FOOD SECURITY IN SOUTH(ERN) AFRICA
- PRODUCTION, RISKS & THREATS

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Already Defined for Us

- Food Security…
- Right to Food Security…
- Undernourishment…
- Chronic and Seasonal Hunger…
- Per Capita Calorie Intake…

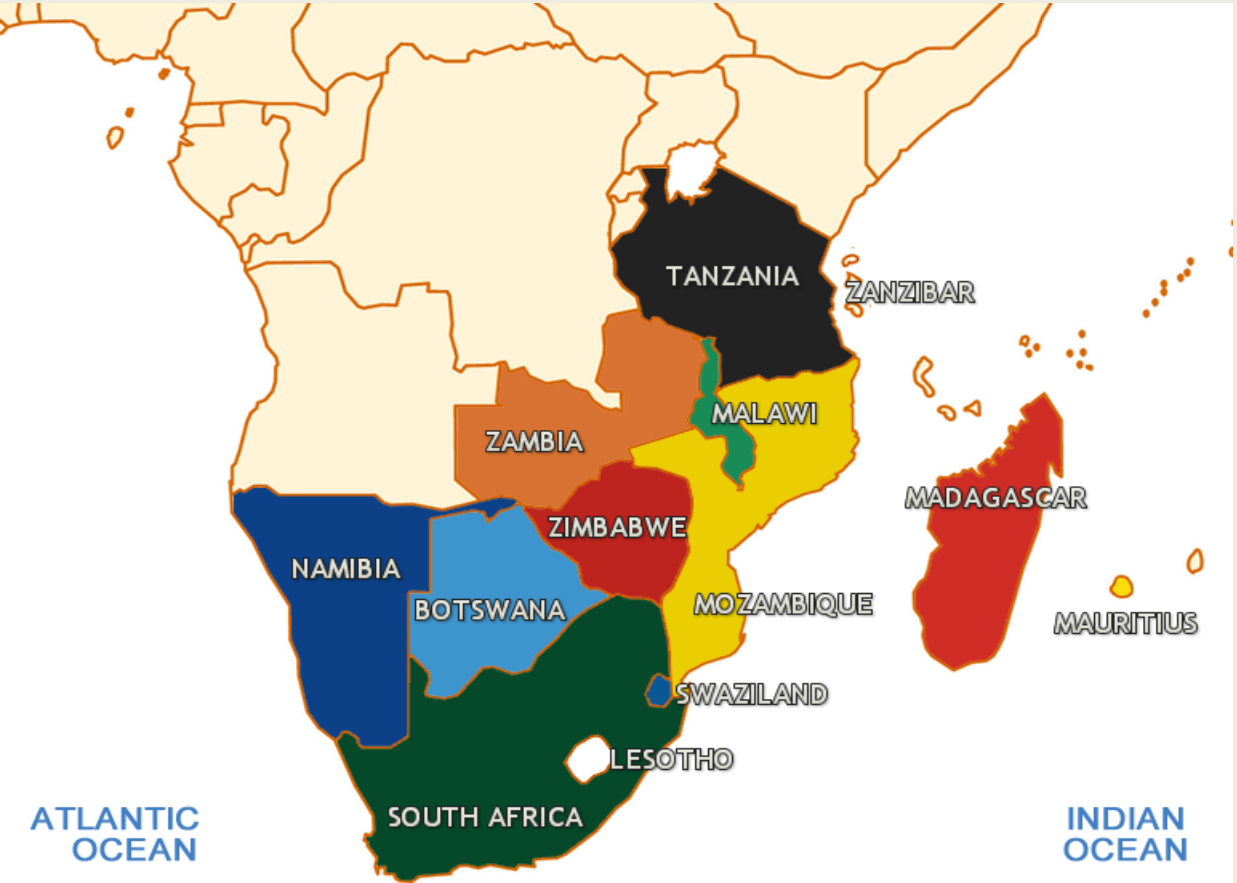
Food Security in Africa…1

- Food security (horror) stories out of Africa…
  - ***Almost 30% of all hungry people are in SSA…***
  - Horn of Africa: ***Hunger threat widens… deepens in Horn of Africa…***
  - West Africa: ***Millions face starvation in West Africa…***
  - Central Africa: ***Ten million face hunger in Central Africa…***
  - Southern Africa: ***Hunger in Southern Africa – Can famine be averted?***
- **Are we surprised…?**
  - What is the truth on the ground…?

