



agri benchmark

Cash Crop Conference 2012

How does South African Maize production compare to the USA?



Presentation Overview

1) Presentation objective

2) An overview on South African farms

3) An overview on the farm situated in Iowa, United States

4) The benchmark of physical data:

- Yield
- Cropping systems
- Cost comparisons
- Productivity indicators

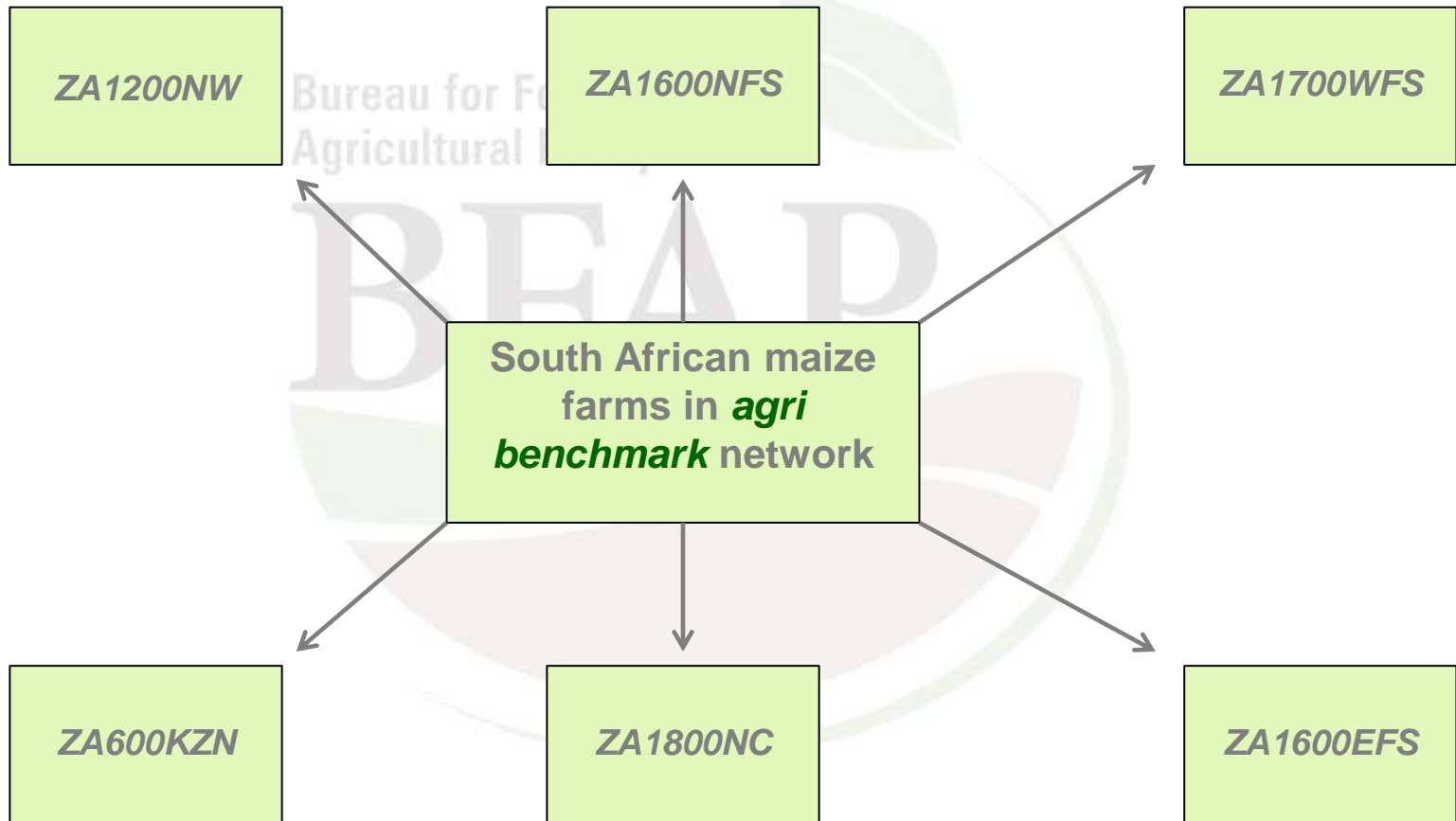


Presentation objective

- To illustrate how South African farms compare to the USA
- Although several variables could influence production conditions, the objective is to only illustrate a basic benchmark with the assumption that everything else is held constant
- The benchmark could give an indication whether SA farms are competitive internationally on a per ton



Overview on South African farms



Overview on South African farms

| Farm name & province | Hectares (Arable) | Crops | Tillage system | Soil Type | Rainfall | Total kW |
|--|-------------------|-------------------|----------------|------------|----------|----------|
| ZA1200NW, North West | 1 024 ha | Maize & Sunflower | Intensive | Sandy loam | 550mm | 606 |
| ZA1700WFS, Western Free State | 1 680 ha | Maize & Wheat | Conservation | Sandy loam | 450mm | 898 |
| ZA1600NFS, Northern Free State | 1 490 ha | Maize & Sunflower | Conservation | Sandy loam | 450mm | 1095 |
| ZA1800NC, Northern Cape (double crop irrigation) | 1 818 ha | Maize & Wheat | No-till | Sandy loam | 250mm | 914 |



Overview: Farm situated in Iowa, United States

- Farm consist of 688 hectares arable land
- Corn & soybean production (50:50)
- Conservation tillage approach with reduced stubble breaking and mulch seed
- Strategy: Increase marketing skills & capture more of the value of the bio-fuels industry
- Soils: Loam - Silt clay loam
- Climate: Continental with an annual rainfall of 888 l/m²
- Land cost: \$20 000 (R150 000) per ha & rent, \$670 (R5 025) per ha
- Average field size: 60 Acres (24.2 Ha)
- Average distance of fields: 6km

North Central Iowa



Source: Wikitravel, 2012

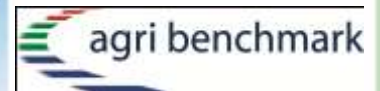




Iowa is non-irrigated; often with wet spring and fall season.



