

Small holder Jatropha processing & products

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Small scale (pre-)processing

Solving the problem of low functional density of biomass

■ Advantages

- Lower transportation costs
- Increased storage times
- Water and minerals stay on site
- Less waste treatment on factory
- More income to farmers
- Faster innovation

■ Research

- Small scale biodiesel and protein from rubber seed
- Animal feed from Jatropha press cake
- Sugar, ethanol and biogas from Sugar beet



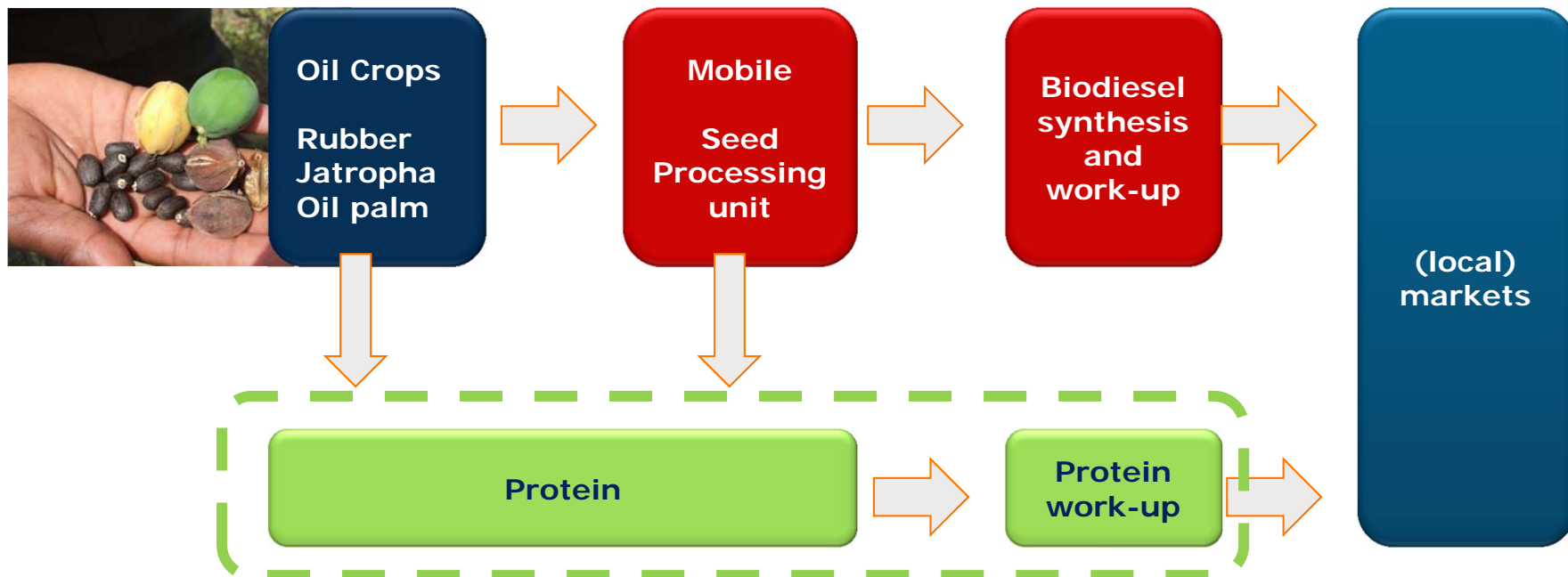
Agriculture beyond food

Mobile Biodiesel project



Two worlds meet:

- Mobile biodiesel refining
- Protein extraction



Mobile biodiesel unit

- Making maize meal
- Mobile units for cassava meal
- Mobile unit for biodiesel may be an option
- Also valorise the press cake



