SMP Miscanthus in Mozambique

vibers

WAGENINGEN
UNIVERSITY & RESEARCH

Business of NNRGY

- Growing Miscanthus
- Sustainable materials for plastic, concrete, paper and Bio-fuel
- 20 ton a year
- Easy crop to grow
- Low nutrient demand
- 600 mm rain
- Captures CO_2
- Pitch Vibers products

The project goals

To assess:

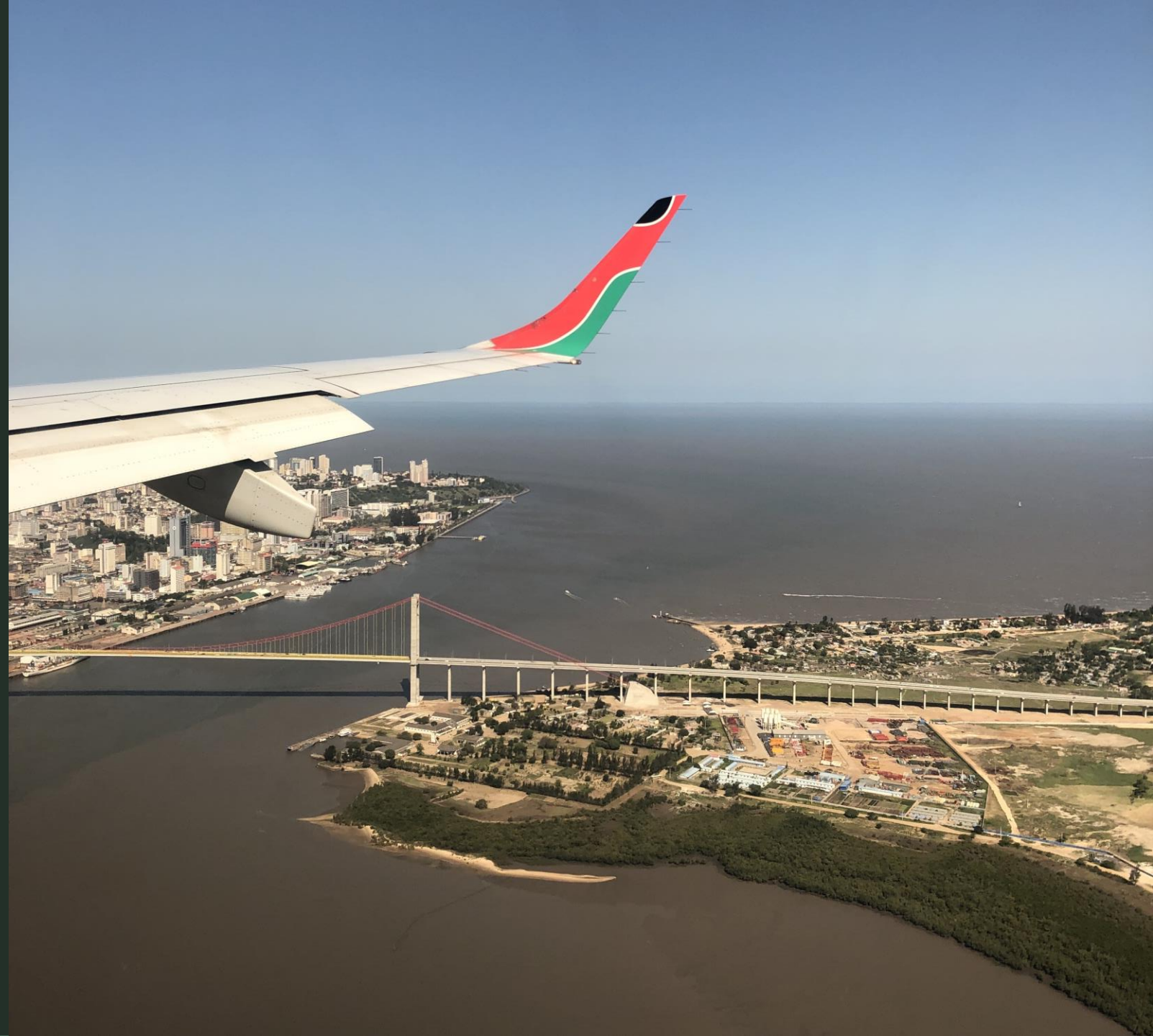
1. If and how a Miscanthus production system is feasible in Mozambique.
2. How a sustainable production system can be set-up
3. How to deal with the residues from such a production system
4. Identify drivers and constraints (political, economical, juridical, organizational)
5. Identify the social readiness levels
6. local market opportunities for the Vibers plastics in Mozambique

