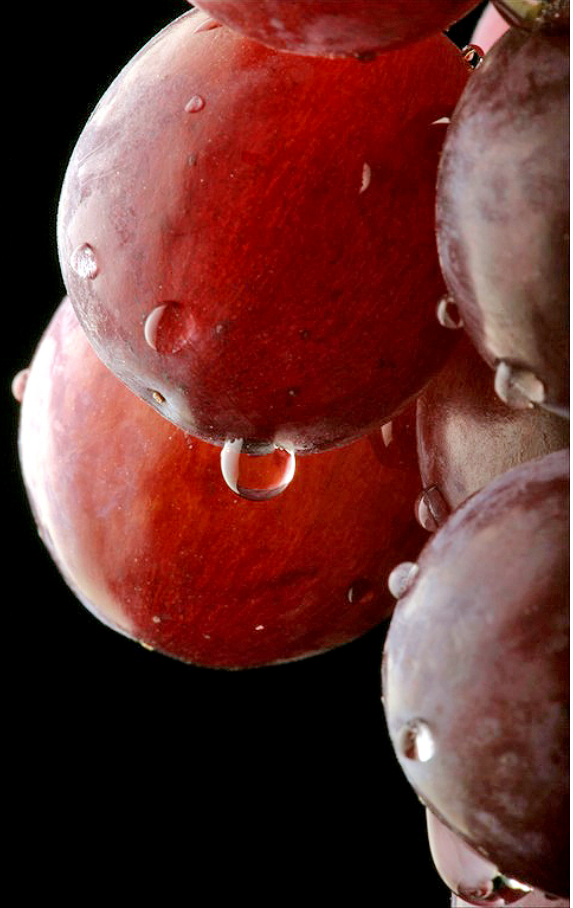
WOOLWORTHS
the difference

The Good Business Journey



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What is sustainability?

The Brundtland definition:

> "…*to meet the needs of the present without compromising the ability of future generations to meet their needs.*"

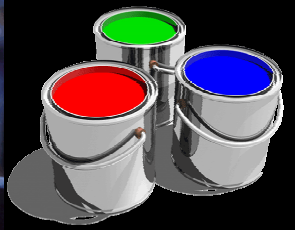
Sustainability principle 1

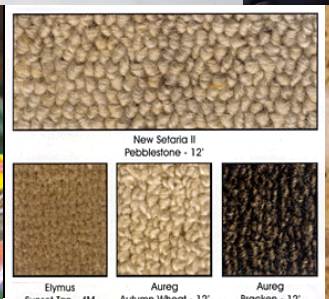
Minimize use of
natural substances

CLOSE

Sustainability principle 2

Minimize use of ***man-made substances*** that harm life…





Sustainability principle 3

Minimize ***physical degradation***…

CLOSE

Sustainability principle 4

Avoid undermining ***human needs***…

UNDERSTANDING

PARTICIPATION

IDENTITY

IDLENESS

FREEDOM

CREATION

AFFECTION

PROTECTION

SUBSISTENCE

WOOLWORTHS
the difference

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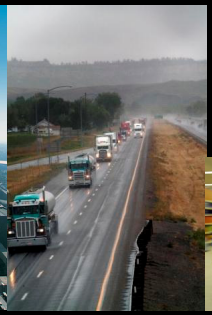
The linear economy



extraction → production → distribution → consumption → disposal

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Population growth

World population is projected to exceed 9 billion people in 2050 – how will we produce enough food to feed them?

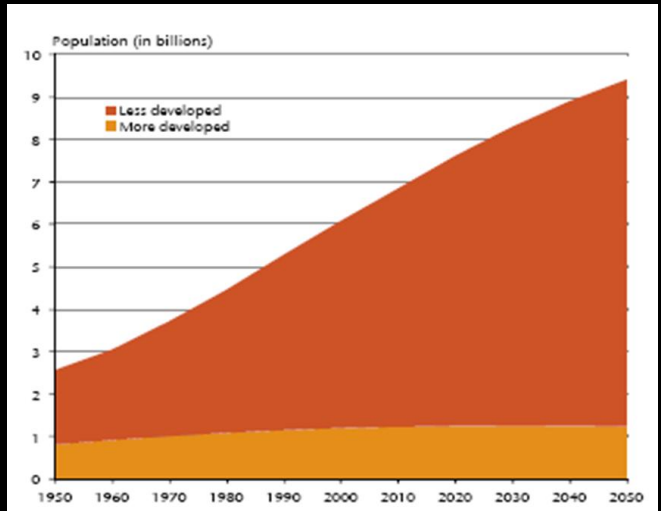

Figure 1: World population 1950 – 2050[1]

World Business Council Sustainable Development 2008

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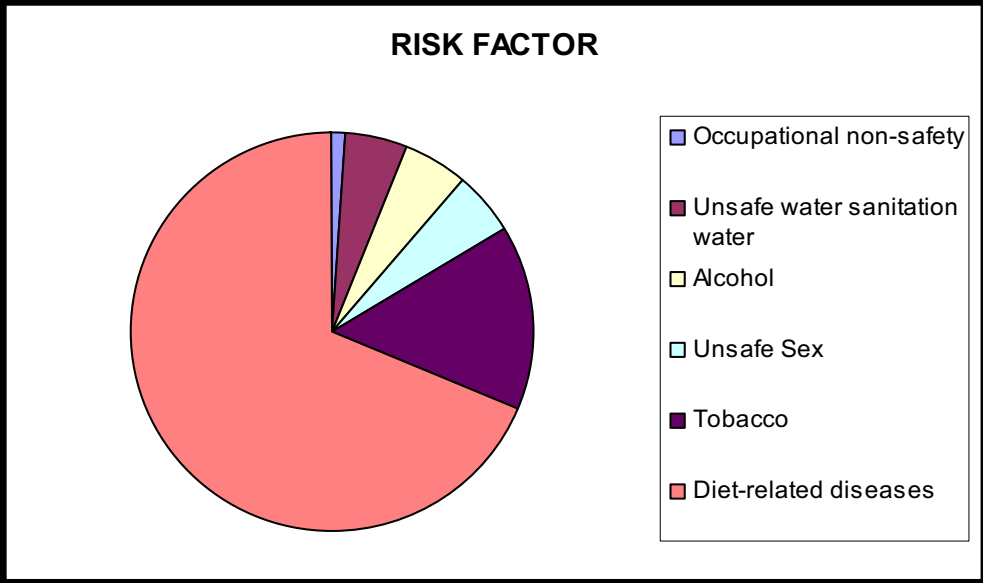
The Health Issue

Causes of death (W.H.O. Report 2002)



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DECLINE IN FOOD NUTRIENTS

By Donald Davis a biochemist at University of Texas at meeting of AAAS (American Association for the Advancement of Science) in St Louis.

