Experiences from the Future Farm Project

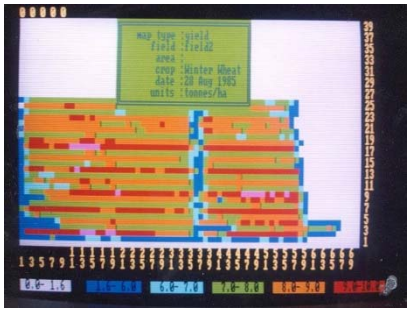
Dr. Mark Moore

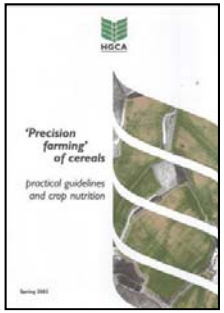
Introduction

Dr Mark Moore – Agricultural Development – Africa Middle East

- 25+ years experience of applying technology in Agriculture
- Developed precision farming in the late 1980's/early 1990's, including participating in standards for machine communication and data transfer
- Worked with farmers and research organisations all over the world on the application of technology









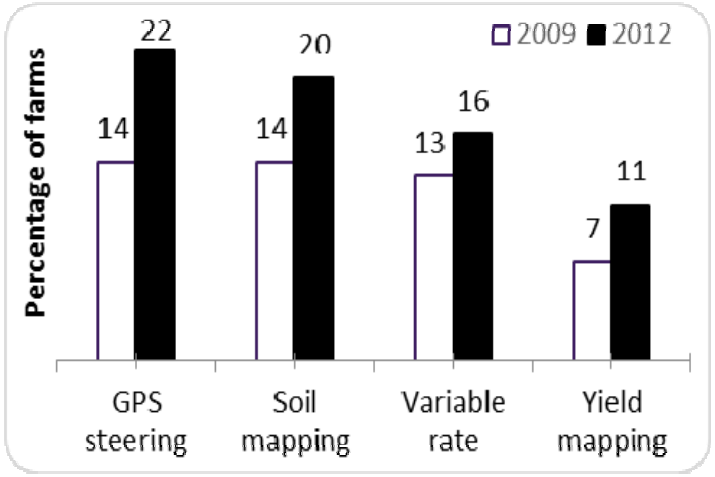





Introduction

Objective – Increase the alignment of research with industry

- The Challenge:
  - Some technology adoption rates are relatively slow, despite proven economic and environmental benefits



Defra, 2013, Farm Practices Survey Autumn 2012 – England

- How can the Future Farm & the UK AgriTech strategy address the challenge?

Introduction

Vertically Integrated Systems (Product System)

- Tend to be supplied & supported by one organisation
- Value proposition relatively easy to obtain
- Focus on specific elements of technology
- Examples:

The Ferguson System

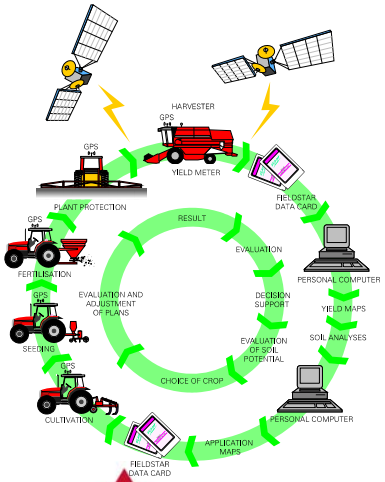
Autoguide

Introduction

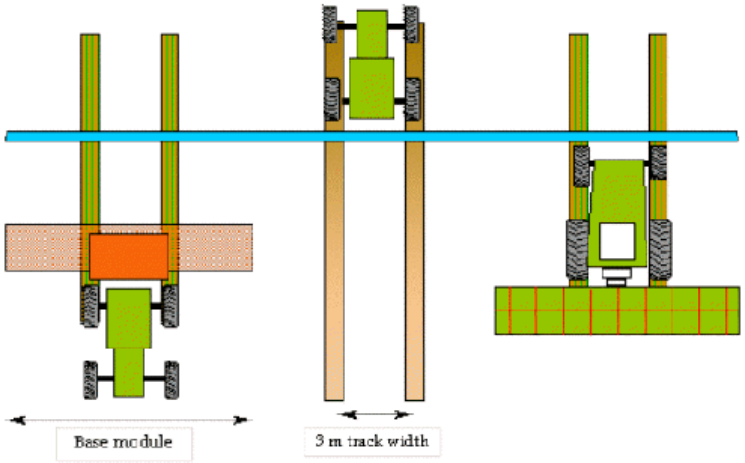
Horizontally Integrated Systems (System of Systems)

