Agribusiness on constraints to agricultural productivity and food security in the era of climate change

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For today…….

- Recognition of the threat of Climate Change
- Food security comments
- Agricultural productivity constraints
- Position of Agribusiness sector

Recognition of the threat of Climate Change

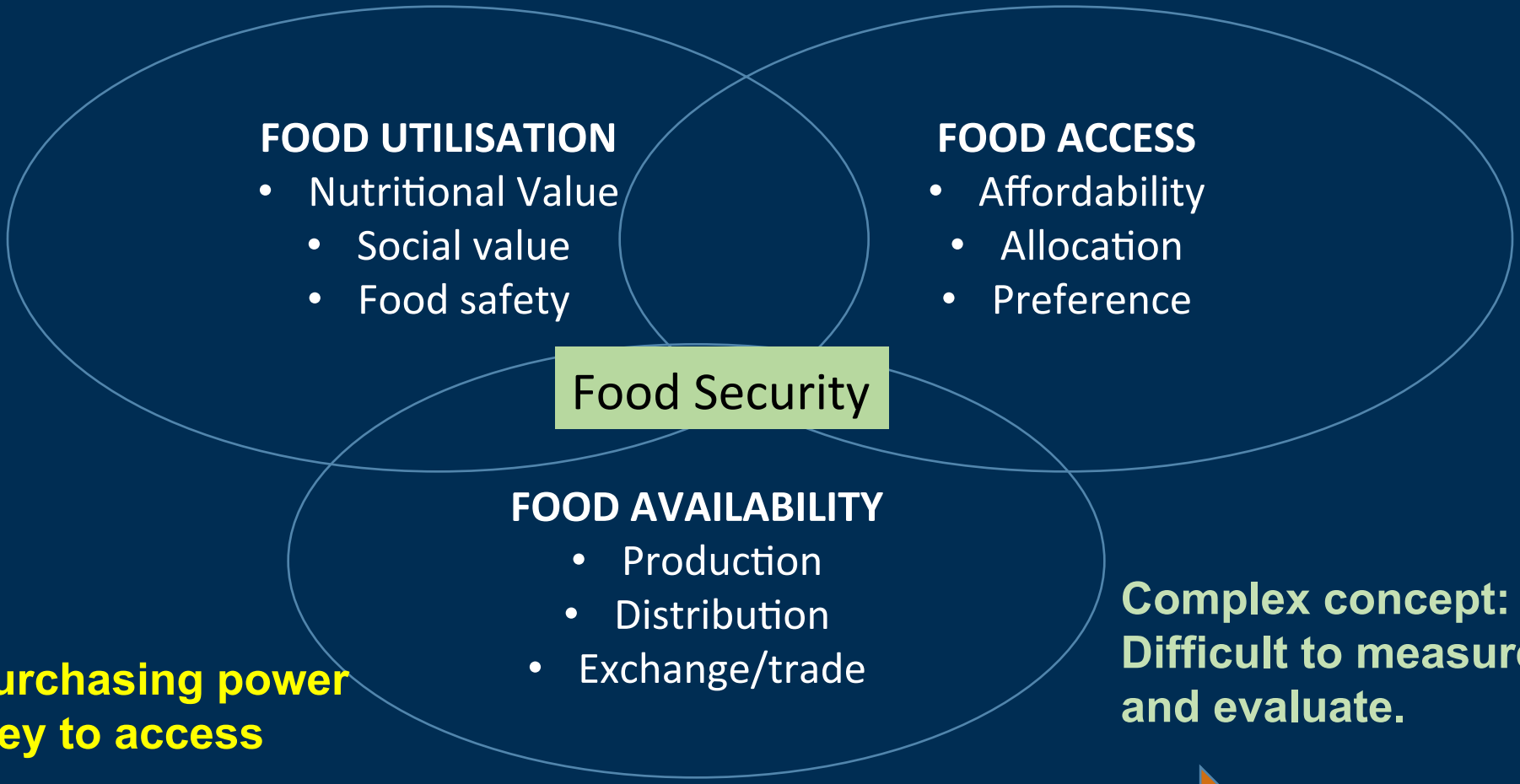
- Agribusiness recognizes that global warming and resultant climate change hold major risks to food security and sustainable agriculture production in many vulnerable regions, including Africa and specifically also South Africa.
- Impacts of climate change on agriculture and agricultural water management remain **uncertain.**
- **How vulnerable are we?**

Food Security Imperative

Many definitions to food security, but the one we use is the FAO definition (World Food Summit, 1996):

"A situation that exists when **all people**, at all times, have **physical and economic access to sufficient, safe and nutritious food** to meet their dietary needs and food preferences for an **active and healthy life**".

Components of Food Security



Purchasing power key to access

Complex concept: Difficult to measure and evaluate.

