

# Food – Fuel Interfaces an interdisciplinary workshop

Berg en Dal, Kruger National Park, South Africa

14-18 September 2014



**SUPERGEN** Bioenergy Hub



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# Group 1.

Evodia Setati, Stellenbosch University, SA

John Corton, Aberystwyth University, UK

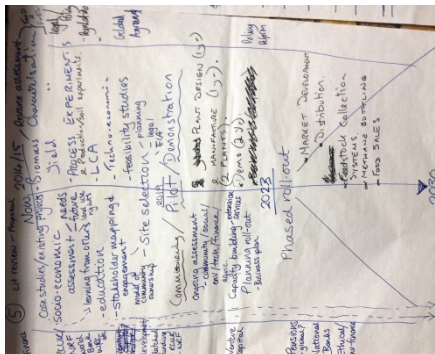
Julia Tomei, University College London, UK

Paul Adams, University of Bath, UK

Sagaran Abboo, Rhodes University, SA



**Mentor:** Patricia Thornley



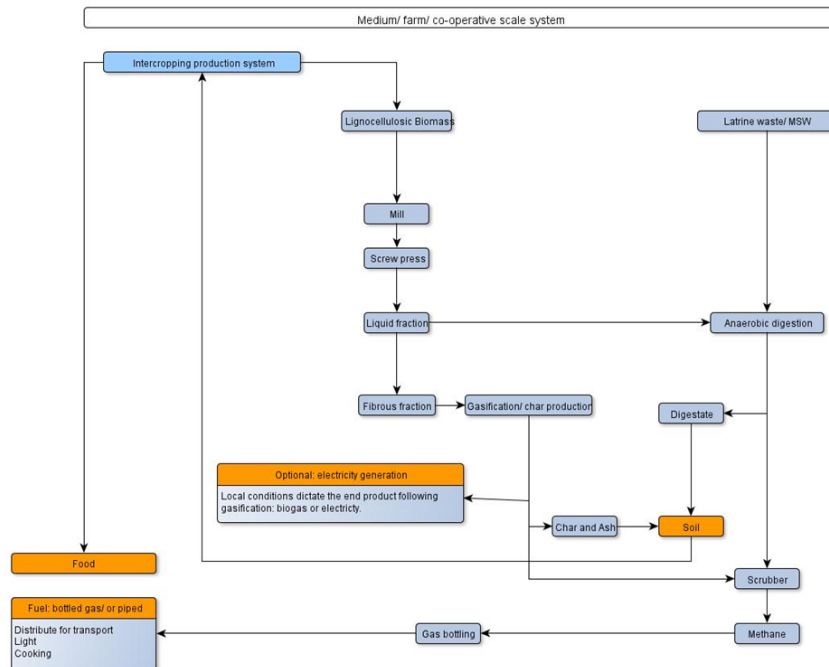
# Group 1. Sustainability criteria

- **Energy access** – does the vision improve energy access?
- **Innovation** – does the vision have a sufficiently innovate component?
- **Financeable** – is there a viable business opportunity?
- **Reality** – can the vision fit into the current food system for the foreseeable future?
- **Social acceptance** – is the scenario inclusive, providing benefits for the poorest?

# Group 1: technological routes

## Pathway #1. Integrated generation of syngas and biogas from biomass

(John Corton, IBERS)

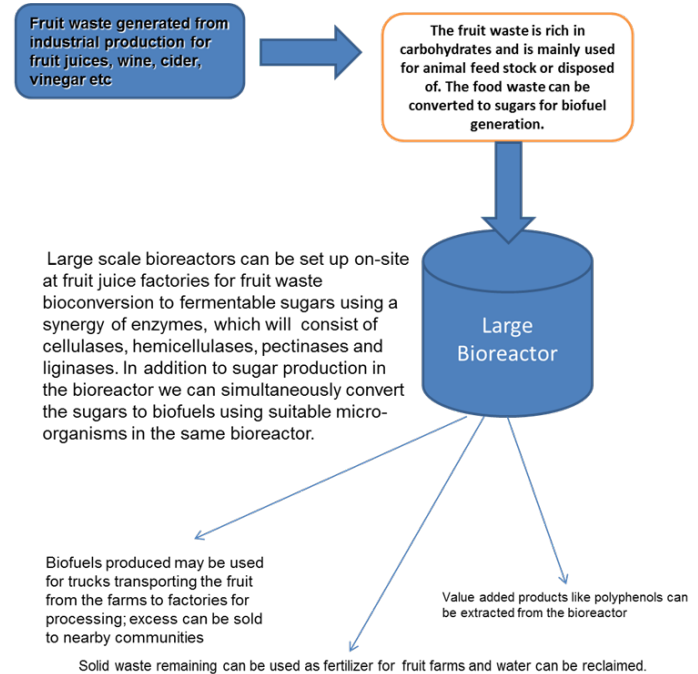


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## Pathway # 2. Bioreactor with fruit industry waste

(Sagaran Abboo, Rhodes University)



Clause: The intellectual property (IP) belongs to Rhodes University and is part of the PhD thesis for Sagaran Abboo (student no. 88A2550)(in preparation) under the supervision of Prof Brett I. Pletschke.