BUREAU FOR FOOD AND AGRICULTURAL POLICY

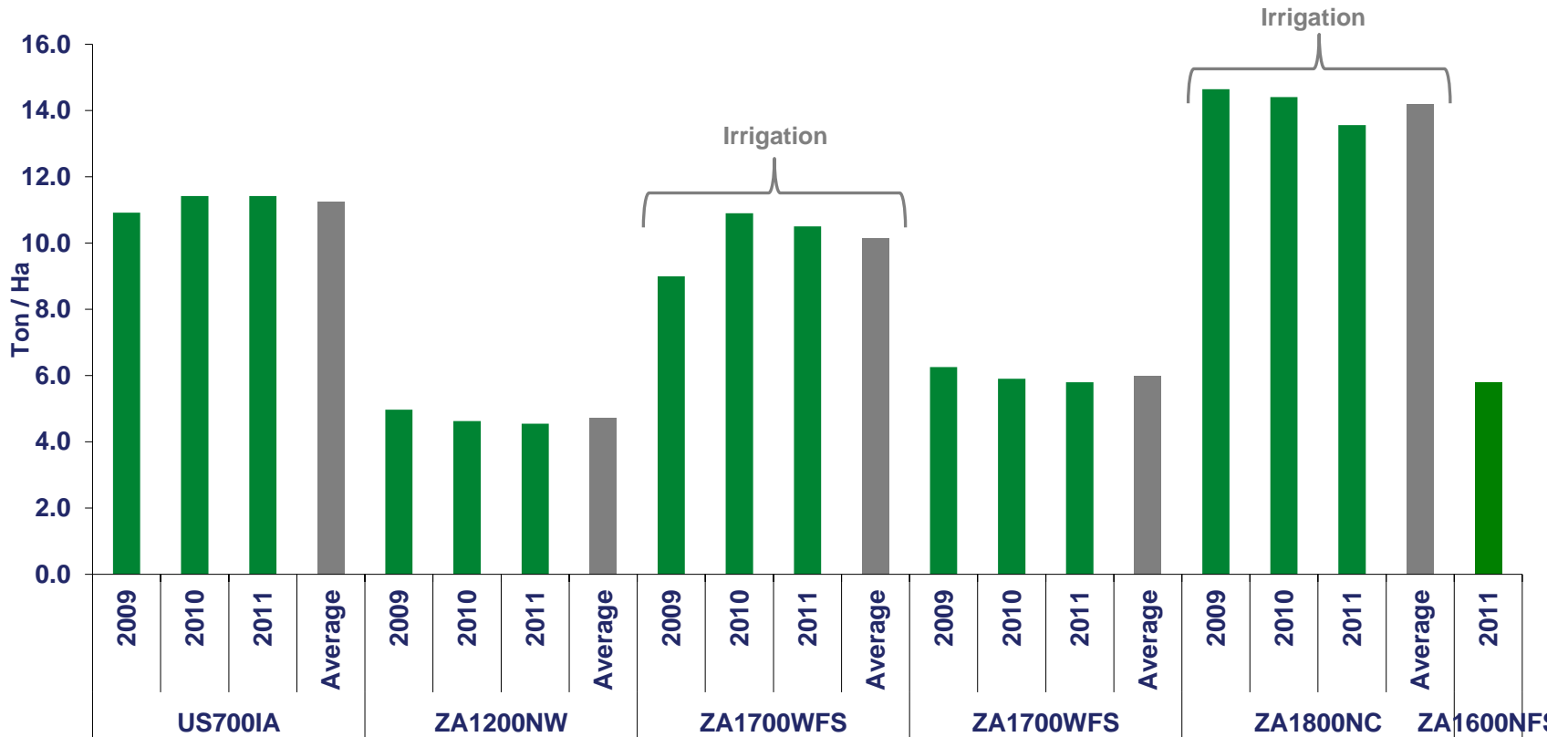


Benchmark: SA & USA

- Yield
- Cropping systems
 - Graph on seed & fertilizer application
 - Plant protection
- Cost comparisons
- Productivity:
 - Nitrogen
 - Seed application



Yield

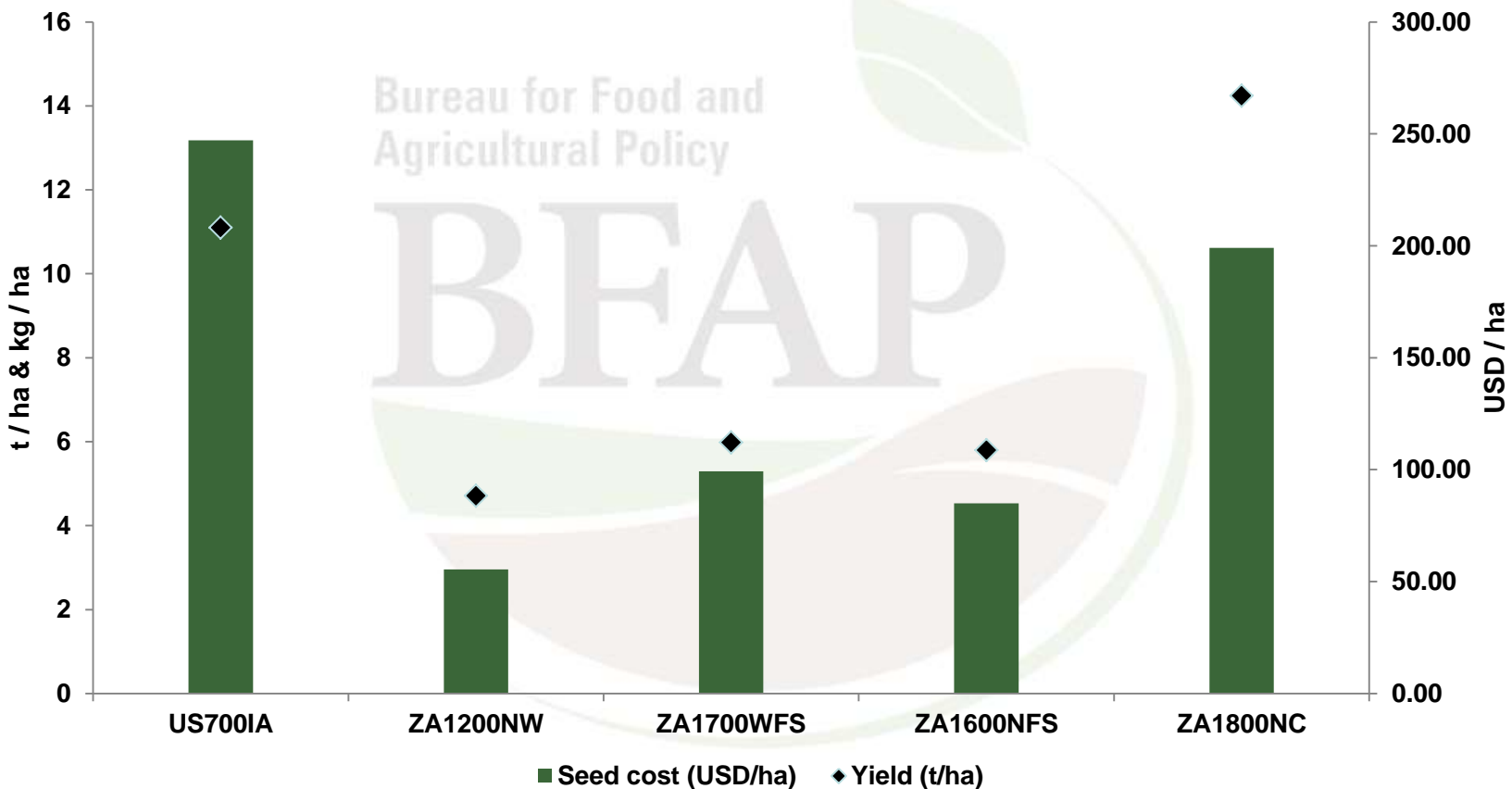


Benchmark: SA & USA

- Cannot make a simple yield comparison by not looking at the drivers behind yield, therefore:
- What are the key drivers behind yield?
 - Respective production system / practise
 - Seed and fertilizer management
 - Plant protection
 - Availability of water



Seed comparison



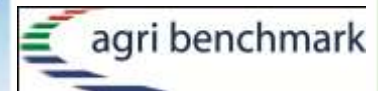


The drought-tolerant trait is part of Monsanto's Yield and Stress collaboration in plant biotechnology with Germany-based BASF.

