Organic Bananas in Sudan: Challenges and Opportunities for Developing Export Chains
Organic Bananas in Sudan: Challenges and Opportunities for Developing Export Chains.

Van der Waal, JWH, Clercx, J., Gutiérrez González, G.¹
E. M. Elhassan, B, Bakhiet, S.B.²
Bolton, M³

h.w.waal@agrofair.nl

¹Taste Foundation, 2991 LN, Barendrecht, The Netherlands
²Horticulture Department, Ministry of Agriculture, Khartoum, Sudan
³formerly with Bioversity International, Rome, Italy
Contents

1. Introduction
2. The project
3. Results and discussion
1. Introduction
1.1 The potential

Sudan has a large potential for organic banana production:

- land, dry climate, irrigation water, sea access, **proximity** to Middle East and **Europe**.

- high demand for bananas in the **Middle East**

- high demand for **organic bananas** in **Europe**. Currently, supply only from Ecuador, DomRep and Peru, all with risk factors and cost issues.

  - Sudan wants to be less dependent on oil exports and **diversify its economic base** by developing agribusiness.
1.2 The Location

Demand in Middle East

Demand for organic banana in Europe

Water, dry climate, fertile soils favourable for organic Sea port and basic infrastructure allow export.

Other organic banana countries have risks and high costs: Peru, Ecuador, DomRep. Export promotion, hard currency, non-oil revenue.
1.3 The Market

The Middle East banana market is important and grows

The main competing suppliers are Philippines and Ecuador. India, Mozambique, Vietnam and Indonesia supply minor volumes. For comparison: the average per capita consumption in the EU 27 is 7.7 kg.

Source: FAO 2014
3.1 Exports increased

Area under cultivation and production of bananas in Sudan

- Production ('000 MT)
- Area ('000 ha)
1.4 The current situation

**Soils**: banana areas on the banks of the Blue and White Nile. Soils fertile due to regular flooding. Almost no fertilizers used. Older farms suffer from nematodes.

**Water**: arid climate, so banana cultivation depends on irrigation; by gravity, drip or sprinkler. In Kassala dependent on deep water wells.

**Cultivars**: Dwarf Cavendish prevails (95%)
- unsuitable for export (too small: >16 cm)
- hard flowers, curved damaging other fingers on the bunch

The value chain is not organized for export: local traders buy, harvest and pack the fruit, giving low quality, unpredictable volume.
# 1.5 Opportunities and Challenges

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Opportunities</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agronomy</td>
<td>Soils abundant and fertile</td>
<td>Organic soil management</td>
</tr>
<tr>
<td></td>
<td>Absence of Sigatoka</td>
<td>Nematodes</td>
</tr>
<tr>
<td></td>
<td>Abundance of irrigation water</td>
<td>Irrigation management (gravity versus sprinkler-drip)</td>
</tr>
<tr>
<td></td>
<td>Favourable production pattern</td>
<td></td>
</tr>
<tr>
<td>Geography/logistics</td>
<td>Close proximity to Europe and Middle East markets</td>
<td>Inland distance fairly long, lack of competitive input suppliers</td>
</tr>
<tr>
<td></td>
<td>Presence of shipping options</td>
<td>refrigerated logistics in practice</td>
</tr>
<tr>
<td>Market</td>
<td>Strong demand for organic banana in Europe</td>
<td>Lack of sufficient professional production</td>
</tr>
<tr>
<td></td>
<td>Strong demand for bananas in Middle East</td>
<td>Turning opportunities into a lower cost offering compared to Ecuador</td>
</tr>
<tr>
<td>Know-how/HR</td>
<td>Development potential?</td>
<td>Absence of know-how or a “horti-culture”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Labour issues, farmer organization</td>
</tr>
<tr>
<td>Political</td>
<td>Need for non-oil revenue; hence government and investor interest</td>
<td>Political instability/sanctions</td>
</tr>
</tbody>
</table>
1.6 Opportunity: production pattern

A favourable production curve, as demand in Europe is high in Q1 & Q2
2. The Project
2.1 Project Objectives

The Ministry of Agriculture of Sudan started a project: “Promotion of Exports of Organic Bananas from Ethiopia and Sudan”

Funding: Common Fund for Commodities.