Food Security in Africa…2

- **The question is why?** The answers are many & varied…
  - Geo-political
    - War, displacement, …
  - Geo-physical
    - 'Poor' resource base in land, water, etc (?)
    - Natural calamities – floods, droughts, locusts,…
  - Production
    - Sub-optimal production practices, low resilience…
  - Social capital
    - Limited ability to adapt, …
  - Global economics
    - Land leases (international), global economic meltdown, food prices,…
- **But more importantly, what can we do or can be done?**

Southern Africa in Perspective



Southern Africa Region

- **Population base**
  - Almost 120 million
  - ≈1.43% growth rate
  - Predominantly **rural based**
- **GDP**
  - Approximately US$237 billion
- **Economies**
  - **Agro-based** (except South Africa & Botswana)

- **Implications**: If agriculture fails, there are food security problems

Southern Africa Region…1

Country	Population (million)	Population Growth Rate (%)	Gross Domestic Product (USD billion)	Agriculture Sector Contribution to GDP (%)
Botswana	1.9	1.94	8.7	1.6
Lesotho	2.1	0.12	1.4	7.1
Malawi	15.9	2.76	1.9	30.1
Mozambique	21.7	1.79	5.5	23.4
Namibia	2.1	0.95	5.5	9.6
South Africa	49.9	0.92	201.4	3
Swaziland	1.37	1.20	2.4	8.6
Zambia	11.9	1.63	5.4	16.7
Zimbabwe	12.0	1.53	4.7	18.1
Total	118.87	1.43	236.9	-

Agricultural Production

- **Agricultural production**
  - Predominantly **rainfed agriculture**
    - Low levels of production, e.g. 0.5 t/ha cereal yield (Rockstrom, 2003)
    - Need to boost productivity of rainfed agriculture in region
  - Dominant to rural livelihoods

- **Implications**: Rural communities generally exposed to food security problems if agriculture under performs

- **Irrigated agriculture**
  - Limited role in most countries, except South Africa
  - Huge unexploited potential e.g., Mozambique

- **Implications**: Food security problems will persist

Production Base … Land

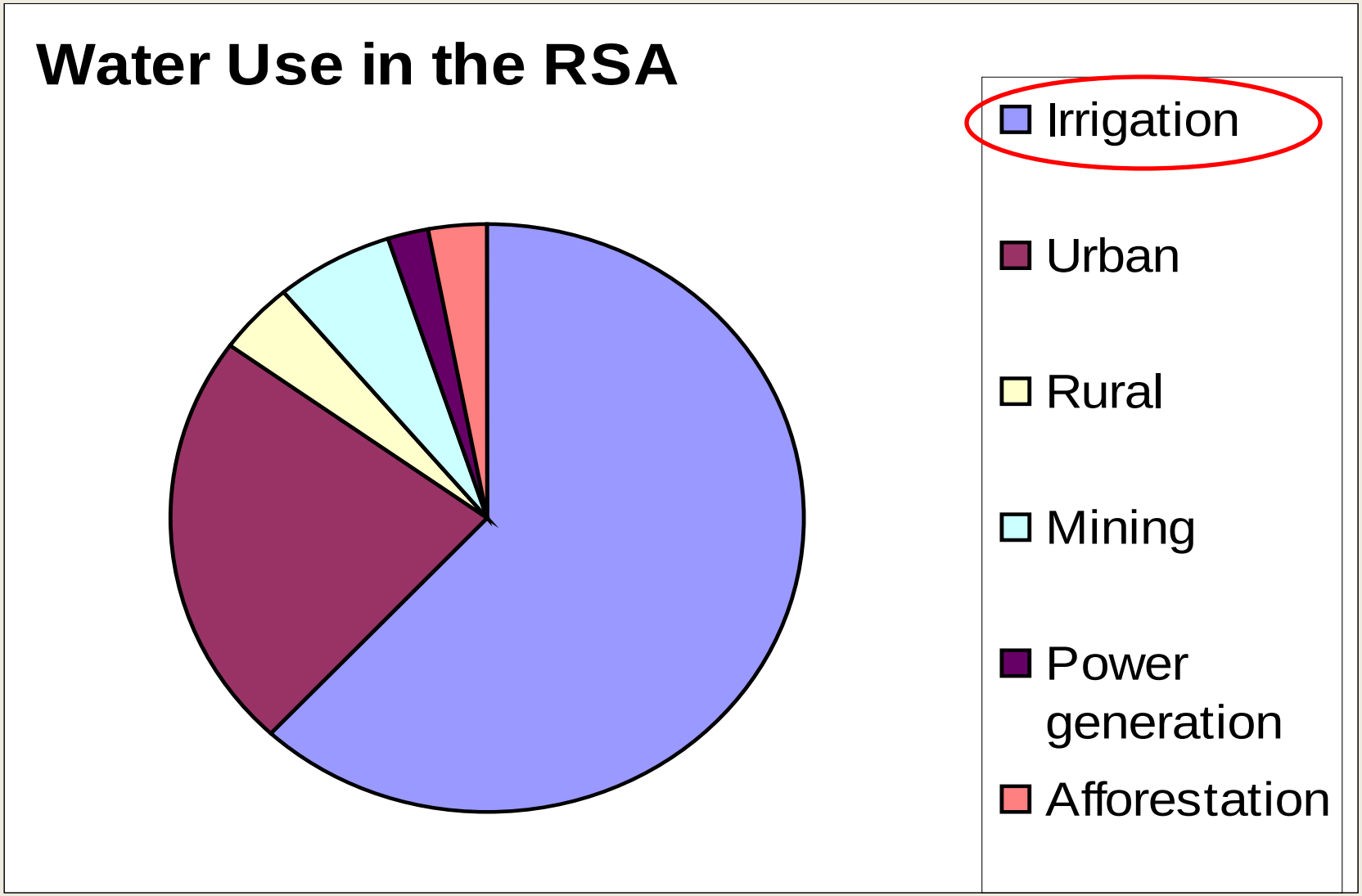
Country	Cultivated Area (1000 ha)	Irrigated Area (1000 ha)	Irrigated Area as Proportion of Cultivated Area (%)	Irrigated Area as Proportion of Potential Irrigable Area (%)
Botswana	252	1.44	0.59	11
Lesotho	359	2.64	0.87	21
Malawi	3622	56.39	1.90	35
Mozambique	4750	118.12	2.51	4
Namibia	808	7.57	0.92	16
South Africa	15450	1498.00	9.53	100
Swaziland	192	49.84	25.96	53
Zambia	2384	155.91	7.71	30
Zimbabwe	3850	173.51	5.10	47
Total	31667	2063.42		

