship between extension practitioners and farmers in South Africa.

The SA Ministry of Agriculture has already commenced the process to renew the first 5 year contract with Manstrat (which ends early 2015) for a further term to implement, update and maintain the system for use by DAFF.

EXTENSION SUITE ONLINE

Acclaimed Impact of ESO

➢ Before ESO Extension Practitioners were struggling to find information, now they have quick and easy access to such information

➢ They used to have access to books only (often outdated info) now have access to fresh, updated and practical and user friendly information.

➢ It serves as a suitable conduit or "pipeline" for information flow from Researchers to Extensionists

➢ Provinces are relying on ESO as the main source of information to Extension Practitioners and the system has become deeply entrenched in the approach to extension in every province.

➢ It improves Service Delivery and is a key component of farmer support – it provides information right there where Extensionists work and information is needed – at farm level. Thus enabling Extension Practitioners to respond quickly to farmers' needs.

➢ It provides Extensionists with high quality and a broad spectrum of information thus contributing to their knowledge base and enhanced problem solving and decisionmaking through the provision of appropriate advice and solutions to farmer problems

➢ It collates, consolidates and makes information available in a user friendly manner and on devices that are readily accessible anywhere and anytime (e.g. via mobile phones, tablets, laptops, personal computers, etc.)

➢ It has created a relationship of trust between Extension Practitioners and Farmers

Southern African Agriculture in the Information Age

AgriSuite Online – MIIS for Farmers

INTRODUCTION

A Responsible Approach – Info support to Farmers

Size of the Agricultural Sector and ICT in Southern Africa (SADC)
(Source - African Development Bank)

AGRICULTURAL STATISTICS	SIZE OF SECTOR
Agricultural population (2014)	175, 000, 000
Economically active in agriculture (2014)	75, 000, 000
Number of mobile cellular subscribers (2012)	180, 000, 000
Number of internet users (2012)	40 ,000, 000
Number of mobile phones in agriculture (Anglophone) 2012 Accenture study for Vodacom)	30, 000, 000

WHAT INFORMATION ARE WE PROVIDING TO THEM?
Specifically the Smallholders and other Small-scale Farmers

AgriSuite Online

Main menu

AgriSuite Online

Content

Agricultural weather

- Sunlight
- Temperature
- Cloud cover
- Pressure
- Humidity
- Precipitation
- Visibility
- Wind speed and direction

Information provided for 7 days in advance and linked to production early-warnings

AgriSuite Online

Content

Plant production

- Vegetables
- Fruit
- Grains
- Oil Seeds
- Roots & Tubers
- Industrial Crops
- Flowers

Animal production

- Beef cattle
- Dairy cattle
- Mutton sheep
- Wool sheep
- Meat goats
- Milk goats
- Fibre goats
- Ostriches
- Layer chickens
- Broiler chickens
- Pigs

AgriSuite Online

Content

Agricultural infrastructure

- Silos
- Veterinarians
- Cooperatives
- Financial Institutions
- Tanneries
- Suppliers
- Support Services
- Other