The 2012 large-scale, on-farm trials, will be taking place with approximately 250 growers on up to 10,000 acres across the Western Great Plains, the product's target launch area.



BUREAU FOR FOOD AND AGRICULTURAL POLICY



Client Focused GMO Traits

Keep the stability, lose the trans fat

Pioneer is integrating the Plenish™ high oleic soybean trait into elite Pioneer® brand Y Series genetics in a broad range of maturities and agronomic packages, providing the right product for the right acre, and market.

<http://www.plenish.com/default.aspx>

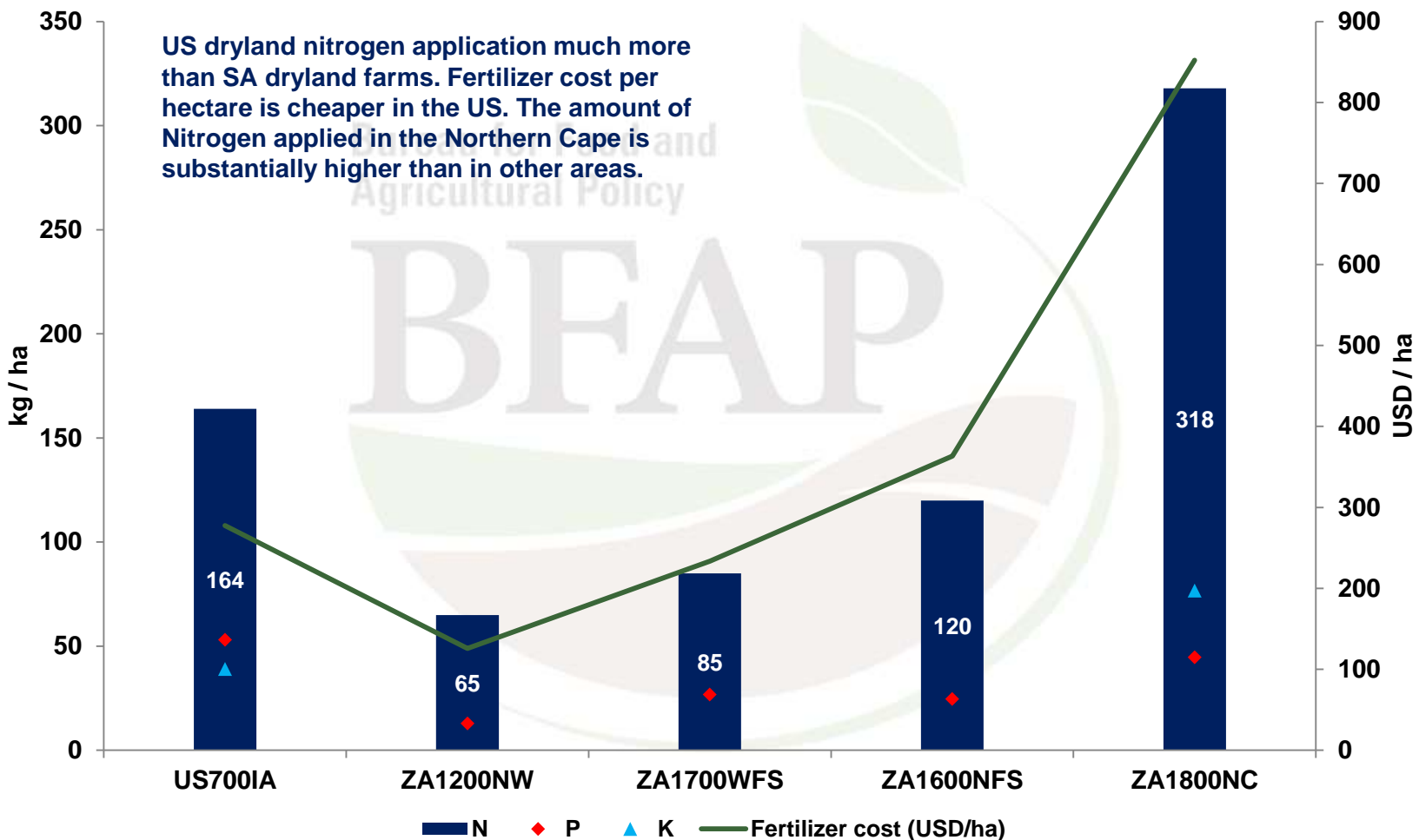
<http://www.vistivegold.com/Pages/Home.aspx>