Water for Agriculture

- **Region is water stressed**
  - Physical water scarcity, e.g., South Africa
  - Economic water scarcity, e.g., Mozambique
- **Water abstractions for agriculture**
  - **Agriculture dominates**
  - > 60% of all freshwater resources for most countries in the region (except Botswana & Lesotho)

- Implications: Water stresses will impact directly on agriculture → food production → food security
- **BUT**
  - ***"There is adequate water in major river basins for food production…"*** (CPWF-CGIAR 2011)

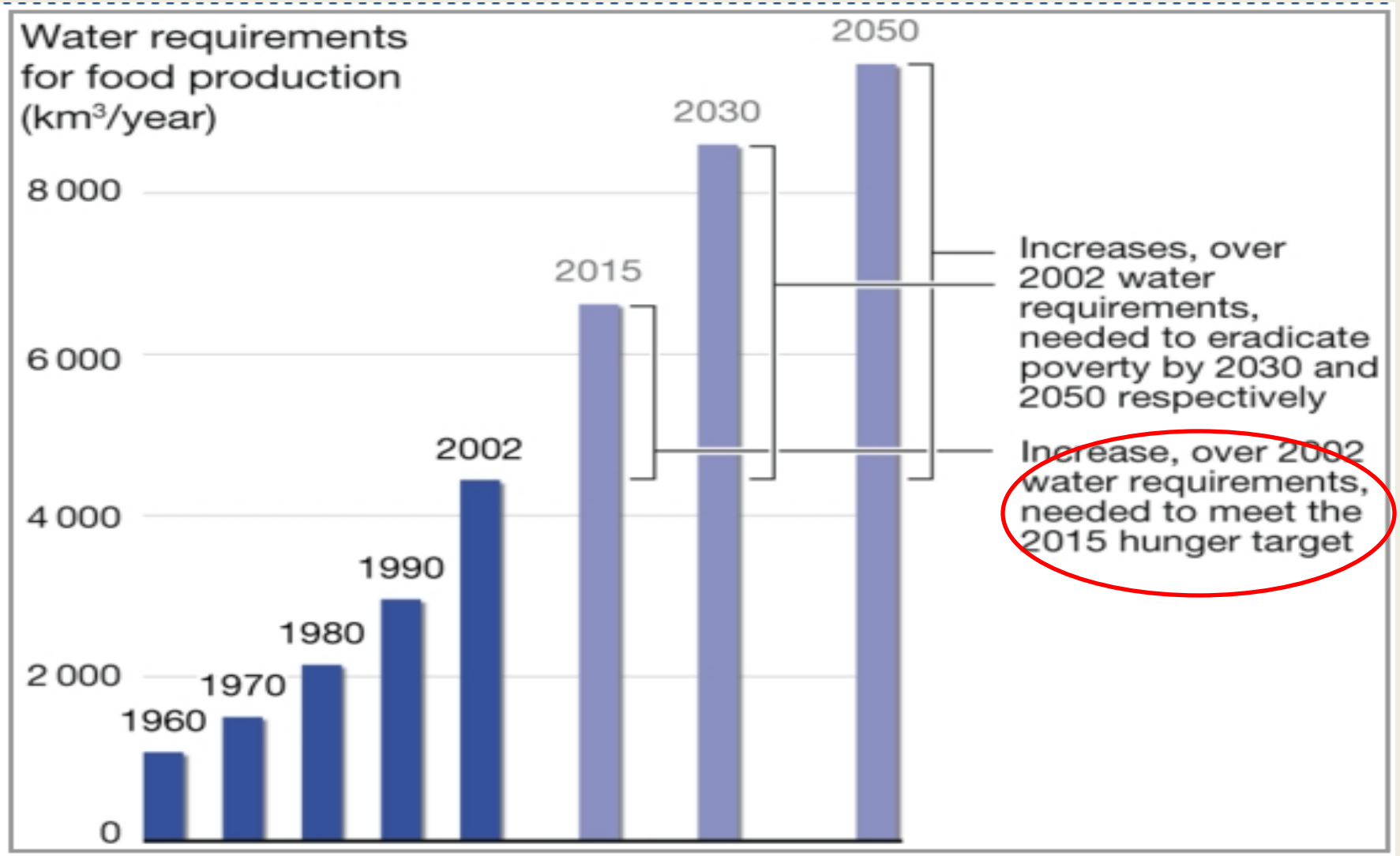
Water Use in South Africa



Production Base…Water