Partners

- Wageningen Research: knowledge base for biobased business development. Focus on agronomy and technology, social-economical aspects and governance.
- SNV and ICCO: development agencies with a focus on sustainable development, business development
- Land owner: Carloz Braz, district of Maracuene
- Government: District of Maracuene
- APIEX: foreign investment promotion
- Agricultural Sector: Mr Ribeiro, agrofood production, farmer organization
- Research: IIAM (Mozambique Institute for Agrarian Investigation), University of Maputo
- Dadtco: cassave production
- Dutch Embassy: information, arrangements, networking, instruments
- Dutch Business Club – entrepreneurs who know how to start business in Mozambique

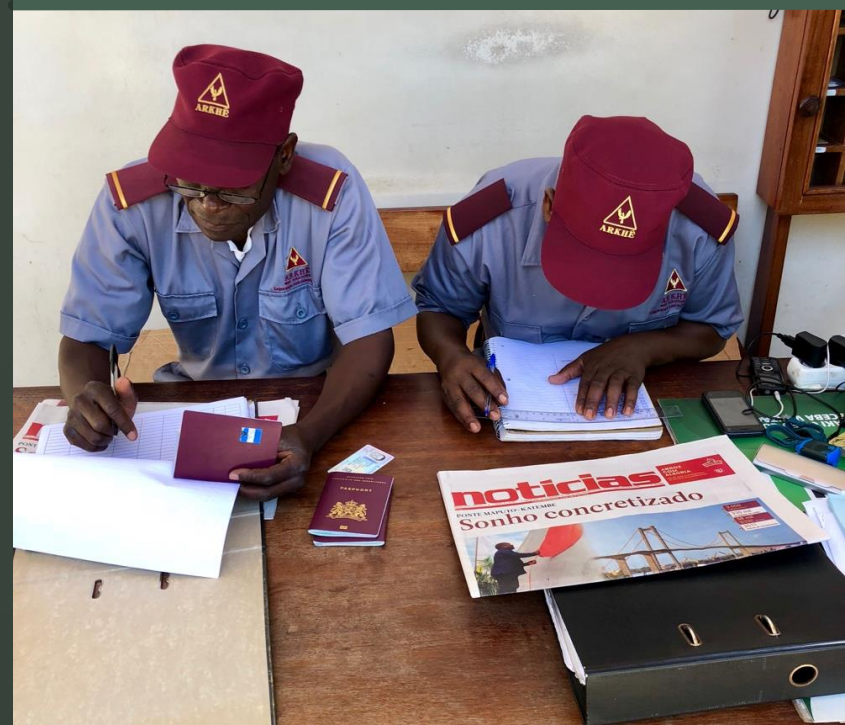
Pioneers

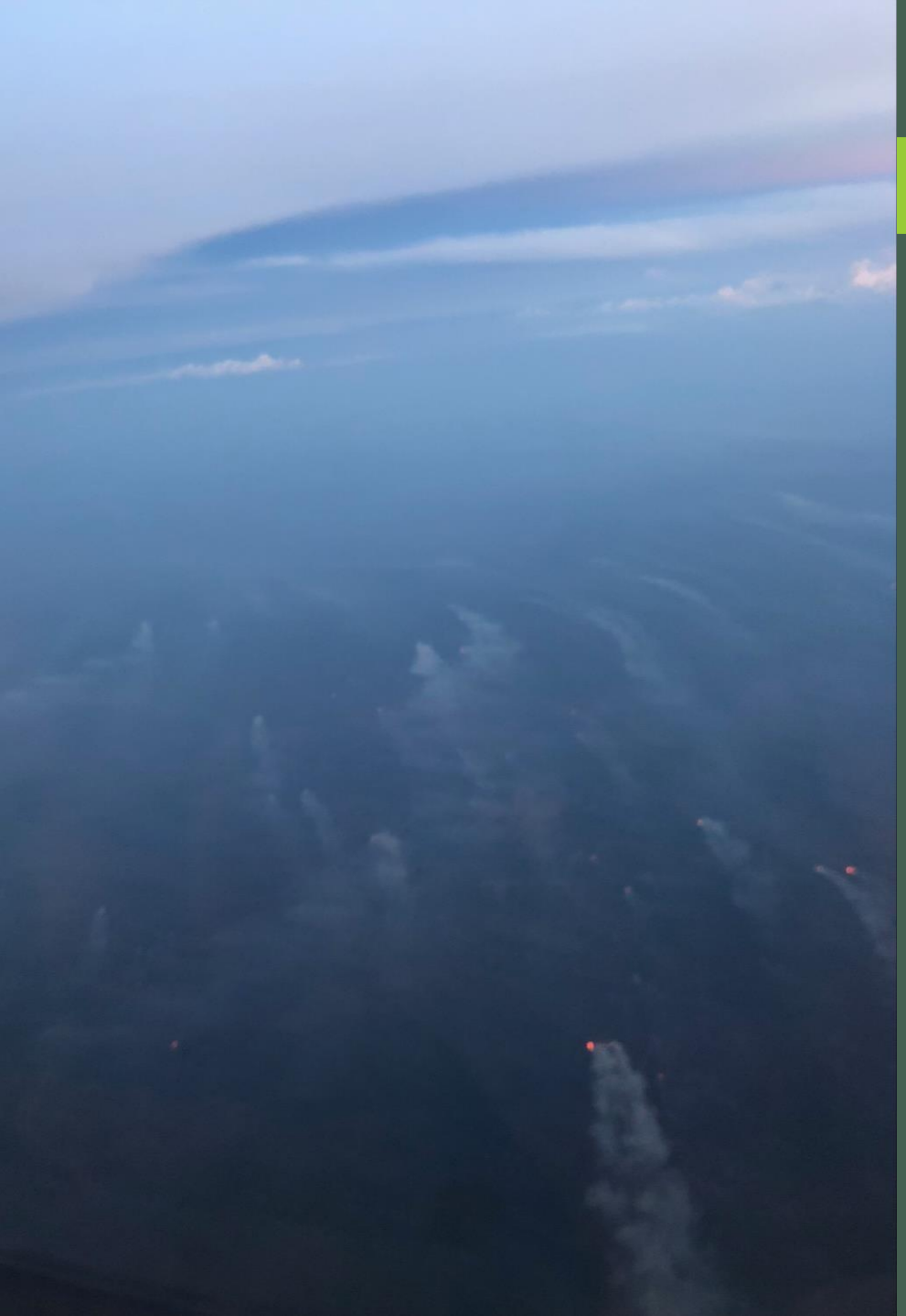
- Chinese, Turkisch, Dutch, SA
- Investment friendly
- Economic Growth
- Low cost for land and labour



Frameworks

- AGRA – Green Revolution in Africa
  - Food, export promotion
- Policy Mozambique:
  - Growth of Export is needed
  - Processing and added value activities in Mozambique
  - Alternative energy sources:
    - gas, new networks in urban areas
    - alternative for charcoal
  - Involvement local people
- ICCO – climate fund involving carbon credits