In studies on Fruit, Vegetables and Wheat it was find that the concentration of Vitamins, Minerals and Proteins have declined by 5 to 35% in 50 years.

Antioxidant levels in the same crops declined by 30% in the same period.

Iron, in 15 different varieties of meat, decreased on average by 47% and in some products by 80%.

The iron in milk dropped by 60% in the same period.

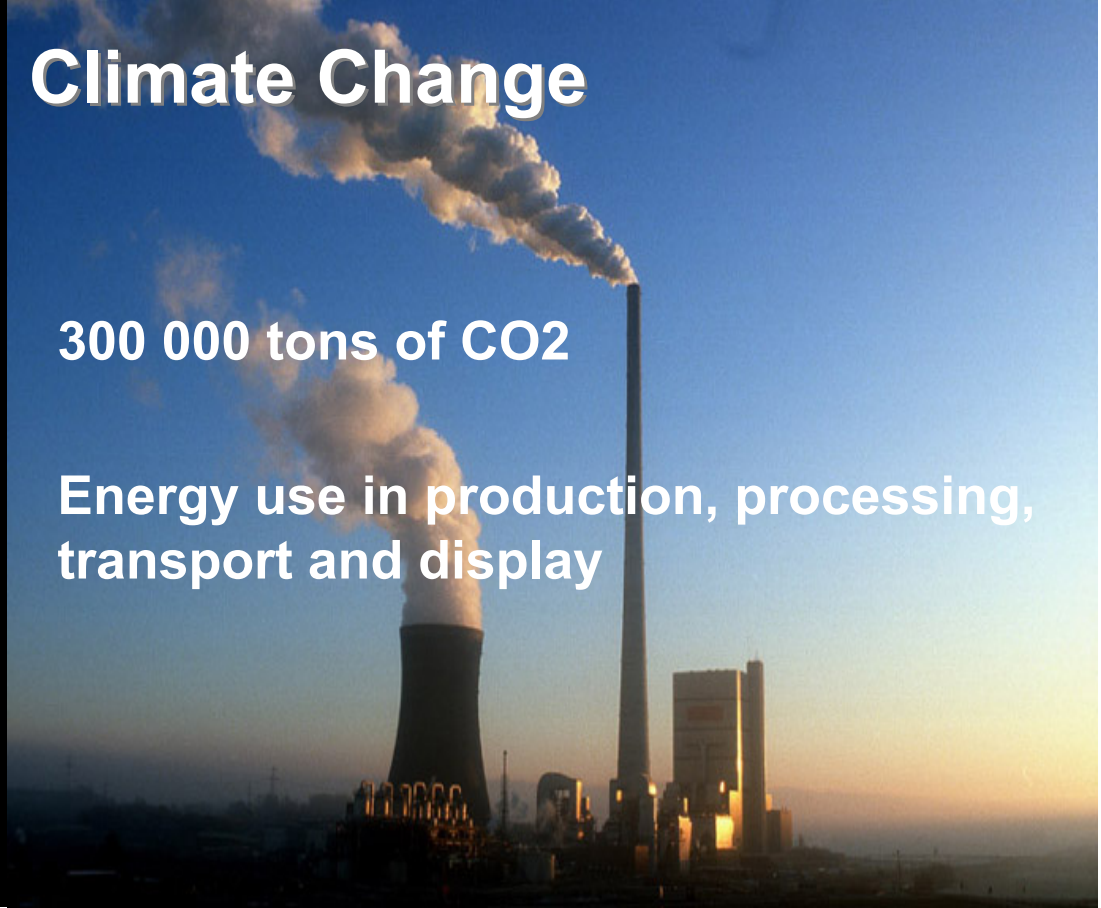
Copper and magnesium, essential for enzyme functioning, declined by 10 to 60% over 50 years

Waste

500 000 000 items of packaging

Reduce, recycle and compost

CLOSE

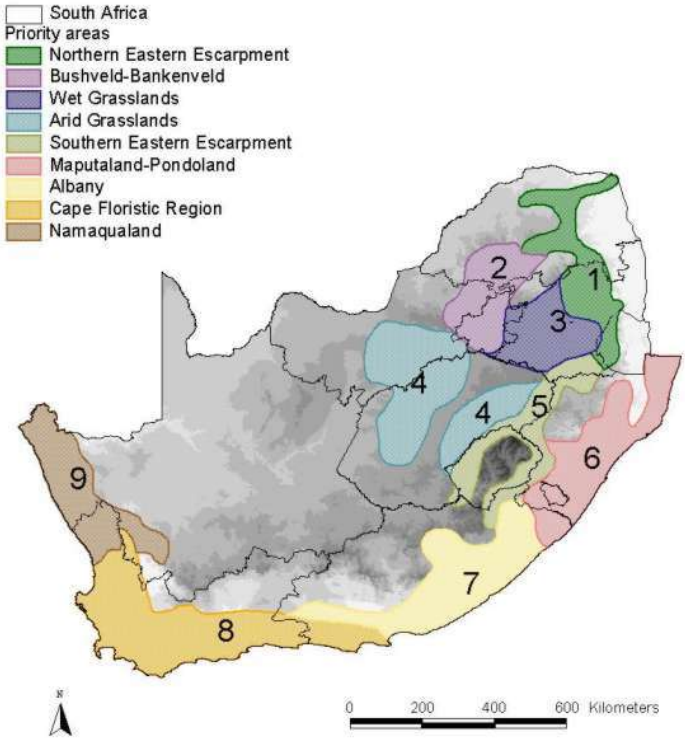

Climate Change
300 000 tons of CO2
Energy use in production, processing, transport and display

