german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Welcome to the Regional Cashew Apple Valorization Conference & Exhibition

Accra, 30th April 2026

ComCashew

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Dr. Andrews Osei Okrah

Chief Executive

Tree Crops Development Authority (TCDA)

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Nathan Eboyi

Representative
Association of Cashew Processors Ghana (ACPG)

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Céline Prud'Homme Madsen

Programme Manager
Agriculture
EU-Delegation Ghana

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Daniel Boehme

Deputy Head

Development Cooperation at the German Embassy Ghana

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Samson Ahi

Deputy Minister

Ministry of Trade, Industry and Agribusiness

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Kwasi Etu Bonde

Technical Advisor

Ministry of Minister of Food and Agriculture

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Opening Ceremony

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Cashew Break

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Connecting perspectives for a shared cashew apple future.

Bsc. General Agriculture (UCC), MSc. Development policy and planning (KNUST)

Former head of department of Agriculture: Sunyani West and Jaman South.

Current Cashew value chain specialist at the Tree Crops Development Authority.

TREE CROPS DEVELOPMENT AUTHORITY

TCDAs Proposed Policy Framework On Cashew Apple Utilization in Ghana

Outline

- Background
- Policy Goal
- Objectives
- Key Challenges
- Policy Pillars
- Implementation Framework
- Financing Mechanism
- Monitoring And Evaluation
- Expected Outcomes
- Conclusion

Background & Rationale

Ghana’s current production is around 250,000mt annually.

90% of the fruit mass (Cashew apples) are underutilized.

Challenges: perishability, astringency, low processing, overreliance on nut exports among others are the major causes.

Opportunity for agro-industrial transformation.

Policy Goal

- Enhance value addition, reduce losses, and increase incomes through commercialization of cashew apples.

Specific Objectives

- Build technical capacity for product development and processing.
- Promote investment in infrastructure
- Support research & innovation in addressing astringency
- Strengthen markets for cashew apple products (fairs etc,)
- Improve coordination across the cashew value chain

Key Challenges

- Limited technical expertise in apple processing
- High perishability and short shelf life
- Astringent taste limiting consumer acceptance
- Inadequate processing facilities and infrastructure
- Market and policy bias toward raw nut exports
- Weak linkages between farmers and processors

Policy Pillar 1:
R&D and Innovation

SUPPORT RESEARCH INSTITUTIONS TO DEVELOP TECHNOLOGIES TO REDUCE ASTRINGENCY

PROMOTE INNOVATIONS IN PRESERVATION (E.G., DRYING, FERMENTATION, COLD STORAGE)

ENCOURAGE PRODUCT DIVERSIFICATION (JUICE, WINE, ETHANOL, ANIMAL FEED, ETC.)

Policy Pillar 2:
Capacity Building and Skills Development

Establish regional training centers on cashew apple processing

Integrate cashew apple utilization into agricultural extension services

Promote youth and women entrepreneurship in apple-based products

Policy Pillar 3:
Product Categorization and Prioritization

Classify cashew apple products into:

Large-scale (industrial) products

Small-scale (artisan and community-level) products

As a national policy direction, prioritize two products for large-scale production, namely:

Cashew apple juice

Ethanol (industrial and biofuel use)

Promote small-scale product development for decentralized and community-based enterprises, including:

Animal feed

Organic fertilizers (compost)

Provide targeted support mechanisms tailored to each category to enhance efficiency, investment, and market development

Policy Pillar 4:
Infrastructure & Investment promotion

PROVIDE INCENTIVES (TAX BREAKS, GRANTS, SUBSIDIES) FOR PROCESSORS

FACILITATE ESTABLISHMENT OF DECENTRALIZED PROCESSING UNITS NEAR PRODUCTION ZONES

PROMOTE PUBLIC-PRIVATE PARTNERSHIPS (PPPS) IN PROCESSING AND LOGISTICS

Policy Pillar 5:
Market Development &Commercialization

DEVELOP STANDARDS AND CERTIFICATION FOR CASHEW APPLE PRODUCTS

PROMOTE DOMESTIC CONSUMPTION AND EXPORT OF PROCESSED APPLE PRODUCTS

SUPPORT BRANDING AND MARKETING OF GHANAIAN CASHEW APPLE PRODUCTS

Policy Pillar 6:
Value Chain Integration

STRENGTHEN LINKAGES BETWEEN FARMERS, AGGREGATORS, AND PROCESSORS

ENCOURAGE INTEGRATED PROCESSING MODELS (NUT + APPLE UTILIZATION)

SUPPORT COOPERATIVES TO ENGAGE IN APPLE COLLECTION AND SUPPLY

Policy Pillar 7:
Policy and Regulatory Support

Align	Develop	Promote
Align cashew apple utilization with national industrialization policies	Develop guidelines for safe processing and quality assurance	Promote inclusion of apple utilization in national cashew strategies

Policy Pillar 8:
Digitalization and Traceability

Deploy digital traceability systems to track production and processing

Use data platforms to link producers with processors and markets

Strengthen traceability systems to align with EU Deforestation Regulation (EUDR) requirements, including farm geolocation, supply chain transparency, and deforestation-free verification to maintain access to premium export markets

Implementation Framework

Lead Agency: Tree Crops Development Authority under the supervision of the Ministry of Food and Agriculture

Key Partners:, Research institutions, private sector, development partners

Approach: Multi-stakeholder collaboration with phased (step-by-step)

implementation

Financing Mechanisms

- Export tax on RNC to support value addition in apples
- Development partner support
- Structured Co-Financing and blended finance schemes
- Private sector investments

Monitoring & Evaluation

- Establish KPIs (e.g., volume of apples processed, jobs created, reduction in waste)
- Annual progress reviews and stakeholder consultations
- Data-driven tracking of value chain performance

Expected Outcomes

- Reduced post-harvest losses of cashew apples
- Increased income for farmers and processors
- Growth in agro-processing industries
- Job creation, especially for youth and women
- Enhanced contribution of cashew to Ghana’s economy

Conclusion

- **The effective utilization of cashew apples presents a significant opportunity to transform Ghana's cashew sector from a raw export-driven industry into a diversified, value-added agro-industrial sector. With the right policies, investments, and stakeholder commitment, Ghana can become a leader in cashew apple valorization in Africa.**


TREE CROPS DEVELOPMENT AUTHORITY

Cashew Apple Training In Sunyani

Cashew Apple Training In Sunyani

Cashew Apple products

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Beate Weiskopf

Programme Manager
GIZ MOVE

Co-funded by the European Union

Implemented by

Cashew Apple Valorization Conference

Cashew Apples, the Untapped Potential- Experiences from GIZ/MOVE

Accra, 30th April 2026

Beate Weiskopf, MOVE-ComCashew

Market Oriented Value Chains for Jobs and Growth in the ECOWAS region (MOVE)
Business Support Facility for Resilient Agricultural Value Chains

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Content

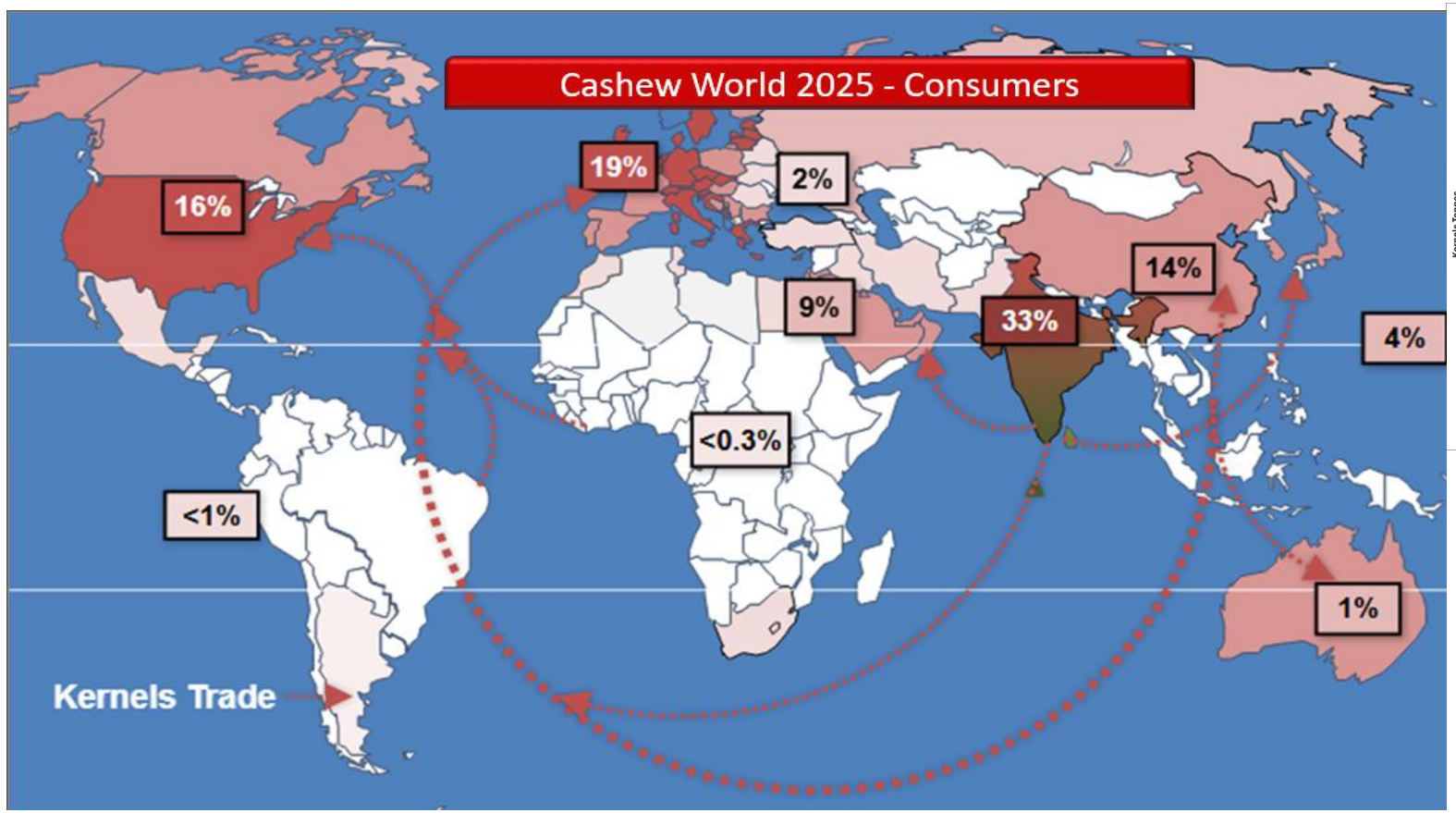
1. Introduction: Cashew Sector Overview
2. Untaped Potential of Cashew Apples
3. Cashew Apple Utilization and Value Opportunities
4. Nutrition Value of Cashew Apples
5. Experiences from GIZ MOVE-ComCashew
    a. Capacity Development
    b. New Product Development
    c. Promotion of local Consumption
    d. The Cashew Matching Fund Instrument
    e. e-MOVE

