



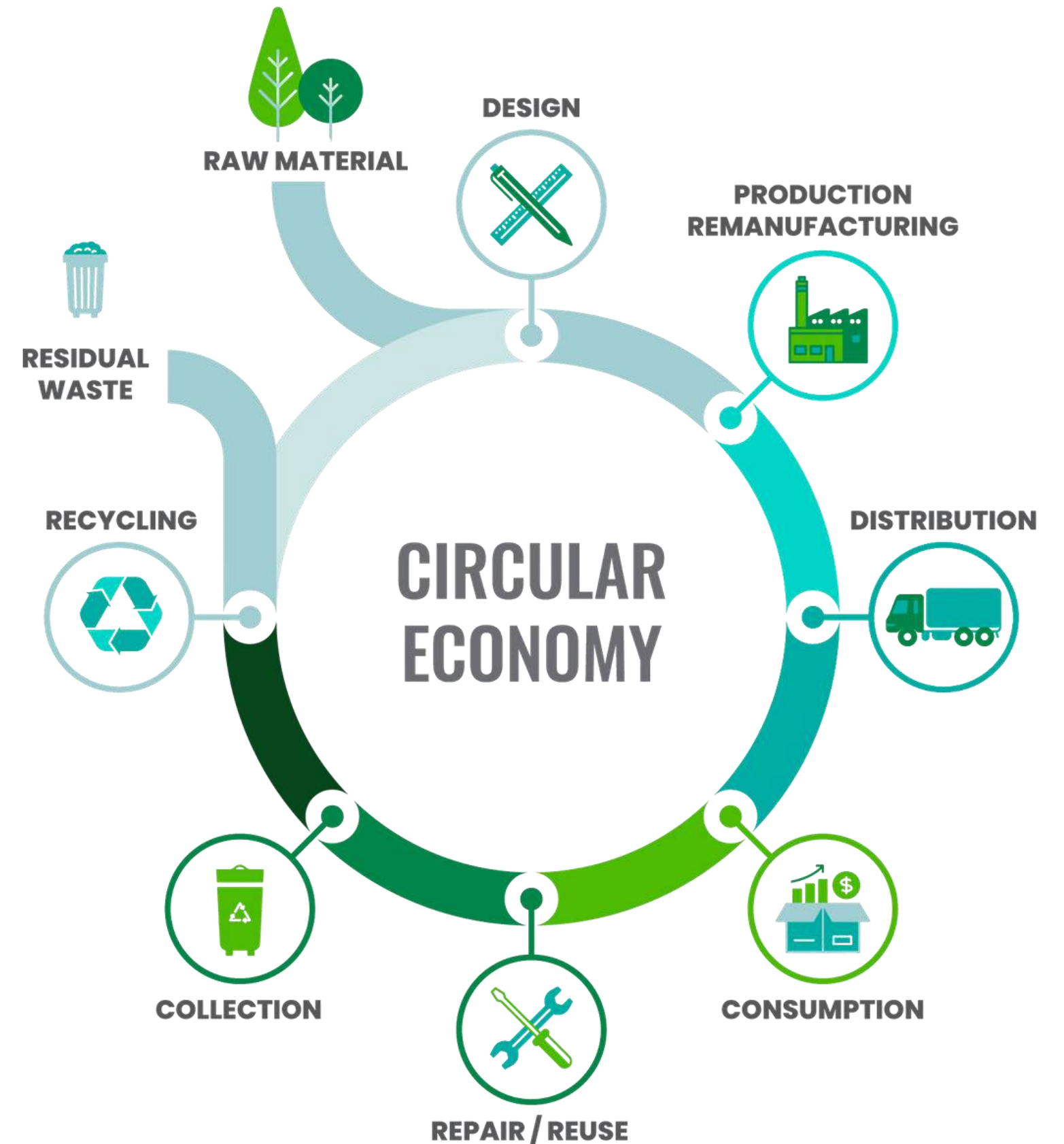
Circular economy in action

Peace Quadt
Africa Agriculture Solutions

Study commissioned by:
Netherlands Food Partnership in
cooperation with the **Netherlands**
Embassy: business
cases for circular solutions in the poultry
value chain in Cote D'Ivoire.

