

Value-add to livestock value chain residues

South African Case Studies

More Value, Less Waste

Robertson
9 May 2017



Netherlands Enterprise Agency



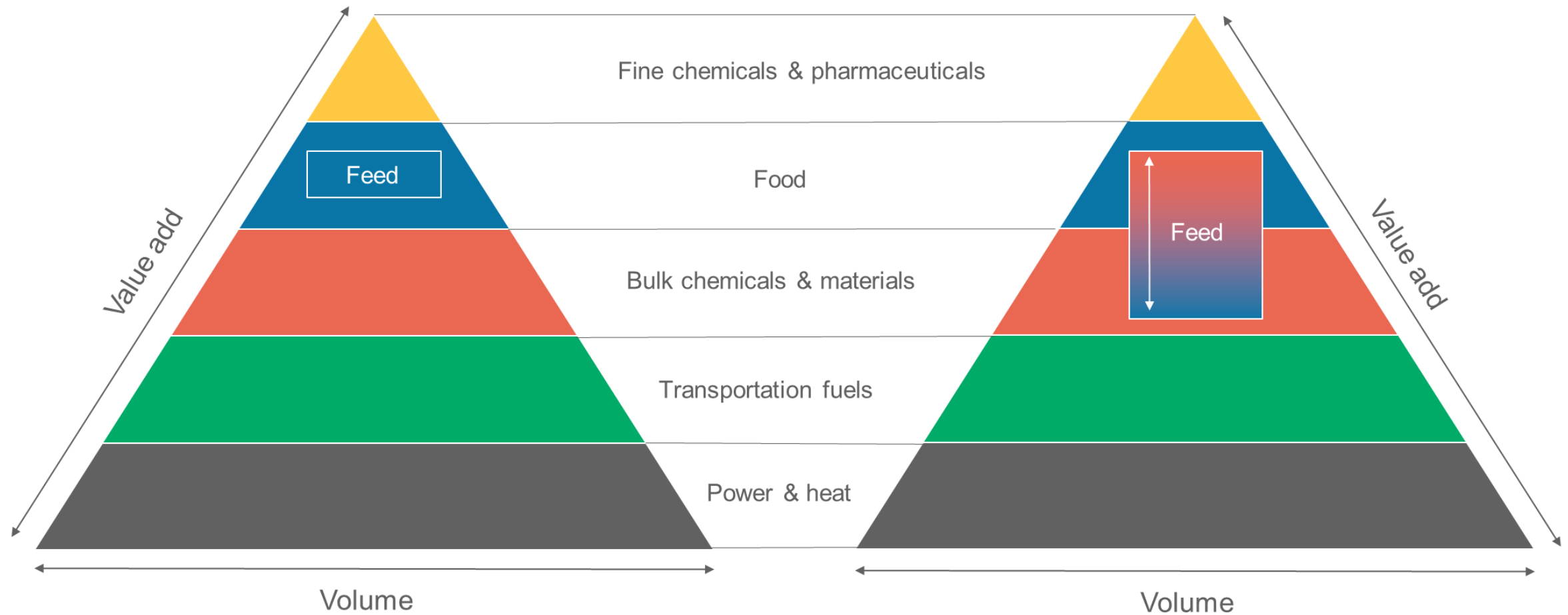
HOW CAN WE
#COCREATESA

AN INITIATIVE OF THE KINGDOM OF THE NETHERLANDS IN SOUTH AFRICA



Bio-based value-add hierarchy

Heuristic used for value-addition assessment



(a) General bio-based hierarchy

(b) Suggested bio-based hierarchy

Case Study 1: Zandam Piggery & Cheese

Biogas installation at a pig feedlot and dairy producer

Input	Pig manure
Outputs	Electricity: ≤ 100 kW Heat Digestate
Challenges	Digestate management – soon digestate microfiltration to be installed Digester leakage
Capital cost	~R9 million



Case Study 2: AgriProtein

Enhanced animal feed – insect protein

- **Process:** “clean organic waste” fed to fly larvae to produce insect protein
- **Products:**
 - MagMeal: high protein, high value soy/fish-meal substitute
 - MagOil: fat-rich component
 - MagSoil: soil conditioner
 - Whole Dried Larvae
- **Challenges**
 - Improving technology
 - Sourcing suitable feedstock
- **Capital cost**
 - R60 – R100 million for 100 t/day feed



Case Study 3: Khepri Innovations

Enhanced animal feed – insect protein

- Similar process as mentioned
- Holding trials using **abattoir waste** as a feedstock
- **Smaller-scale** than AgriProtein
- Use **solar energy** to dry larvae
- Looking at establishing locations nationwide



Case Study 4: Uilenkraal Dairy

Biogas installation at a dairy farm



Input	Cattle manure
Outputs	Electricity: ≤ 400 kW Heat Digestate – composted with sawdust to produce animal bedding
Benefits	~
Challenges	Digestate management Digester crust due to straw in feed – reduced electrical output
Capital cost	~R10 million

Case Study 4: Robertson Abattoir

Open wind-row composting

- Started by company due to tightened abattoir waste regulations
 - High waste management cost
 - Lack of existing solutions
- ~10 t/d abattoir and green waste composting



What's next?