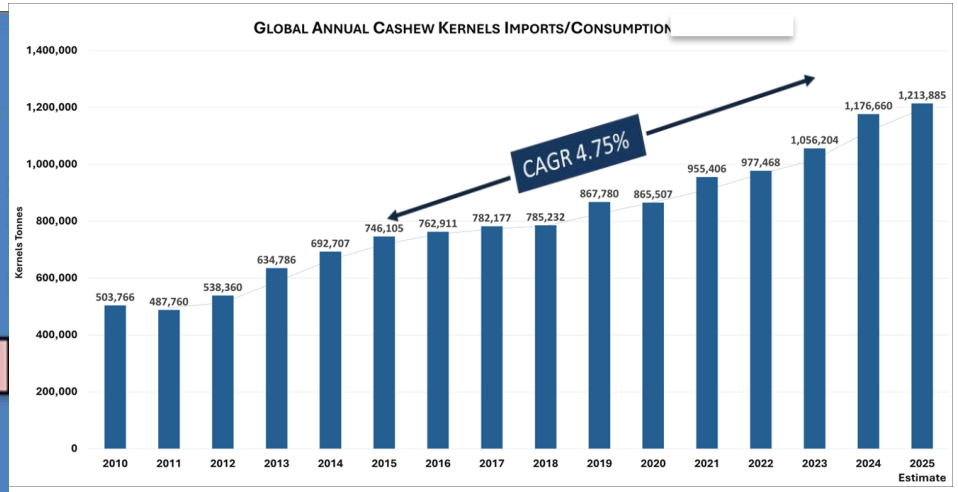
german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Growing Cashew Market





Demand CAGR 10 yr.	4.75%

1. **Strong demand growth**
2. **Key source of livelihood for more than 1.5 million smallholder farmers**
3. **Key source of export earning for producing countries**

Co-funded by the European Union

Implemented by

Cashew Apples produced in 2025

for selected countries, in thousands MT/year

	Benin	Burkina Faso	Cambodia	Côte d'Ivoire	Ghana	Guinea Bissau	Nigeria	Tanzania	West Africa	India	Total World Production
RCN Production	230	170	1,020	1,549	250	300	340	550	3,065	795	**6,100**
Volume of Cashew Apples produced	2,070	1,530	9,180	13,941	2,250	2,700	3,060	4,950	27,589	7,155	**55,000**

Approx. 55 Millions MT of cashew apples are produced yearly but not used due to lack of knowledge and technology

In Ghana, the cashew sector is becoming increasingly important

Co-funded by the European Union

Implemented by giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

- **75.000 farmers** cultivating cashew in 14 of 16 regions
- **45.400 farmers** trained by GIZ and partners in Ghana since 2009

Yield:

- Africa: 350-450 Kg/ha
- Trained farmers in Ghana: Up to 950 Kg/ha

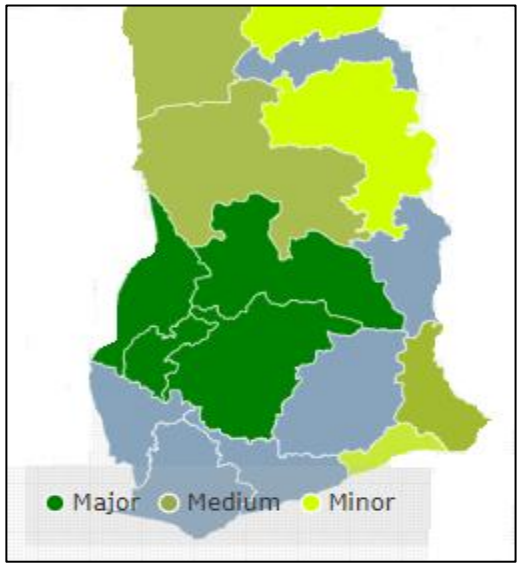


FIGURE 1 GHANA CASHEW GROWING REGIONS SOURCE: MOFA, DIRECTORATE OF CROP SERVICES DATA

- National production: **250.000 MT/2024**
- 9th largest producer world wide, 6th in Africa
- Ghana RCN of high quality, preferred by Indian processors
- **Processing** capacity: **65.000 MT,** underutilised
- **Cashew Trade** important income source, transit country for export for Burkina Faso and Mali

- **In 2024**, an estimated **2,000,000 MT** (GIZ/MOVE, 2024) of **cashew apples** were produced, 90 -95 % of those wasted
- Only RCN is being considered as of economic value

Cashew Apple Utilization and Value Opportunities

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Cashew Apples

Raw Material

- Fresh
- Pulp, Bagasse
- Dehydrated, Cooked

Intermediate Products

- Juices, drinks
- Alcohol, Acids
- Vegan Meat
- Texture and Flavor Ingredients
- Manure
- Nutritional Suppl.

Applications

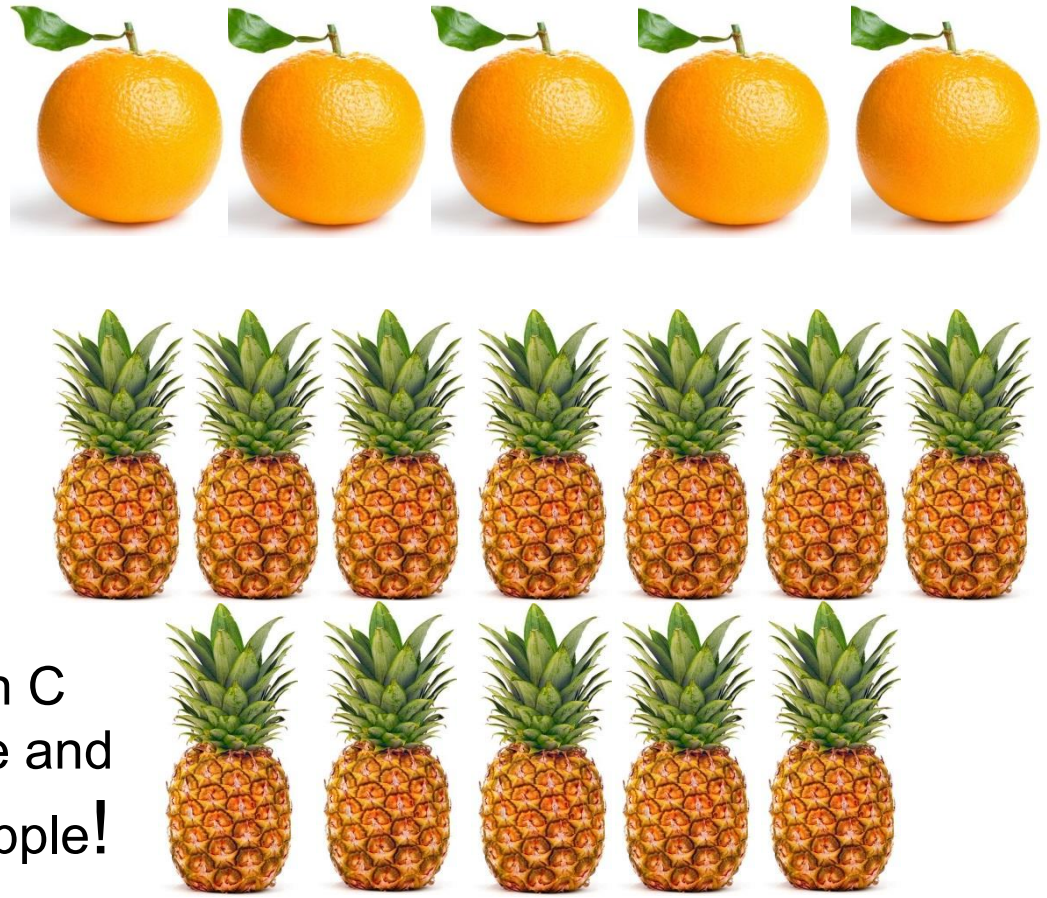
- Human Consumption
- Animal Feed
- Soil Improvement
- Colorants, Cosmetics
- Health

german cooperation
DEUTSCHE ZUSAMMENARBEIT
Co-funded by the European Union
Implemented by
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Nutrition Value of Cashew Apples

Nutrient	Nutritional Value
Vitamin C	261.0mg/100g
Thiamin (Vitamin B1)	0.02mg/100g
Riboflavin (Vitamin B2)	0.5mg/100mg
Nicotinic acid (Vitamin B3)	0.4mg/100g
Vitamin A	39.0IU
Sugar	6.7-10.5%
Pectin	1.17%
Calcium	10.0mg/100g

=



5 times the vitamin C content of an orange and **12** times of a pineapple!

Source : Sobhana A and Jose Matthew (2013); Strategies for Cashew Apple Utilisation on commercial scales; Cashew week, Volume 13 Issue 38

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Experiences from GIZ MOVE

Business Support Facility for Resilient Agricultural Value chains

Implemented from 2023 to 2027

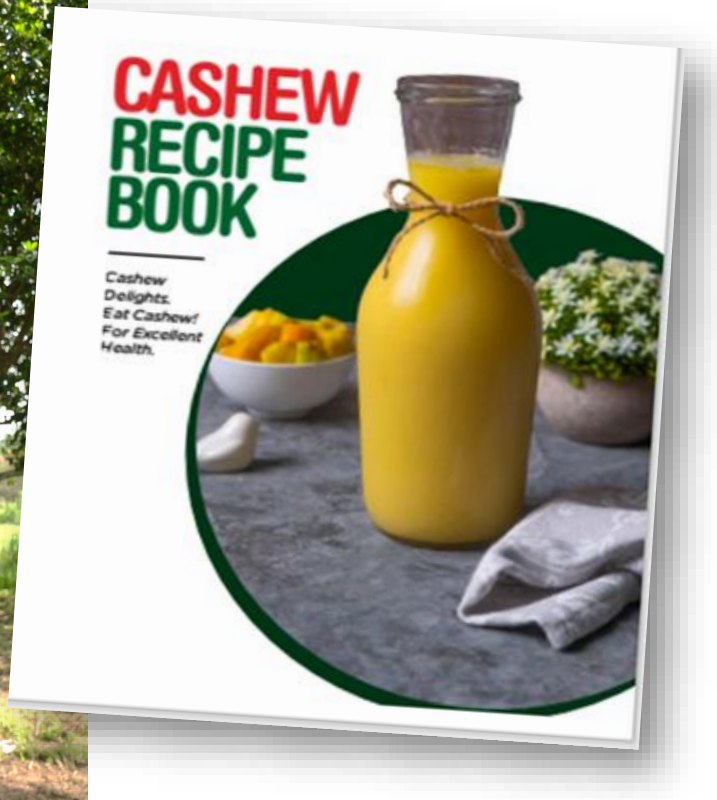
Co-funded by BMZ, EU/OACPS

GIZ MOVE's Cashew Apple Interventions

Co-funded by the European Union

Implemented by giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

- ❑ **Capacity Building**
- ❑ Recipe Book Development
- ❑ Exhibitions
- ❑ **New Product Development**
- ❑ Consumer Acceptability Tasting Events
- ❑ **Matching Grant Fund Projects**



german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Capacity building: Cashew Apple Processing Trainings

5000+ women and youth trained in cashew apple processing

Countries

Impacts

- Improved nutrition and health of the communities
- Introduction of cashew apple into the local diet
- Set up of new businesses
- Job creation and increased revenues for women and youth
- Environmental impact and reduction of wastage

Capacity building: incorporation of cashew apples into the local diet by creating recipes that satisfy the local palate (example of Ghana)

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Cashew apple as meat subsitute

- Cashew Apple Omelette
- Cashew Apple Khebab
- Cashew Apple Sandwich/burger
- Cashew Apple Yam balls
- Cashew Apple Light Soup
- Cashew Apple Veggie stew
- Cashew Apple "*Shito*"
- Cashew Apple Fried Rice

Cashew apple juice blends

- Cashew Apple Sobolo Juice
- Cashew Apple Cough Syrup "*emu duro*"
- Cashew Apple Juices and their blends (pineapple, mang