- Multiple sectors and groups create the system
- Can utilise vertically integrated technology (Product Systems)
- Farmer often becomes the systems integrator increasing management time
  - Value proposition can be hard to obtain
- Focus on farming practices, rather than individual technologies/products
- Examples:

Precision Farming



Controlled Traffic Farming



Conservation Agriculture

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Case Study – Africa

Technology requirements for Africa are very diverse

Future Farm project is fully inclusive

Case Study – Africa

Lack of systems integration, training and local support means technology is not always sustainable

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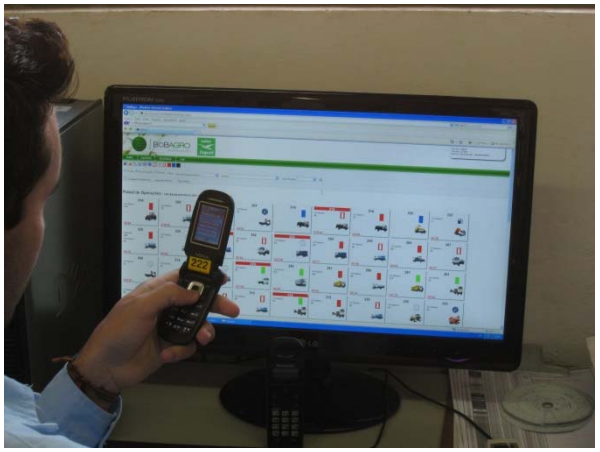
Case study – Africa