CLOSE

Biodiversity Hotspots

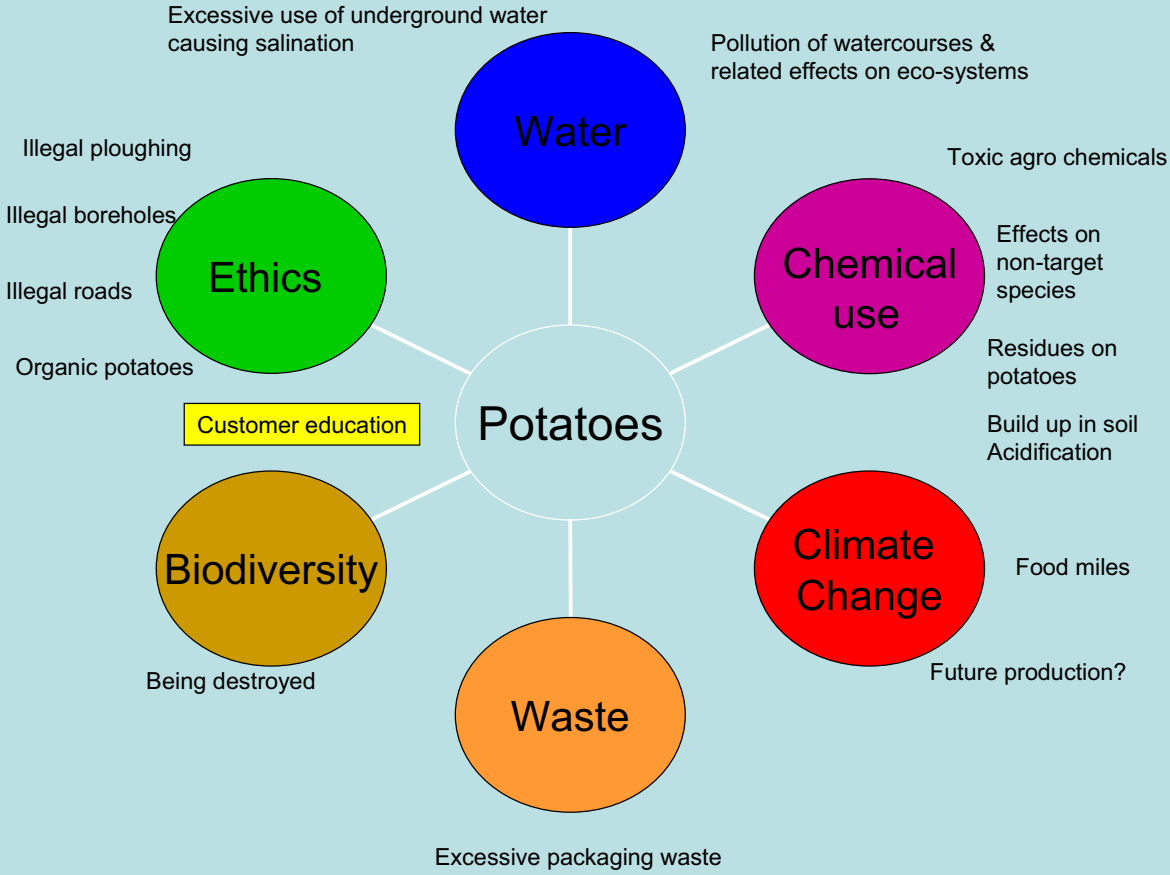
The most remarkable places on earth are the most threatened

