

# Water security and water governance in South Africa

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- ▶ Agricultural success depends
  - ▶ Less on people, land and water
  - ▶ More on money, management and markets
- ▶ But 'water security' underpins agriculture
- ▶ And water can provide some useful perspectives

**THE WORLD THROUGH THE LENS OF WATER**

# *Water security:*

*“...the reliable availability of an acceptable quantity and quality of water for health, livelihoods, ecosystems and production, coupled with an acceptable level of water-related risks to people, environments and economies.”*

## *Where does AGBIZ fit?*

# Multiple competing water uses

Irrigation

Flood  
management


Ecosystem  
protection



Industrial and  
urban use

Social, environmental  
and international flows

# AGBIZ'S WATER CHALLENGES: DOES SA HAVE CAPACITY TO MANAGE?

- ▶ Increasing demand for water, aggravated by climate uncertainty
    - ▶ Agriculture at back of queue
  - ▶ Opportunities as well as challenges:-
    - ▶ Globally, water for food will be resolved through trade
  - ▶ Specific South African challenges:-
    - ▶ More transformation and inclusion with less water
    - ▶ 'Sustainable intensification'?
    - ▶ Will need active engagement and intervention
- 

# Climate variability and change: An additional challenge



- ▶ Predictions of rainfall are weak
  - ▶ But higher temperatures, more evaporation, reduced infiltration
- ▶ Floods and droughts more frequent?
  - ▶ Or just more intense?
- ▶ More intense storms may increase river and groundwater flow?
  - ▶ Storage important but greater evaporation ...
- ▶ Prediction for drier west robust; east and centre less so?
- ▶ Lots of 'normal' uncertainty and variability

**Climate: plan for more uncertainty**

# Water demand will grow – irrigation's share will decline

Overall water demand is projected to increase by some 55%, due to growing demand from manufacturing (+400%), thermal electricity generation (+140%) and domestic use (+130%) (Figure 0.3). In the face of these competing demands, **there will be little scope for increasing water for irrigation under the Baseline. The Baseline shows some reduction in water for irrigation.** This reflects no increase in irrigated land and significant improvements in efficiency. If these do not eventuate, competition for water will be even more acute.



**OECD Environmental  
Outlook to 2050**

THE CONSEQUENCES OF INACTION





*Not new to South Africa ....*

**Food production and the use of water:**

In regard to most of the important agricultural and horticultural products the Republic is self-sufficient. There is every reason to believe that normal technological advances in farming, supported by research and extension services provided by state and private enterprise, will suffice to maintain at least the present degree of self-sufficiency till the end of the century without the need of any additional dryland or irrigation land for raising more of these products. In respect of a few products such as wheat (and also rice, of which little is produced at present) it will evidently be necessary to continue to rely to some extent on importation. If State research and extension services were to lay greater emphasis on these products, however, it is possible that even in these products a greater measure of self-sufficiency could be achieved

than at present. This applies particularly to wheat. On the other hand, **it seems fairly certain that importation will in general be more advantageous than attempts to raise local productivity if this entails opening up new irrigation land.** In regard to strategic considerations it must be recognised that emergency situations effect not only

importation sources but also export channels. In such events, land normally utilised for export production would become available to overcome shortage in specific products.