Netherlands[🌱] Food Partnership

- Builds strong partnerships for sustainable food systems
- Takes a systemic perspective for more inclusive food systems in Low and Middle-Income countries.
- Looking from Drivers to Outcomes and the institutional environment that enables food security and environmental sustainability.



source:
Freepik



NFP: vision where we go



01

Develop and scale alternative protein sources

- Food waste from hospitality and food industries
- Residue streams from other sectors (e.g. cassava peels, BSF)

02

Manure management in poultry sector

- Advanced composting technology
 - Soil health advisory and training
-

Maize and Fertilizer imported in Cote D'Ivoire

**Maize is an important
cereal in Cote D'Ivoire**

**In 2024 Cote D'Ivoire
imported \$25.7mil worth
of corn (OEC, 2024)**

**In 2026 ,average prices per
kg is 300CFA for imported
corn and 135 CFA for local
corn (validated by
FOANNI).**

**IFDC data CIV imported
573.123 Tonnes of
fertilizer in 2024 & in 2023
the WB data showed that
CIV spent \$391.3mil (Ehl,
2026)**

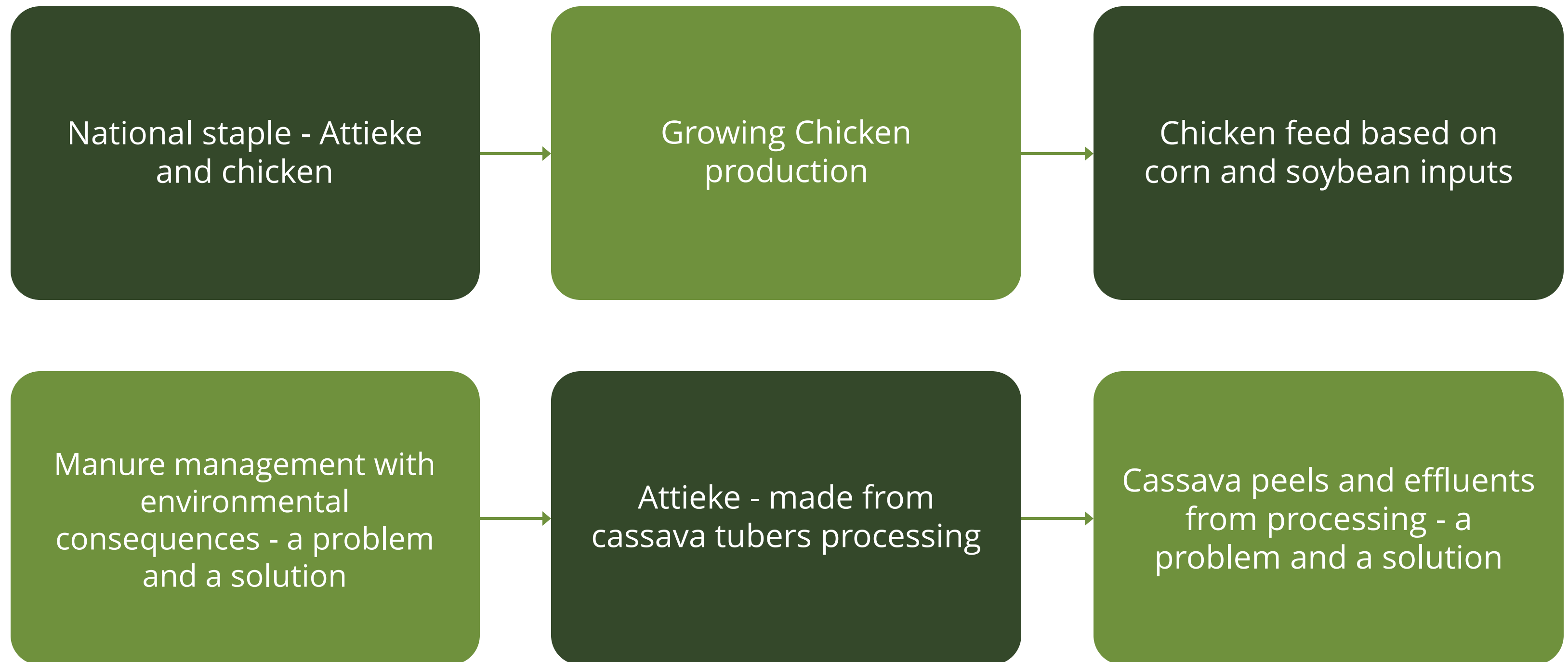
	Current quantity (tonnes per annum)	Future Quantity (tonnes per annum)
Poultry feed production capacity	20,000 (De Hues Abidjan factory)	60,000 (Abidjan + new Korhogo factory)
Maize demand	150,000	450,000
Local maize supply	10,000–20,000	Significant supply gap expected to remain
Fresh, washed, dry, cassava peel demand (83% dry matter, 0.5% maximum foreign matter)	600	Expected to increase with expansion of feed production
Fresh, washed, dry cassava peel supply (83% dry matter, 0.5% maximum foreign matter)	60-120	Insufficient to meet current and future demand
Market opportunity	Deficit of 130,000–140,000 tonnes/year maize and 480–540 tons/year cassava peels	Strong opportunity for increased HQCP production, collection, and processing of feed ingredients