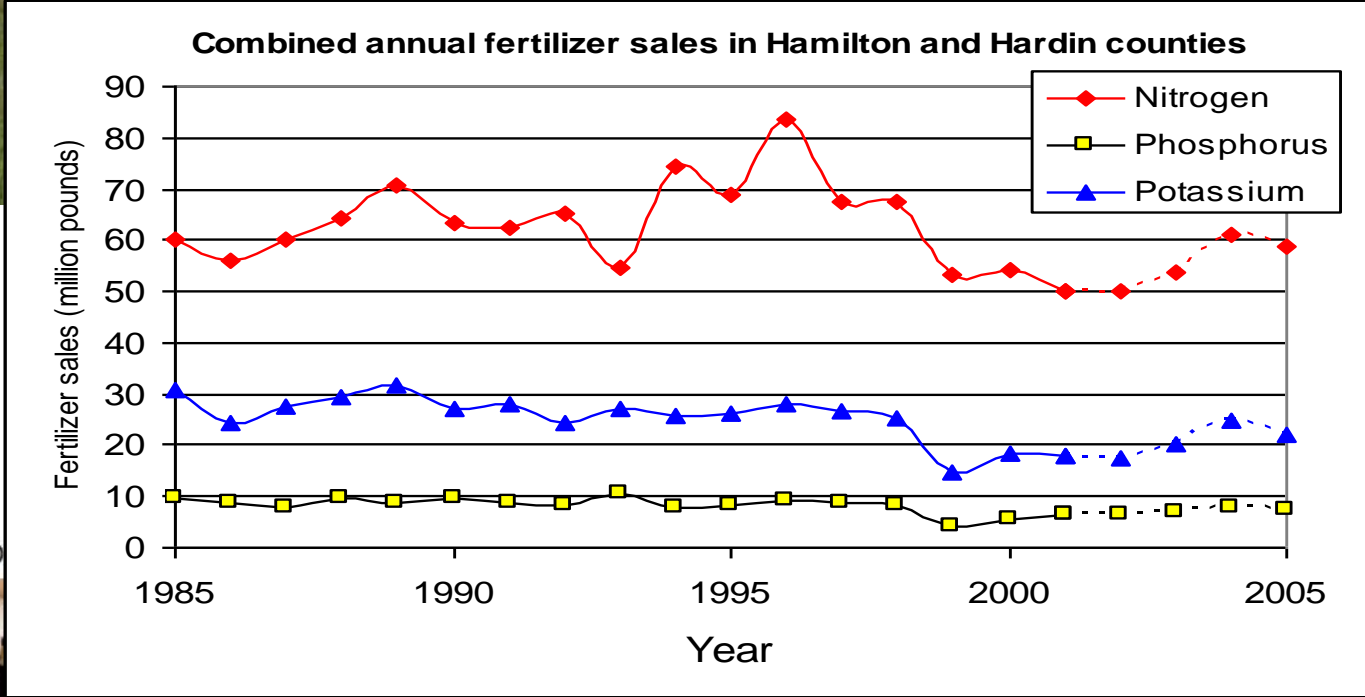
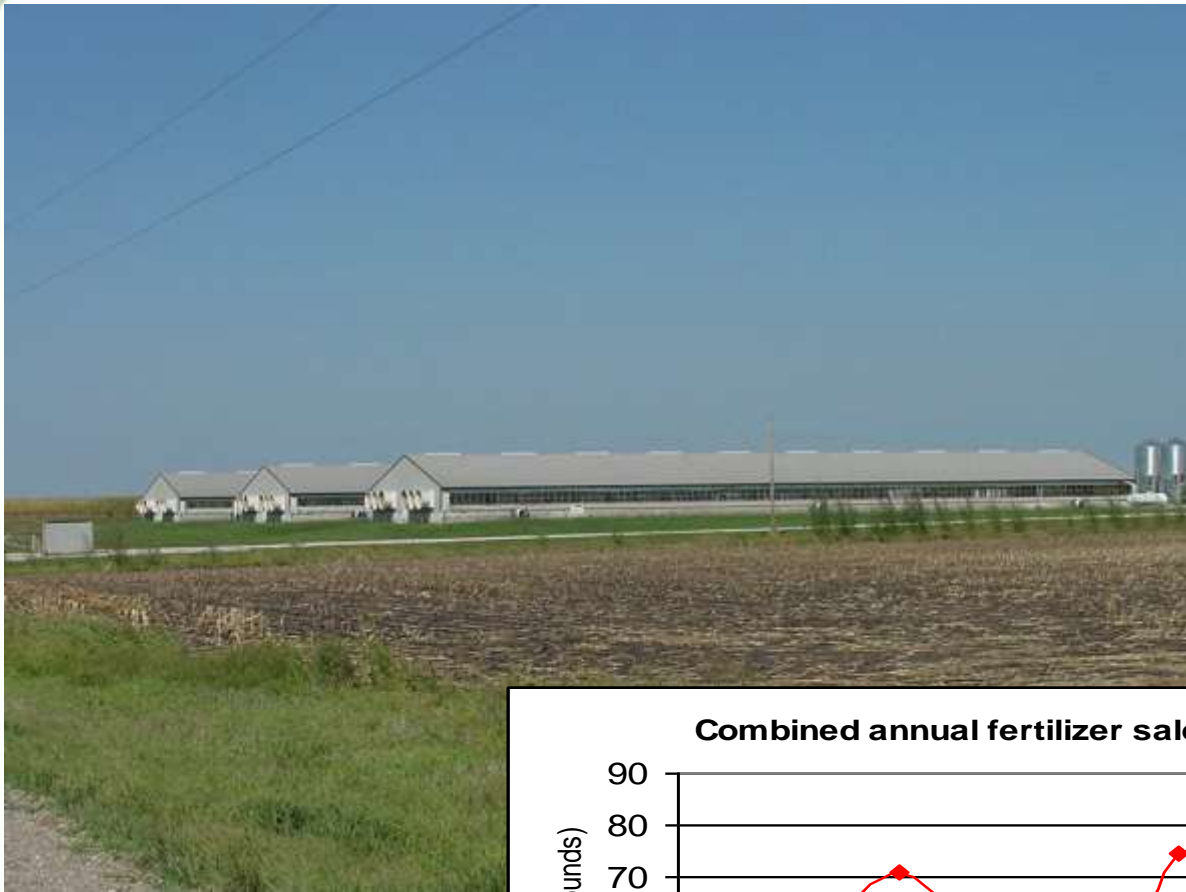


