Project title : BENINUT - Sustainable Cashew Nuts in Benin

Project place	Project cost	Role in the project	Technical and financial sponsors	Dates
Benin	65 000 €	Bioenergy expertise	Agroforestry Technical Assistance Facility - ATAF, Common Fund for Commodities - CFC, Moringa Partnership, IED - Innovation Energie Développement, Tolaro Global	February 2018 - June 2018

Project's goals and results

Main goals
Valorise cashew production & processing waste in order to improve the sector's performance and sustainability

Specific objectives
Assess the economic and technical viability of a power plant using cashew nut residues and other agricultural waste available locally for mitigating environmental & social challenges regarding waste disposal and unreliable access to electricity in Benin. The study will assess local availability and biomass potential of cashew and other agricultural waste as well as the practical feasibility of energy generation for Tolaro and local off-takers. The study will assess the impact of such a project to confirm the expected positive social and environmental outcomes.

Beneficiaries
Cashew stakeholders in Benin

Results
A feasibility study clearly pointing the best bio-mass energy system and the best way to create a mini-grid to service the community (and respecting the MCC grant requirements) with the following results:

- The comprehensive study will identify the best feasible solution for a bio-mass energy system based on Tolaro's needs, absorbing at least 80% of produced cashew nut shells and possibility using cashew apple waste from smallholder famers (based on technical, economic and practical feasibility)
- The knowledge produced on the local availability of agricultural waste and potential uses will be used to identify other transformation options and potential value addition for farmers
- Ultimately, such a plant will increase the sustainability of cashew nut's value chain (by reducing waste). It will also create value for farmers who will sell biomass to Tolaro and potentially -in turn - receive organic compost for their plantations, while fostering local development by ensuring access to an affordable, secured and clean energy – hence contributing to the Sustainable Development Goals defined by the UNPD
- The project will exemplify an innovative strategy to create new synergies between cashew nuts producers and processors and as a contribution to the national governmental plan to foster the production of renewable energy from the use of biomass
- The plant will facilitate the development of new market opportunities for cashew nut by-products, which will benefit producers and processors, improving the overall competitiveness of the cashew nut value chain in Benin.

Activities

The undertaking of the feasibility study of a biomass power generation system based on the cashew residues of the processing plant of Tolaro Global is performed by a consortium of two consulting firms (10 experts): NITIDÆ (ex-RONGEAD-EtcTerra) and IED (Innovation Energy Development).

A1. Data collection – desktop and field research

- Desktop research based on secondary data available on cashew nut residues management, and state of the art of reutilization of cashew residues and other agricultural waste for energy generation
- On-site visit and field research in Benin
- Meetings and interviews with Tolaro management, outgrowers and other relevant stakeholders

A2. Assessment of biomass residue potential and availability

- Technical assessment of biomass potential of cashew nut residues (cashew nut shells and apples for gasification, direct burn)
- Identification of appropriate machinery/technologies
- Identification of machinery/technology providers (preferably locally)
- Assessment of gas emission and necessary environmental and health related control measures according to IFC guidelines

A3. Factory electricity needs

A4. Technical support for at least three units

A5. Economic analysis of the three potential units

A6. Social and environmental impact

A7. Conclusion and recommendations