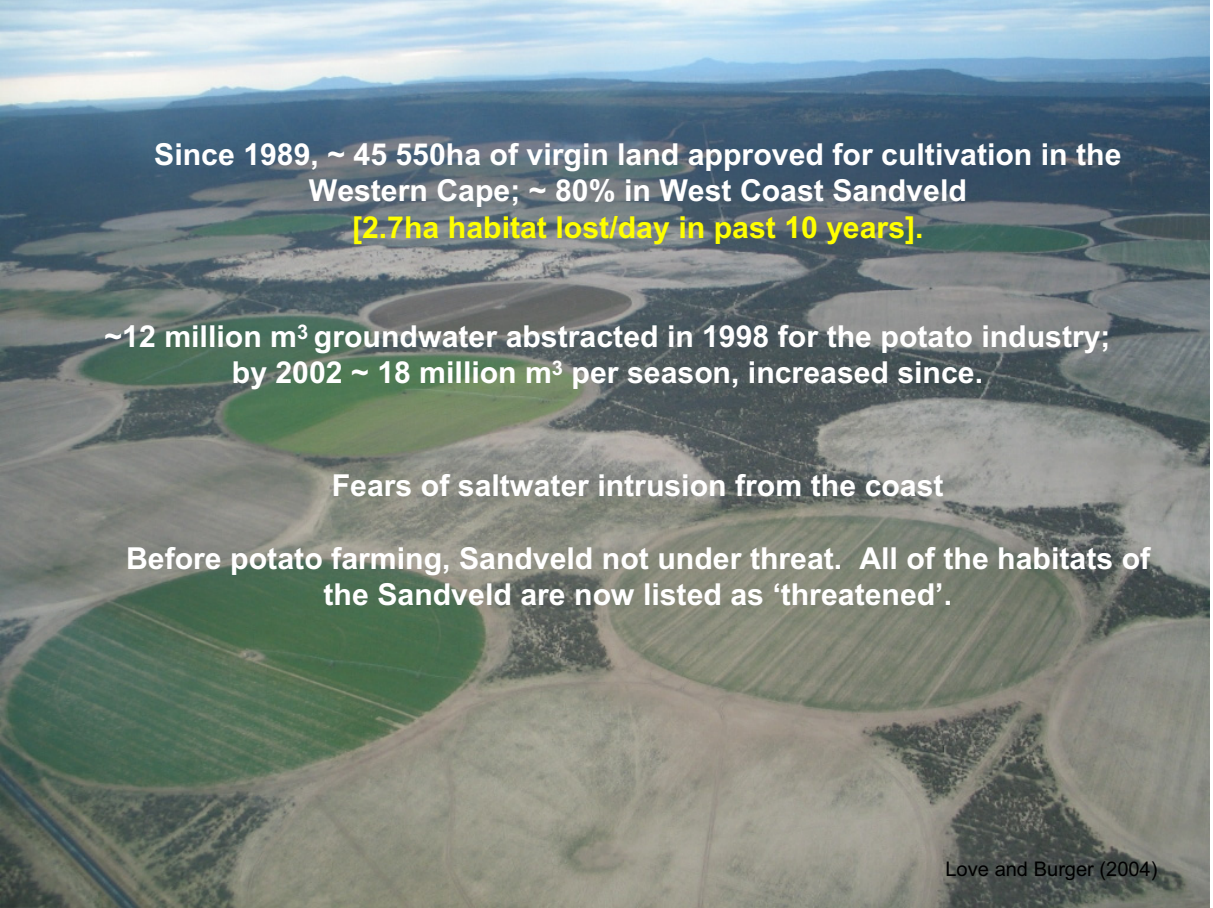
CLOSE


South Africa
Priority areas
Northern Eastern Escarpment
Bushveld-Bankenveld
Wet Grasslands
Arid Grasslands
Southern Eastern Escarpment
Maputaland-Pondoland
Albany
Cape Floristic Region
Namaqualand
1
2
3
4
4
5
6
7
8
9
N
0 200 400 600 Kilometers

PRODUCT ISSUES

- Potatoes
- Wine
- Ostrich
- Beef
- Lamb
- Fish

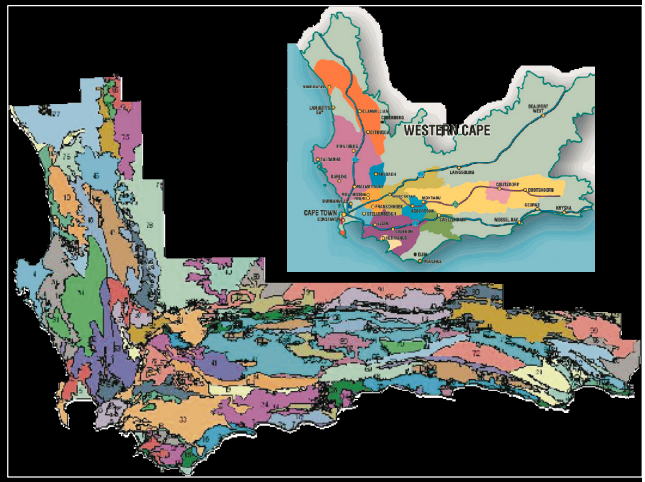

Excessive use of underground water causing salination
Water
Pollution of watercourses & related effects on eco-systems
Illegal ploughing
Illegal boreholes
Illegal roads
Ethics
Organic potatoes
Toxic agro chemicals
Chemical use
Effects on non-target species
Residues on potatoes
Build up in soil
Acidification
Customer education
Potatoes
Biodiversity
Being destroyed
Climate Change
Food miles
Future production?
Waste
Excessive packaging waste


Since 1989, ~ 45 550ha of virgin land approved for cultivation in the Western Cape; ~ 80% in West Coast Sandveld
[2.7ha habitat lost/day in past 10 years].
~12 million m³ groundwater abstracted in 1998 for the potato industry; by 2002 ~ 18 million m³ per season, increased since.
Fears of saltwater intrusion from the coast
Before potato farming, Sandveld not under threat. All of the habitats of the Sandveld are now listed as 'threatened'.
Love and Burger (2004)

CLOSE

Wine: Cape Floral Kingdom

- SA is 8th largest producer
- 90% production occurs in the CFK
- Matching footprints: terroir & habitat
- Boom in wine exports = expansion into CFK



CLOSE

Ostriches: Succulent Karoo

CLOSE

Beef: Grasslands

- The most threatened biome covering 30 % of SA
- Grazed by 6.4 m cattle and 13 m sheep
- Issues:
  - Winter burning on Highveld
  - Overgrazing
  - 30 % of land going into black hands
- 80 vegetation types

Lamb: Wildlife conflict with farmers

CLOSE

Gintraps & Poisons

CLOSE

Woolworths' Future Footprint

- Aggressive growth of our Foods business
- Doubling our ecological footprint
- Existing farms expanding
- Proactive planning for future farms

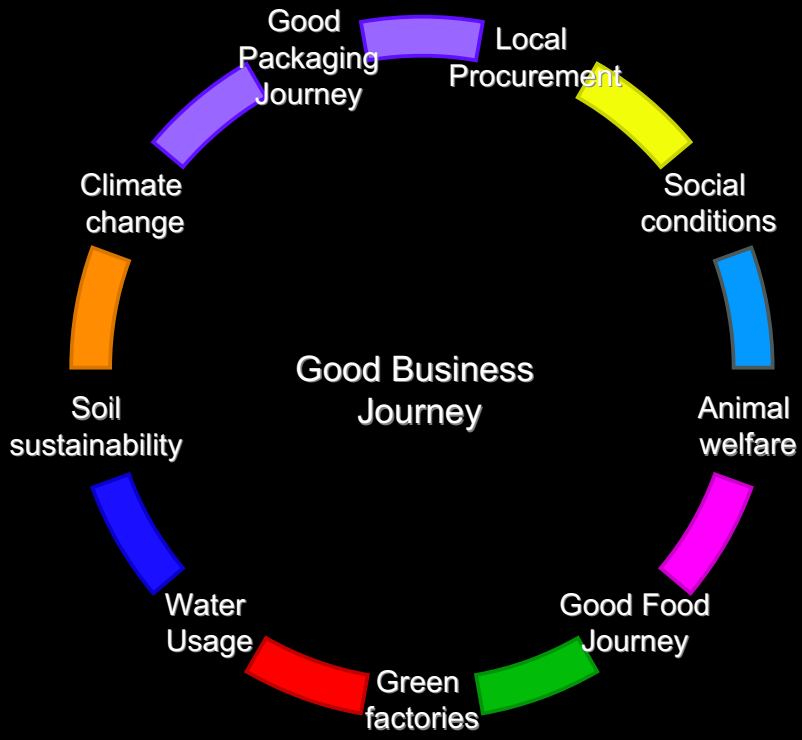
Virtuous or vicious circle?