Other innovations

- Cashew Apple Popsicle
- Cashew Apple Jam and their blends
- Cashew Apple Chips
- Cashew Apple Pasta
- Cashew Apple Pizza
- Cashew Apple Pancake
- Cashew Apple Hair Food

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

New Product Development: 18 new Cashew Apple products developed in Cote d'Ivoire, Ghana and Nigeria

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

The Matching Grant Fund (MGF): A Strategic Lever to Boost the Cashew Value Chain

Co-funded by the European Union

Implemented by giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

- Of the 42 projects across the cashew value chain in 17 countries co-funded by GIZ/MOVE-ComCashew, **13 projects with an overall volume of 3,085,000€** work towards cashew apple valorization and are implemented in 7 countries.
- 2 research grant projects on cashew apple funded in Tanzania and Mozambique

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

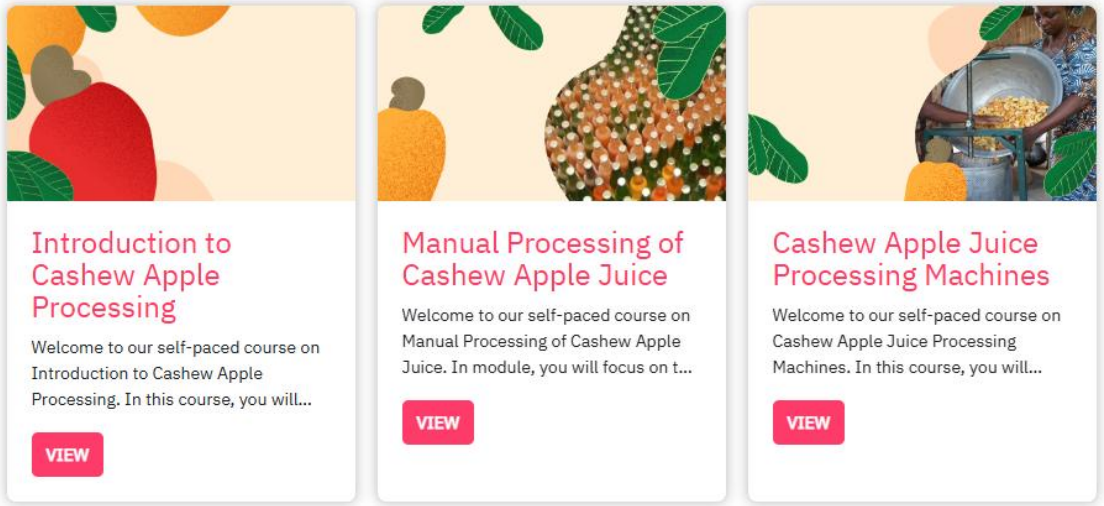
Cashew e-Learning eMOVE

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

E-learning courses on value addition for Cashew Apples

Cashew Apple Processing Series



Scan QR code to access courses here:

- Our cashew apple processing learning series consists of three practical, industry-relevant courses designed to build skills on basic cashew apple processing techniques.
- The courses provide step-by-step guidance for both small-scale and mechanized operations.
- The courses equip learners with the knowledge to add value to cashew apples, reduce post-harvest losses, and explore new agribusiness opportunities.

Conclusiones

Local context

- High potential for **income generation for women and youth**
  - positive business models exist,
  - many possibilities to transform cashew apples into final products for different uses
  - availability of raw material in quantity
  - low or moderate investment necessary

National context

- High potential for **job creation**
- National distribution channels and cooling chains have to be built up
- Promotion of consumption of the different products based on cashew apple necessary
- **Private sector investment needed** especially for introduciong new products to the market

Regional context

- Collaboration in research, networking, joint learning to close knowledge and technology gaps

International context

- First initiatives to bring Cashew Apple products to the European market ongoing
- Interesting possibilities as functional food in the health market
- **Private sector investment needed** especially for introducing new products to the market
- Whole value chain has to be developped, products have to be compliant with food safety and other standards

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Thank you!

Beate Weiskopf
Programme Manager GIZ/MOVE
Beate.weiskopf@giz.de

ComCashew Website
www.comcashew.org

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Rodolpho Ramilton de Castro Monteiro (RRCM)

Researcher
Embrapa Tropical Agroindustry

Cashew Apple Valorization

Experiences, Lessons Learnt from Brazil and Recommendation for Africa

Rodolpho R. C. Monteiro – PhD in Chemical Engineering
Researcher at the Brazilian Agricultural Research Corporation (Embrapa)

Accra – Ghana, April 30th, 2026

Embrapa
MINISTÉRIO DA AGRICULTURA E PECUÁRIA
GOVERNO DO BRASIL
DO LADO DO POVO BRASILEIRO

Trilateral Cooperation Ghana – Germany – Brazil

Co-funded by the European Union

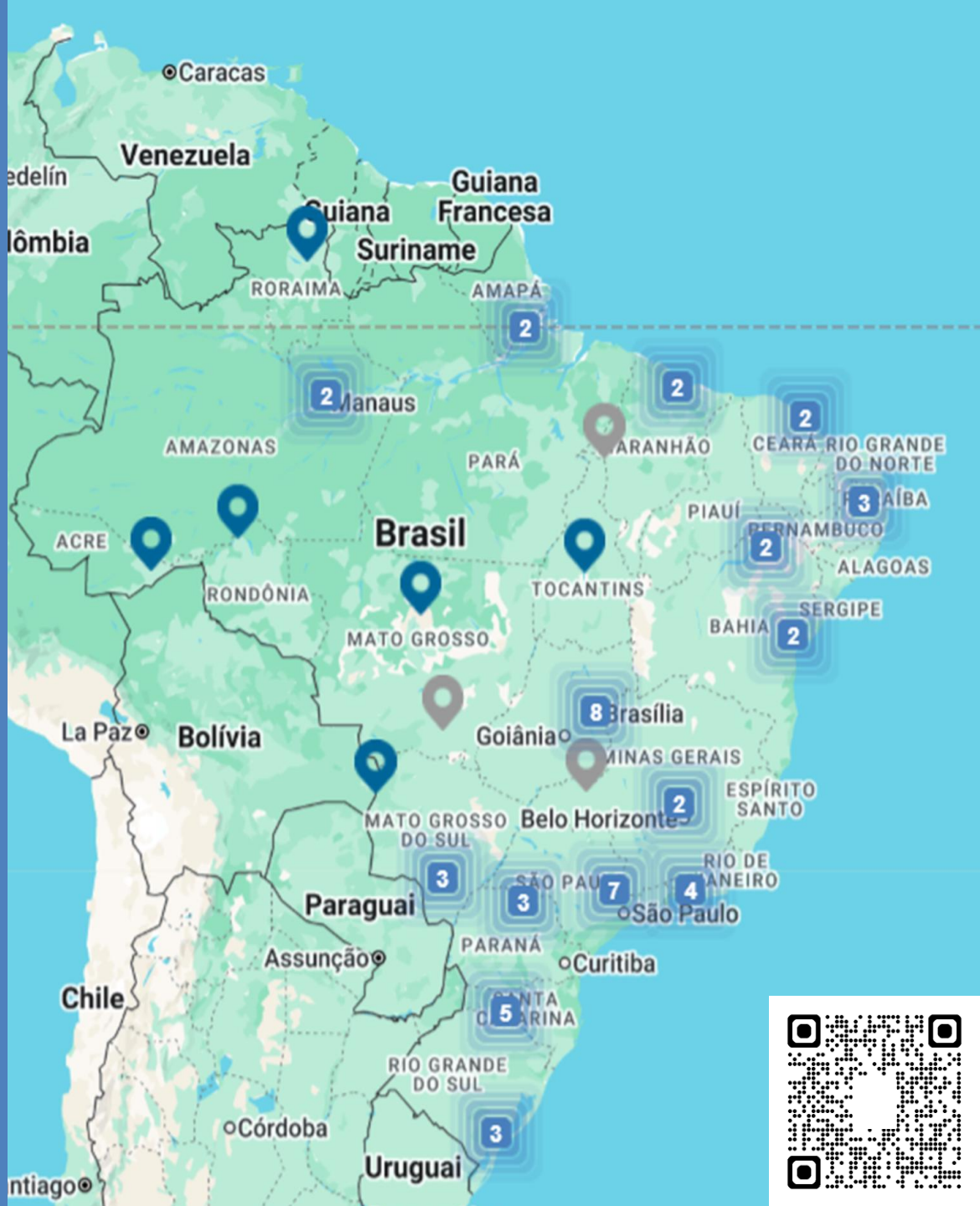
Implemented by

- Title: Improved cashew planting material and **by-product processing technologies for Ghana**
- Duration: January 2017 to December 2020
- **20 experts and 200 farmers** (both from private and public sector) have been trained on apple processing with **42.5%** of the trainees being women.
- A market analysis research have been conducted to develop following **6 economically feasible business models** for Cashew Apple Processing in Ghana
  1. The apple aggregator
  2. The apple pre-processor
  3. The Juice plant
  4. The industrial local/ regional juice bottler
  5. The artisanal juice & cajuina producer
  6. Toll bottling/ contract botteling for artisanal producers

Vegetables are
grown from
North to South

50

Research units in Brazil



92.5%

The majority of national cashew production is concentrated in three states: Ceará, Rio Grande do Norte, and Piauí.

35.000

direct jobs in the field

15.000

direct jobs in the industry

250.000

indirect jobs in both sectors

Cashew nut production by country (2024)

Country	Production (T)
1. Ivory Coast	944,673
2. India	794,910
3. Tanzania	528,262
4. Vietnam	306,185
5. Ghana	**218,576**
5. Benin	212,624
6. Brazil	**159,212**
7. Burkina Faso	147,617
8. Mozambique	142,250
9. Indonesia	141,305
10. Guinea-Bissau	90,229

Cashew apple products commercialized in Brazil

Beverages

US$ ~1-2

US$ ~10-15

US$ ~ 5-10

Food

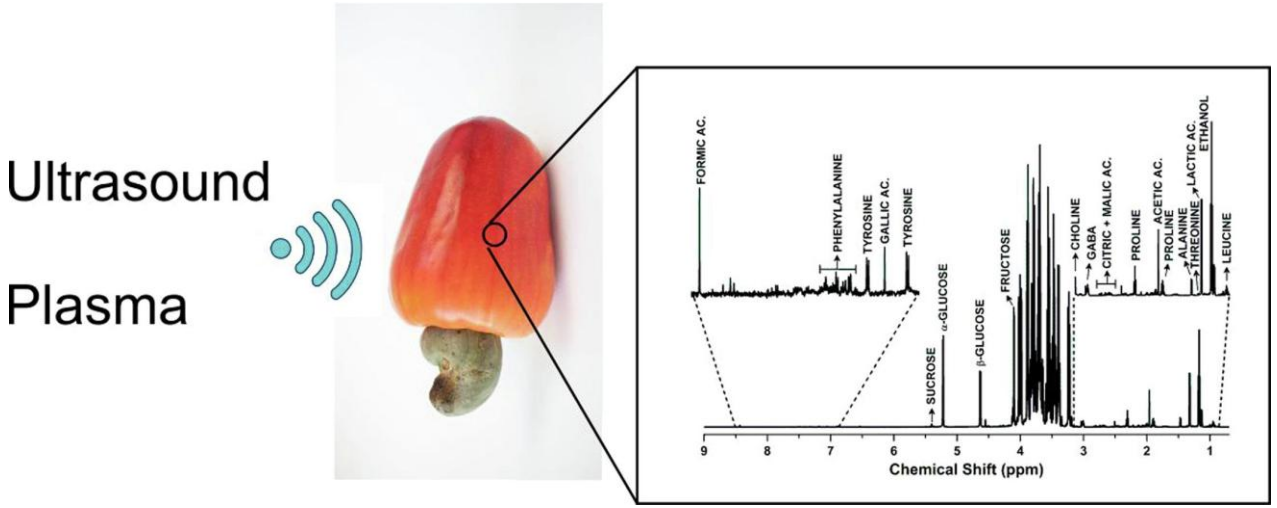
Scientific publication on cashew by country (1934 - 2026)