Country	Total Renewable Water Resources (km^3)	Total Freshwater Withdrawals (km^3/yr)	Freshwater Withdrawals by Agriculture (km^3/yr)	Freshwater Withdrawals by Agriculture (%)
Botswana	12.24	0.30	0.08	26.7
Lesotho	3.02	0.05	0.01	20.0
Malawi	17.28	0.97	0.81	83.5
Mozambique	217.1	0.74	0.55	74.3
Namibia	17.72	0.30	0.21	70.0
South Africa	50.0	12.5	7.84	62.7
Swaziland	4.51	1.04	1.01	97.1
Zambia	105.2	1.74	1.32	75.9
Zimbabwe	20.0	4.21	3.32	78.9
Total	447.1	21.85	15.15	-

Water requirements for Food Security

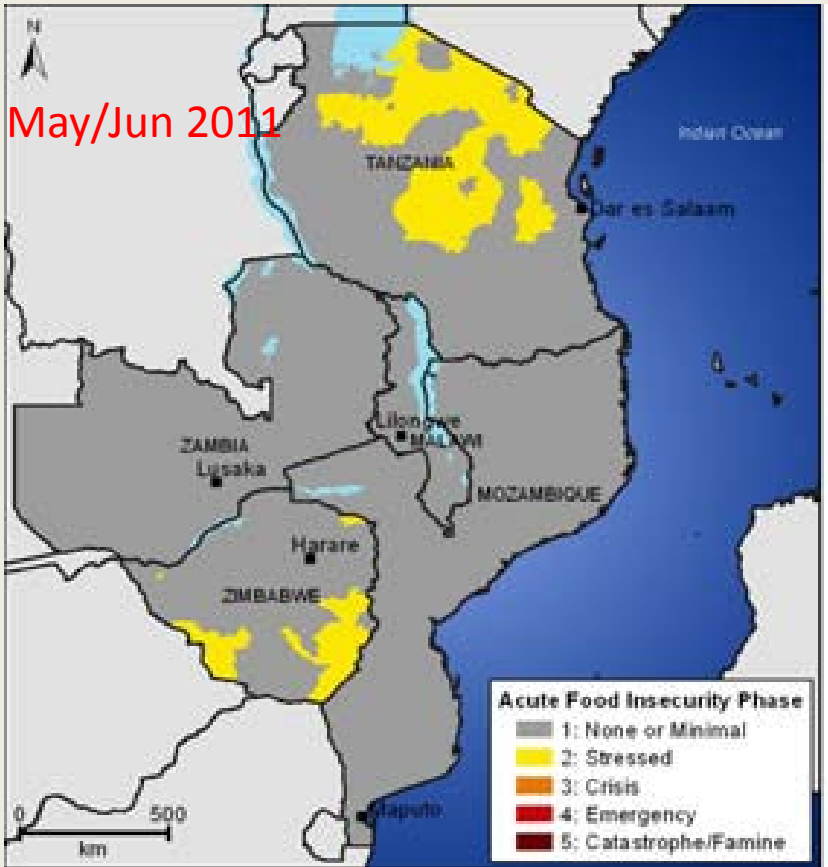


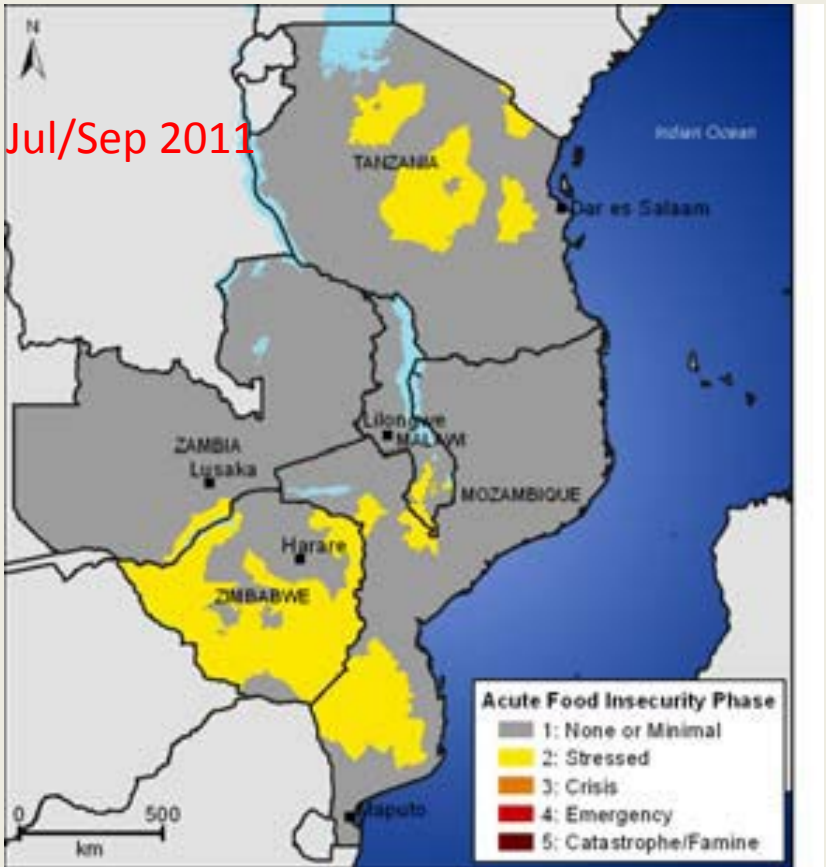
Southern Africa – Major Agricultural Products