"The links between economic growth, transformation, poverty alleviation, the environment and climate change can either form a vicious or a virtuous circle".

CLOSE

4 Pillars of Good Business Journey

- Accelerate transformation
- Drive social development
- Enhance environmental focus
- Address climate change


Good Business Journey
Good Packaging Journey
Local Procurement
Social conditions
Animal welfare
Good Food Journey
Green factories
Water Usage
Soil sustainability
Climate change

Restoring Balance

CLOSE

SASSI

(The Southern African Sustainable Seafood Initiative)

WWF

environment & tourism

Department:
Environmental Affairs and Tourism
REPUBLIC OF SOUTH AFRICA

CLOSE

SASSI

GREEN	ORANGE	RED
Species that can handle current fishing pressures:	Increased demand for these could compromise sustainable supply.	Illegal to catch.
Hake Yellowtail Anchovy Butterfish	Kingklip Kabeljou Swordfish Sole	Galjoen White Steenbras Cape Stumpnose

CLOSE

Introduction of Farming for the Future

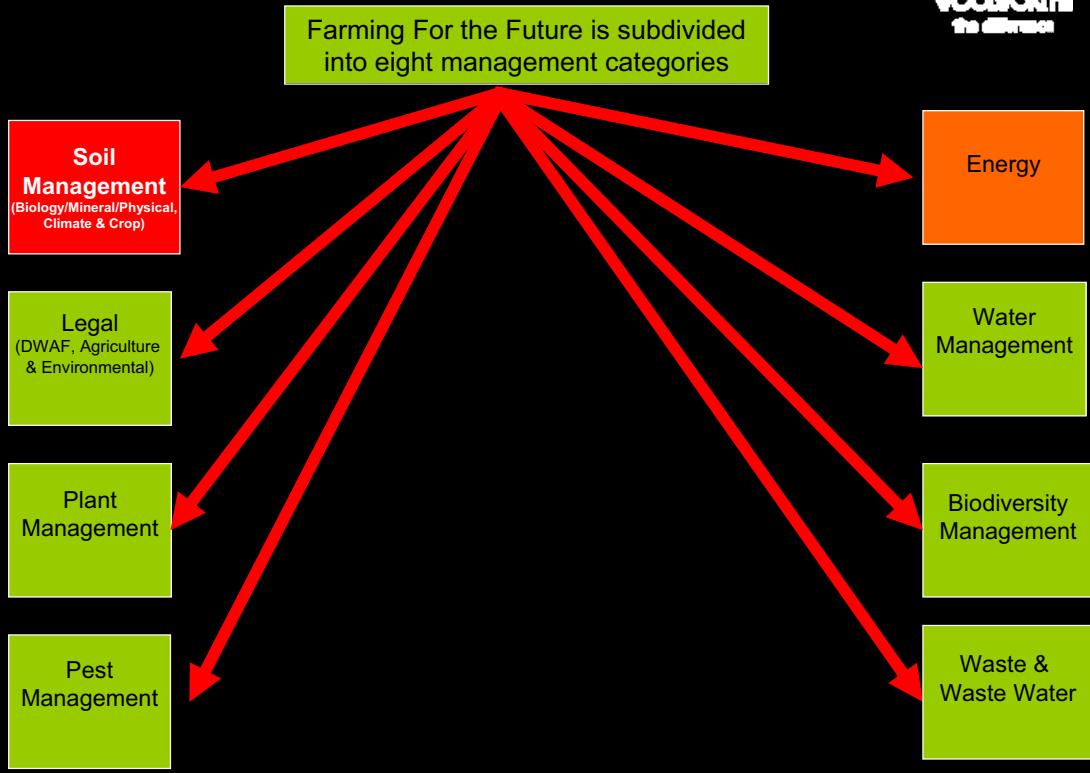
Sustainable vs. Un-sustainable Farming

- Un-sustainable farming often involves a reactive response based on fear.
- Farming for the Future is pro-active - working with nature rather than against her.
- Fear becomes fascination.
- Abuse and excuse become consideration and explanation.

- ***Combining*** the best ***ideas*** and ***inputs*** from everywhere to achieve the best possible ***results.***
- Scientifically sound
- Measures continuous improvement
- Assessments done by independent & registered scientists ( Enviroscientific)

CLOSE

What is Farming for the Future ?