**REPORT**  
*of the*  
**COMMISSION OF ENQUIRY**  
*into*  
**WATER MATTERS**



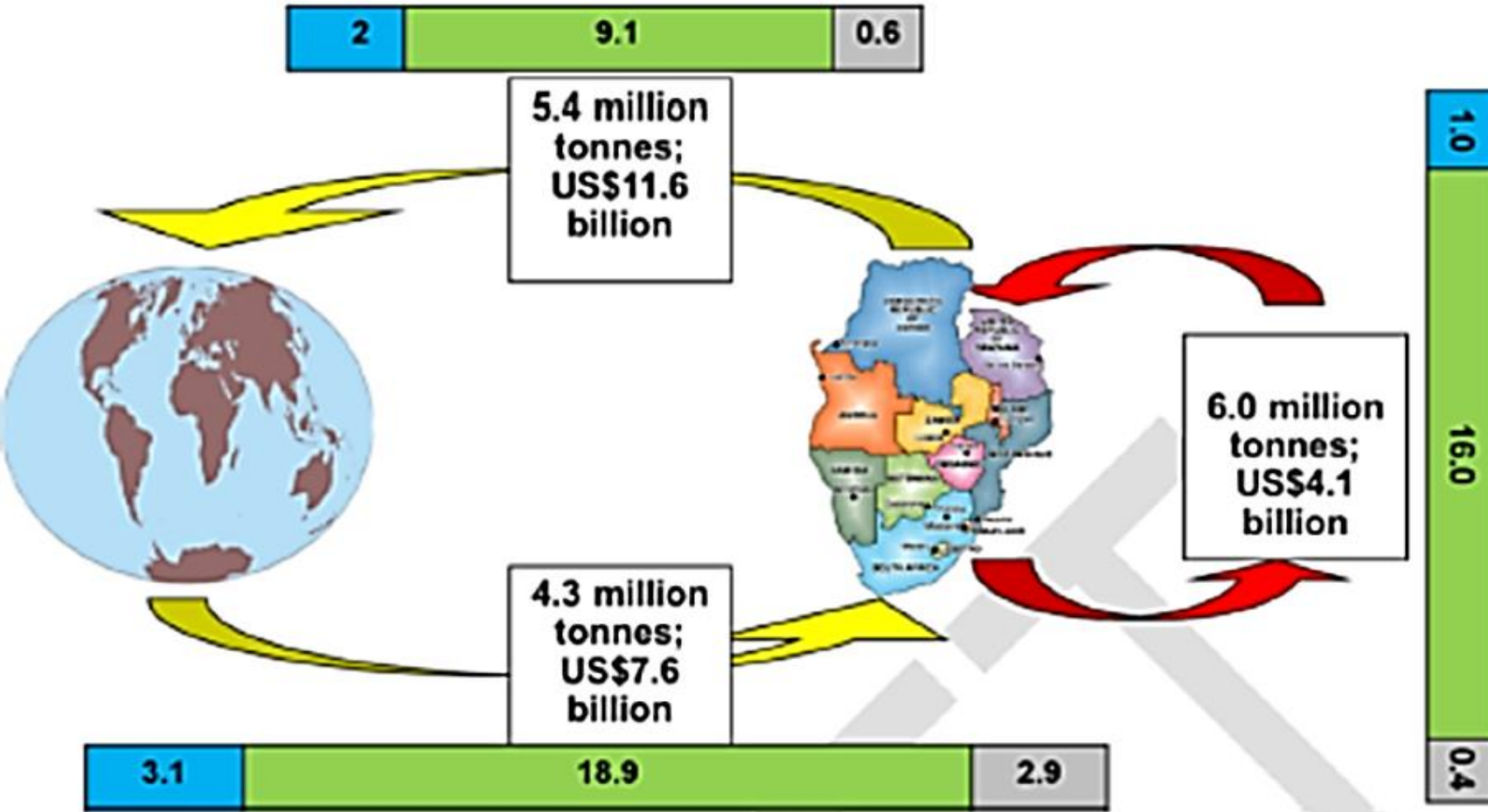
REPUBLIC OF SOUTH AFRICA

R.P. 34/1970



**THE 'VIRTUAL WATER' TRADE ....**

# SADC's agricultural trade with the World



**Water rich to water poor**

Figure 3.2 The imports and exports of agricultural products (in total) in 2012 amongst the continental SADC countries, and between these and the rest of the world. Tonnages and values are shown in text boxes; the accompanying blue, green and grey virtual water transfers are shown by 'colour' in cubic kilometres

# SADC'S GLOBAL TRADE

CURRENTLY,  
SADC IMPORTS RICE,  
EXPORTS FRUIT AND  
TOBACCO ....

MAKES SENSE?

(memo to Ministers:  
must make more fertilizer!)