Country	Major Agricultural Products
Botswana	Cattle (meat), milk, game (meat), small grain
Lesotho	Potatoes, milk, game (meat), wool, maize
Malawi	Potatoes, tobacco, maize, cassava
Mozambique	Cassava, cotton, maize, tobacco, sugar cane
Namibia	Cattle, roots & tubers, milk
South Africa	Meat, chicken, maize, grapes, sugar cane
Swaziland	Sugar cane, cattle (meat), milk
Zambia	Maize, cattle (meat), tobacco, cotton
Zimbabwe	Cattle (meat), tobacco, cotton, sugar cane

Food Security in Southern Africa…1

- Food security outlook **positive** for 2011 – 2012 (SADC-NEWUs) (Fewsnet, 2011)





Food Security in Southern Africa…2

- **But food security problems exist in the region**
  - Zimbabwe, Mozambique, Zambia, Namibia
    - Floods, droughts, government policies, …
    - E.g. Mozambique rated 2nd country in the world most prone to natural disasters (after Haiti!)

Food Security in Southern Africa…3

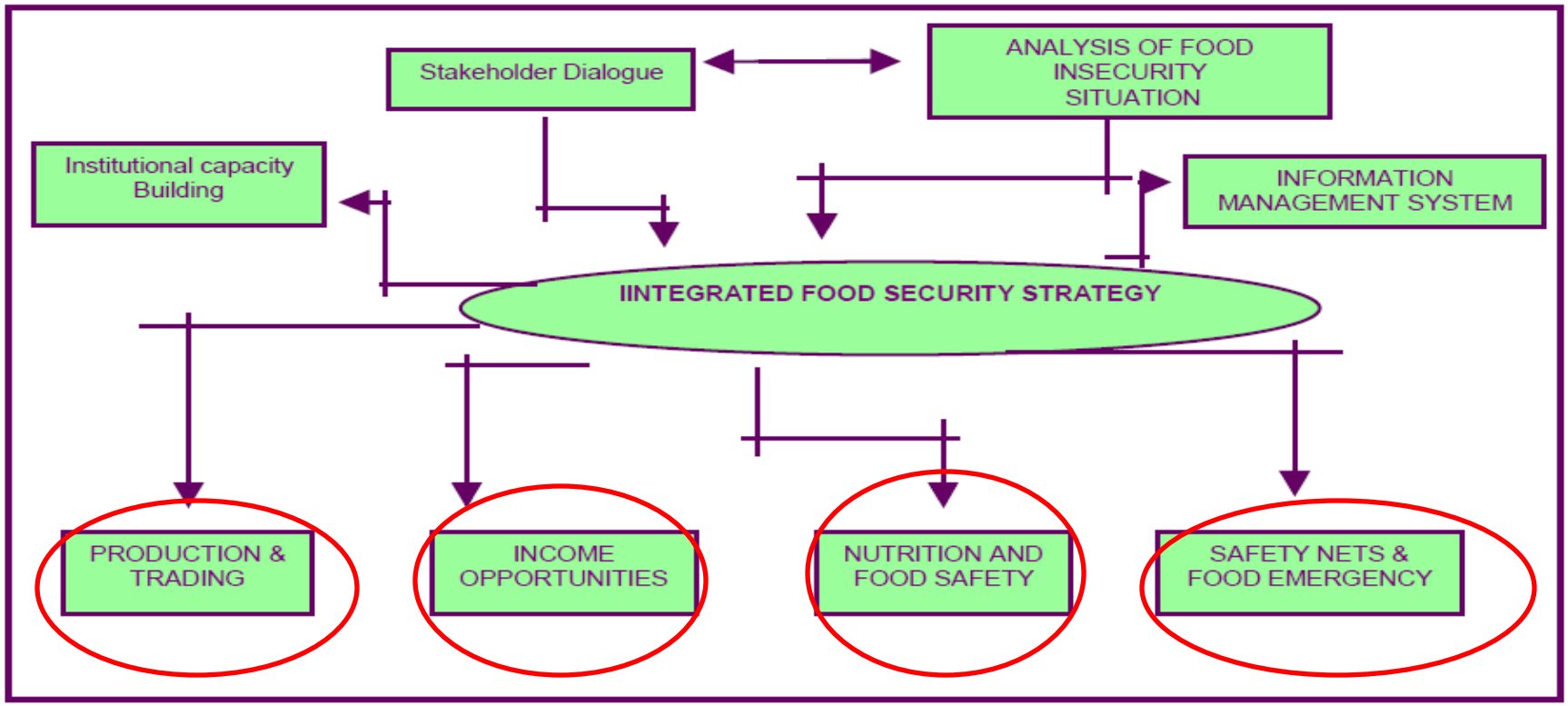
- **Food Security Score (FSI)**
  - Southern Africa has 3 countries in the top 15 highest risk countries
- **Global Hunger Index** (GHI)
  - Moderate – South Africa
  - Serious – Botswana, Lesotho, Malawi, Namibia & Swaziland
  - **Alarming** – Mozambique, Zimbabwe & Zambia