BUREAU FOR FOOD AND AGRICULTURAL POLICY



Fertilizer application

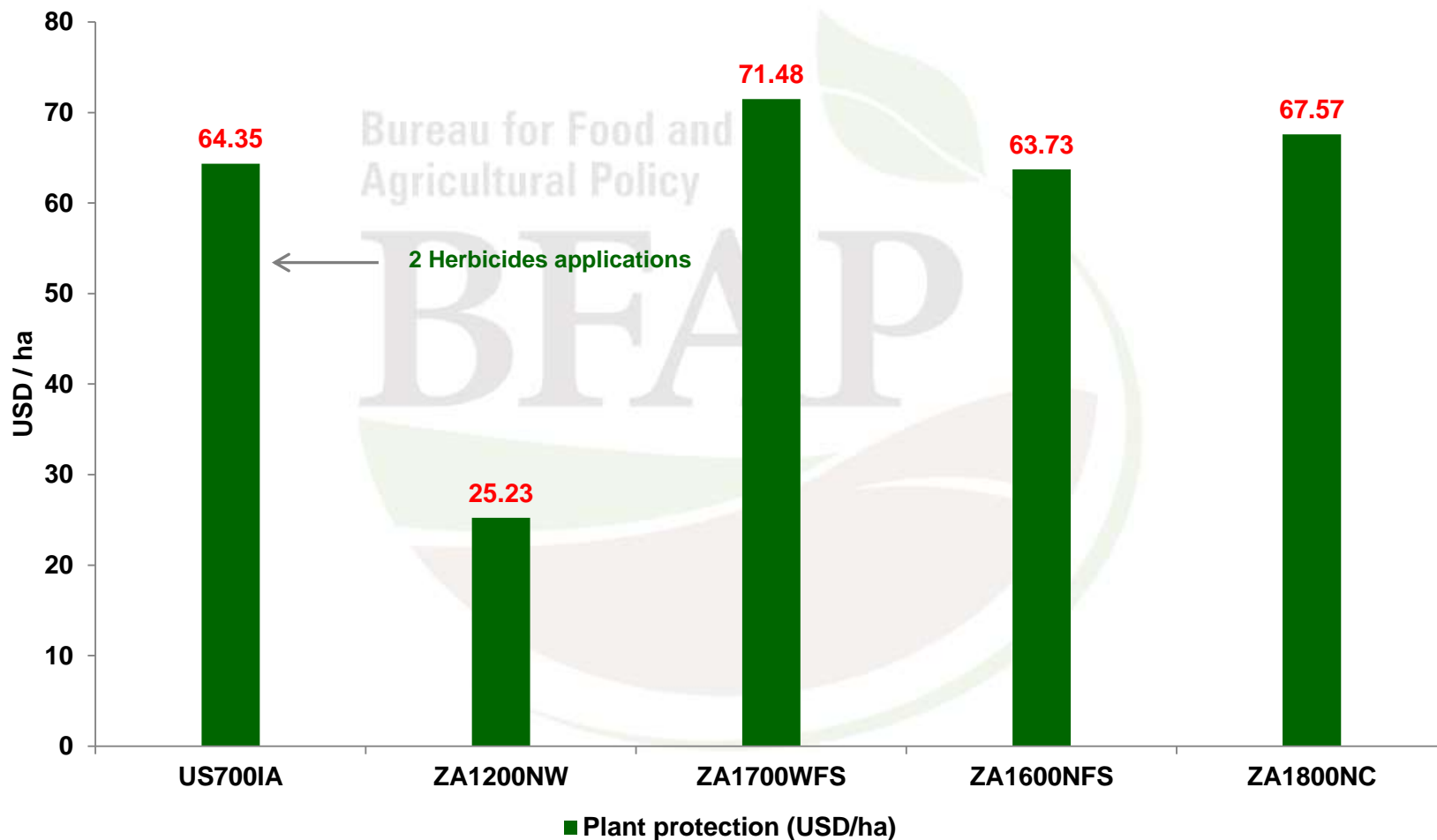




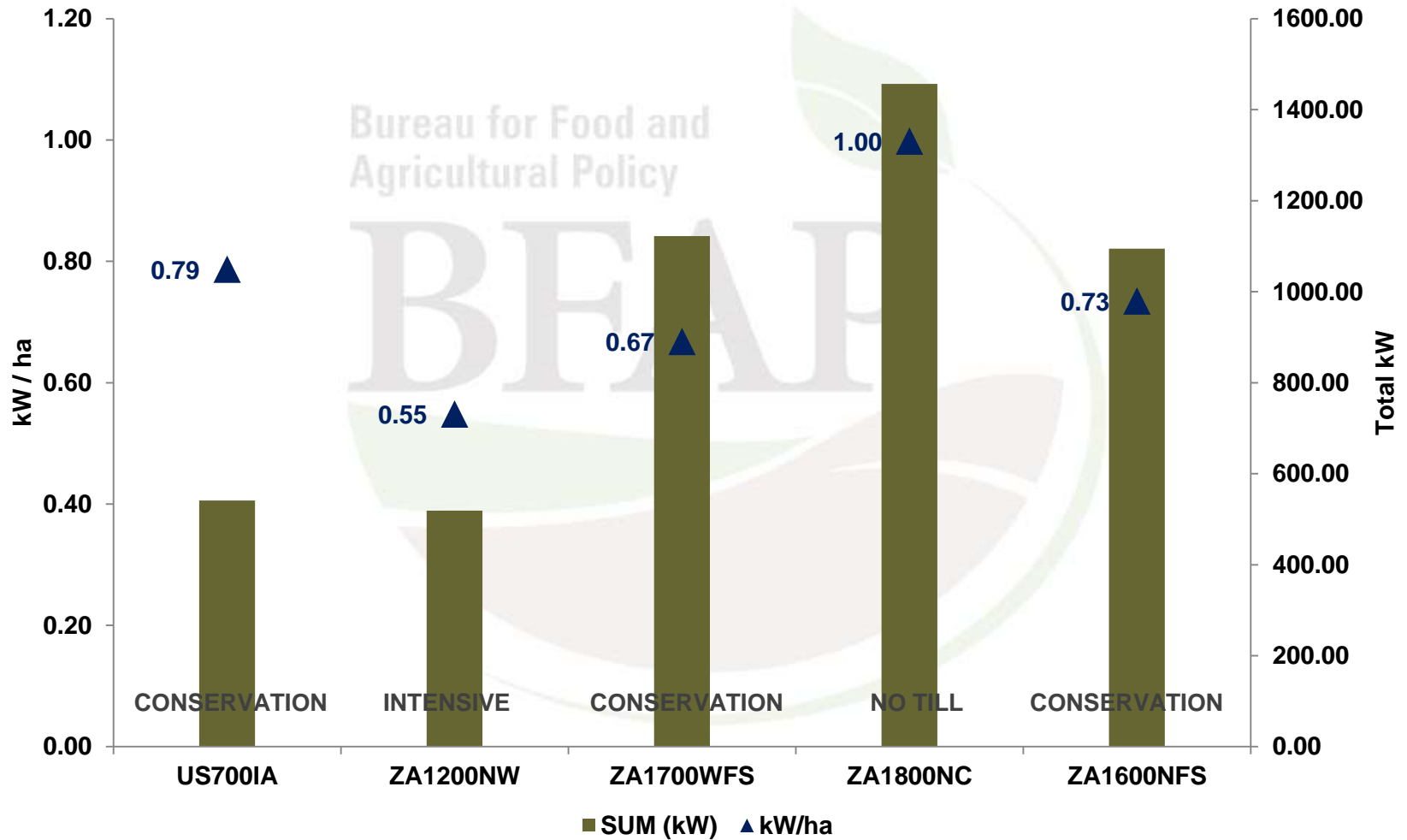
BUREAU FO



Plant protection



Production systems & machinery



BUREAU FOR FOOD AND AGRICULTURAL POLICY

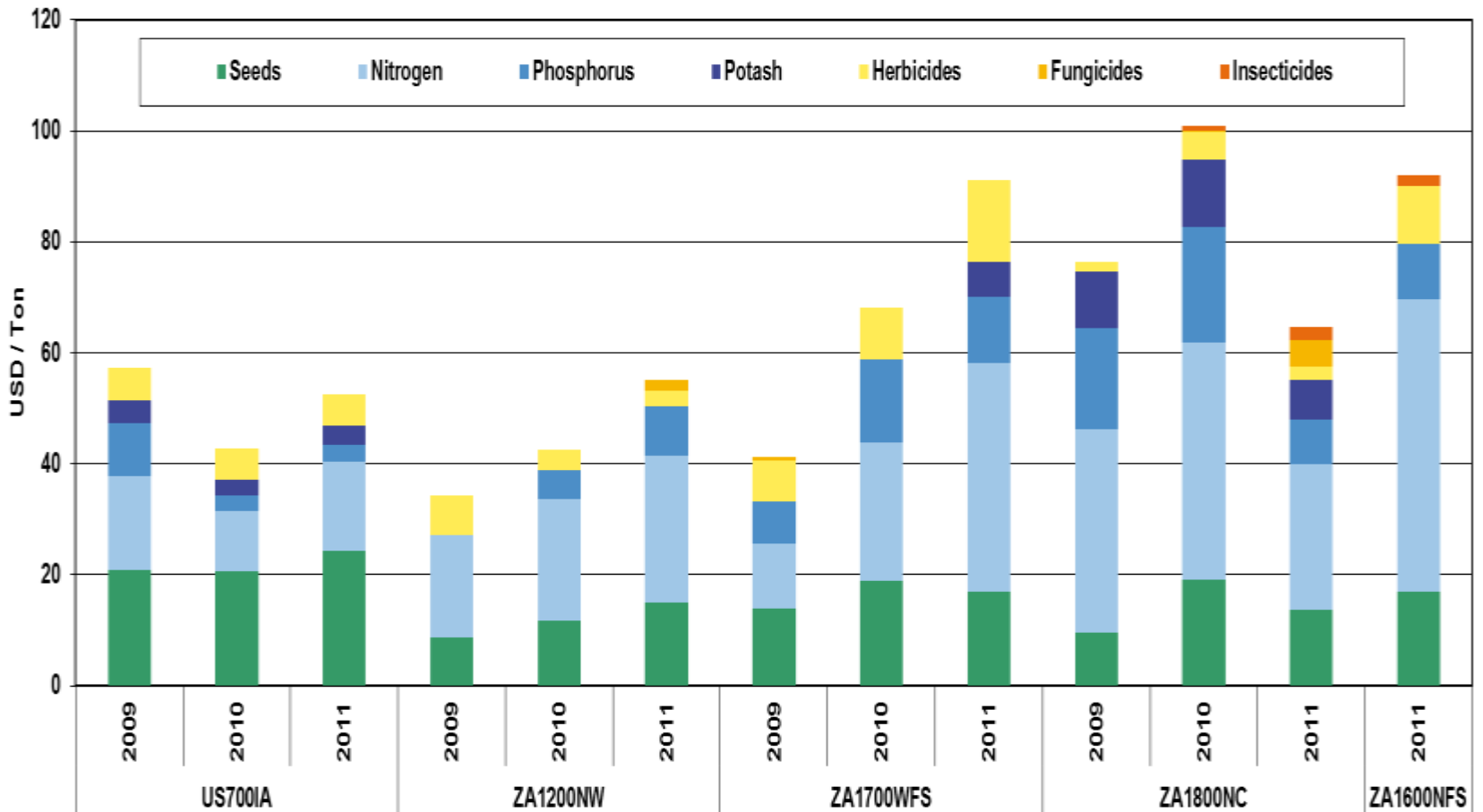


Benchmark: SA & USA

- Given our previous slides, it can be argued that the drivers behind yield may differ significantly & therefore makes it difficult to benchmark production systems.