## SADC Trade in Selected Agricultural Products, Inputs

|                 |      | IMPORTS      | EXPORTS | BALANCE |
|-----------------|------|--------------|---------|---------|
| Product / Input | Year |              |         |         |
| Cassava         | 2009 | 0            | 0       | 0       |
|                 | 2010 | 0            | 0       | 0       |
| Maize           | 2009 | 210          | 410     | 200     |
|                 | 2010 | 130          | 278     | 148     |
| Rice            | 2009 | 800          | 34      | -766    |
|                 | 2010 | 737          | 36      | -701    |
| Soya Bean       | 2009 | 6            | 76      | 70      |
|                 | 2010 | 14           | 60      | 46      |
| Sugar Beans     | 2009 | 62           | 76      | 15      |
|                 | 2010 | 67           | 91      | 24      |
| Fruit           | 2009 | 152          | 1822    | 1671    |
|                 | 2010 | 182          | 2367    | 2185    |
| Cotton          | 2009 | 10           | 30      | 20      |
|                 | 2010 | 1            | 37      | 36      |
| Tobacco         | 2009 | 299          | 1422    | 1123    |
|                 | 2010 | 343          | 771     | 427     |
| Fertilizers, m  | 2009 | 1006         | 270     | -735    |
|                 | 2010 | 1013         | 345     | -668    |
| Pesticides      | 2009 | 188          | 67      | -121    |
|                 | 2010 | 206          | 47      | -159    |
|                 |      | Million \$US |         |         |

# SADC:- WHO HAS THE WATER?

| Country      | Water Availability |
|--------------|--------------------|
| Angola       |                    |
| Botswana     |                    |
| Lesotho      |                    |
| Malawi       |                    |
| Mozambique   |                    |
| Namibia      |                    |
| South Africa |                    |
| Swaziland    |                    |
| Zambia       |                    |
| Zimbabwe     |                    |
|              | M3/p/yr            |

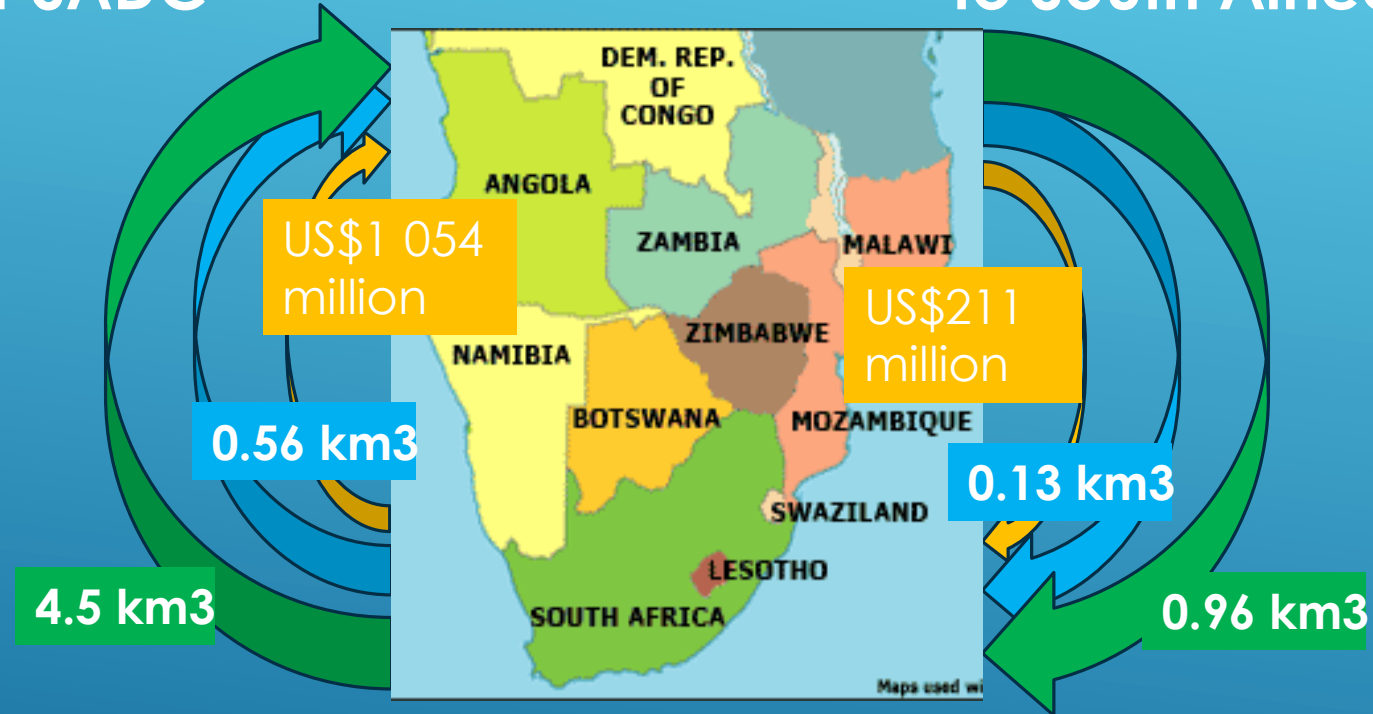


| Country      | Cubic Metres/person |
|--------------|---------------------|
| South Africa | 1110                |
| Malawi       | 1400                |
| Zimbabwe     | 1550                |
| Lesotho      | 1680                |
| Swaziland    | 4160                |
| Botswana     | 6820                |
| Namibia      | 8810                |
| Zambia       | 9630                |
| Angola       | 10510               |
| Mozambique   | 11320               |