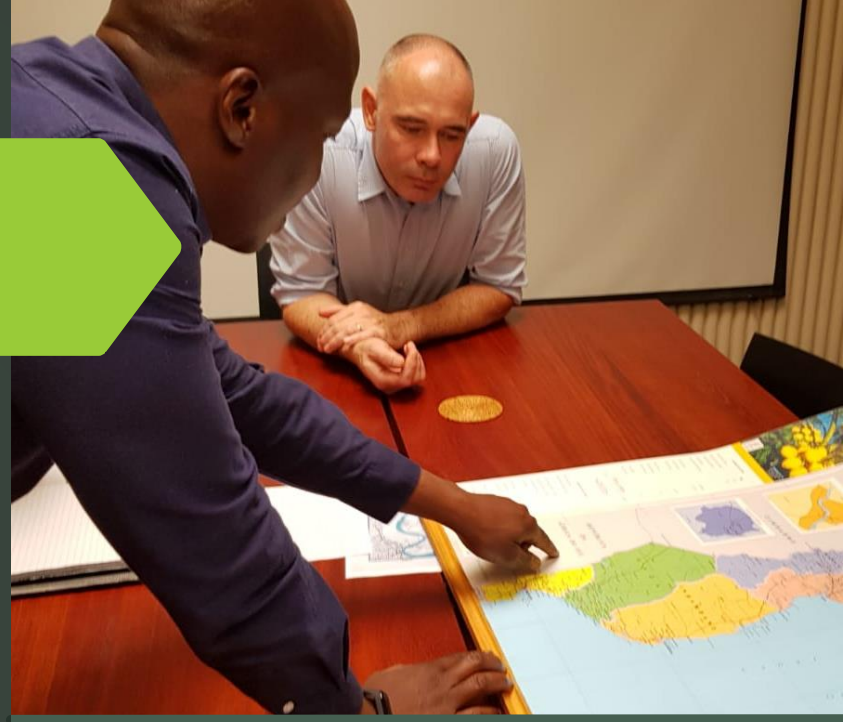


Issues / Challenges /Questions (Q)
Most projects do not succeed

- Charcoal
- Social / Cultural aspects
- Job creation
- Food vs Fuel, materials etc
- Plastic problem
- Export potential
- Housing and construction
- Education and Capacity building
- Population growth

Strenghts

- Available production area/land
- Climate (precipitation, temperature) and soil quality
- Home market for alternative energy sources
- Export potential to South Africa – good infrastructure
- Willingness to participate
  - Government -> tax relieves
  - Science -> experiments
  - Entrepreneurs
  - Land ‘’owners’’



Weaknesses

- Education workforce; level of skills and knowledge
- Land rights for limited period of time, no land property
- Only small (and unexperienced) farmers
- Organizational level of society is limited, informal economy
- Regulation (no ban of plastics/ charcoal still used as energy source)
- Logistics:
  - infra to rural area
  - location/ ranking / capacity of Maputo seaport

Opportunities

- Miscanthus as source for alternative energy production for cooking, alternative for charcoal
- Miscanthus as source for bioplastics production, niche product for upper class, export product for South Africa – starch needed (cassava)
- Miscanthus as a building material and replacing cement
- Testing fibers of other crops
  - Valorization of rest streams of sorghum for beer production.
  - Growing other grasses, as swiss grass or napier (real Elephant grass)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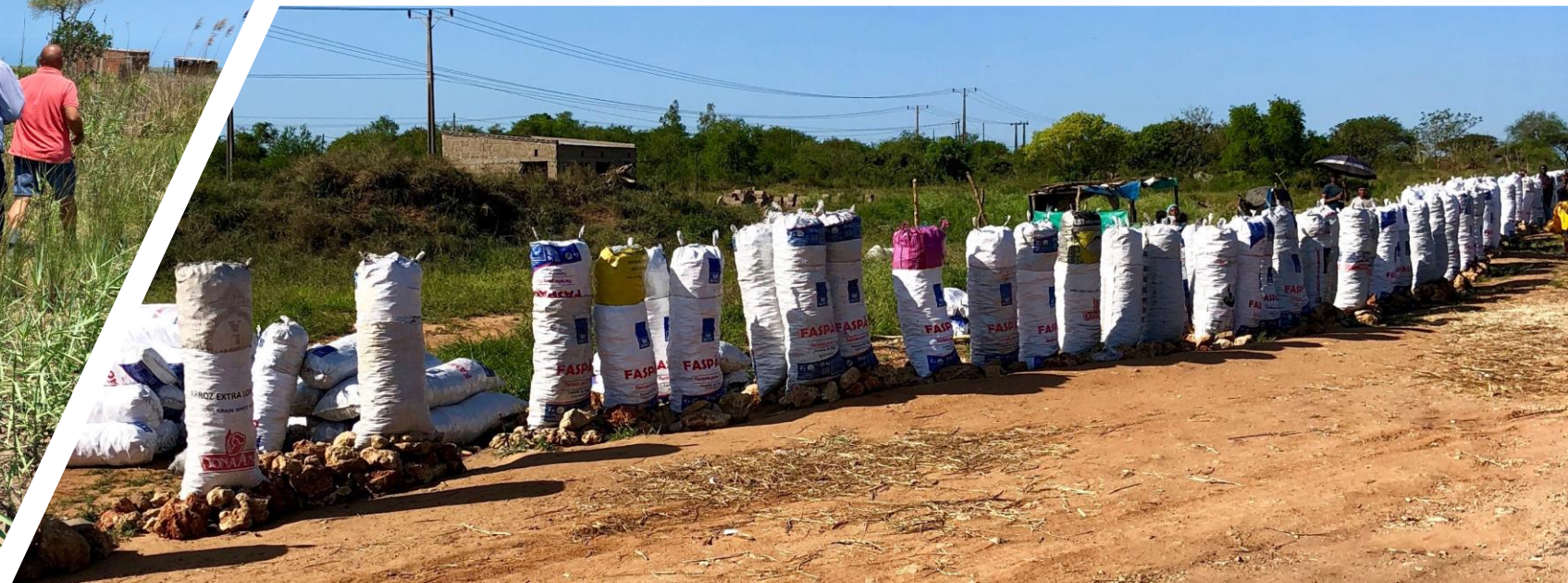
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Results I