Stability over TIME

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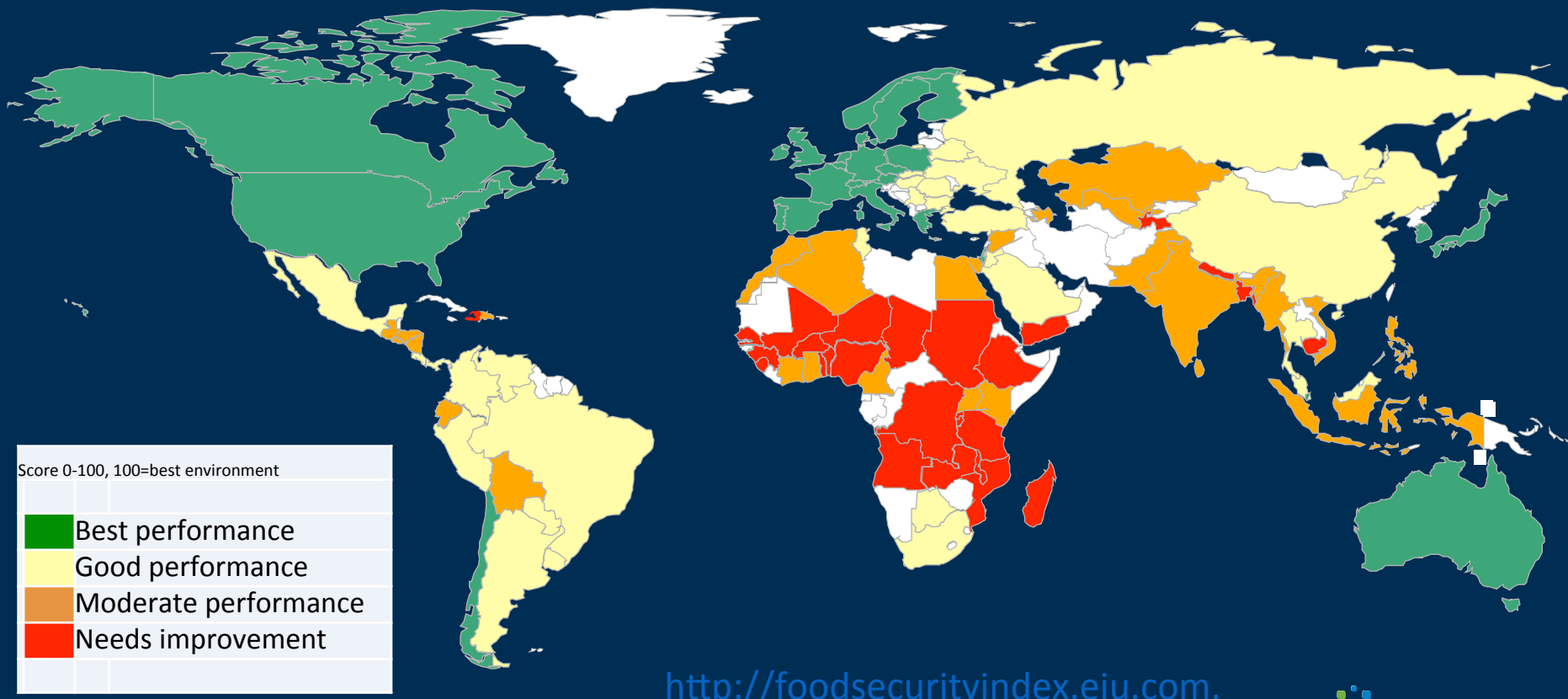
Global Food Security Index



http://foodsecurityindex.eiu.com.

Source: The Economist Intelligence Unit/Du Pont

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Index measures risks and factors that drive food security

Affordability

Food consumption as a share of household expenditure
Proportion of population under global poverty line
Gross domestic product per capita
Agricultural import tariffs
Presence of food safety net programs
Access to farmer financing

Availability

- Sufficiency of supply
- Public expenditure on agricultural R&D
- Agricultural infrastructure
- Volatility of agricultural production
- Political instability
- Corruption
- Urban absorption capacity

Quality and safety

- Diet diversification
- Nutritional standards
- Micronutrient availability
- Protein quality
- Food safety

Agricultural productivity constraints

Agricultural productivity

- **Agricultural productivity** is measured as the ratio of agricultural outputs to agricultural inputs.
- Output is usually measured as the **market value** of final output. This output value may be compared to many different types of inputs such as labour, land (yield), water (WUE) and even fertilizer (NUE). These are partial measures of productivity.
- Agricultural productivity may also be measured by what is termed total factor productivity (TFP). This method of calculating agricultural productivity compares an index of agricultural inputs to an index of outputs.
- Changes in TFP are usually attributed to technological improvements, often in terms of machinery, genetics, ag-chemicals, etc.

Agricultural productivity

- In a competitive, open market global food system farmers (and agribusinesses) need to produce more with less, and the value of what is produced must exceed the value of inputs and resources used.
- The open, competitive market system drives efficiency and ensures the optimal use of scarce resources to be competitive in the market.
- As productive resources become more scarce, they also become more expensive due to growing demand.

Agricultural productivity constraints

1. Policy and legislation is needed to create enabling environment for a competitive , open market agro-food system for private sector participation.
2. Support systems from government ito training and skills development, R&D, extension and technology transfer, SPS & Biosecurity matters, trade agreements, disaster relief, regulation of chemicals, land use legislation, etc.
3. Technology development to ensure greater efficiency of input use.

Agricultural productivity constraints (Cont.)

4. Production system development, e.g. conservation agriculture, biological farming, etc.
5. Infrastructure and cost, including energy access and cost, transport/ logistics efficiency, internet access, etc.
6. Market access, both input and output markets, and integration in value chain.
7. Access to and cost of capital.

Conclusion

1. Considerably more research required to better understand impact of climate change in different production regions and impact on production systems.
2. Development of adaptation strategies necessary.
3. Education on the “state of knowledge” is needed.
4. Adaptation efforts need to rest on a sound economic basis.
5. Analysis on the costs and benefits of adaptation in key sectors remains important. PPP recommendation.
6. Agribusiness has the potential to deliver concrete and significant solutions, but government will need to engage constructively with business.

Thank you

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