- However, it is important to determine whether South African maize can compete internationally due to the fact that we compete for the same export markets
- The question: Are we cost effective & competitive?
- The following slides will focus on cost comparisons: USD per ton



Cost comparisons: Direct costs



Cost comparisons: Direct costs

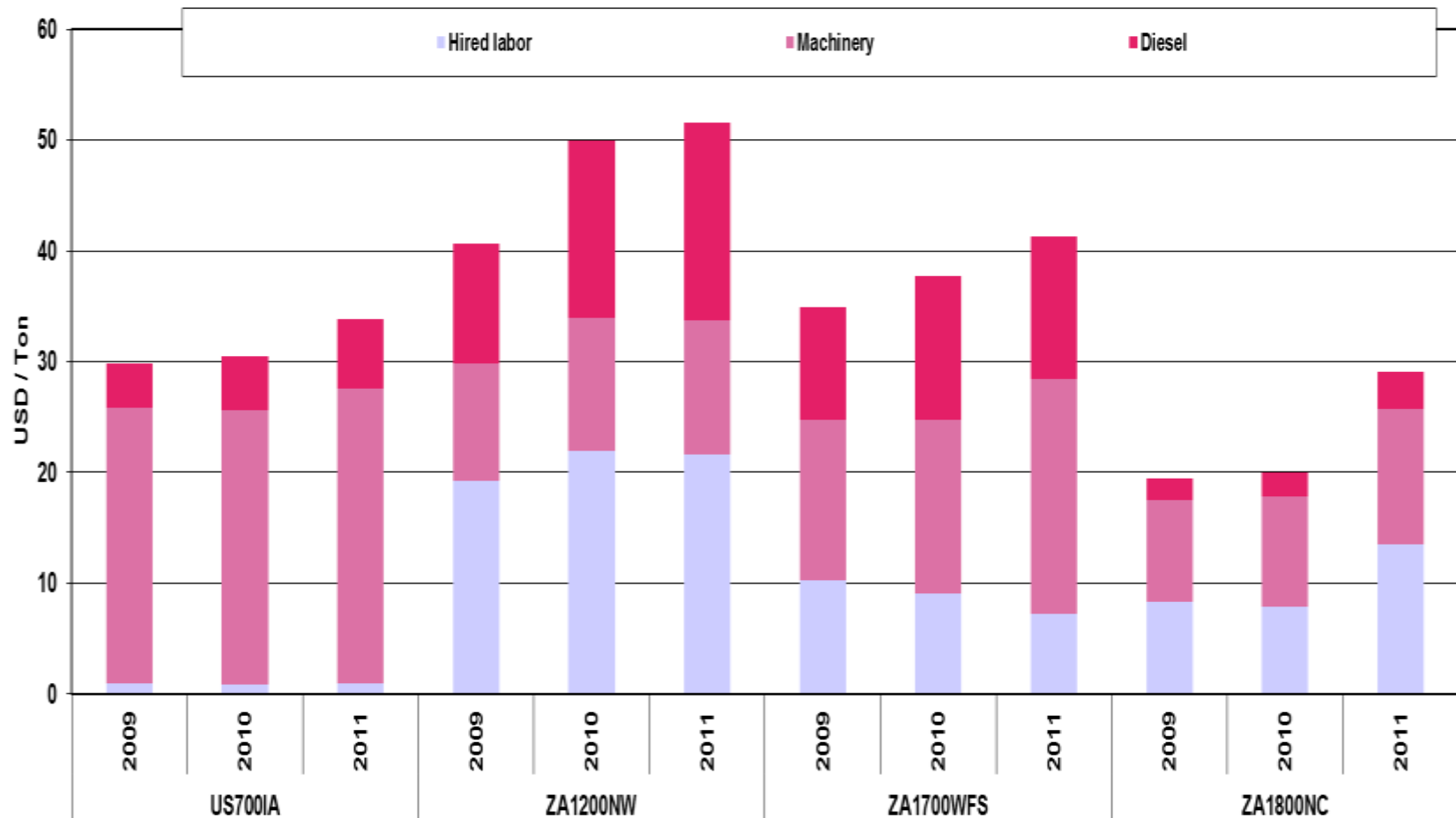
1) US seed cost were very high on a per hectare basis, but relatively on the same level on a per ton basis.