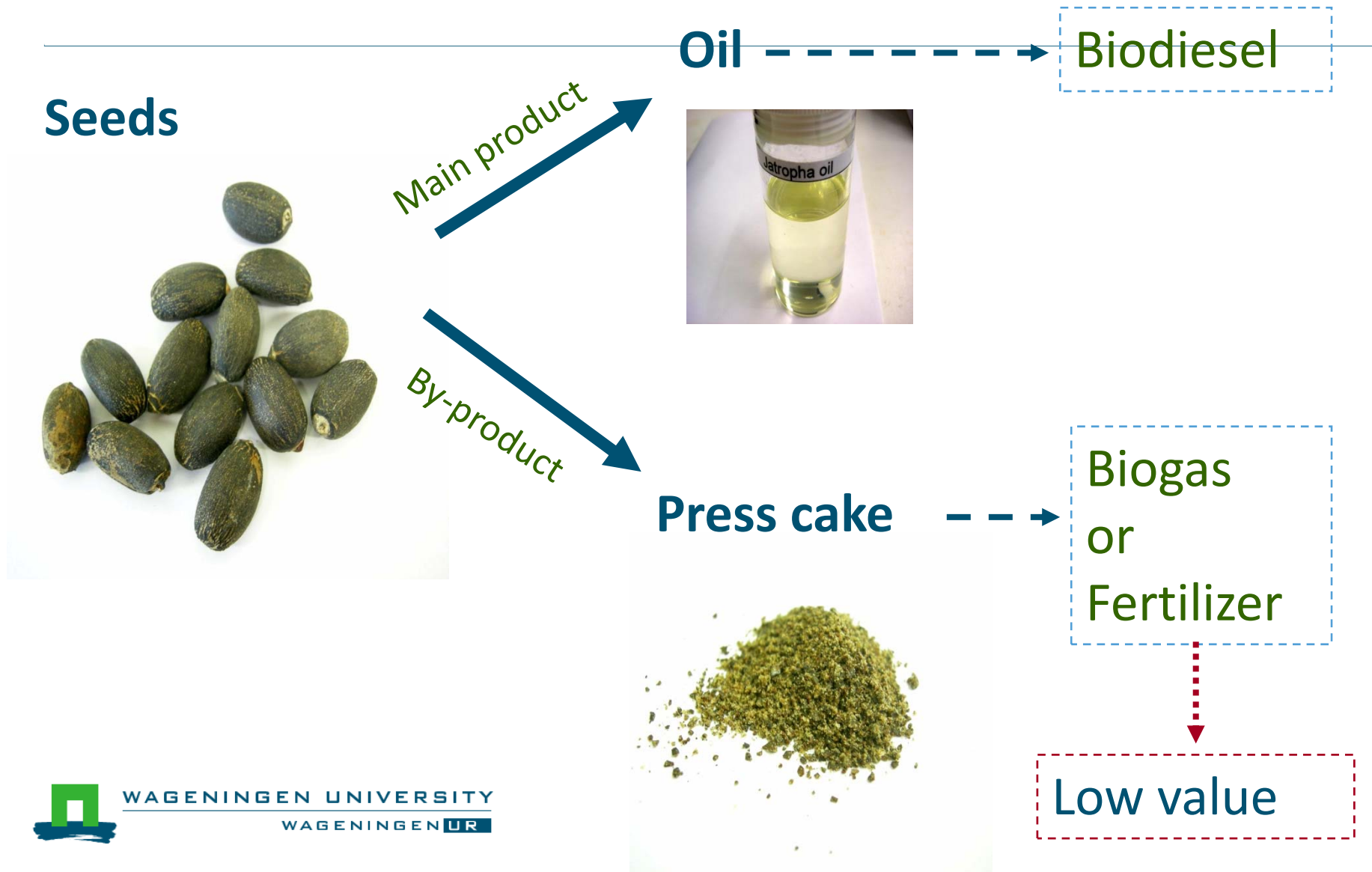
Starch from Cassava in Nigeria

Estimation seed added value

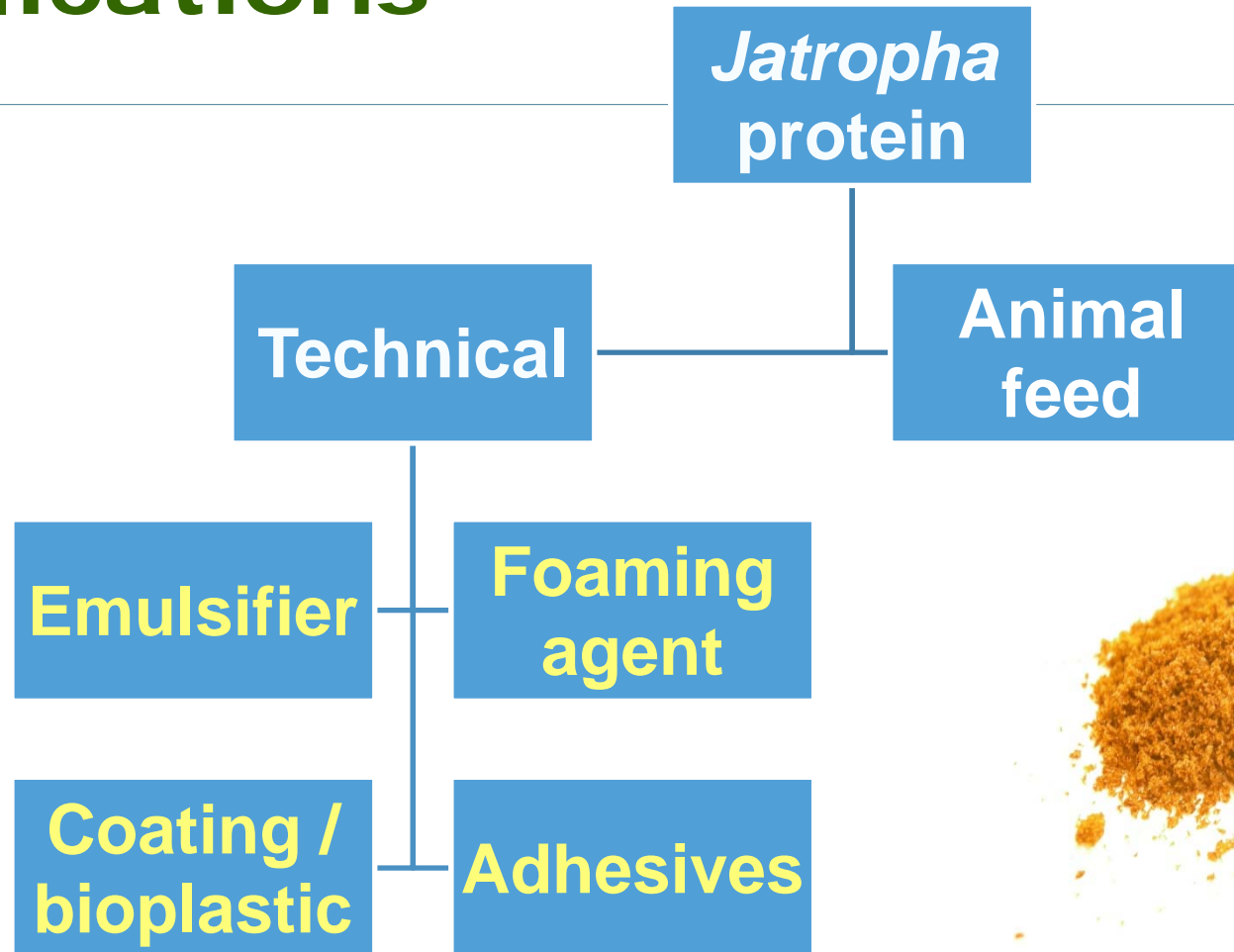
Components	%	Value (EUR/ kg seed)	
		Partial Fractionation	Total Fractionation
Oil	35	0.21	0.21
Crude Protein	17	0.02	0.17
Fiber/ Lignin	38		0.06
Carbohydrate	5		0.01
Ash	5		0.01
Total added value		0.23	0.46

