agri benchmark
Cash Crop Conference 2012

Perspectives of agri benchmark in South Africa
Presentation overview

• Why do we want to benchmark?
• The BFAP farm level program & linkage
• What does the future hold?
  • Establishing a national network
  • Expanding into other African countries
Why benchmarking?

SA grains and oilseeds

- White maize
- Yellow maize
- Wheat summer
- Wheat winter
- Sunflower
- Soybeans

BUREAU FOR FOOD AND AGRICULTURAL POLICY

agri benchmark
Mpumalanga's potential arable (Agricultural) land, i.e. - land that should be kept in Agriculture

<table>
<thead>
<tr>
<th>Potential Arable Land</th>
<th>SUM TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>High potential arable land</td>
<td>872 007</td>
</tr>
<tr>
<td>Moderate potential arable land</td>
<td>2 085 727</td>
</tr>
<tr>
<td>Marginal potential arable land</td>
<td>1 596 609</td>
</tr>
<tr>
<td><strong>SUM TOTAL</strong></td>
<td><strong>4 554 344</strong></td>
</tr>
</tbody>
</table>

Arable (Agricultural) land that will be taken up by mining in the years to come and currently

<table>
<thead>
<tr>
<th>Potential Arable Land</th>
<th>SUM TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>High potential arable land</td>
<td>671 293</td>
</tr>
<tr>
<td>Moderate potential arable land</td>
<td>1 145 460</td>
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<tr>
<td>Marginal potential arable land</td>
<td>871 875</td>
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<tr>
<td><strong>SUM TOTAL</strong></td>
<td><strong>2 634 629</strong></td>
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Arable land left over if all current & prospecting mining takes place

<table>
<thead>
<tr>
<th>Potential Arable Land</th>
<th>SUM TOTAL</th>
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</thead>
<tbody>
<tr>
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<td>200 714</td>
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<tr>
<td>Moderate potential arable land</td>
<td>940 267</td>
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<tr>
<td>Marginal potential arable land</td>
<td>724 734</td>
</tr>
<tr>
<td><strong>SUM TOTAL</strong></td>
<td><strong>1 919 715</strong></td>
</tr>
</tbody>
</table>

Legend

- Very high potential arable land
- High potential arable land
- Moderate potential arable land
- Marginal potential arable land
- Non-Arable: Moderate potential grazing land
- Non-Arable: Low to moderate potential grazing land
- Non-Arable: Low potential grazing land
- Wilderness
- No Data
- Water
Why benchmarking?

Wheat yields in t/ha (average 2009-2011)
Why benchmarking?

Wheat production: Profitability in US$/t (average 2009-2011)
Why benchmarking?

Wheat production: Direct costs in US$/t (average 2009-2011)
Why benchmarking?

Wheat production: Operating costs in US$/t (average 2009-2011)
Why benchmarking?

SOURCE: NAMC, June 2012
Why benchmarking?

The employment creation matrix
Why benchmarking?

Zambian Maize Outlook

Maize production
Maize exports
Maize dom. consumption

 Thousand ha


Maize production
Maize exports
Maize dom. consumption

Bureau for Food and Agricultural Policy

BUREAU FOR FOOD AND AGRICULTURAL POLICY

agri benchmark
Why benchmarking for SA?

- Understanding agriculture worldwide
- Access to reliable & objective information at international level
- Measure a countries’ performance relative to other countries
- Financial & managerial strategies for profitable & sustainable farming
- Create a sound platform on which decisions can be based, impact assessments can be conducted & “what if” questions can be answered (policy reforms, government programs, external economic, climate & biological shocks
- Snapshot of the performance of farmers & multi-annual comparisons
agri benchmark in South Africa

Commodities:
- Maize
- Wheat
- Soybeans
- Sunflower
- Barley
- Canola
- Potatoes
- Sugarcane

Future:
- Horticulture
- Tobacco

Source: Google Maps
agri benchmark in South Africa

- Currently 11 farms in the key producing areas of South Africa

- 7 grain- and oilseed farms (maize, wheat, soybeans, sunflower, barley & canola).