Country	Publications
1. Brazil	1,807
2. India	1,779
3. United States	703
4. Nigeria	412
5. China	328
5. United Kingdom	247
6. France	218
7. Spain	174
8. Germany	174
9. Indonesia	173
10. Italy	171

406 publications from Embrapa

Cashew apple **juice**

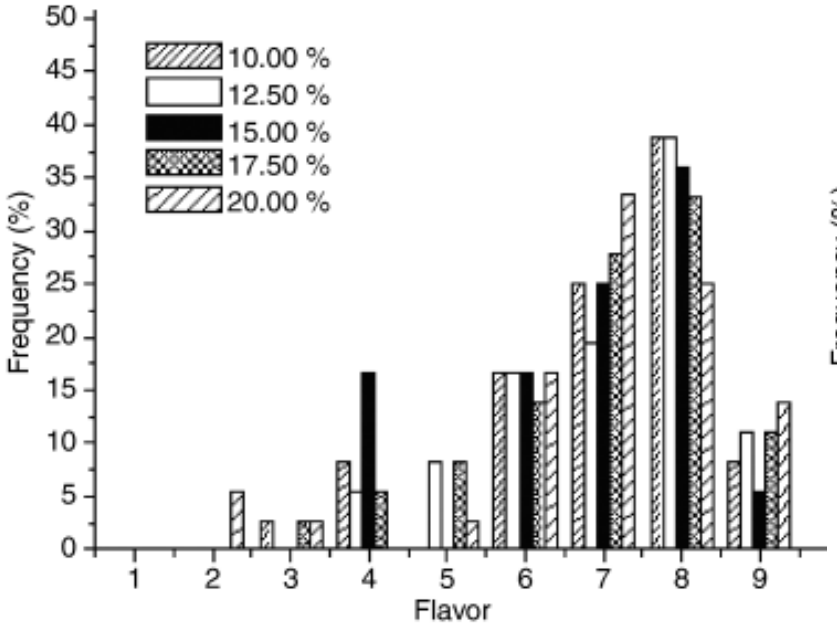
Plasma and ultrasound-treated cashew apple juices

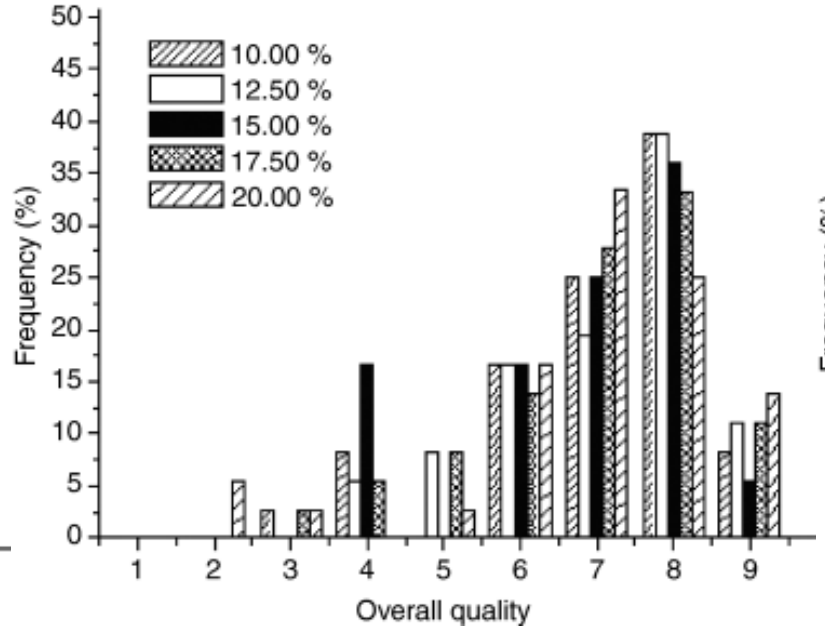


- Cold plasma increased the organic and amino acid concentration, but it did not change significantly the sugar content of the juice;
- Ultrasound reduced the concentration of sugars by 21%, but without changing significantly the sweetness perception.

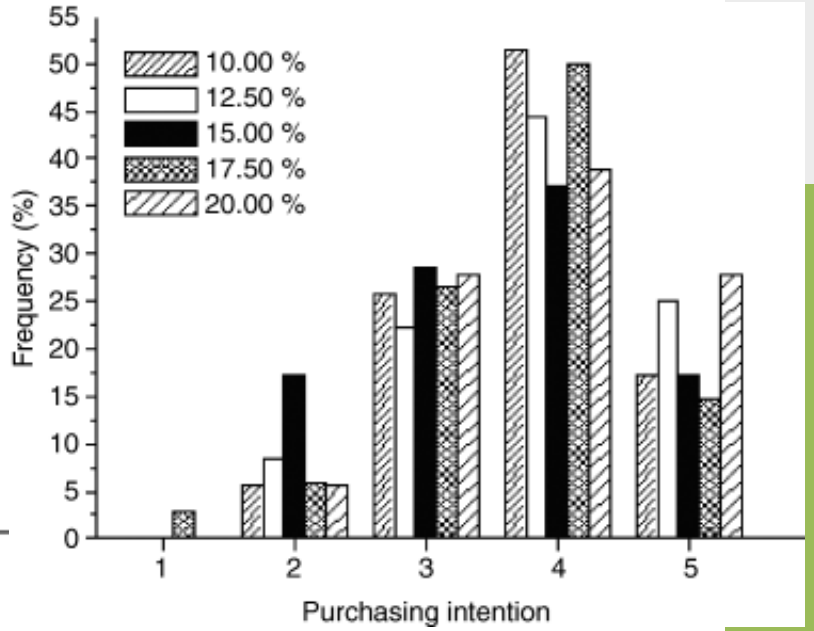
Cashew apple **juice**

As a nutritional additive in coconut water





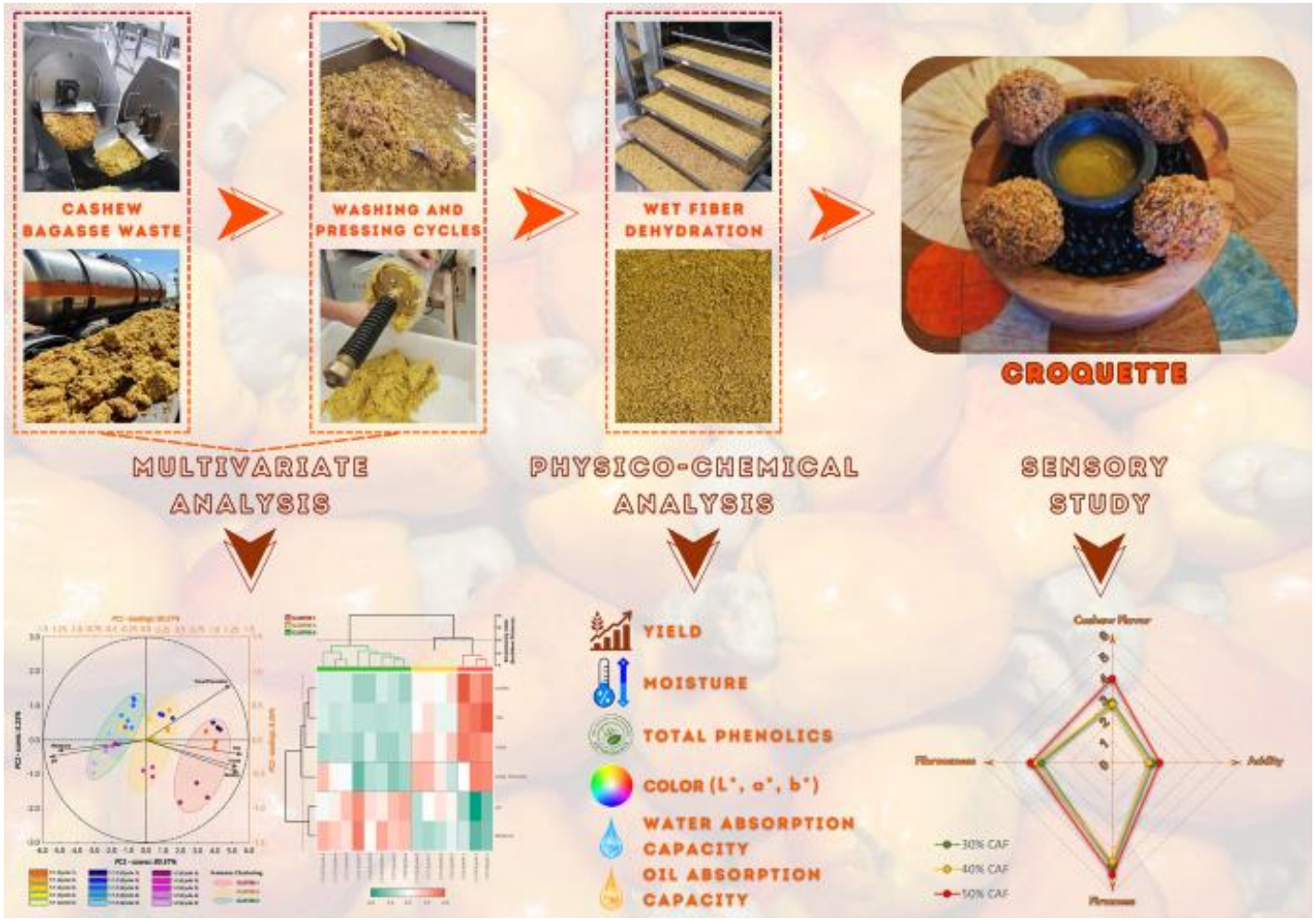
Frequency of panellist's response concerning the overall quality of the blended beverage. Percentage of cashew juice content is indicated in the graph legend. Hedonic scores: 1, dislike extremely; 2, dislike very much; 3, dislike moderately; 4, dislike slightly; 5, neither like nor dislike; 6, like slightly; 7, like moderately; 8, like very much; 9, like extremely.



Frequency of the consumer's purchasing intention for the blended beverage. Percentage of cashew juice content is indicated in the graph legend. Scores: 1, probably would not buy; 2, probably would not buy; 3, maybe/maybe not; 4, probably would buy; 5, definitely would buy.