2) The high nitrogen cost for ZA farms on a per hectare basis lead to high per ton cost as well. Yields are not high enough to compensate for the increased expenditure on nitrogen cost. The US farm also benefits from the fact that they have soybeans part of their rotation.

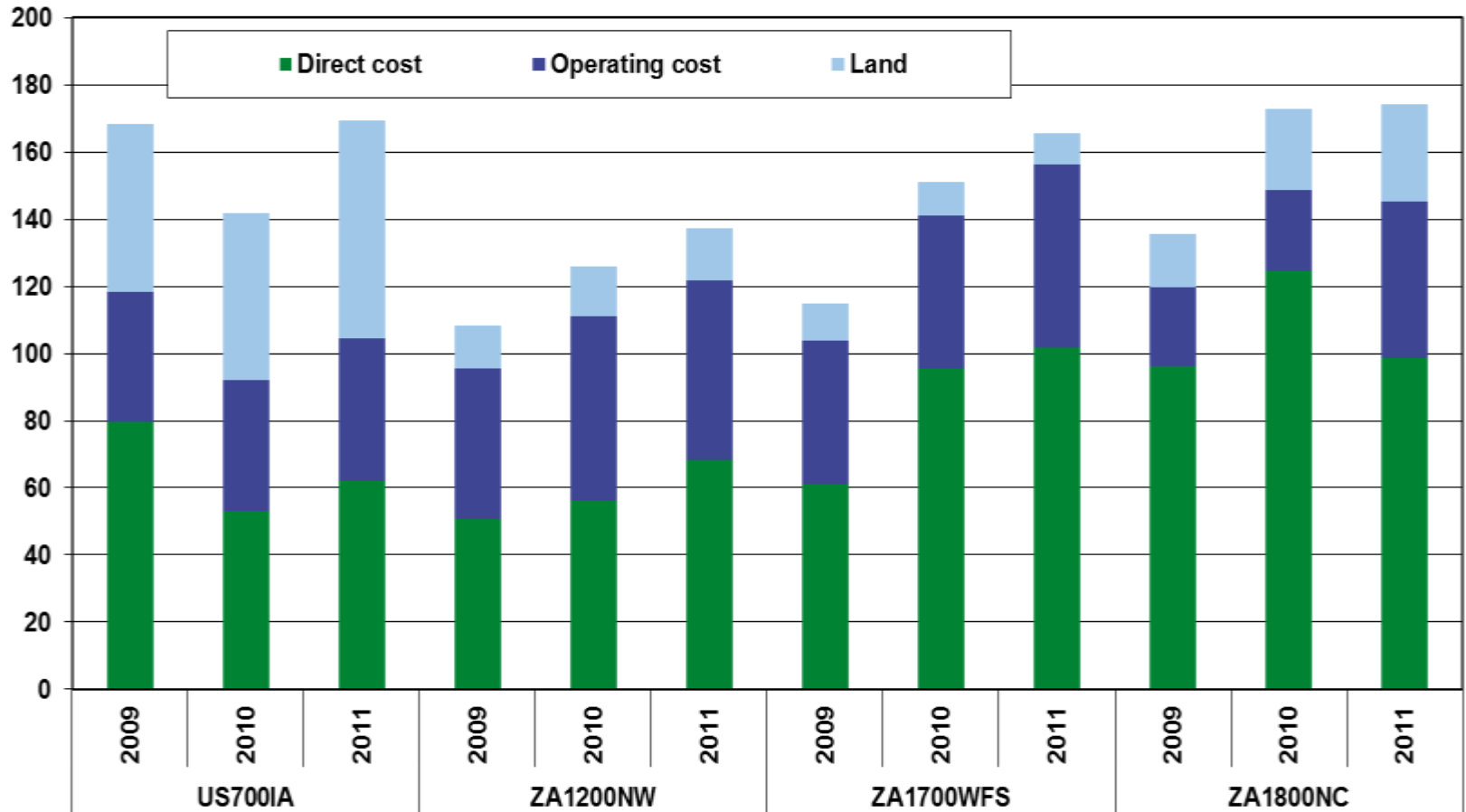
3) Crop protection seems to be as well fairly expensive on a per ton basis for ZA farms.