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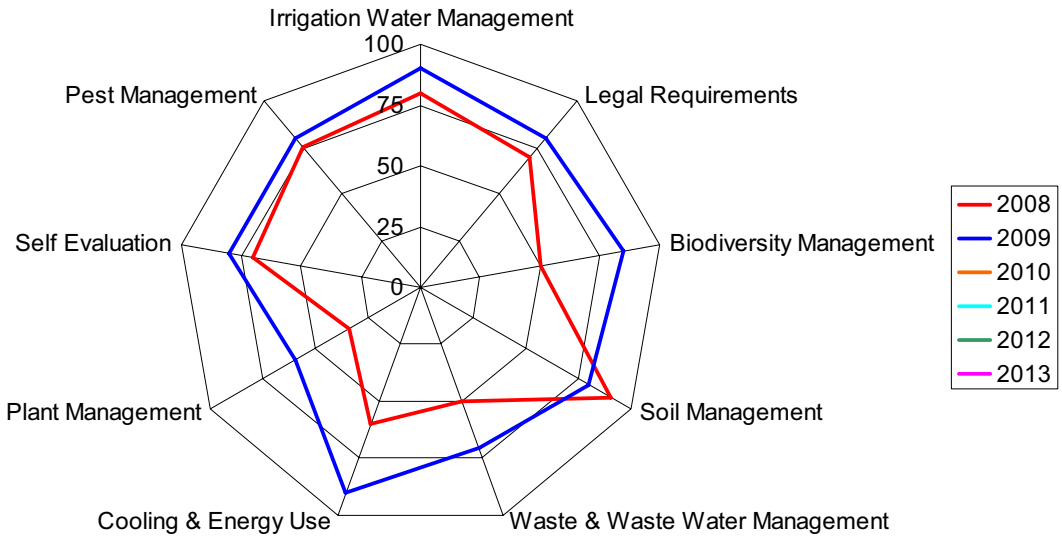
Farming for the Future Score Chart



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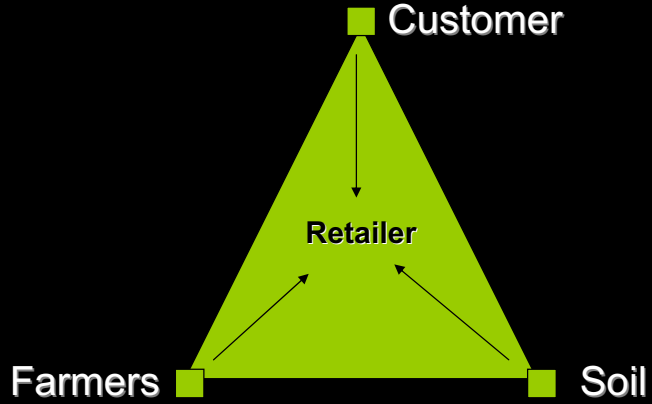
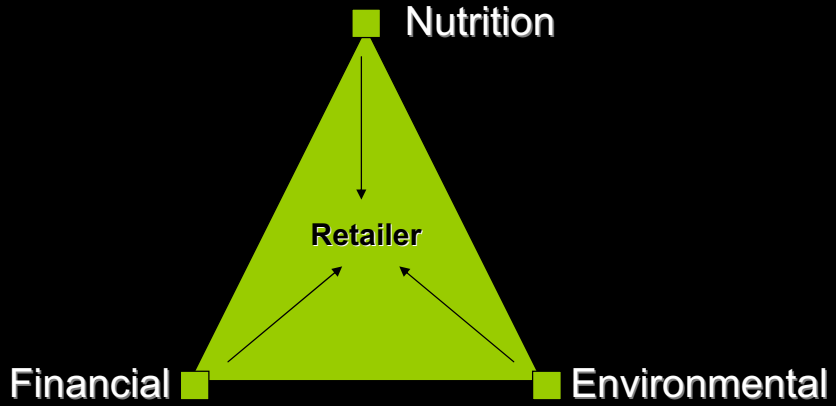
Soil Sustainability

- Understanding soil quality means assessing and managing soil so that it functions optimally now and is not degraded for the future.
- By monitoring changes in soil quality, one can determine if a set of practices are sustainable.

Soil sustainability



Soil sustainability



The problem …….!

- Our ***soils are*** the primary source of human, animal and plant ***nutrition***.
- ***Most of the minerals in fruit and vegetables are available for uptake in your body***
- We can't bypass the plant as a source of minerals i.e. all sources of minerals comes directly or in-directly from our plants.
- *The problem is that our food-producing soils are depleted of minerals and the soil biology needed for optimal plant growth.*
- *Consequently, our food is mineral deficient, leading to a society which is malnourished with a full stomach.*
- ***Disease*** is directly related to ***mineral*** deficiencies, and well being is often a ***nutritional*** issue. Ultimately, ***health*** and ***well being*** are personal responsibilities.

One solution is to regain *control* of the food you eat!

A healthy soil = Healthy food = Healthy people!

Soil Management

	Full Score	Analyses	Score
Soil Chemical Composition	**10**		**6**
pH	4	5.1	3
Salinity	4	200	1
Na	2	0.68	2
Soil Nutrient Status	**10**		**2**
P (mg/kg)	2	34	1
K (mg/kg)	2	424	0
Ca (cmol/kg)	2	9.47	1
Mg (cmol/kg)	2	4.96	0
Micro-elements	2	*0*	0
Fertilisation Practices	**10**		**5**
Fertiliser programme	5	*2*	2
Organic products used & source	5	*3*	3
Org Carbon Content	**10**		**0.5**
Texture vs C content	10	0.38	0.5
Soil Cover	**10**		**8**
Type of covering	5	*3*	3
Percentage covered	5	*5*	5

Soil Management issues identified during Farming For the Future audits:

How do we measure:

- The interaction between soil mineral management (fertilizer program) and soil microbe activity
- The interaction between soil mineral management and pesticide/herbicide applications
- The interaction between soil cultivation and soil microbe activity
- The interaction between irrigation and soil microbe activity

and

- The lack of norms on minor crops
- Existing norms uses one rule fits all
- The lack of scientific approach during fertilizer recommendations.
- No interaction between irrigation, pesticide and fertilizer companies and recommendations
- The lack of raw material for compost production
- Vermicompost?