Cashew apple **bagasse**

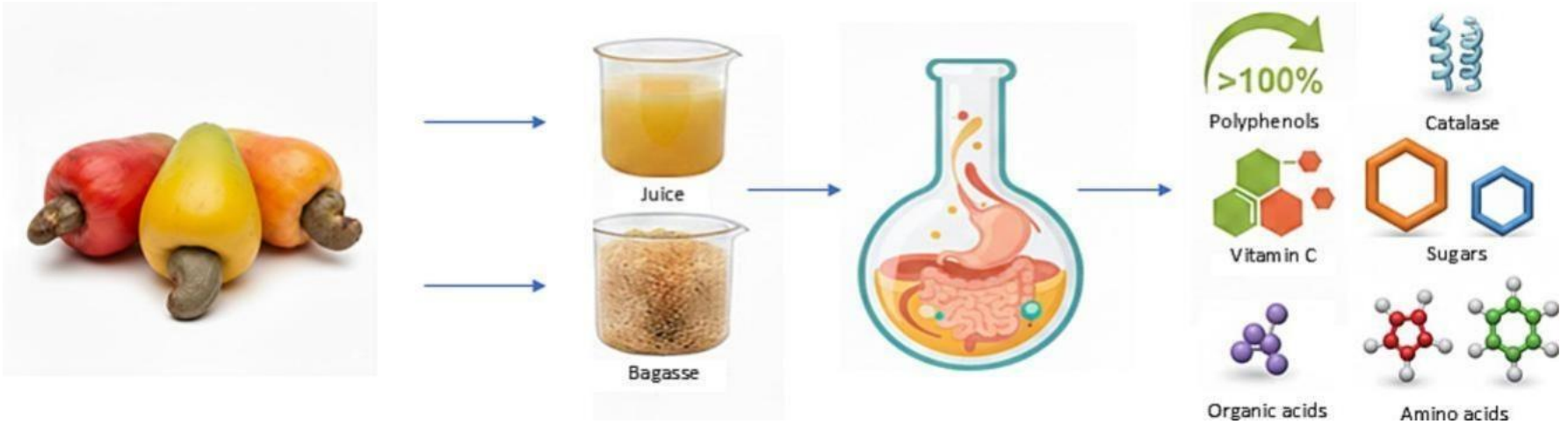
For plant-based food formulations



- A cashew fiber content of up to 40% is suitable for use in plant-based croquettes;
- 50% cashew fiber had a pronounced cashew flavor, which limited its appeal.

Cashew apple **juice** and **bagasse**

Bioaccessibility, antioxidant activity, and metabolomic profile

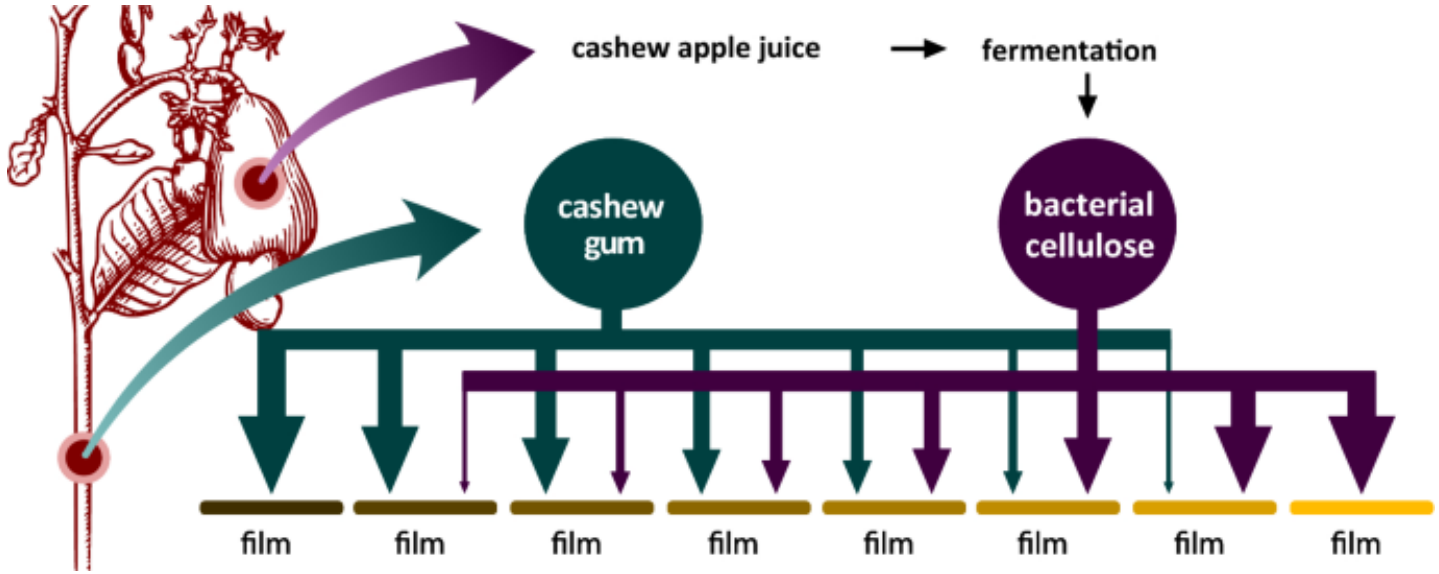


- **Both cashew apple juice and bagasse retain bioactive compounds with antioxidant activity;**

- **Cashew apple juice exhibited higher vitamin C content, although bagasse exhibited greater bioaccessibility.**

Cashew apple **juice**

For the formulation of edible films



- **T**he films containing at least 25% bacterial cellulose presented remarkably **higher strength** (even similar to some conventional petroleum-derived polymers).

Cashew apple **bagasse**

For the formulation of sunscreen

Table 2. Antioxidant activity and SPF of emulsion base and sunscreen commercial lotions incorporated with lignin, lignin nanocomposites, zinc commercial oxide, or titanium commercial oxides.

Material	Scavenging (%)	SPF (base lotion)[a]	SPF (sunscreen)[b]
Control	–	0.0±0.0	12.6±0.3
Lignin	94.5±0.9	0.94±0.0	11.9±0.3
ZnO commercial	9.4±1.8	1.03±0.0	13.0±0.6
TiO_2 commercial	9.2±2.0	0.71±0.0	13.9±0.6
LigZnO	31.8±1.1	0.55±0.0	15.9±0.3
$LigTiO_2$	28.9±1.1	1.10±0.0	15.7±0.5

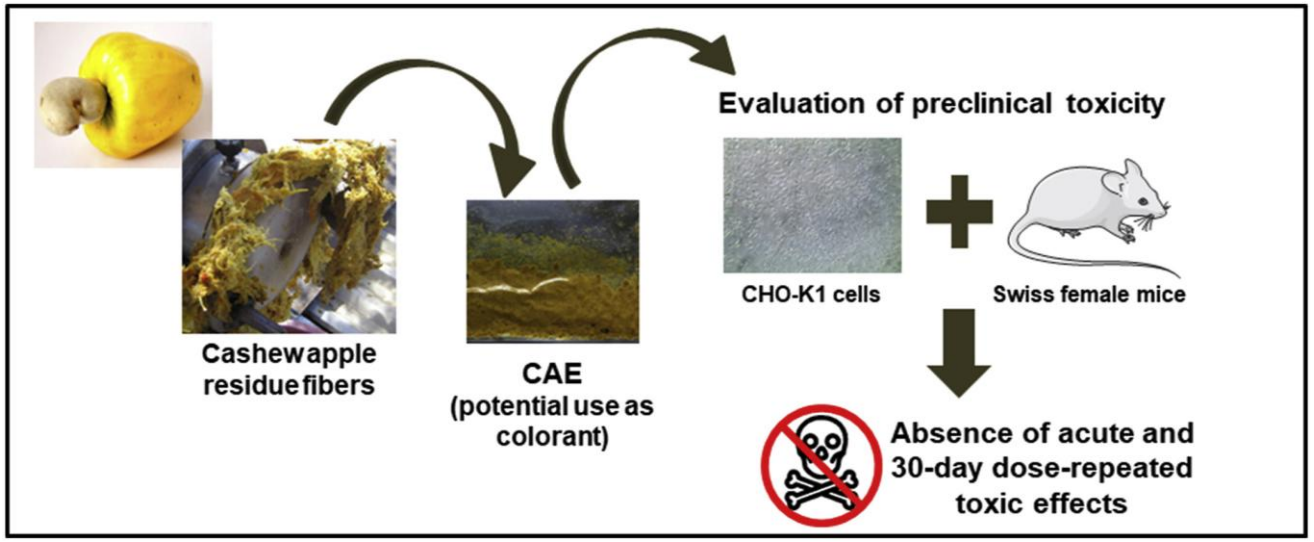
[a]Formulations with 5% (w/w) of lignin, nanocomposites and commercial oxides in emulsion base lotion.
[b]Formulations with 5% (w/w) of lignin, nanocomposites and commercial oxides in sunscreen lotion.

- **LigZnO (15.9) and $LigTiO_2$ (15.7) boosted the effectiveness of commercial UV absorbers outperforming formulations with lignin alone or commercial ZnO and TiO_2.**

US$ ~100

Cashew apple **bagasse**

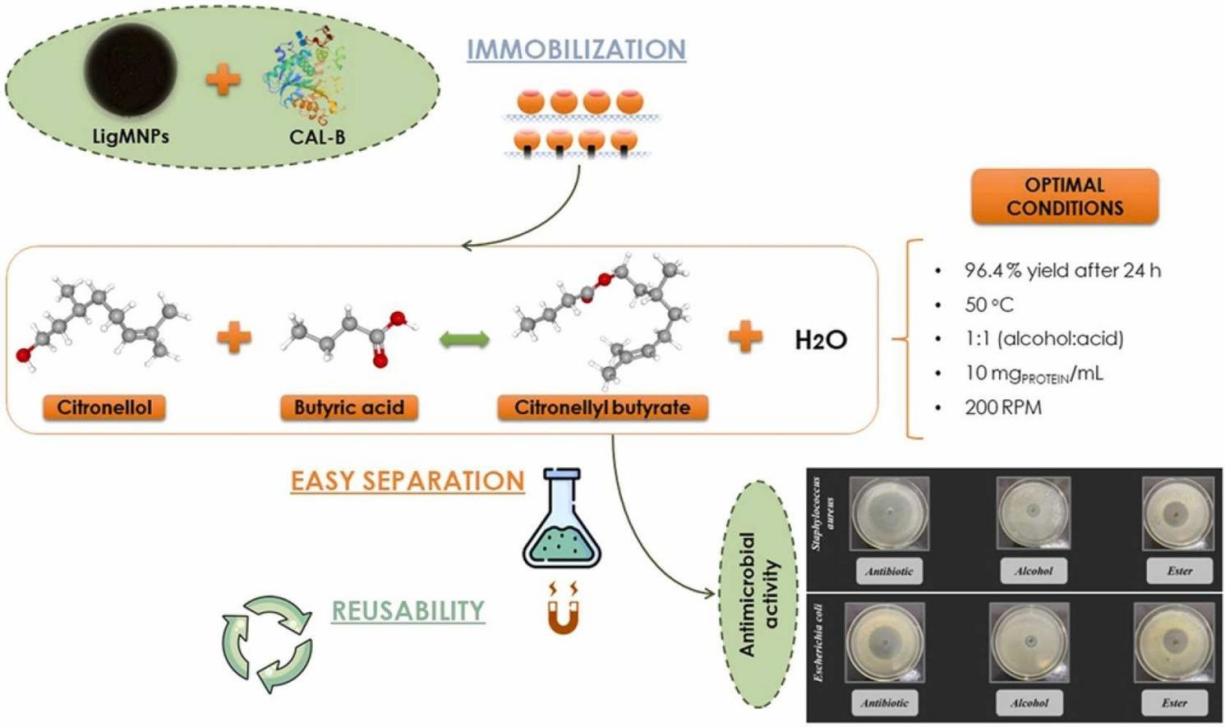
For the formulation of colorants



- **The yellow-colored extract prepared from cashew apple showed nontoxic or mutagenic effects in female mice after 30 days of treatment;**
- **The yellow-colored extract may be a safe source of carotenoids as an industrial dye.**