The result: most farming in Africa remains low-tech and under developed

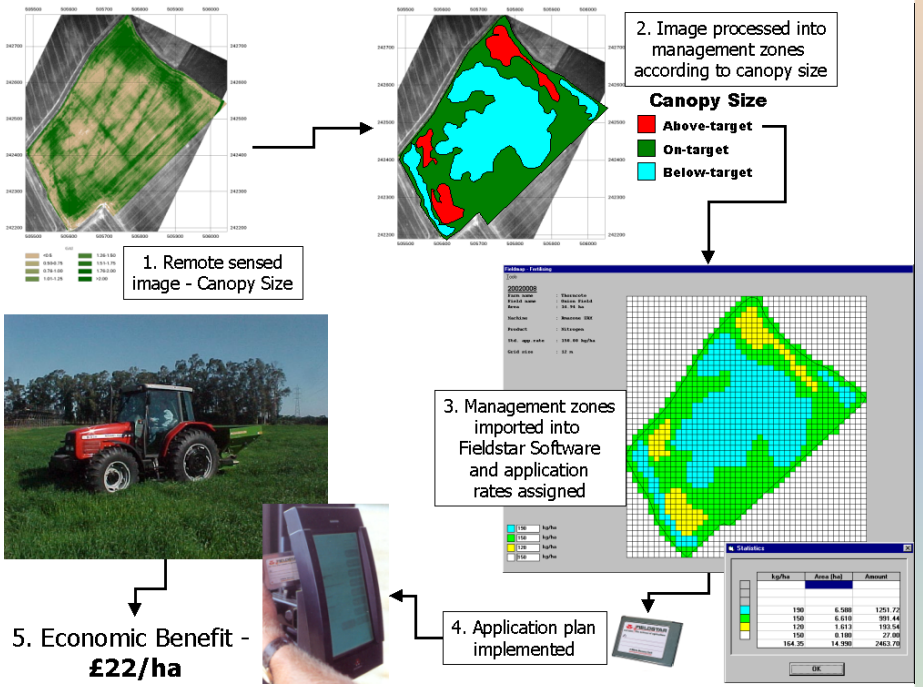
Case Study – Brazil

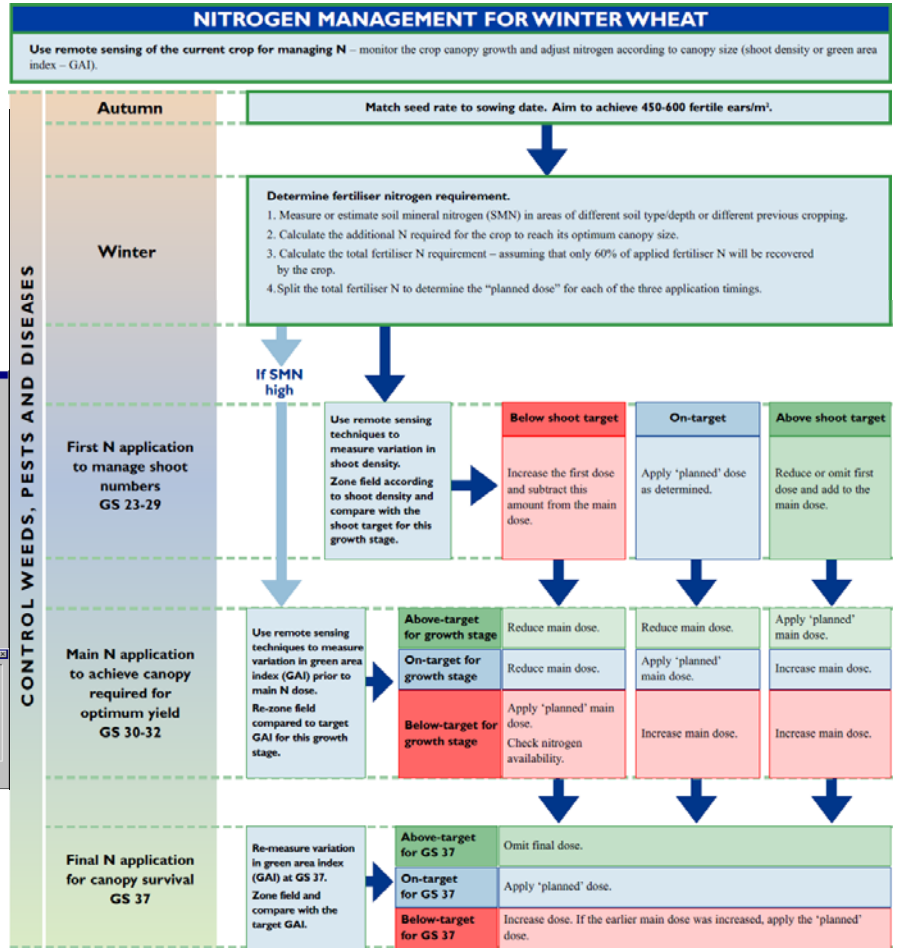
Lack of systems integration means sugar cane mills struggle to collect reliable fleet data to manage machines



Case study – UK

HGCA – Precision Farming of Cereals (2002)





Future Farm Programme

Addressing the challenges of technology to enable best farm practice

The Future Farm programme focuses on 3 key challenges:

1. **Systems integration and value proposition**

   Horizontally integrated systems – Confirm the system works, and value proposition is obtainable.

2. **Education and training**

   Farmers, farm operators and support technicians are educated and trained on the system, rather than individual parts.

3. **Distribution and support**

   Ensuring farmers have local access to the systems products and services, and support (technical & agronomic) if issues are encountered.