FARMING FOR THE FUTURE
Wastewater Management

Process Wastewater	26				
Monitoring (quantity & quality)	3	None	Partial	Full Monitoring Program	NA
Cleaning agents & disinfectants	3	Poor	Average	Good/Stored separately	NA
Cleaner production strategies	3	None	Partial	Implemented	
Scientific calculation of disposal options	3	Not done	Partial	Scientific Options	
Adequate treatment and winter storage	6	None	Partial Treatment	Adequate Treatment	Legal Compliance
Disposal method	6	Indiscriminate land or water	Septic Tank	Municipal/River (legally)	Beneficial Irrigation
Sludge storage & disposal	2	Indiscriminate land or water	Composting	Composting / Analyses	

FARMING FOR THE FUTURE
Domestic wastewater

Sewerage Waste	**3**				
Disposal method	**3**	Indiscriminate	Soak Away	Septic Tank	WWTW

FARMING FOR THE FUTURE
Solid waste management

General waste	8				
Volumes vs Disposal (Offices & dwellings waste)	2	> 1 T/day, on Farm	< 1 T/dag on Farm	Municipal	
Waste Minimisation (Re-use & Recycle)	2	None	Average	Good	
Disposal method	2	Indiscriminate	Burning	Municipal / Recycle	
Disposal site	2	Site unsuitable	Contained	Site legal	Municipal

FARMING FOR THE FUTURE
Agri-wastes

Agri- & Agri-industry waste	9				
Waste Minimisation (Re-use & Recycle)	3	None	Average	Good	
Disposal method	3	Indiscriminate	Burning / Recycling	Recycle / Composting	
Composting & site	3	Unsuitable	Polluting	Contained	Legal

Water efficiency values

Crop	Indicator
Apples	9.09
Apples	6.16
Apples	4.17
Strawberries	3.92
Strawberries	1.45

Variances indicate differences in climatic, soil, slope conditions, and irrigation practices.

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Water Management			
Calculation of Irrigation Requirement	**10**		**5**
Method of calculating IR	10	*5*	5
Measurement of Soil Water	**10**		**7**
Regularity of measurement & depth	10	*7*	7
WUE	**5**		**2**
WUE	5	*2*	2
Water Chemical Composition	**20**		**9.7**
pH	3	5	1
Conductivity (mS/m)	5	150	2
SAR	5	3	3
Ca (mg/L)	0.5	20	0.5
Mg (mg/L)	0.5	10	0.5
K (mg/L)	0.5	50	0.5
Na (mg/L)	0.5	30	0.2
Cl (mg/L)	5	90	2
Water Health	**5**		**5**
E. Coli	5	*0*	5

FARMING FOR THE FUTURE
Legislation: DEAT

Environmental Management	14	None	Min	Med	Max	
Development of virgin soil	**5**	>20 ha & no EIA	3>20 ha & no BA	<3ha Sensitive	Legal	NA
Development or enlargement of Agri-Industry	**3**	Indiscriminate Development	No EIA/BA (Area sensitive)	No EIA/BA not sensitive	Legal	NA
Conservation of ecological sensitive areas	**3**	Not compliant	Ad-Hoc	Partial- No M-Plan	Legal	NA
Conservation of rare & endangered species	**3**	Not compliant	Ad-Hoc	Partial- No M-Plan	Legal	NA

CLOSE

FARMING FOR THE FUTURE
Legislation: DWAF

Water Management	**17**					
Water uses registered	4	No	Partial	Legal		
Wastewater practices legalized	7	Non-compliant	Monit. - no Treatment	Monit.- Inadequate Treatm.	Legal	NA
Restriction of water erosion	2	Non-compliant	Partial	Legal	NA	
Management of a waste disposal site	2	Non-compliant	Partial	Legal	NA	
Management of sewerage	2	Non-compliant	Partial	Legal	NA	

CLOSE

FARMING FOR THE FUTURE
Legislation: DoA

Agricultural Management	15				
Ploughing permit for new developments	1	No	Yes	NA	
Permit for establishing new windbreaks	3	No	Partial	Yes	NA
Combating weeds & Invader plants	3	Non-compliant	Partial	Compliant	NA
Restriction of soil erosion	2	Non-compliant	Partial	Compliant	NA
Regulation of fertilizers farm feeds etc..	2	Non-compliant	Partial	Compliant	NA
Use of registered chemicals	2	Non-compliant	Partial	Compliant	NA
Storage of hazardous chemicals	2	Non-compliant	Partial	Compliant	NA

CLOSE

FARMING FOR THE FUTURE
Legislation: Other

Heritage Management	**2**				
Conservation of heritage and archeological finds	2	No	Partial	Legal	NA
Property zoning	**2**				
Correct zoning of land (Agri-Industry)	2	No	No evidence	Legal	N/A

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FARMING FOR THE FUTURE
Conservation of Ecosystems

Conservation of ecosystems	13	None	Min	Med	Max
Remaining Natural veld, Rivers or Wetlands	3	< 3ha	3>20 ha	> 20ha	>30 Endang ered
Is it a threatened or vulnerable ecosystem	2	None	LT	VU	EN / CE
Overall condition of these features	2	Poor	Average	Good	
Buffer sones & adequacy	2	None	< 30m / Insufficien t	> 30 m / Functional	
Features protected & Management Plan	2	None	Ad-Hoc	Actively	Active / M-Plan
Remaining natural corridors / adequacy	1	None	Insufficient	Functional	
Remaining corridors actively conserved	1	None	Ad-Hoc	Actively	Active / M-Plan