Possible upcoming projects

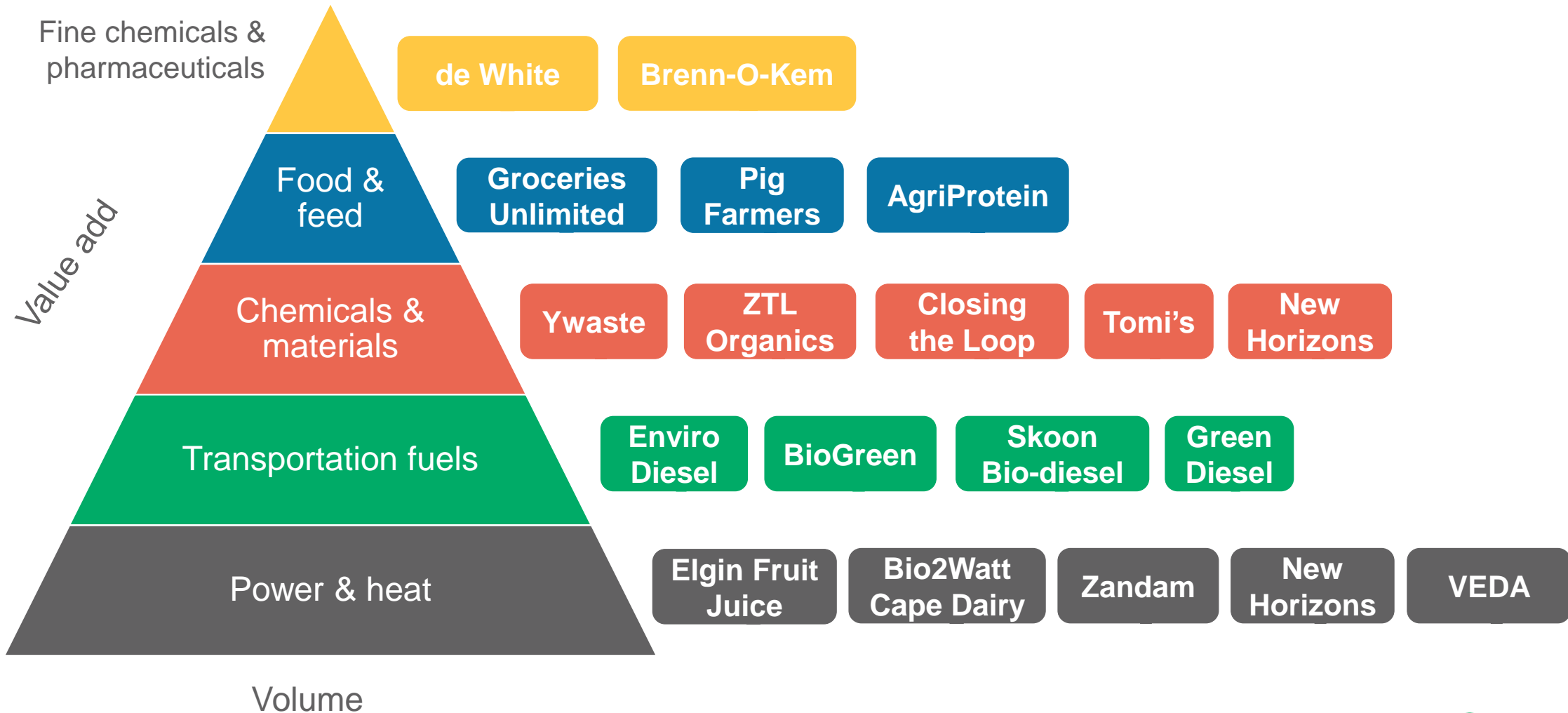
- Rendering project in Bonnievale
- Composting project in Bredasdorp



Thank You

Case studies

Western Cape organic waste solution providers



Source: WISP & Bioeconomy