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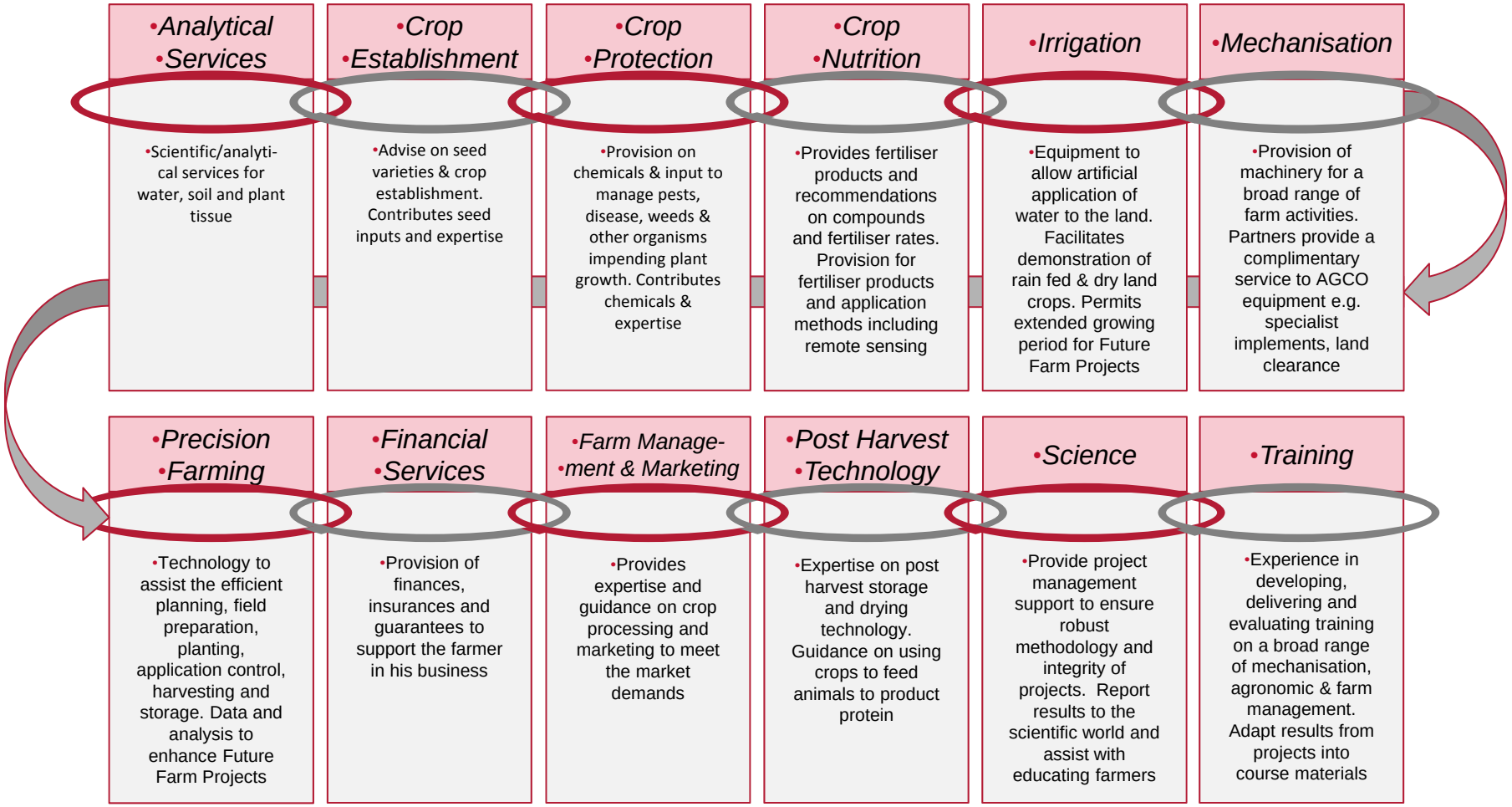