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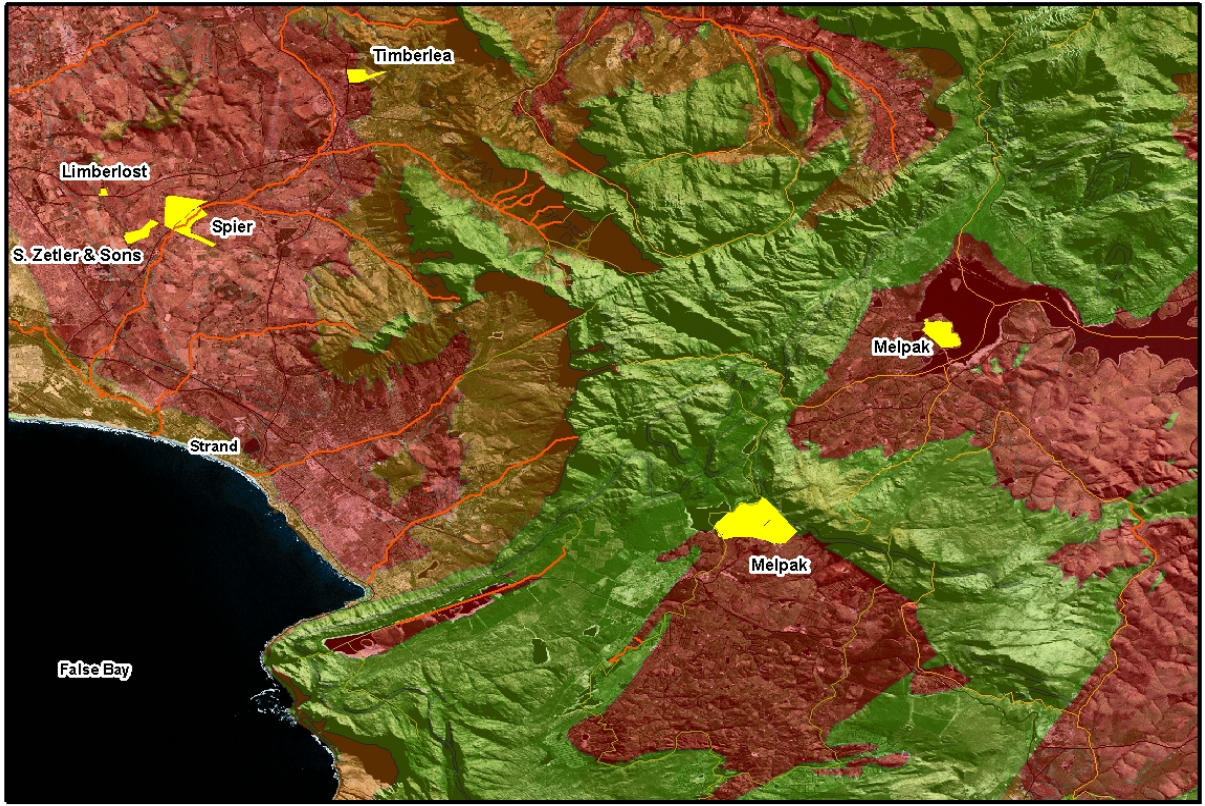

Woolworths Supply Farms
Stellenbosch/Grabuow Region

0 5 10 20
Kilometers

Legend

- Critically endanged
- Endangered
- Vulnerable
- Not threatened
- Least Threatened
- Vulnerable
- Endangered
- Critically Endangered
- Woolworths Farms

N

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FARMING FOR THE FUTURE
Alien invasive plant management

Alien invasive plant management	**7**		**0**				
Are there any declared weeds or invader plants	2	> 25%	0	> 25%	5-25%	0-5%	
Are there an active alien eradication program	3	None	0	None	Ad-Hoc	Program	Program & M-Plan
Herbicides used & stored correctly	2	Poor	0	Poor	Average	Good	

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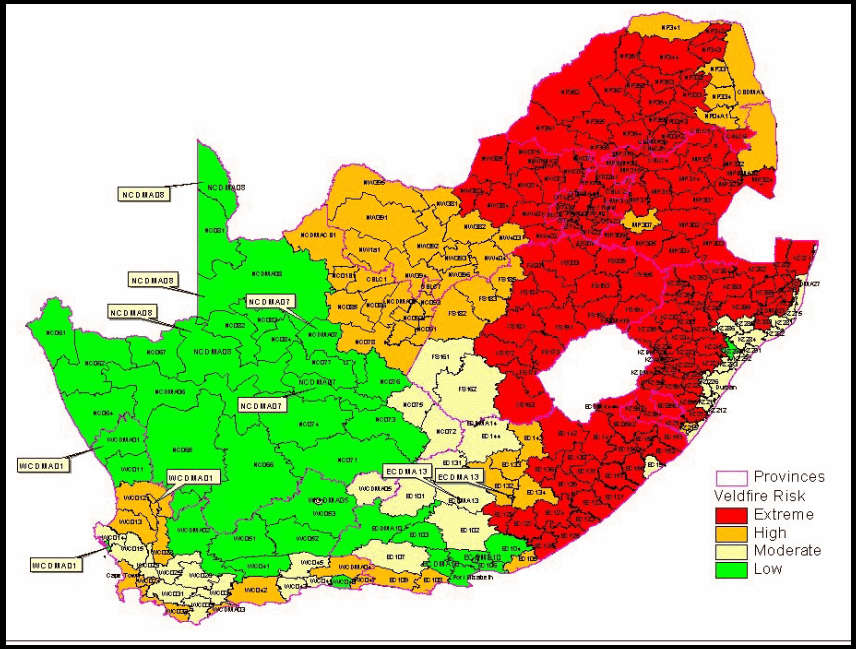
FARMING FOR THE FUTURE
Fire, Game and Erosion management

Fire Management	**4**		**0**				
Fire risk area & Member of FPA	2	H/E no FPA	0	H/E no FPA	L/M no FPA	FPA	
Adequate Fire equipment & Training	2	Poor	0	Poor	Average	FPA Req.	
Game & Problem animal management	**4**		**0**				
Are there an active game management program	2	none	0	none	Ad-Hoc	Good	NA
Are there an problem animal management program	2	none	0	none	Ad-Hoc	Good	NA
Erosion Management	**2**		**0**				
Erosion vs. control measures	2	No Control	0	No Control	Average	Good	

FARMING FOR THE FUTURE
Fire danger rating map



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Farming For The Future Targets

CLOSE

What does all this mean?

- Take full accountability
  - For example: Know and understand what your carbon footprint is.
- Become a good steward of the land.
- Use science but work with nature.
- Be ready to take advantage of the opportunities.
- Help us remake the marketplace before someone else does.

The Journey begins …..

This is the beginning
of a
good business journey
to a more equitable
carbon-constrained
water-scarce
hyper-efficient
pollution-free
world.

It's about living within limits.

Thank you

Kobus Pienaar
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