



Market-Oriented Value Chains for Jobs and Growth in the ECOWAS Region (MOVE-ComCashew)

Uses of the Cashew Nut Shell

Raw cashew nut (RCN) consists of the white kernel surrounded by a hard and brown cashew nut shell. The shell makes up 70 - 75 % of the raw cashew nut. Even though the cashew shell presents a great opportunity for additional income generation, it is often ignored during cashew processing and treated as a waste product. Up till now, African processors have not fully tapped into its economic potential.

Uses of the shell

The cashew shell, when processed, provides an excellent source for industrial fuel and energy generation. Its toxic acid – the cashew nut shell liquid (CNSL) – can be extracted from the shell. The demand for CNSL on the international market is increasing and offers a great source for income generation. Once the CNSL is extracted, the shell can be used for several other products

In 2014, In 2020 Africa's RCN production generated about 840,000 1540000 MT of cashew nut shell. Despite this critical quantity of available shell, its processing is still very low. Most of the shells are going to waste. Reasons are a lack of knowledge on the income potentials of cashew nut shell by-products, low level of cashew processing as well as access to processing technologies which results in low investments in the cashew nut shell processing in Africa. As of today, only three factories in Africa extract as little as 20,000 MT of CNSL. About 25 % of the shell in Africa is used at the factory level for operational activities such as steaming.



Photo: ComCashew, Cashew nut shell after kernel

Products from cashew nut shell processing:

Process	Cashew nut shell products
Extraction	<ul style="list-style-type: none"> • CNSL • Brakefuel • Paint and vanish • Treatment of wood against termite • Cement
Gasification	<ul style="list-style-type: none"> • Methane gas • Biofuel
Pryrolysis	<ul style="list-style-type: none"> • Briquette • Charcoal • Bio fuel • Biocarburant
Combustion in the factory	<ul style="list-style-type: none"> • RCN Steaming

Source: ComCashew Database

The cashew nut shell liquid (CNSL) has numerous uses

- Lubricant
- Brake lining powder
- Paint
- Lamination
- Lining
- Insecticide or fungicides
- Tropical medications against leprosy, elephantiasis, psoriasis, ringworms and warts.



Environmental qualities of the cashew shell

- The cashew shell briquettes are biological sources for energy generation.
- The cashew shell briquettes and charcoal serve as an alternative and biological sources for energy generation.
- CNSL oil blend can also be used as alternative fuel.
- It reduces pressure on natural resource mining such as charcoal or oil.
- CNSL products such as termite repellents are also environmentally safe.

Cashew shell by-products: A profitable business for cashew processors in Africa

The cashew nut shell is a by-product of cashew kernel processing. CNSL extraction can add value to cashew processing activities, hence increase returns. As the shells are in the same location as the kernels, there is no initial transportation cost for the processor. The cashew shell can be used to produce heat for the RCN steaming and energy to supply the machines which will reduce the high energy costs - a factor reducing the competitiveness of African processing. For already existing large processing units, engaging into CNSL extraction may require substantial initial investment in equipment. Aci ComCashew and partners have been actively working on the promotion of local cashew processing and its commercialization. Shell processing has not yet picked up. Hence, there are still untapped product possibilities remaining to be exploited. Initial investment cost constitutes the main obstacle to processing. However, existing large units have the potential to spread the costs on other operations, making investment in shell processing a relatively low



Use of cashew shell for power generation in the steaming process. Source: ComCashew

Contact

Mary Adzanyo
mary.adzanyo@giz.de

Published by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Registered offices Bonn and Eschborn, Germany

Project MOVE- ComCashew
 Ghana
www.comcashew.org

Contact mary.adzanyo@giz.de

Design/Layout MOVE-ComCashew – Valerie Toffey

Photo credits GIZ

The Multi-Donor Action is jointly co-funded by the European Union under the post-Cotonou agreement with OACPS and the German Federal Ministry for Economic Cooperation and Development (BMZ).

GIZ is responsible for the content of this publication

As at September 2023, Accra