# Group 1: end vision

- Sustainable agriculture, incorporating appropriate soil, water and nutrient management.
- Realisation of the complementarities between food and fuel via the innovative use of proven technologies.
- Community ownership/ co-operative models to ensure the benefits are distributed equitably.
- Improved wellbeing, increased access to food and energy, and enhanced ecosystem services.
- An interdisciplinary approach with holistic goals.

# Group 2: The 4F's Project

## Feed-Food-Fuel-Fertilizer Interface

Privilege Cheteni – Rhodes University

Annie Chimphango – Stellenbosch University

James Colwill – Loughborough University

Beatriz Fidalgo – Cranfield University

Danie la Grange – University of Limpopo

Jon McKechnie – University of Nottingham

**Mentors:** Nico Stolz and Johann Gorgens

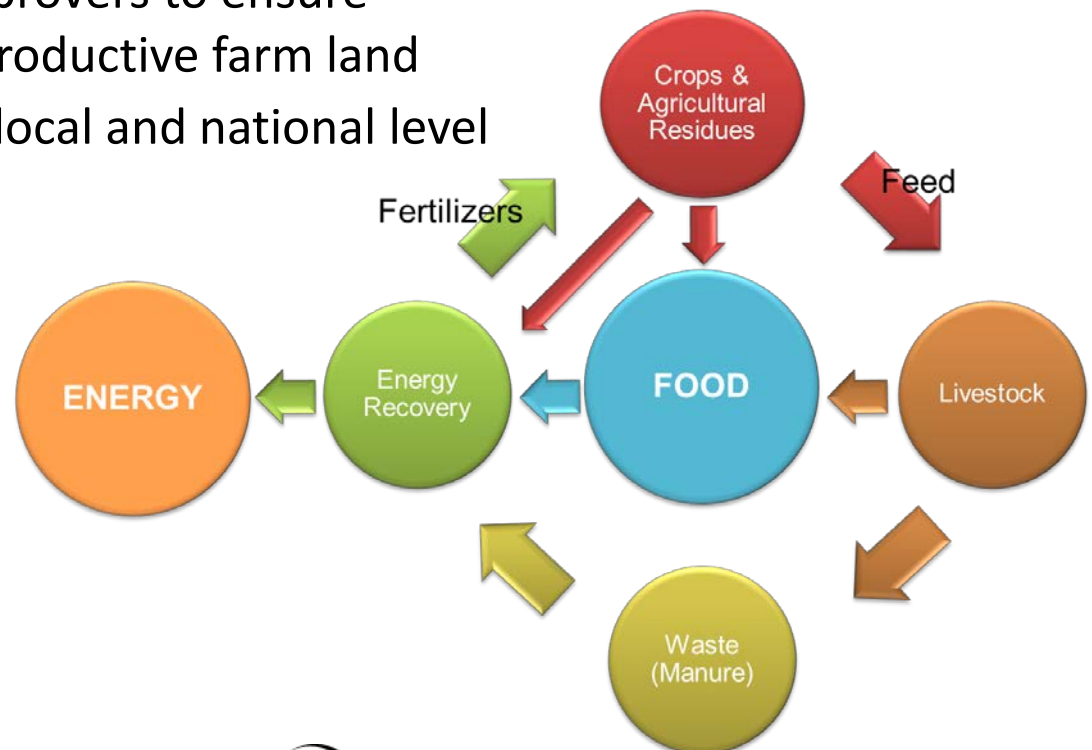


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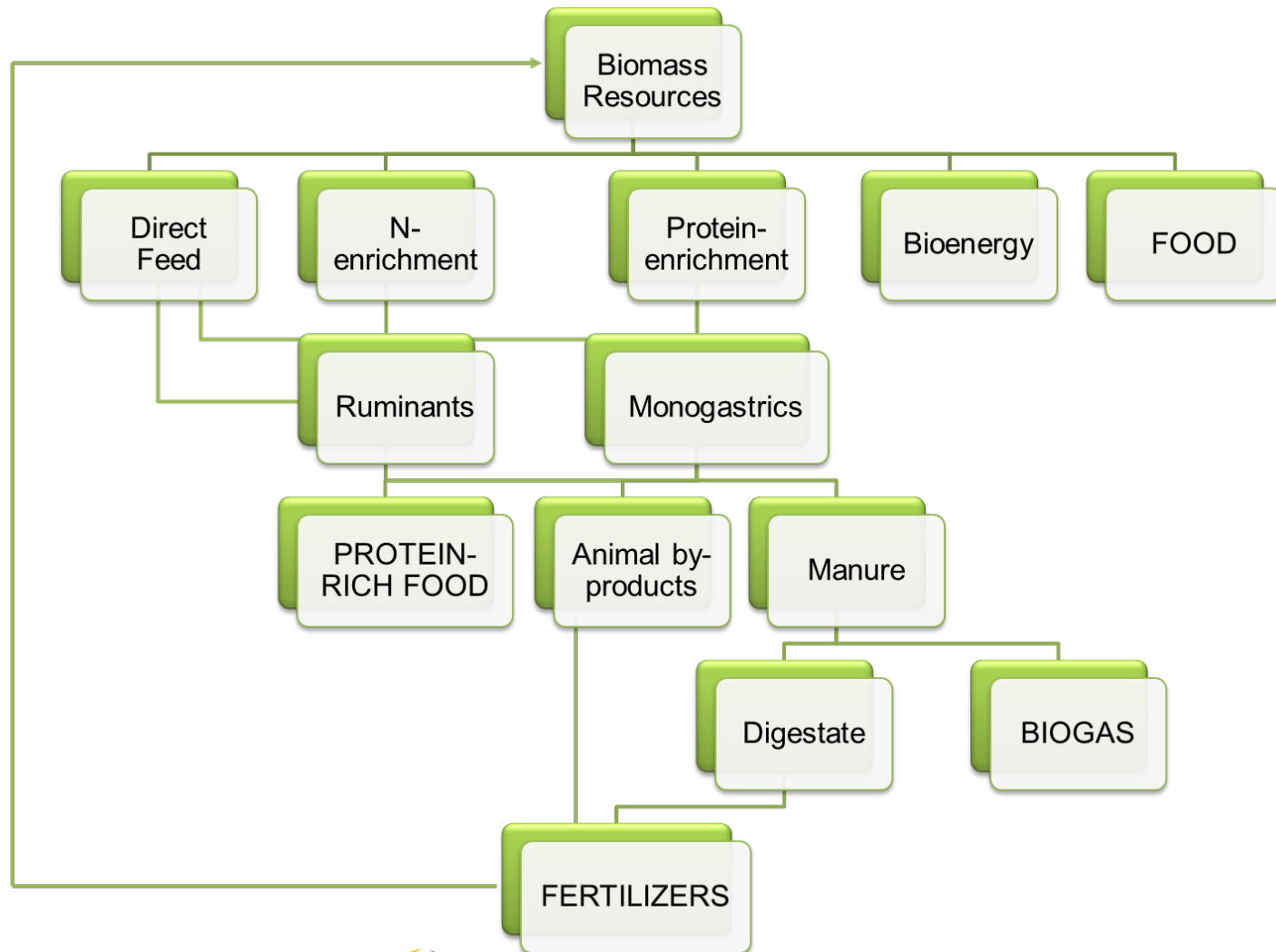
The South African population experiences need for:

- adequate food that provides both a healthy and balanced diet (protein-rich food vs. Carbohydrate-rich food)
- nutritious animal feed to enable meat production and animal products as part of meeting the food requirements
- natural fertilizers and soil improvers to ensure agriculture production and productive farm land
- energy production at both a local and national level





The **4F's specific approach** tackles the food/fuel challenge and also integrates the production of feed and fertilizers





