Planet Friendly Citrus: Reconnecting Our Food Systems to Our Ecosystems

Inge Kotze
Senior Manager: Sustainable Agriculture
WWF-SA
1. The current context: why is agriculture central to environmental sustainability?
   1.1 Agriculture – global driver of change
   1.2 The South African natural resource context
2. Managing environmental risks in citrus production
3. Increase scale and pace of action – opportunity for collective action
1.1 Agriculture as the Largest Global Driver of Change on Our Planet

- More than a 1/3rd of the globe under agricultural production (55% of all available, habitable land surface)
- The footprint of food leading driver of land transformation, land degradation and biodiversity loss
- Largest user of freshwater resources (2/3rds of water used)
- 25-30% contribution to GHG (land conversion, fuel, energy, electricity, agrochemicals and livestock)
- ½ of all topsoil lost in last 150 years

Future demand within constrained natural resource base:

Challenge of 21st Century – feed 9 billion by 2050, would require 70% more production current food footprint = better current production & productivity, resource use optimisation, shifting consumption patterns, addressing food waste
1.2 South African Agriculture - The Natural Resource Base Context

**SOUTH AFRICA’S AGRICULTURE BY NUMBERS**

- **69%** of South Africa’s land surface is good for grazing.
- **3%** of the country has truly fertile soils.
- **13%** of our land is good for cultivation.
- **50%** of South Africa’s population doesn’t have enough food.
- **98%** of South Africa’s total water supply is already allocated.
- **1%** of South Africa has the right climate and soil combinations for rain-fed crops.
- **25%** of South Africa’s soil is susceptible to wind erosion.
- **30%** of food is wasted at every step in the food chain.

**FOOD ENERGY WATER NEXUS**

We increasingly recognize the need to view these three fundamental aspects of our existence as interconnected...
1.2 South African Agriculture - The Natural Resource Base Context

The South African spatial land use and resource trade -offs

8% of land surface produces 50% of our water

Coal Deposits

Mean Annual Runoff (mm/year)
- 0 - 10
- 10 - 50
- 50 - 135
- 135 - 220
- 220 - 420
- > 420

Citrus Growers’ Association of Southern Africa

Potential for viable agriculture:
- Low: Less than 10
- Moderate: 10 - 20
- High: Greater than 20

WWF
2. Key Environmental Pressures / Risks in South African Citrus Production

- Changing climate: time of great uncertainty & unpredictability: seasonality, temperatures, extreme weather (droughts, floods, hail, wind), soil conservation, health, fertility, pest & disease.
- Increasing resource insecurity: increasing physical and economic scarcity – energy, water and land.
- Regulatory Risk: policy uncertainty re land, water and carbon...reconciliation and reallocations emphasizing need to monitor, verify use and due diligence in efficient use.
- Water quality (pollution) and soil health.
- Addressing waste (solid, waste water, and food waste).
- Increasing risk of and impact from wildfire (management of surrounding natural ecosystems): control of alien invasive plant species.
2. Key Environmental Pressures / Risks in South African Citrus Production (cont)

- Protecting freshwater resource base: esp. wetlands, floodplains and river banks (riparian areas).
- Role in protecting pollinators.
2. The Business Prerequisite for Sustainable Production

Agricultural sector is at forefront of physical and economic scarcity of energy, water, land & increasing resource insecurity.

- Managing increasing risks (access & cost) and rising input costs: water, energy and soil/land (agro-chemicals, pesticides, herbicides, diesel).

- Regulatory and governance risk: establishing baselines and progress tracking, verification/ due diligence.

- Maintaining market access, driving non-duplication and harmonisation of requirements: but on our terms – relevant to SA conditions and risk profile: improving traceability and visibility of efforts.

- Buffering against changing climate: fire, water risks & impacts, soil protection, protection extreme events: flooding/ droughts, wind etc.
Changing climate – existing resource constraints and climate change simply exacerbating the need for an increased rate, pace and scale of reduced impact.

Numerous excellent examples of good practices at farm and industry level:

- **Confronting climate change carbon calculator** – tracking emission baselines and supporting resource efficiency and emission reduction;
- **Water use efficiency** – technology using optimal irrigation (including Fruitlook water efficiency initiative);
- **IPM and biological control**;
- **Soil protection, composting** (SRCC example);
- **Value-chain or catchment collaborations** such as WWF water risk filter and Alliance for Water Stewardship initiatives.
One platform for evaluating your own integrated sustainability: balancing needs and resourcing of social, ethical and environmental risks and opportunities.

**SIZA Platform - Sustainability Initiative of South Africa**

2017: new additional VOLUNTARY environmental performance assessment & tracking tool

**Vision**
Enabling South African Agriculture to be a global leader. Ensuring sustainable, ethical trade and environmental stewardship.

**Mission**
SIZA, the Sustainability Initiative of South Africa, provides a platform for agricultural stakeholders to ensure ethical and environmentally sustainable trade. This platform monitors care for the environment and compliance with labour legislation.

Our aim is to encourage continuous improvement in practices over time in excess of the minimum legal requirements. We engage directly with our stakeholders throughout the value chain in order to identify needs and issues. Interventions and support tools are created by measuring member compliance over time.
Purpose: One stop shop of legal compliance requirements and better production guidelines, step wise tracking of improvement.