Maize supply-demand gap & opportunities



Cote D'Ivoire realities-problems/solutions



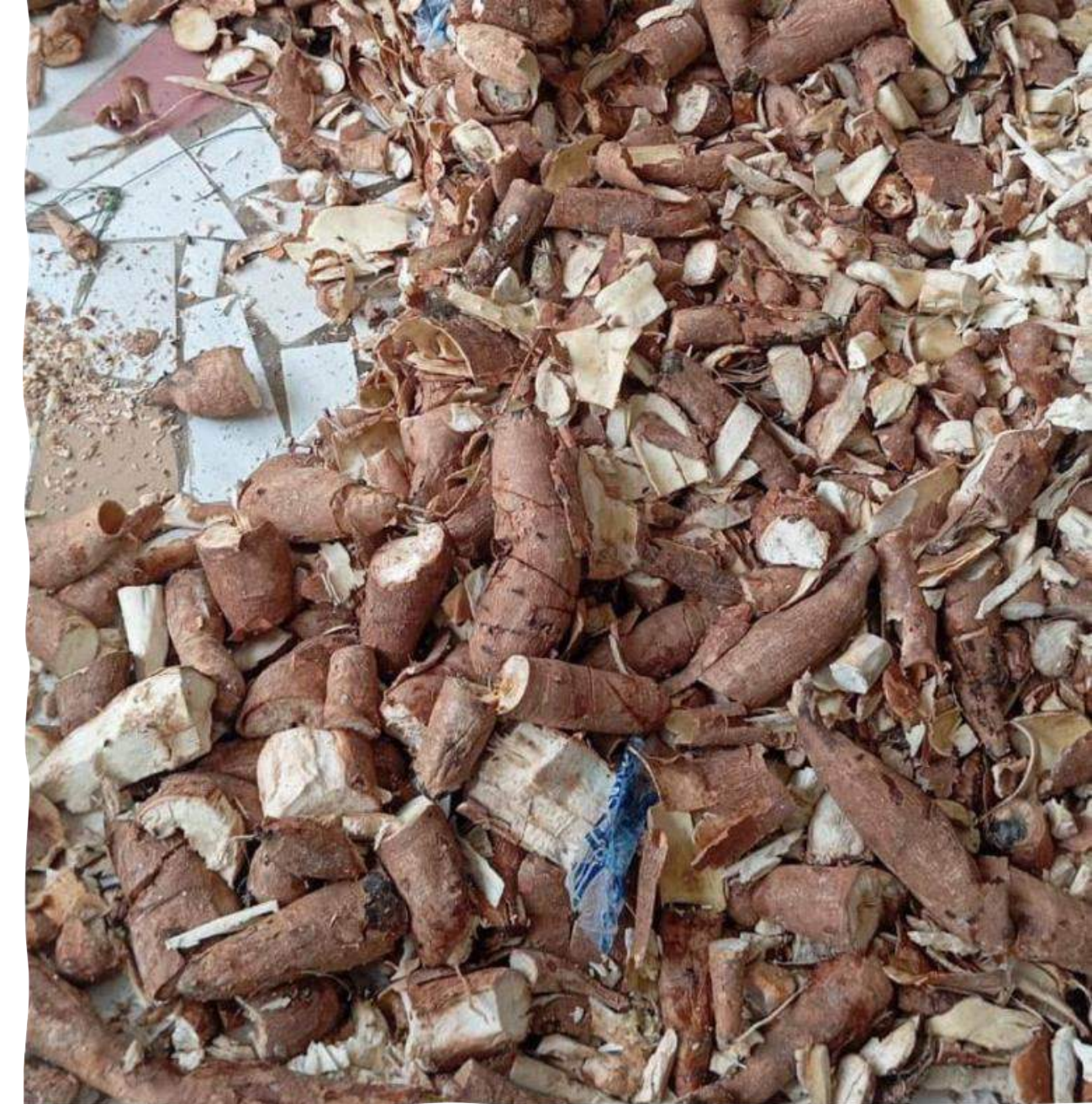
Volumes of 🌱 raw materials to be transformed