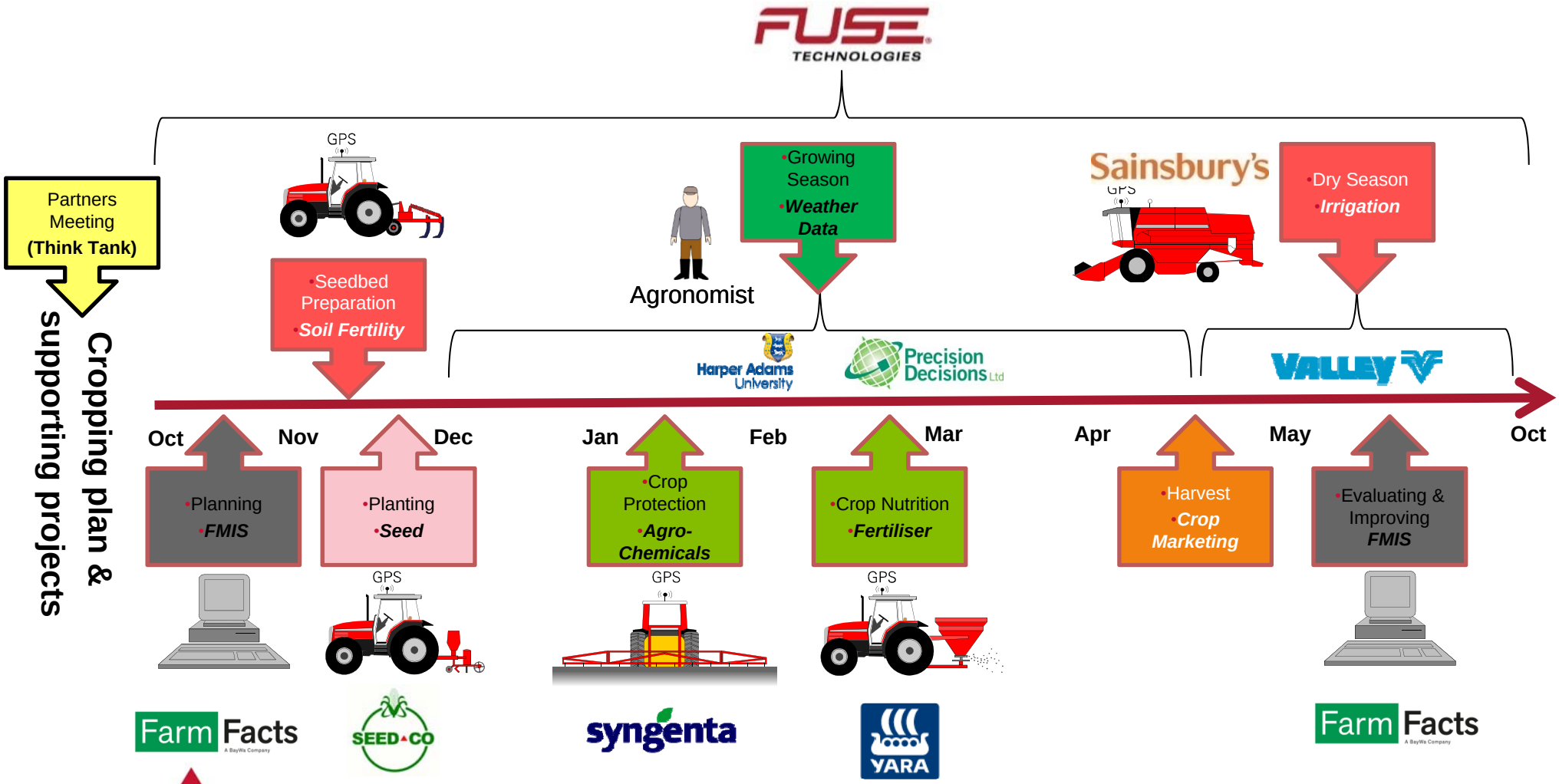
Future Farm – Systems Integration and Value Proposition