# **Sugarcane** as a feedstock underpins the Southern African Development Community (SADC) sugar industry

## **Opportunities**

- Several materials and energy products can be produced from sugarcane (i.e. **ethanol, electricity & chemicals**)
- Providing **employment** and **sustaining the livelihoods** of smallholder farmers

## **Challenges**

- Need to **increase process efficiency**: current options are stalled by **policy uncertainty**, which limits investments
- What type of bioenergy models can **pair large- and small-scale** producers?
- Unclear implications for **energy, food and welfare provision** across SADC (meeting key development goals)



## The way forward (short-term activities)

- **2-year scoping study:** understand the role, opportunities and challenges of working with smallholder farmers in the SADC
- Based around a **small number of case studies**, the project will involve a **detailed policy, stakeholder and livelihood analysis**



### Group members

Name	Organisation
Nicola Favretto	University of Leeds
Raphael Slade	Imperial College
Miao Guo	Imperial College
Jon McCalmont	Aberystwyth Uni.
Roshini Govinden	Uni. KwaZulu Natal
Trudy Jansen	Stellenbosch Uni.



# Next Steps

- Several priority research areas were identified in the workshop
- Each area has a 'project champion'
- Idea is to develop research consortiums relevant to projects and then identify funding
- Do the research that underpins the implementation of each group vision



# Further Details:

- Contact Laura O’Keefe or Patricia Thornley
- Speak to one of the workshop participants