- Chicken manure estimated at over 500,000 tonnes per annum and concentrated around specific regions (RVO, 2025).
- Cassava processing produces an estimated 1.25 million tonnes of peels per annum about 10-20% is currently re-used and the rest leads to odour, soil degradation and environmental pollution (Hamissou et al., 2023).

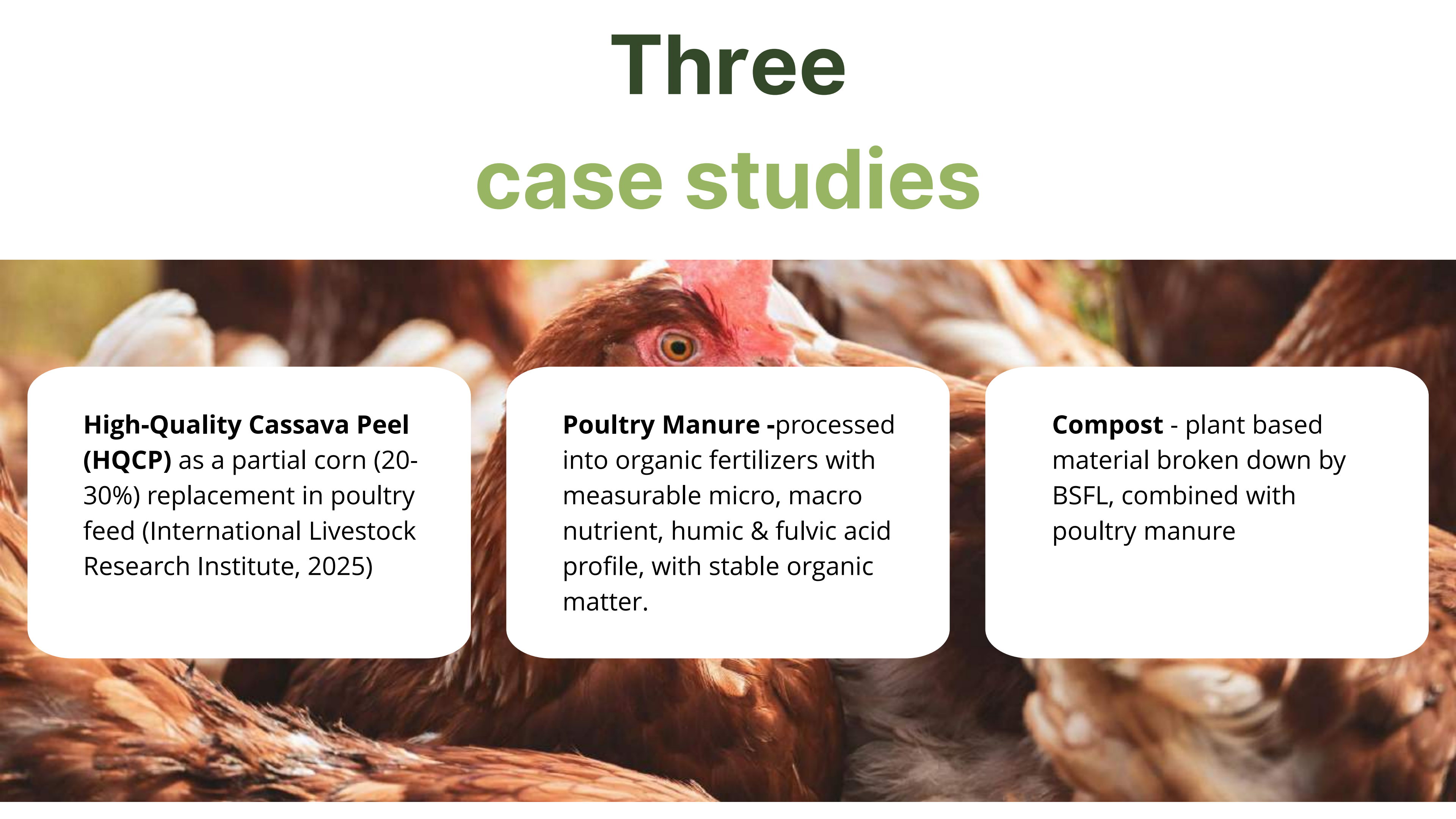


Current context

- Chicken manure is generally abandoned on the roadside and sometimes sold dried by farms who can sell, and it's applied on the fields without composting.
- Bigger farms have a manure management challenge.
- Cassava peel is not processed but a small part is sold for animal feed and causes environmental challenges.



Three case studies



High-Quality Cassava Peel (HQCP) as a partial corn (20-30%) replacement in poultry feed (International Livestock Research Institute, 2025)

Poultry Manure -processed into organic fertilizers with measurable micro, macro nutrient, humic & fulvic acid profile, with stable organic matter.

Compost - plant based material broken down by BSFL, combined with poultry manure

Case study 1: HQCP

- Extensive work done by International Livestock Research Institute in Nigeria with **localized technology** developing 3 fermented feed inputs from the cassava peels (International Livestock Research Institute, 2025):
- Whole, Coarse and fine mash
- Using the same machinery/technology used to produce Attieke and Garri - a fermentation and drying process that gives the product a shelf life of 6 months.



Source: CGIAR. (2022). Solution : Cassava Peels for Animal Feed Production. Propas.iita.org.
<https://propas.iita.org/en/solutions/cassava-peels-for-animal-feed-production/57/details/>

HCQP local context in Cote D'Ivoire

- In CIV a local feed miller is already testing washed and dried cassava peels as a feed input, with supply needs of a minimum of 50 tons per month.
- A small feed supplier in Yamoussoukro is already blending it with other ingredients and supplying to more than 10 fish farms.