# INTRA-SADC AGRICULTURAL TRADE

South Africa  
to other SADC

Other SADC  
to South Africa



**Water poor to  
water rich**

South Africa's net exports:  
3.50km<sup>3</sup> green water  
0.43km<sup>3</sup> blue water  
US\$843 million

# Regional agricultural cooperation is a no-brainer (in water terms!)

- Irrigation in SA uses 60% of water
- Much for internationally “rain-fed” crops
- “High-potential, rain-fed cropping land”:-

|              |   |                        |
|--------------|---|------------------------|
| Zambia       | - | 11,1 million ha        |
| Mozambique   | - | 8,8 million ha         |
| Zimbabwe     | - | 6,3 million ha         |
| Malawi       | - | 0,4 million ha         |
| <b>Total</b> | - | <b>26,6 million ha</b> |



REPORT NO: P RSA 000/00/12510

## An Assessment of Rain-Fed Crop Production Potential in South Africa's Neighboring Countries

MAY 2010



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# HOW AGBIZ COULD RESPOND ....





“the goal of producing more food with less impact on the environment, intensifying food production while ensuring the natural resource base on which agriculture depends is sustained, and indeed improved, for future generations.”

- ▶ In a South African context:
- ▶ Should also support broader social goals
- ▶ ‘developmental intensification’ would
  - ▶ Bring more people into agribusiness
  - ▶ Participating on more equitable terms in value chains
  - ▶ Making more productive use of water (not just land)

**“SUSTAINABLE INTENSIFICATION”**

“As the primary economic activity in rural areas, agriculture has the potential to create close to 1 million new jobs by 2030, a significant contribution to the overall employment target. To achieve this, South Africa needs to:

Expand irrigated agriculture. Evidence shows that the 1.5 million hectares under irrigation (which produce virtually all South Africa's horticultural harvest and some field crops) can be expanded by at least 500 000 hectares through the better use of existing water resources and developing new water schemes.”

*National Development Plan 2012*

**‘SUSTAINABLE INTENSIFICATION’**

- ▶ Water allocation that prioritises jobs & production
- ▶ CMAs that lead local management and development
- ▶ Implementation of the National Water Act
  - ▶ Build CMAs, develop local water strategies
  - ▶ Make water allocation process work
  - ▶ With strategies that support inclusion

**WHAT IS NEEDED FROM WATER FOR  
'SUSTAINABLE INTENSIFICATION'?**

- ▶ **Globally, water allocated away from agriculture to industry and urban**
- ▶ **No need for more water for food to 2050!**
- ▶ **Agriculture will just move elsewhere?**
- ▶ **Assumes effective demand from importers**
- ▶ **Similar to SA's 1970 assumptions ....**

**GLOBAL CONCLUSIONS – ADJUSTMENT THROUGH TRADE**

▶ **Water risks in SA will increase**

- ▶ Available resource shared between more users
- ▶ Allocation must meet developmental priorities

▶ **Need active participation in management**

- ▶ Framework is there, needs to be used
- ▶ Catchment mgmt. agencies opening the door
- ▶ Businesses, alone and in association, must engage

**... or risks will come home to roost**

**SA'S EXTRA CHALLENGES: TRANSFORMATION, INCLUSION**

- ▶ **Sharing the limited water available will be a challenge**
  - ▶ **Need to increase water's productivity**
  - ▶ **(more jobs, income and crops per drop)**
  - ▶ **“Sustainable intensification” a useful guiding principle, water efficiency an important SA element**
  - ▶ **AGBIZ must also help to bring more people into the value chain, on an equitable basis**
  - ▶ **Participation in water management part of the process**
  - ▶ **Meanwhile, shift in staples to the SADC region?**

**A WATER AGENDA FOR AGBIZ?**



**Good luck!**