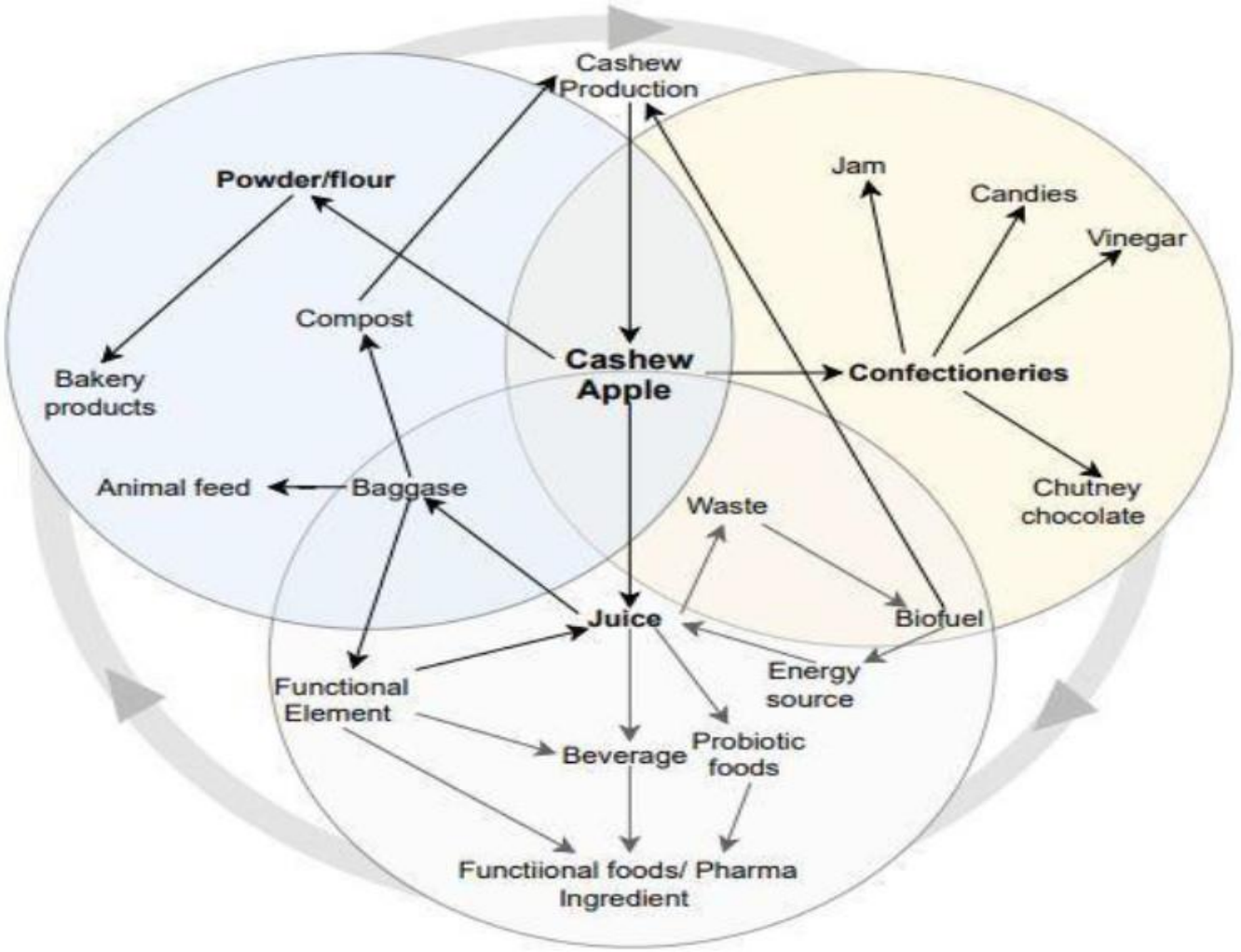
Cashew apple **bagasse**

For the preparation of biocatalysts

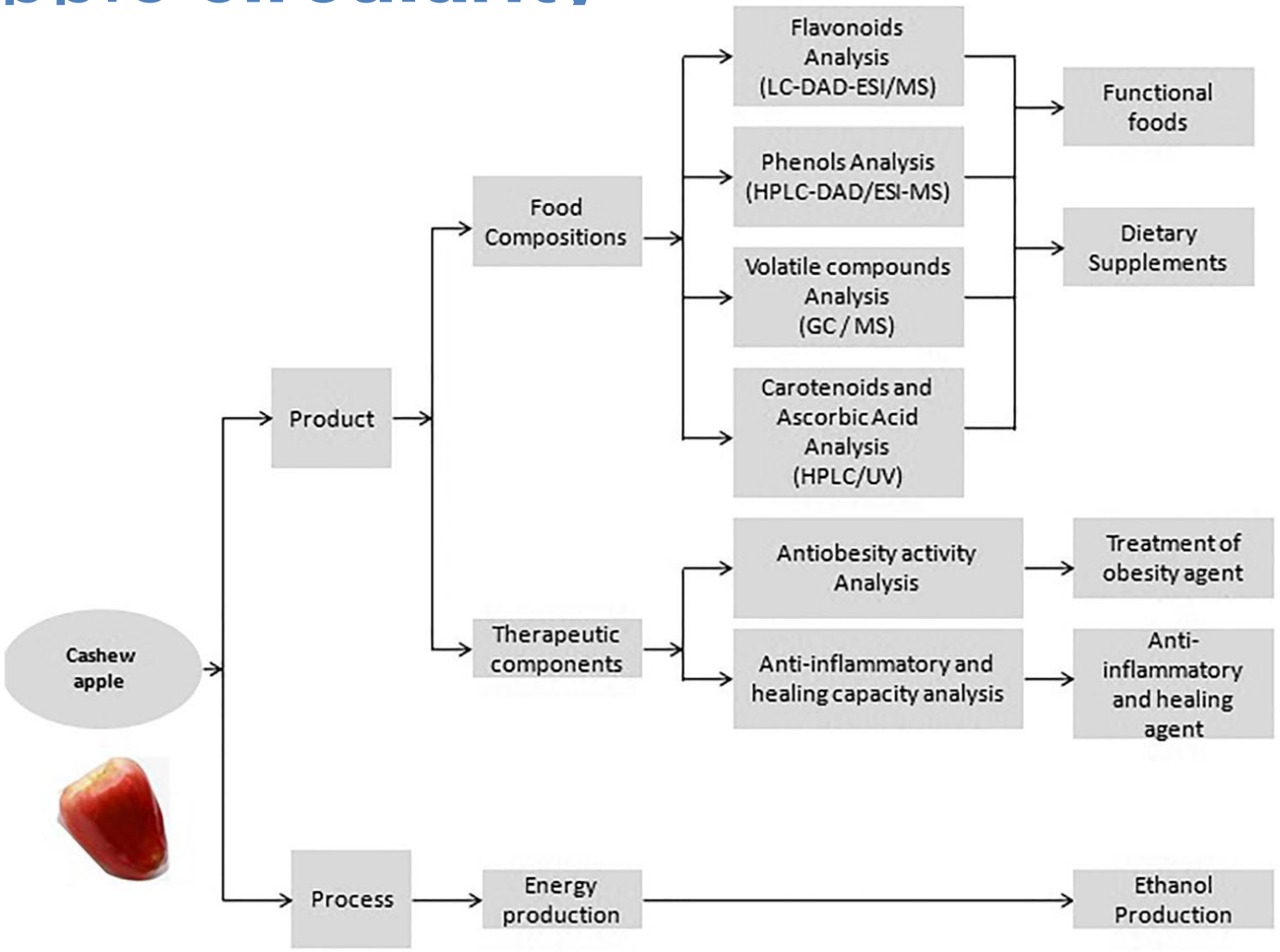


- **The biocatalyst showed operational stability and it was thermally stable;**
- **Citronellyl butyrate showed an outstanding antibacterial activity than citronellol.**

Cashew apple **circularity**



Cashew apple **circularity**



RD&I

Research for Development
Development for Innovation

Public Policies

Thank you!

Rodolpho R. C. Monteiro – Researcher at Embrapa
rodolpho.monteiro@embrapa.br

Accra – Ghana, April 30th, 2026

Embrapa
MINISTÉRIO DA AGRICULTURA E PECUÁRIA
GOVERNO DO BRASIL
DO LADO DO POVO BRASILEIRO

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

PANEL DISCUSSION
Showcasing MOVE MGF Interventions in the Cashew Apple Sector

Moderator: Mary Adzanyo

ComCashew

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

TREE CROPS DEVELOPMENT AUTHORITY

Implemented by
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Panel 1 Speakers

Mary Adzanyo
Panel 1 Moderator
Director Private Sector Development, GIZ/MOVE
Côte d'Ivoire

Serge Hobert Kponou
Managing Director, Tolaro Global SAS
Benin

Doreen Caesaria Abaane
Sustainability Lead, Cashew, OFI
Ghana

John Joseph Nkundwanabake
Managing Director, Akros Ltd
Tanzania

David Sylvan Jordan
Co-Managing Director, Espen Organics Senegal (EOSEN)
Senegal

Dr. Oyilanka Christianah Jayeola
Director Value Addition Research, CRIN/FoodPro
Nigeria

german cooperation
DEUTSCHE ZUSAMMENARBEIT

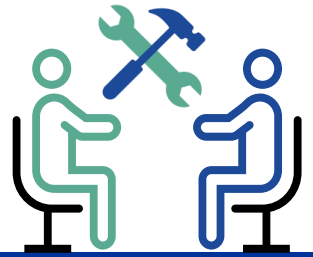
Co-funded by the European Union

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

The Matching Grant Fund, a PPP instrument

- Targeted leverage of complementary investments for more competitive and sustainable VC
- A private-public partnership model designed to propel the cashew industry forward
- Tool to coordinate, (co)finance and implement a program
- A financing and partnership tool used to support innovative ideas/ projects in the sector that are in line with our indicators and are scalable.