Markets

- Vegetables
- Fruit
- Nuts
- Grains
- Red Meat
- Poultry
- Eggs

Classifieds

Buying and selling of agricultural items

Discussions

Expert support and farmer linkages

AgriSuite Online

Content

Community

Linkages to the agricultural industry

Bids and offers

A virtual market place

Agricultural GIS

Demonstration re components of AgriSuite

THE DIFFERENCE

Getting information to all role players

Over the internet

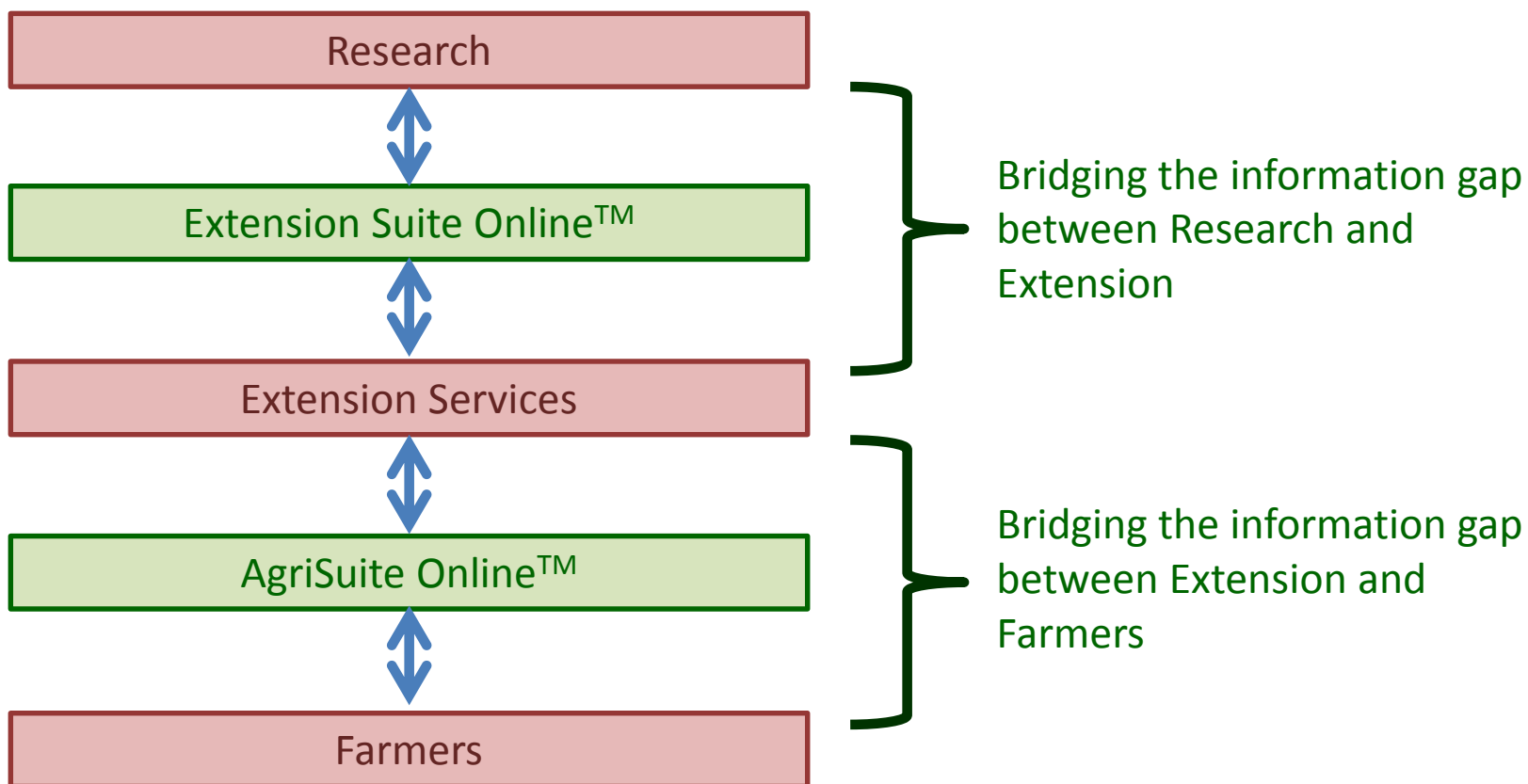- Available almost everywhere (40 million internet users and 180 million mobile phone users in SADC – **30 million in agriculture**)

- System can be maintained at a central point

- No need for individual computer or device upgrade

- Independent of operating system

- Most devices has a browser

BUT
You cannot provide a single system across the range of role players in Southern African agriculture

CONCLUSION

These products close the information gap

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│              Research               │
└─────────────────────────────────────┘
                   ↕                      ┐
┌─────────────────────────────────────┐  │  Bridging the information gap
│      Extension Suite Online™         │  │  between Research and
└─────────────────────────────────────┘  │  Extension
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│         Extension Services           │
└─────────────────────────────────────┘
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┌─────────────────────────────────────┐  │  Bridging the information gap
│         AgriSuite Online™            │  │  between Extension and
└─────────────────────────────────────┘  │  Farmers
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┌─────────────────────────────────────┐
│              Farmers                │
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Thank you