Collaboration is essential to realise the potential of horizontally integrated systems



Future Farm – Systems Integration and Value Proposition

Collaborating across the supply chain to deliver integrating products and services to dealers and end-users



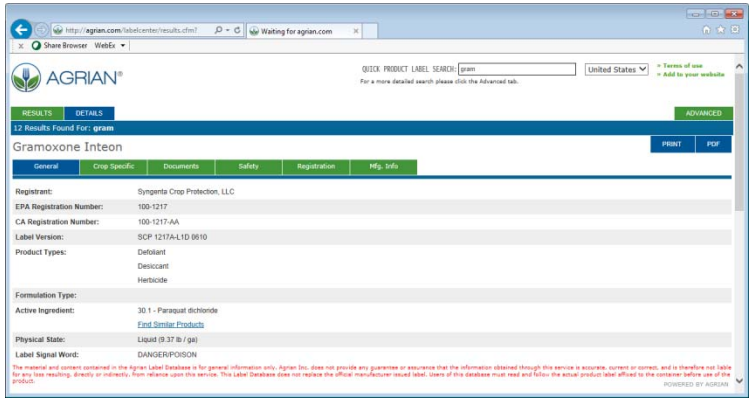
Future Farm – Systems Integration and Value Proposition

Developing and encouraging the adoption of industry standards with partnerships

For example:

- ISOBUS and ISOXML (ISO11783)
  - It is the universal protocol for electronic communication between implements, tractors and computers

- AGRIAN database
  - Crop protection label look-up



Future Farm – Training & Education

Empowering local people to take ownership

TECHNICAL – To enable machinery to be supported

PRODUCT – To ensure the right products are specified & operators know how to use them to maximize efficiency

MECHANISED SYSTEMS – To ensure the right level of mechanisation integrates into the farmers business.

FARMING SYSTEMS – To make sure farmers have access to inputs (seed, fertiliser, protection) and know how to use them with mechanisation

FARM BUSINESS MANAGEMENT – ensure the business remains sustainable

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Future Farm – Distribution & Support

Ensuring sustainability by delivering technology solutions and best farm practice to local communities

Farm Service Centre

- Distribute a full agricultural products and services through a common outlet – “one stop shop”
- Supported by the Future Farm project and partners
- Increases the viability of the distributor

Agro Chemicals

Fertiliser Products

Seed supplies

Mechanisation solutions

Irrigation solutions

Agronomic Advice

Finance

Farm Business Advice

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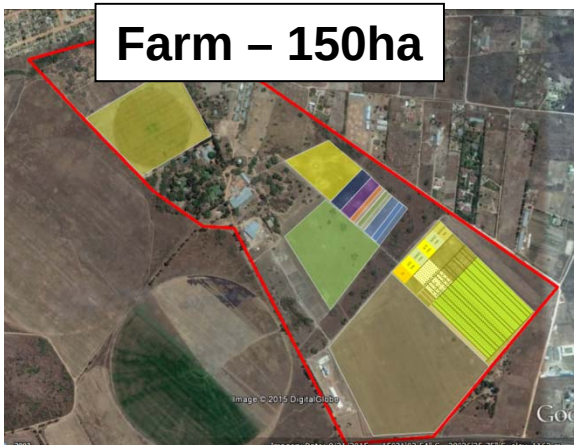
Future Farm Programme – Resources

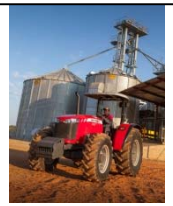
Farm – 150ha



Training Centre

Training & Education

Unlocking the Value Proposition from Technology



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Summary & Recommendations

- **AgriTech is a very welcome strategy**
  - Encouraging industry lead research
  - Help SME's who are fast on their feet but don't necessarily have the R&D resources
  - AgriTech will deliver successful vertically integrated technology (product systems)

- **Mechanisation & technology "touches" many parts of food production**
  - Agricultural engineers have a prominent place in the food production system
  - We are the natural choice for the systems integrator role

- **The full potential of AgriTech will not be released unless horizontally integrated systems thinking is adopted within the proposed think-tanks**
  - Don't think in silos – Otherwise the farmer becomes the "systems integrator"
  - No one organisation "owns" the food production system
  - Collaboration is essential to ensure value is realised from technology

Summary & Recommendations

- **Project teams should be coached as projects are being defined**
  - What is the value proposition?
  - How will the value proposition be obtained?
  - How will customers access the product and/or service?
  - Who will install it and offer training?
  - Who will provide local service/support?
  - How long will it take to obtain spare parts?

- **The Future Farm programme has limited ability to assemble stakeholders across supply & value chain, but AgriTech has more capacity**
  - Think about how AgriTech can harness this strength
  - Some would say we don't need anymore technology, we just need to integrated what we have today into farming practices
  - Of course – it will be a combination of new technology, and putting usable technology in the hands of the majority

Thank you

Further reading

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