Approach: Proactive, voluntary tool
- Self assessment approach, and
- Ability to prioritise your own risk (local, regional and commodity context).

Benefits:
- Proactive response to market requirements – supporting harmonisation and convergence of existing and future requirements from market;
- Benchmarked against GlobalG.A.P, Leaf, Farming for Future, Sedex visibility...
- Identify key issues/ risks in your area/ farm and link to network of training and capacity building support to address these issues.
Self Assessment Questionnaire: 20 key questions

- Evaluating your own legal compliance, prioritised areas of risks and possible management responses.
- Farm management tool and practical guidelines to implement & track step wise change and improvements.

Knowledge management and sharing platform:

- Platform provides an umbrella home for knowledge sharing and supporting tools to address key risks: Confronting Climate Change carbon calculator, WWF water risk tool, Alliance for Water Stewardship, Soil Conservation committees etc.
- Engage according to your own needs, level of assistance, at your own pace.
Overview of the SIZA Environmental Performance Assessment Tool

Excel based tool that allows you to:
1. Self-assessment
2. Draw report on the results / track dashboard of results
3. Create a step wise improvement plan

SAQ answered by 2 step response:
• To what degree is criterion being fulfilled or achieved?
• To what degree is the fulfilment of the criteria due to specific design or purposeful management process?
### Scoring Bar:
To the right – the Criterion is on management’s radar.
To the left – The fulfillment of the Criterion is not being actively/purposefully managed.

### Management Category:
Each category encourages a specific management response.

### Color Coding:
Green – Amber – Red, indicates increasing potential weakness/risk, and therefore increasing priority for management response.
Environmental Performance Assessment Focus and Approach

The EPA tool has 4 key focus areas: **Soil, Water, Energy** and **Materials, Farm Ecosystems**. And questions focus on you obtaining an understanding of what your action/response needs to be in relation the criteria i.e. Actions: **Reduce/Minimise, Optimise, Sustain, Stop**

<table>
<thead>
<tr>
<th>Ref</th>
<th>Focus</th>
<th>Principle</th>
<th>Criteria</th>
<th>Management Category</th>
<th>Focus of Improvement Effort:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2a.7</td>
<td>Energy &amp; Materials</td>
<td>Reduce</td>
<td>The conversion of areas of natural vegetation for cultivation is curtailed.</td>
<td>At Destination</td>
<td></td>
</tr>
<tr>
<td>2a.3</td>
<td>Energy &amp; Materials</td>
<td>Reduce</td>
<td>Ongoing farming operations are not dependent upon the supply of non-renewable based energy.</td>
<td>On Journey</td>
<td></td>
</tr>
<tr>
<td>2a.6</td>
<td>Energy &amp; Materials</td>
<td>Reduce</td>
<td>There is no net release of greenhouse gasses to the atmosphere.</td>
<td>On Journey</td>
<td></td>
</tr>
<tr>
<td>1b.3</td>
<td>Energy &amp; Materials</td>
<td>Optimize</td>
<td>Direct energy-use is optimized.</td>
<td>Good Fortune</td>
<td></td>
</tr>
<tr>
<td>1b.4</td>
<td>Energy &amp; Materials</td>
<td>Optimize</td>
<td>Inorganic fertilizer use is optimized.</td>
<td>Blind Spot</td>
<td></td>
</tr>
<tr>
<td>1b.5</td>
<td>Energy &amp; Materials</td>
<td>Optimize</td>
<td>Agro-chemical use is optimized.</td>
<td>Blind Spot</td>
<td></td>
</tr>
<tr>
<td>2a.5</td>
<td>Energy &amp; Materials</td>
<td>Reduce</td>
<td>The control of pests &amp; diseases is not dependent upon non-renewable based agro-chemicals.</td>
<td>Blind Spot</td>
<td></td>
</tr>
<tr>
<td>3.3</td>
<td>Energy &amp; Materials</td>
<td>Sustain</td>
<td>The achievement of Levels 1 &amp; 2 for &quot;Energy &amp; Materials&quot; is being pursued by the majority of land users across the shared agro-ecosystem and/or the farm participates in specific programs/initiatives aimed at achieving sustainable management of farm ecosystems for the agro-ecosystem as a whole.</td>
<td>Blind Spot</td>
<td></td>
</tr>
<tr>
<td>1b.10</td>
<td>Energy &amp; Materials</td>
<td>Minimize</td>
<td>Emissions to air related to farming activities and on-farm operations are minimized.</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>1b.8</td>
<td>Energy &amp; Materials</td>
<td>Optimize</td>
<td>The re-use, recycling and recovery of waste materials generated on the farm, is optimized.</td>
<td>n/a</td>
<td></td>
</tr>
</tbody>
</table>
Welcome to indicate interest in using the EPA tool (through your CGA channels)

Complete the Self Assessment Questionnaire – establish your own initial benchmark and determine your own appetite for focus areas of work

CGA – will use this tool to identify key issues in citrus production with year 1 focus on WATER.

Able to develop focused interventions to assist sector in response to addressing key water challenges

Register and interact with the SIZA Platform if you haven’t already done so....

www.siza.co.za
Thank you

Inge Kotze
WWF Senior Manager: Sustainable Agriculture

ikotze@wwf.org.za