Food Security in South Africa…1

- **Food Production**
  - 30 000 commercial farmers service SA food needs!
- **National Picture**
  - **Global Hunger Index**: Low to Moderate (7.3) (IFPRI, 2010)
  - Prevalence of Undernourishment: very low (<5%) (FAO, 2010)
- **Regional & Provincial Picture**
  - Inadequate because of localised problems
    - e.g., internal distribution, drought, floods
- **Food Security**
  - **Part of Section 27 Constitutional rights in SA**
  - Integrated Food Security Strategy (IFSS)

Food Security in South Africa…2

- **National Integrated Food Security Strategy** (IFSS) (RSA, 2002)
  - Harmonisation of food security programmes
  - Focus on household food production, nutrition & food safety, safety nets & food emergencies, …



South Africa – Behind the Numbers

- **Access to food**
  - 20% of SA households have **inadequate** & **severely inadequate** access
- **SA Hunger Index – Food Secure households**
  - Only 14.4% in rural areas
  - Only 24.7% in urban areas
- **Reasons**
  - High food prices & affordability
  - Unemployment & poverty
  - Lack of economic activities

South Africa – Zero Hunger Programme

- **Zero Hunger Approach Strategy**
  - **Reduce incidences of food insecurity**
- **Objectives of Zero Hunger Programme**
  - Ensure **access to food** by poor & vulnerable groups
  - Improve **food production** capacity of the poor
  - Improve **nutrition security** of the citizens
  - Develop **market channels**
  - Foster **partnerships** in the food supply chain

Threats & Risks Exist to Food Security

- **Several threats & risks exist in the region and these threaten food security**
  - Climate change and global warming √
  - Dependence on rainfed agriculture √
  - Sub-optimal (agricultural) water management √
  - Bio-fuels/energy generation √
  - Pollution √
  - Land leases (grabbing?) √
  - Production practices √
  - Food prices √
  - Politics X
  - Population increases √
  - Others…