german cooperation
DEUTSCHE ZUSAMMENARBEIT

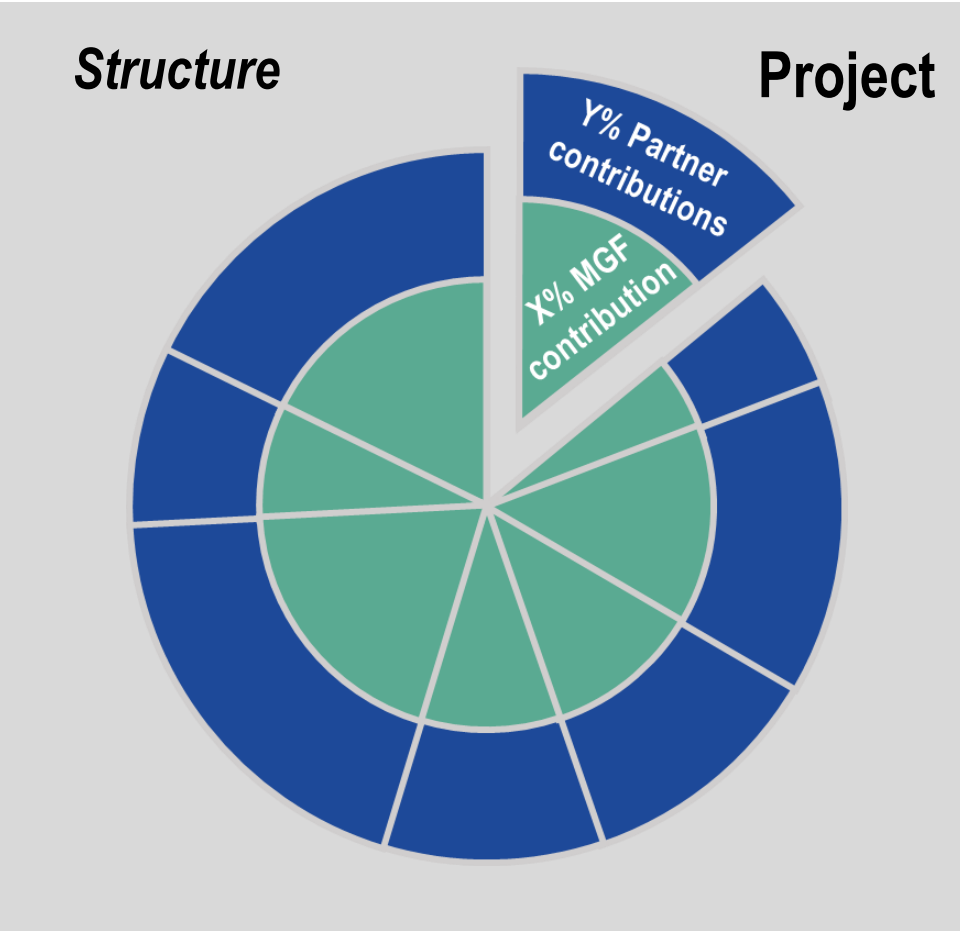
Co-funded by the European Union

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

The MGF – Impacting lives together

- Drive sustainable growth and strengthen private sector development
- Improve the productivity, and profitability of cashew value chain actors in the 79 ACP countries
- Build resilience and inclusiveness in the cashew value chain
- Foster Excellence and ownership



CASHEW APPLE VALORIZATION CONFERENCE

A new approach to developing the cashew sector

through innovative valorization of cashew apples

Serge Hobert Kponou

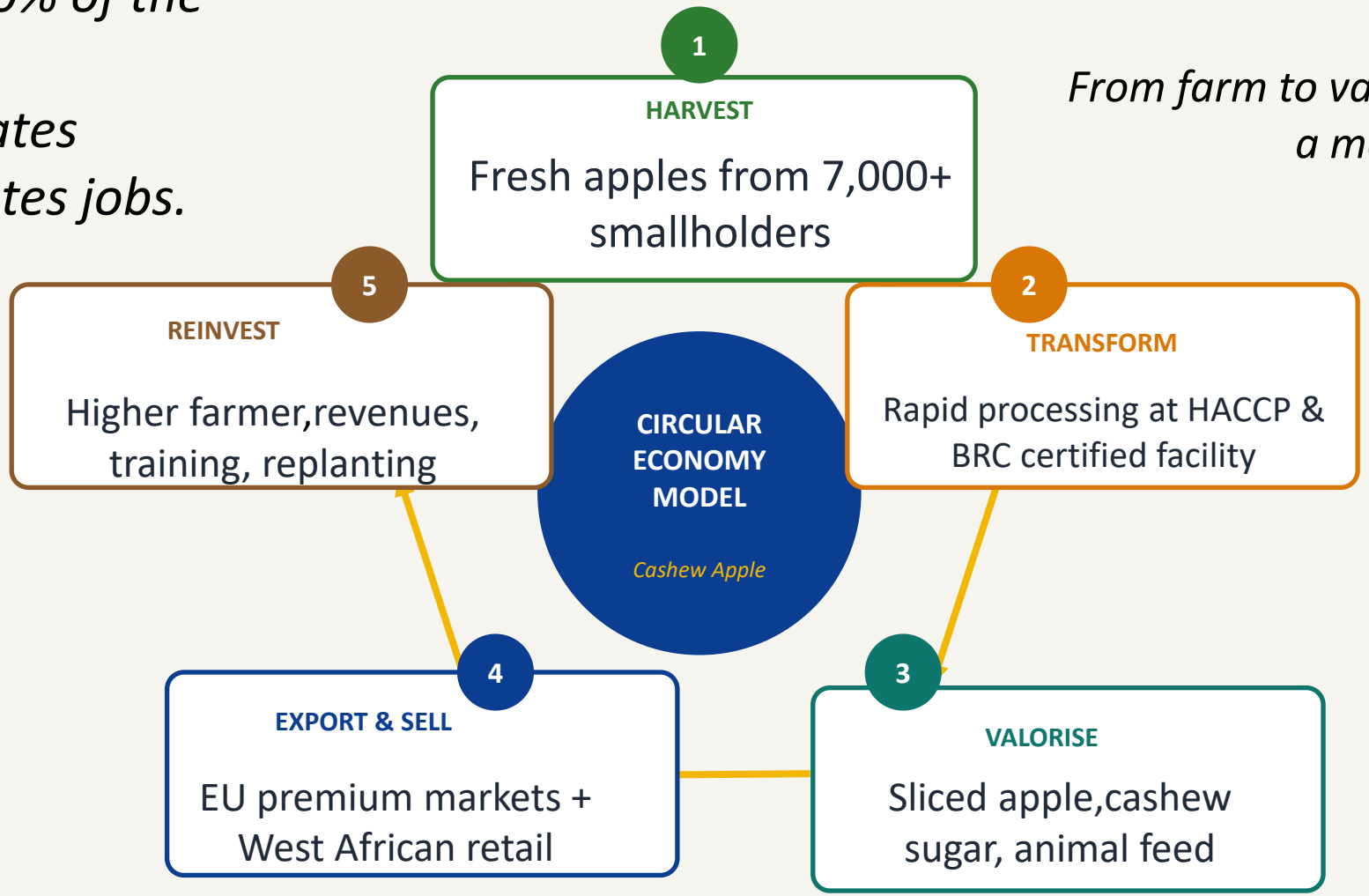
Managing Director | Tolaro Global

Accra, 30 April 2026

A new approach: a circular economy around the cashew apple

Zero waste — 100% of the fruit is valorised.
Every step generates revenue and creates jobs.

From farm to value-added product — a model replicable across West Africa.



From a wasted fruit (90% discarded across West Africa) to a sustainable, replicable value chain.

Proven impact today — and the case for scaling up

Every additional ton processed = sustainable income for ~1 person across the value chain.

TODAY — 2025

1,097

tons of cashew apples transformed

+1,000

people directly involved

- **76% women** + **strong youth presence** among trainees
- **Fairtrade · Bio · HACCP · BRCGS** certified
- Exports to **premium European markets**

TOMORROW — AT SCALE

10,000

tons processed per year (target)

+10,000

people supported with sustainable, long-term income

- **Year-round jobs for women & youth** in rural areas
- **3,000+ women** + **2,000+ youth** trained
- A regional hub for **cashew apple innovation**

× 9 tons → **× 10 livelihoods sustained** — *the same model, ten times the impact.*

Vision 2026–2030 | From pilot to regional reference

Tolaro Global's roadmap to make cashew apple valorization a central pillar of Benin's cashew sector.

SCALE PRODUCTION	EXPAND MARKETS	WOMEN & YOUTH	DRIVE INNOVATION
From 1,000 to 10,000+ tons processed per year. Dedicated lines and cold-chain infrastructure.	Beyond US & EU export to West African retail. Tolaro as the regional reference for cashew apple innovation.	Train 3,000+ women and 2,000+ young people. Sustain female leadership. Year-round rural employment for the next generation.	Tolaro as a factory-school in partnership with Abomey-Calavi & Parakou universities. 3 new product lines by 2030.

> ***I saw the treasure in the cashew apple and carved until I set it free.***

– Serge Hobert Kponou, Managing Director, Tolaro Global

Co-funded by the European Union

Implemented by

CASHEW APPLE VALORIZATION CONFERENCE

Business Support Facility for Resilient Agricultural Value chains

Title: Cashew Apple as a Recipe for Women and Youth Empowerment

Accra, 30th April 2026

Doreen Abaane, Olam food ingredients

PROJECT OVERVIEW

Co-funded by the European Union

Implemented by giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Transforming cashew apple waste into sustainable **livelihood opportunities for women and youth** in Bono, Bono East and Savannah regions of Ghana, creating resilient agricultural value chains and improved household incomes.

Objectives and targets of the project

Empowering women and youth in cashew-growing communities to valorize cashew apples and improve household livelihoods by 2026.

Objective 1

Capacity development for women and youth farmers

Train **500 women** & **500 youth** in cashew-growing communities

Objective 2

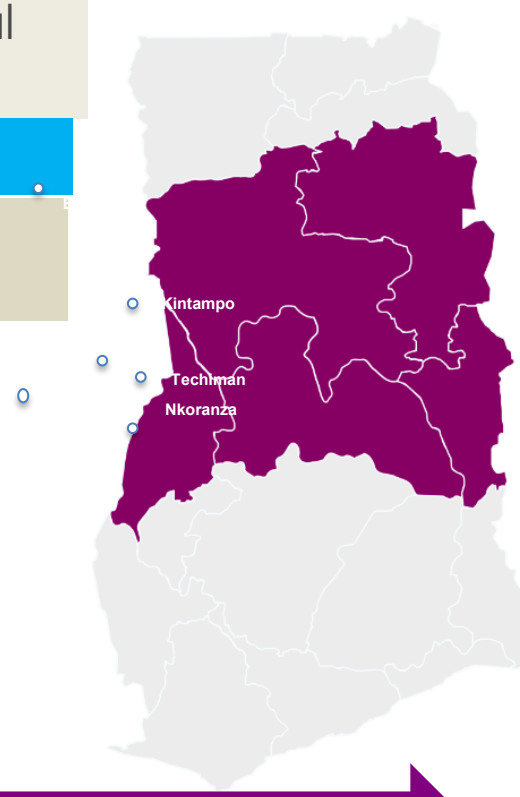
Valorization of cashew apples

- Train the **same 500 women** and **500 youth** in **harvest and post-harvest management** of cashew apples to reduce on-farm waste
- **Develop at least two new recipes from cashew apples** for utilization by women, with a targeted adoption rate of 50% among trained beneficiaries.
- Train the same 500 women and 500 youth on the **nutritional benefits of cashew apples** to increase awareness in their communities.

Objective 3

Increased livelihood opportunities

- Provide **education and tools for cashew apple valorization** (livelihood support) to 500 women and 500 youth as direct beneficiaries.
- **Enable at least 3,000 people to benefit as indirect beneficiaries** of increased livelihoods, based on an estimated household size of six persons.



Implementation Timeline: **24 months**

August 2024 — **July 2026**

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Activities & successes

Project launch

Procurement & distribution of processing equipment

512 women & 330 youth trained on cashew apple processing

Training of trainers for field officer

Other Activities
828 women and 387 youth on business and marketing skills that will create jobs.