To assess:

- If and how a Miscanthus production system is possible in Mozambique.
- How a sustainable production system can be set-up
- How to deal with the residues from such a production system

Answer

- Technicalities of the viber quality to sort out
- Land available, good climate conditions, testing facilities available, interest of universities and farmer organizations.
- Need for alternative energy sources, interest in bioplastics and sustainable building materials
- Start with experiments, mobilise value chain partners, small investments
- Educate local people, find broad understanding and support, engage partner networks, align with policy frameworks

Results II

To assess:

- Identify drivers and constraints (political, economical, juridical, organizational)

Answer:

- Existing market and charcoal system is a constraint, not so easy to change
- Uncertain land policies
- No ban on plastics
- New energy directives, investments in gas production..
- Informal economies, organizational problems
- Lack of workforce, lack of bargaining power, small middle class

Results III

To assess:

- Identify the social readiness levels
- If it is possible to also find a local market for the Vibers plastics in Mozambique

Answer:

- Much interest in perspectives of the biobased economy, vibers production lines
- Big need for alternative energies, but large part of the population is actively participating in the informal charcoal market
- Upper class my be interested in bioplastics
- Much building activities, growing demand to building materials
- Poor communities, struggle to survive and need for social development

Conclusion

- SMP exploration will not lead to direct investments of NNRGY
- Scoping has been done: more mapping and experimenting is needed
- Conditions (social, cultural and workforce) are far from perfect
- Much interest and expectations from all partners
- Efforts on partnerships, engagement, alignment and learning are needed
- Frames for foreign investment /green revolution need further exploration
- Miscanthus and biobased product lines will fit well in the long term
- Co-investments and guaranties are necessary
- Development of low cost strategies for further exploration is needed

Next steps

- Experiments with miscanthus – in collaboration with the University, farmers
  - experiment of growing miscanthus: viber quality and yield dry matter
  - Benchmark with other grasses
- Elaboration of the concept:
  - explore growers systems, value chains, market development
  - learning environment – education of farmers, informing policy makers, processors, development agencies, embassy network, investors, local people
- Market development
- Strengthening the network – engagement and alignment / community development
- Team development – formation of consortium

Instruments

- Feasibility study: embassy, Ministry of Foreign Affairs/ Economic Affairs
- Topsector Agrofood international
- ICCO climate fund
- EU Mozambique
- World Bank
- Agra (Agricultural Revolution of Africa)
- Case Uganda experiences (Dutch entrepreneur, WUR)