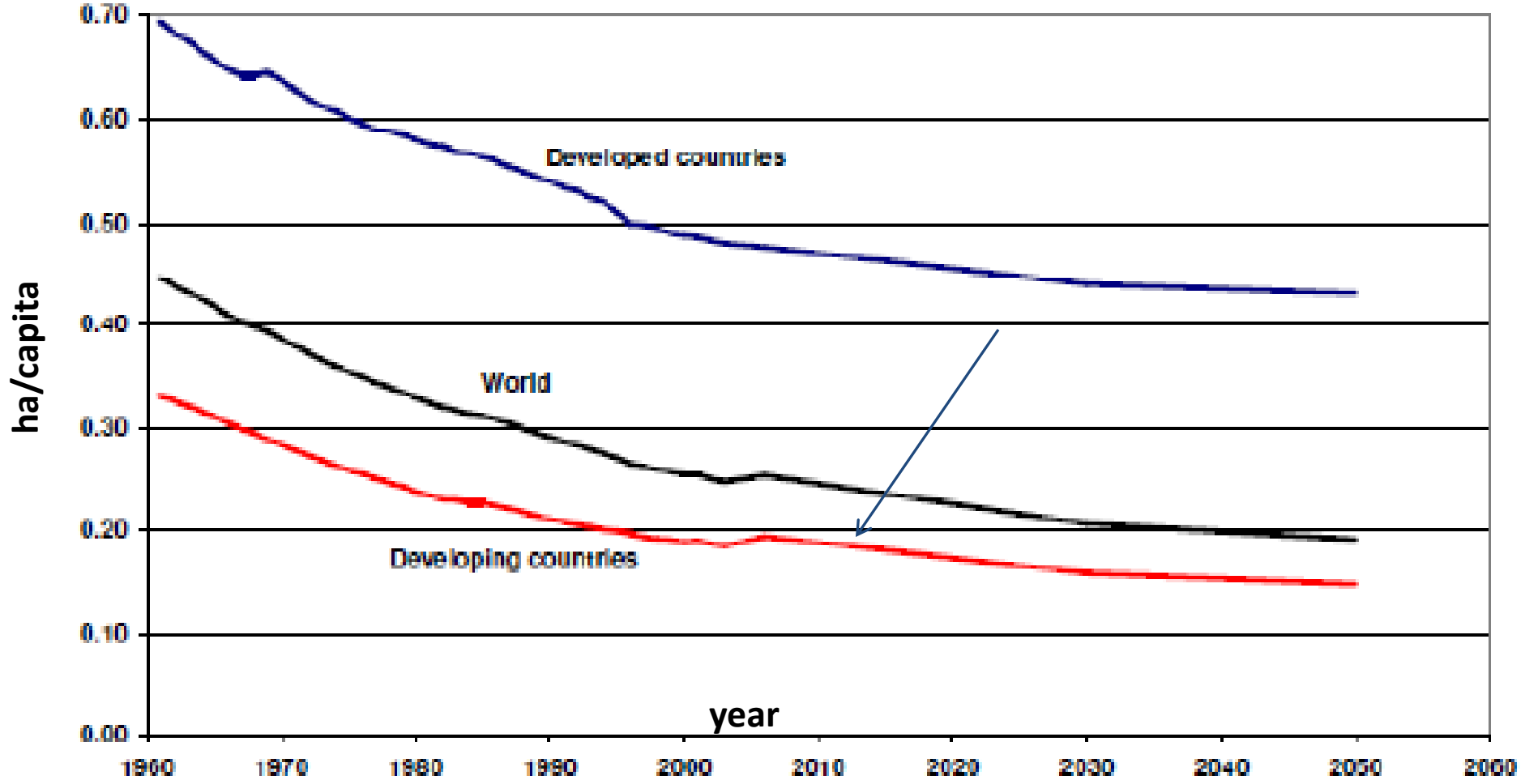
Climate Change & Global Warming

- **Climate change scenarios in the region**
  - Increase in temperatures (+6^{o}C)
  - Decrease in rainfall (by 40%)
- **Results**
  - Increased incidences of climate extremes
    - Droughts & floods
- **Impacts**
  - **Reduced food production**
    - *Food production will reduce by ≈50% in the next 70 years* (SACAU)
- Communities in the region are least able to adapt to CC

Dependence on Rainfed Agriculture

- **Agricultural production & economic activity**
  - Very **sensitive to rainfall variability & deficits**
  - Compounded by low per capita land holdings
- **Examples**
  - Mozambique – water related shocks depress country's GDP by >1% per year
  - Zambia – rainfall variability reduces country's agric growth by 1% per year & will cost US$4.3 billion in 10 years in lost GDP
- **Implications**: Regional countries exposed to the vagaries of nature

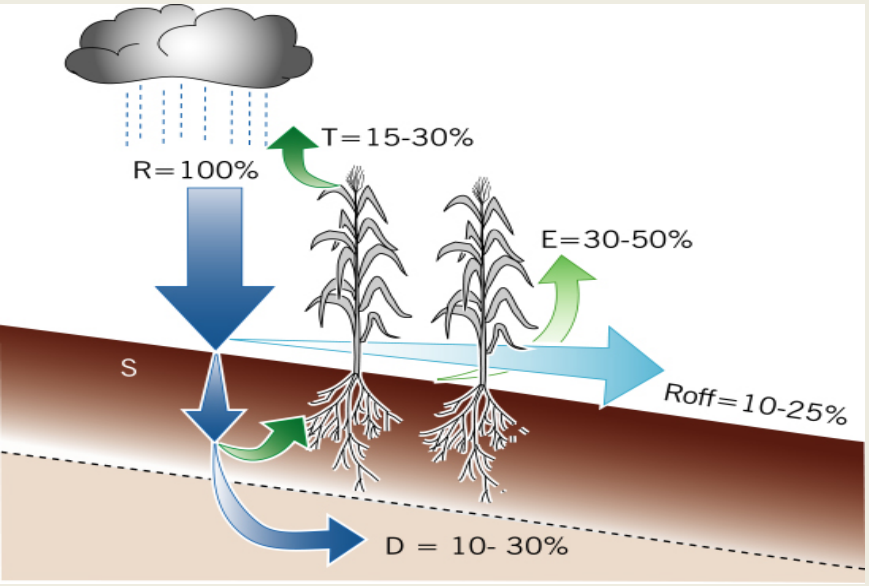
Arable Land per Capita (ha)



Sub-Optimal Water Management

- **Sub-optimal water management**
  - Inefficient irrigation water management (blue water)
  - Low infield water retention & high runoff losses (green water)
  - Non-productive evaporative losses
  - Only 4% of available water is captured for crops & livestock
- *"…Southern Africa has been struggling with low yields due to **inadequate management of water and…**"* Chilonda (ReSAKSS-SA)
- **Implications**: Less output per unit of scarce water resources
- Latent potential
  - Increase water (rainfed & irrigation) productivity
    - Many possible approaches available today!

Agricultural Water Management



Bio-fuels/Energy generation

- **Bio-fuel production drive**
  - To reduce carbon emissions
- **Bio-fuels crop production vs. food crops production**
  - Common food crops suited to bio-fuel production
    - Maize (staple in Southern Africa), soybeans, sugar cane
- **Implications**: Extensive move to bio-fuel crop production may lead to food production problems → food security issues

Water Pollution

- **Water pollution**
  - A growing problem
  - Affects water's suitability for agriculture (Westcott & Ayers)
- **Water pollution problems**
  - Diffuse pollution from settlements, e.g. South Africa
  - Point source pollution from industries and mines, e.g. acid mine drainage (AMD) in South Africa
- Implications: Less water available for food production

Land Leases (grabbing)

- **DC to LDC land leases**
  - A major phenomena, >50 million ha in Africa! (Hall 2010)
- **Risk**
  - Dispossession of production land for the poor rural communities
  - Reduced ability to produce own food