Improve the value of seed
~2 times higher!

Biodiesel production: current state

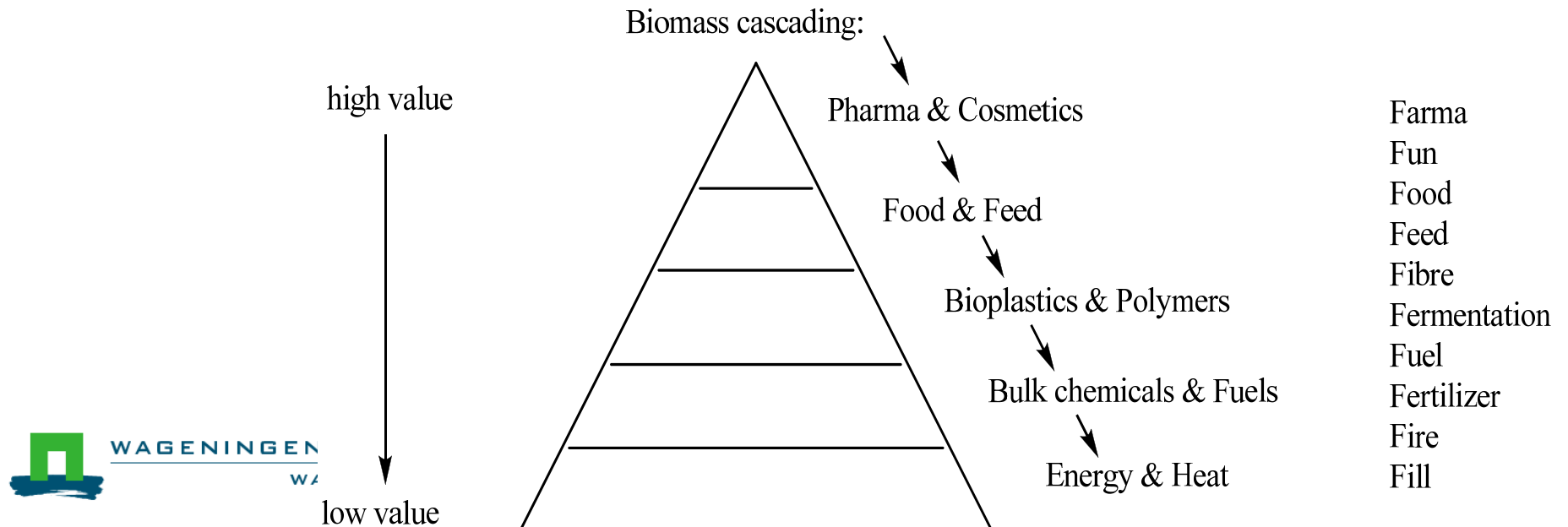


Jatropha protein potential applications



Can protein valorisation be done on small scale

- Fertiliser: no treatment, implemented directly
- Burning briquettes: very easy technology, possible
- Biogas: easy technology, maybe possible
- Other options (e.g. animal feed): Large scale



Small scale local production of oil: possible for PPO, perhaps biodiesel

However: Residue valorisation is needed (look at soy beans or ethanol from wheat)

Fertilizer, fuels are locally applicable

Higher value components (also animal feed): possible at large scale