- 3 potato farms in 3 regions with the inclusion of an additional farm in July 2012. Regions: Sandveld, Eastern Free State, Limpopo & KwaZulu-Natal.

- 1 sugarcane farm in coastal dryland area of KwaZulu-Natal. The objective is to include two additional farms; Inlands and Mpumalanga irrigation.

- Beef and Sheep agri benchmark network
The BFAP farm program & linkage

- *agri benchmark* is an important source of data capturing

- Financial data feed into BFAP Finsim model
  - Linked with BFAP sector model
  - Deterministic vs. Stochastic modelling
  - Stochastic analysis based on past yields, prices, volatile inputs (deflated) etc.
  - Valuable tool to determine/analyse scenario planning & “what if” questions

- Illustrative example: Northern Cape irrigation farm
  - Impact of increasing fuel, fertilizer & electricity cost on NFI
  - Stochastic simulation: The minimum, mean & maximum outcome
  - Stoplight Chart: What is the probability that a ROI between 4.66 & 6.21% will realise?
FAPRI and OECD - Global Models
Agribenchmark – International farm-level data

BFAP
Sector level models

- GDP
- Exchange rate
- Interest rate
- Oil prices

Fert&Fuel
Grains and oilseeds
Livestock
Biofuels
Horticulture

BFAP
Farm level financial models

- World prices
- Weather
- Policy
- Population
Baseline – Stochastic simulation outcome

Northern Cape - Net farm income (Baseline)
Stoplight Chart: Baseline vs. Scenario (ROI between 4.66% and 6.21%)

Baseline result:

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<tr>
<th>Year</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
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<tbody>
<tr>
<td>0%</td>
<td>0.50</td>
<td>0.62</td>
<td>0.68</td>
<td>0.67</td>
<td>0.60</td>
<td>0.61</td>
<td>0.55</td>
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<tr>
<td>10%</td>
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<tr>
<td>20%</td>
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<tr>
<td>30%</td>
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<td>80%</td>
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<tr>
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<tr>
<td>100%</td>
<td>0.39</td>
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Scenario result:
National Network - Concept

Vision:

...Unlocking the full potential of livestock & cash crop sub sectors which will ultimately result in the expansion of these sub-sectors and thus contribute to increased food security and economic growth, which will in turn create a more food secure population and more employment opportunities in the economy...

Objective:

...Initiate similar agri benchmark networks in South Africa by including more farms (commercial & emerging/smallholder) that will be representative of different agro ecological farming regions, as well as different production systems to optimally reflect the diversity of farming in South Africa...
National Network - Outputs

• Access to reliable and objective farm level information at the domestic level per agro-ecological region for the sub-sectors included.
• Access to tools that can be used for policy analysis and answering “what if”.
• Annual reports per sub-sector. Training and capacity building through dedicated training sessions.
• A higher level of cooperation and understanding between stakeholders on issues that affect the sub-sectors.
• *agri benchmark* will complement the current Computerised Budgeting (Combud) system.
What does the future hold?

• Maintain current agri benchmark network by updating farms on an annual basis & expansion into new key regions (Mpumalanga & Western Cape)

• Horticultural Network: Model is currently under development to benchmark horticultural products. Pilot project initiated in 2011.

• Pig & Poultry: The addition of pig & poultry to the livestock network. The aim is to benchmark representative farms internationally: Regions: Gauteng, KwaZulu-Natal & the Western Cape.
What does the future hold?

• Expansion of potato & sugarcane typical farms into other regions/provinces

• Smallholder network: Project initiated in 2011. TypiCrop model currently under development.

• Southern Africa: First typical farms for Zambia in 2012
Thank you!

Please visit our website at www bfap co za

Your partner in decision making

See you at the Baseline on 8 August