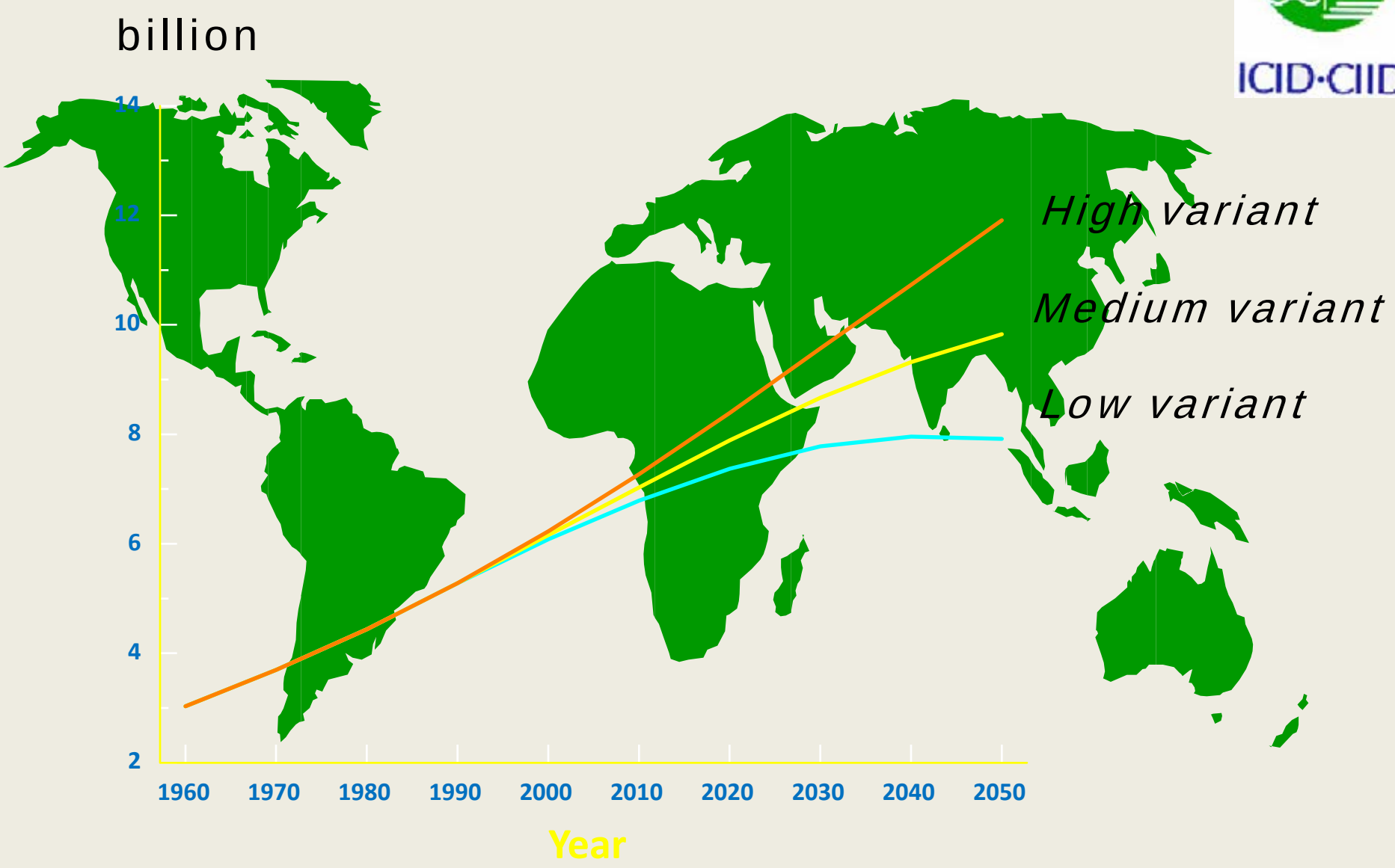
Production Practices

- **Smallholder production practices**
  - Risk aversion & low investment
    - Low input levels, less mechanisation, low research base, poor access to markets, poor infrastructure, …
  - Less productive faming & not profitable
- **Implications**: Low productivity and perpetual food (and cash) shortages
  - Poverty trap

Food Prices

- **Food prices**
  - Sky rocketed in mid 2008
  - Increased by 20 – 100% in the last 2 years!
  - Driven by many factors, e.g., production (supply), bio-fuels, climate change, politics
  - **The poor spend more on food**
- **Implications:** Impacted on access to food by many resource poor families
- **Maize prices in Southern Africa**
  - Maize staple food in the region
  - Prices have been stable since about early 2009
    - US$150 – US$300 per tonne

Global Population 1960 - 2050



Population Increase

- **Population and food security**
  - Population growth rate (SADC, 3%) tend to outstrip food production growth rate (or per capita cereal production)
  - Southern Africa has had no Green Revolution (like Asia)
- Implications: Food shortages leading to food security uncertainties

Summary & Conclusion

- **Current food security outlook**
  - Positive in Southern Africa
  - South Africa continues to produce enough to export in the region
- **Production base**
  - Water & land resources require better management in most countries in the region
- **Threats and risks to food security**
  - These exist and need to continually be mitigated

References

- FAO
  - For most of the agricultural data
- Madramootoo
  - Water Management for Food Security
- Internet
  - Various sources

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