Objectives:

1. to **strengthen capacity of private and public players** in the supply chain to provide information and services for production, post harvest and marketing for effective expansion of organic banana exports

2. to **improve access** of the banana sector to state of art organic export banana production and post harvest **technology**

3. to **establish** organic banana **production** and export

4. to **strengthen human resources** to produce and market export bananas

5. to strengthen **growers associations** for capture of **greater value added** from organic export bananas
2. 2 Project Approach & Interventions

Approach:
1. Initial focus on production side of supply chain
2. Involvement of market partners to address problems at different levels of the value chain.
3. Action research for value chain development.

Interventions:
1. Introduction of new export cultivars as tissue culture material
2. Export training for farmers
3. 3-month export trial with training for the European market conducted by a Panamanian banana expert
4. Exchange visit of Sudanese farmers to Peru
5. The elaboration of an export manual
3. Results and discussion
Giant Cavendish cultivars were introduced and tested by Horticulture Department and made available to producers. An in-vitro lab was set up. Irrigation test plots were established. Farmers adopt new cultivars slowly as Dwarf is more resistant to wind damage and Cavendish not giving advantage on local markets.

### 3.1 Agronomy

**Banana cultivars compared to local Dwarf Cavendish**

- **Williams M-196**
- **Williams-2**
- **Grand Nain-1**
- **Grand Nain-2**
- **Zelig**
- **Bio-01**
- **Dwarf Cavendish (local)**

- **Bunch weight**
- **No. Of hands**
- **Finger length**
- **Pseudostem height**
3.1 Export trial

Export trial: a Panamanian banana expert supported an export test for three months, from bunch selection, age and grade control, sucker management. Materials were brought in from Costa Rica. A reefer container was positioned at the packing location by Safmarine.

Test stopped after 150 boxes of 1080 packed: fine sand damage to the fruit. 70% of the fruit complied with the commercial size standard (grade and length), but only 20% to commercial quality requirements due to inadequate handling.

Improving this will require intensive training, small Peru-style packing stations, use of bags (bolsas), etc.
3.2 Value Chain

Local and regional markets: relatively high prices, low quality requirements and low management costs to farmers, harvest by traders.

Exports to regional markets are rising – see graph.

Export to Europe: higher prices, high quality requirements and management effort. Needs a long-term vision.

Requirement: farmer engagement, need to see the benefit: ratoon management, fertilization, pest control, irrigation, bagging, age control. Harvesting and quality support could be provided by a small farmer service company or cooperative (like Peru).

A well managed nucleus farm with outgrowers is a good change strategy.

The volume-price curve of the local/regional and export markets are complementary, which is an advantage.
3.2 Value chain

Regional exports of bananas

- Export Volume (MT)
- Export value ('000 USD)

Export value ('000 USD)
3.3 Logistics

Inland transport not cost effective enough. High costs, low reliability.

Shipping lines are interested to start exporting refrigerated cargo from Sudan, but need a certain volume to adapt their schedules and offer regular weekly sailings and short transshipment in Jeddah.
3.4 Labour and skills

No family labour, but hired casual labour, (illegal immigrants from Eritrea and Ethiopia).

Low wages: 1-2 USD/day. High turnover of labour, average 3 weeks – investment in training futile - higher wage will solve this. Agricultural work is not seen as worthwhile.

Child labour is an issue. Fairtrade will be very relevant, but not easy to adopt. An export banana culture such as in Ecuador and Peru cannot be easily built. Expat workers from e.g. Philippines will be needed for most of the work.
High rate of inflation: 45%
Disparity between official (5.3 SDG/USD) and black market exchange rate (9.3 SDG/USD) for Sudanese pound.
Sanctions on bank transfers
3.6 Project & Development Lessons

Farmers not interested in training or in investing in improved cultivars, as the marketing system did not provide an incentive to invest in improved quality for export.

The assumption that improving the quality would attract export quality buyers, was wrong.

Active involvement of export industry partners in an early stage is necessary.

The study tours to Peru were very useful.

Development takes time: In Peru, it took 10-15 years, benefiting from neighbouring Ecuador, benefiting from similar cultures and stable political climate. The same development will probably take longer in Sudan.