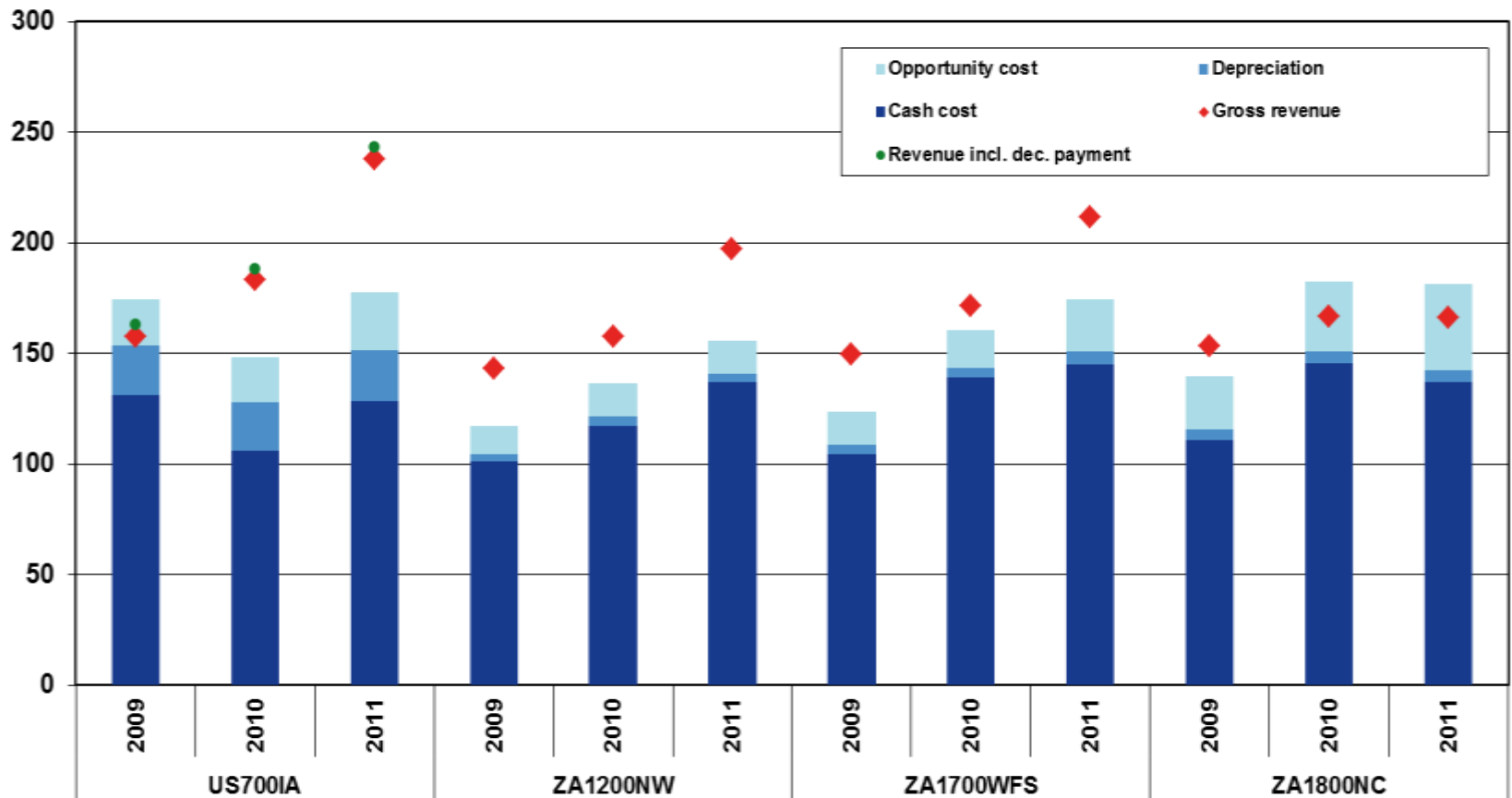
Cost comparisons: Operational costs



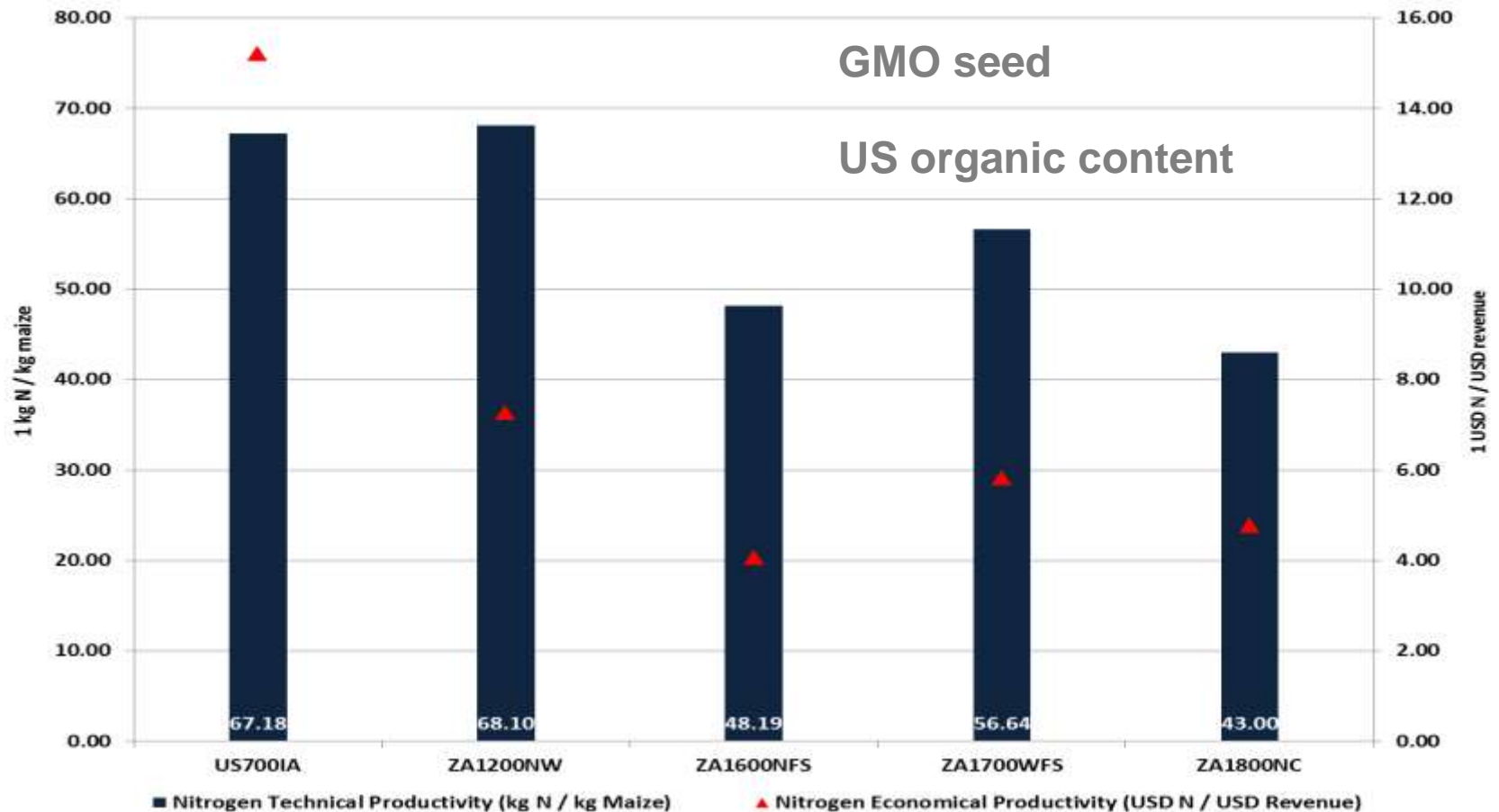
Cost comparisons: All costs



Cost & profitability



Productivity Indicators: Nitrogen



General conclusions:

- Long run seed cost will merge
- Fertilizer: US continue to be lower due to distribution system
- US subsidies will decline for US farmers
- Soils: Higher organic content
- Yields: Continuous yield increases in the US due to hybrids & genetics
- Prices for maize will remain higher due to lower transportation cost & domestic demand in the US (Ethanol & Feed Consumption)





BUREAU FOR FOOD AND AGRICULTURAL POLICY





BUREAU FOR FOOD AND AGRICULTURAL



No-till planting soybeans into corn residue

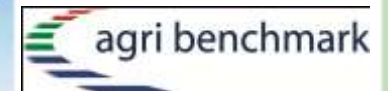


Spring planting

Ten days.....



BUREAU FOR FOOD AND AGRICULTURAL POLICY



Thank You

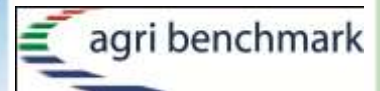
Bureau for Food and
Agricultural Policy

What Questions Do You Have?

BFAP



BUREAU FOR FOOD AND AGRICULTURAL POLICY



Contact:

Divan van der Westhuizen

Bureau for Food and Agricultural Policy (BFAP)

Email: divan.vanderwesthuizen@up.ac.za

www.bfap.co.za

Kelvin Leibold

Farm and Ag Business Mgt. Specialist

Phone: 641-648-4850

E-mail: kleibold@iastate.edu



BUREAU FOR FOOD AND AGRICULTURAL POLICY