- Mitigates the rising costs of corn imports and the inadequate local production of corn with average yields ranging from 2-5 tons per hectare.
- Potential to remove the competition of food and feed





Key findings:

HQCP



- The current model of washing and drying peels is running at a loss - costs exceeding market price.
- Costs are highly concentrated, with feedstock (56.4%) and transport (32.4%) totaling 89%. High moisture content (~70%~) makes long-distance transport inefficient, as most of the cost is tied to moving water rather than usable material.
- Free or near-free feedstock is the main driver of profitability, shifting the model to a +74.3% margin and confirming it as the key viability lever.
- The optimal setup (free feedstock with local processing and no transport) yields very high margins (+576.9%), while even partial cost reductions are sufficient to restore profitability
- According to ILLRI's concept the cassava mash product is more efficient and profitable.

HQCP SWOT Analysis

	Helpful	Harmful
Internal	Strengths • Localized technology and products validated by ILRI • Low-cost readily available raw material (cassava peel) • Offers 4+ diverse products • Recognition of peel as feed source • Reduction in feed production costs • Circular economy model	Weaknesses • Drying & storing challenges • Inconsistent quality • Energy cost • High transport cost(fresh peels) • Lack of knowledge • Perception constraints from female cooperatives (peel as waste)
External	Opportunities • Private sector adoption • Increased income for women and entrepreneurs • Enzyme treatment & bio-fortification • Solar energy utilisation for drying • Expansion to other livestock sectors • Regional export potential due to long shelf-life	Threats • Cassava Mosaic Virus (EACMV-UG) & Bacterial Blight • Fragmented supply chain • Supply constraint (inconsistent supply), especially in the rainy season • Low yields in cassava production