Train same persons on harvest and post-harvest management of cashew and cashew apple

Setting up the equipment
Training on use and maintenance of the equipment

500 women trained on cashew apple utilization and domestic value addition

15 trainers trained

CASHEW APPLE VALORIZATION CONFERENCE

VALORIZATION OF CASHEW APPLES

CASHEW APPLE WINE FROM DRIED CASHEW APPLE

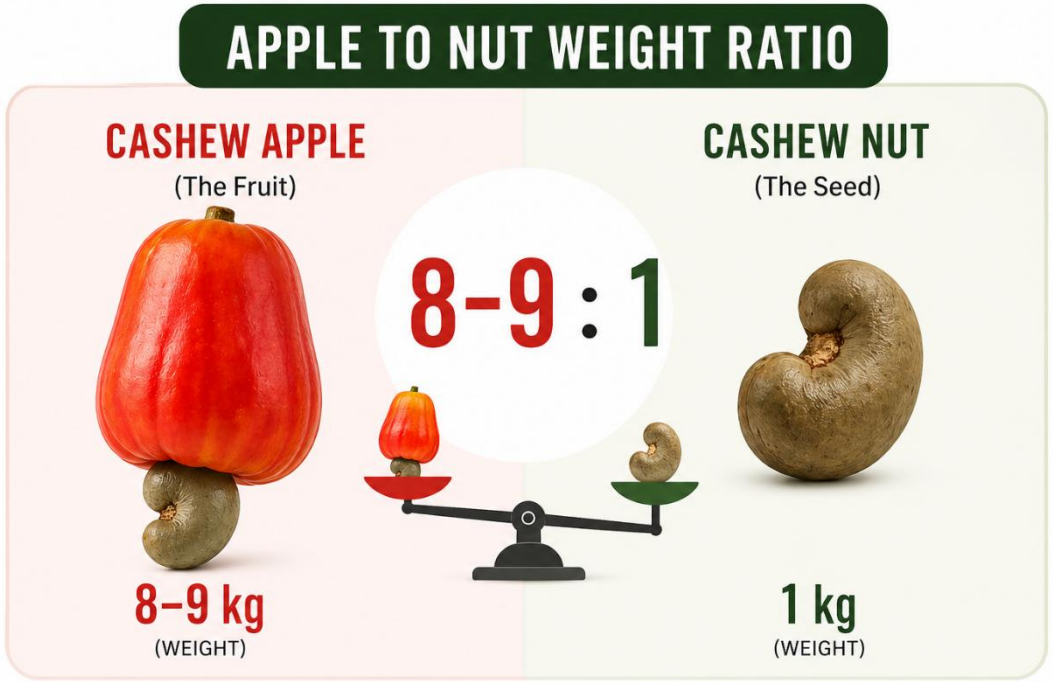
Mtwara, Tanzania

Presented by: John Joseph Nkundwanabake

Cashew apples provide income

Co-funded by the European Union

Key Facts:



Our Project Results:

5-12% extra income

adding measurable **income** without **extra land** or major cost.

Why Valorization?

1. Increasing **Farmers' Income**
2. Income **Diversification** and Economic Empowerment
3. **Environmentally Friendly;** West Management:

   Emissions from Burning, Organic Matter Decomposition

Mtwara, Tanzania

Presented by: John Joseph Nkundwanabake

Co-funded by the European Union

Implemented by

CASHEW APPLE VALORISATION CONFERENCE

Business Support Facility for Resilient Agricultural Value Chains

Turning Cashew Waste into Value

Accra, 30th April 2026

David Sylvan Jordan
Espen Organics

Turning Cashew Waste into Value

Implemented by

Cashew Apple

Black Soldier Fly Larve

Amazing fertilizer

High Protein Feed

Cashew Apple pellets

Empowering women farmers to drive a circular agricultural future.

Implemented by

Mise en œuvre par

Co-funded by the European Union

Implemented by

CASHEW APPLE VALORISATION CONFERENCE

Business Support Facility for Resilient Agricultural Value Chains

Cashew Apple Diversification through Value Addition for Self Sustaining Enterprise

Accra, 30th April 2026

Dr. Olayinka Jayeola
Cocoa Research Institute of Nigeria, ibadan

Value Addition to 90% of cashew of the Tree for Jobs, Nutrition and Climate Action

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

- 90% = 20M MT apples rot yearly in Africa
- Economic loss from unutilized cashew apple in Africa = $1.1B lost income with methane emissions and malnutrition annually (ACA,2022 Cashew Apple Processing Report)
- Based on 22M MT apple production x $50/MT potential value at 95% waste rate, FAO 2021 confirms <5% utilization
- In Nigeria, 800MT RCN = 6.4M MT apples. Utilized 2.1% at #20,000/MT $45 apple value = #125B ($278M) loss in Nigeria alone (IITA Technical Bulletin No. 47)

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Training women and youth in self sustaining skills

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Zero – Waste Diversification = Self Sustaining Revenue

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Cashew Juice

Clarified juice

Cashew drink

Cashew syrup

Branded juice

Cashew wine

Cashew Spirit

Cashew Jelly

Honey

Marmalade

Cashew Relish

Cashew Jam

Cashew Pickles

Cashew Pectin

Cashew Candy

Cashew Meat

Cashew Kebab

Cashew omelette

Cashew Egusi Soup

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

PANEL DISCUSSION
Bridging Research and Investment in the Cashew Apple Sector: Opportunities for Investment at Scale

Moderator: Mohamed Salifou Issaka

ComCashew

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Panel 2 Speakers

Mohamed Salifou Issaka

Panel 2 Moderator

Programme Component Manager_Production, GIZ-MOVE

Ghana

Eugenia Boafo,

New Product Development Lead at **HPW AG**

Topic: Successes and lessons learned from initial Investment experience in developing new cashew apple products in Ghana.

Daniel Otu

Executive Director of Operations and Production at **Koa Impact Ghana Ltd**

Topic: From cocoa pulp to cashew apple, investment opportunities using the Community Mobile Processing Unit approach.

Dr. Esther Gyedu-Akoto

Deputy Executive Director of **CRIG-Ghana**.

Topic: Opportunities, Challenges and Investment strategies for cashew apple by-product development.

Dr. Elídio Zaidine Maurício Zitha.

Food Science Researcher at **IAM- Mozambique**

Topic: Extraction of Cashew Apple Vitamin C and perspectives for investment.

Samuel Yeboah

Chief Operating Officer at **GIRSAL-Ghana**

Topic: What financial products can GIRSAL offer to SMEs for Investment at Scale?

Panel Objectives

- **From Pilot to Scale:** The key question of this Panel 2 is how do we move from pilot innovations to scalable, investment-ready business model supported by policy incentives, research, and private sector engagement.
- Discuss the opportunities for Investment at Scale in cashew apple sector using field experiences that had worked so far and research findings
- Share with the participants business models that promise for scaling
- Explore where the bottlenecks remain and what it will take to move from pilot initiatives to sustainable, large-scale investments

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Business Support Facility for Resilient Agricultural Value chains

Cashew Apple Valorization Conference

Title: Successes and Lessons Learned from Initial Investment Experience in Developing New Cashew Apple Products in Ghana

Accra, 30th April 2026

Eugenia Boafo, HPW Fresh & Dry Ltd, Ghana

ComCashew

Opportunity to Product Innovation

- Strategic diversification & facility optimization
- Cashew apple available outside mango season
- Existing processing-at-source model leveraged

Successes from Early Development

- Several product concepts developed
- Improved taste & acceptability
- Integrated into existing fruit systems

Lessons Learned & Path to Scale:

- Low-cost raw material alone does not ensure viability
- Perishability requires stabilization closer to source
- Scale-up needs dedicated systems, cold chain & investment

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Business Support Facility for Resilient Agricultural Value chains

Cashew Apple Valorization Conference

From Cocoa Pulp to Cashew Apple

Accra, 30th April 2026

DAN OTU
Dir of Operations & Production
Koa Impact Ghana Limited

ComCashew

From Cocoa Pulp to Cashew Apple

Co-funded by the European Union

Implemented by giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Cashew farms like cocoa is scattered in the community with deplorable roads

Dominated by smaller-holder farmers

Multiple outgrower communities

Problem Statement

Apple is Perishable

Distance to processing facilities

No harvesting tools as the Apple is"less" important to the farmer

Solution:

•The CMPU: *A mobile unit powered by Solar for Processing.*

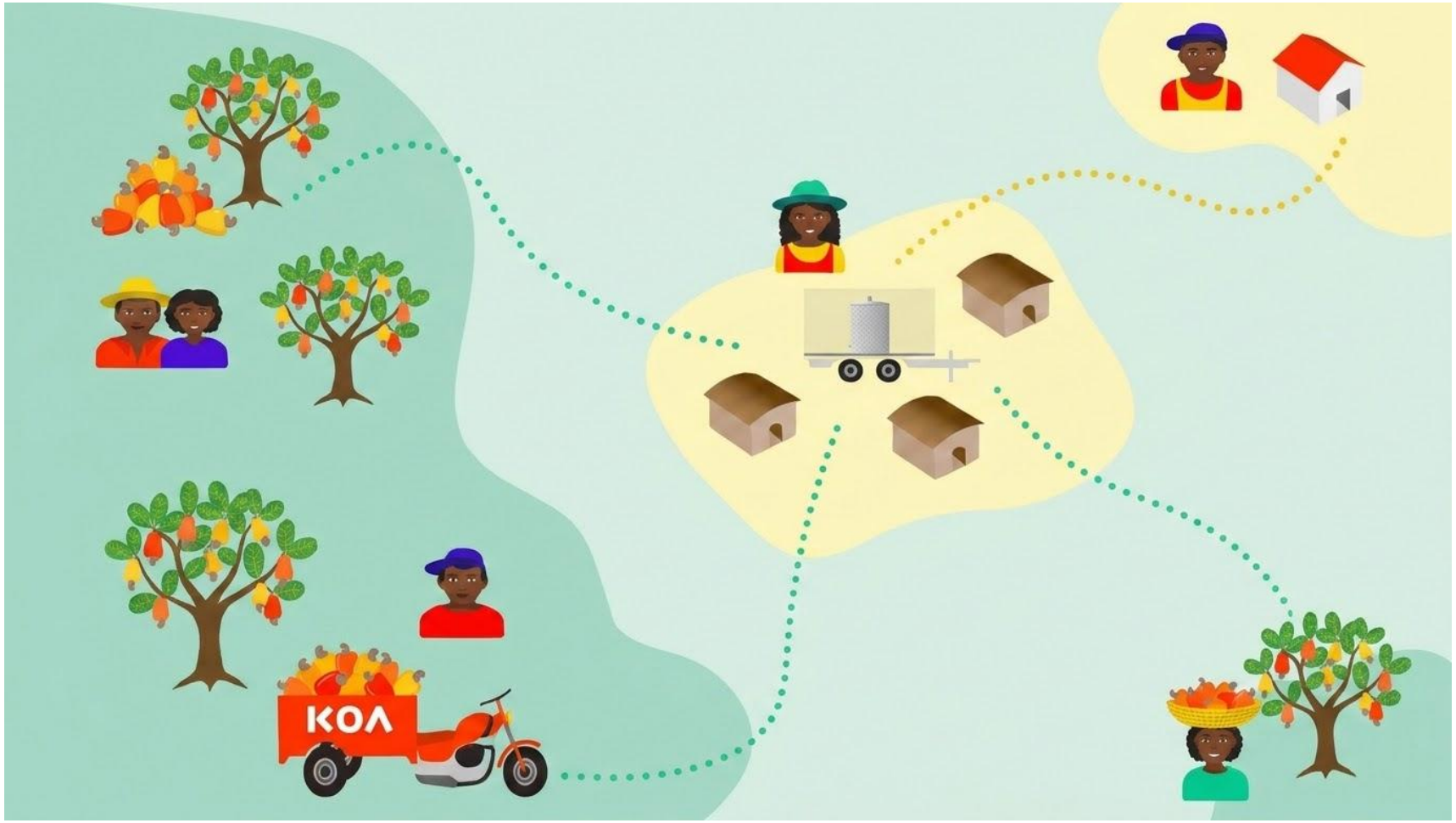
german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

From Cocoa Pulp to Cashew Apple

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

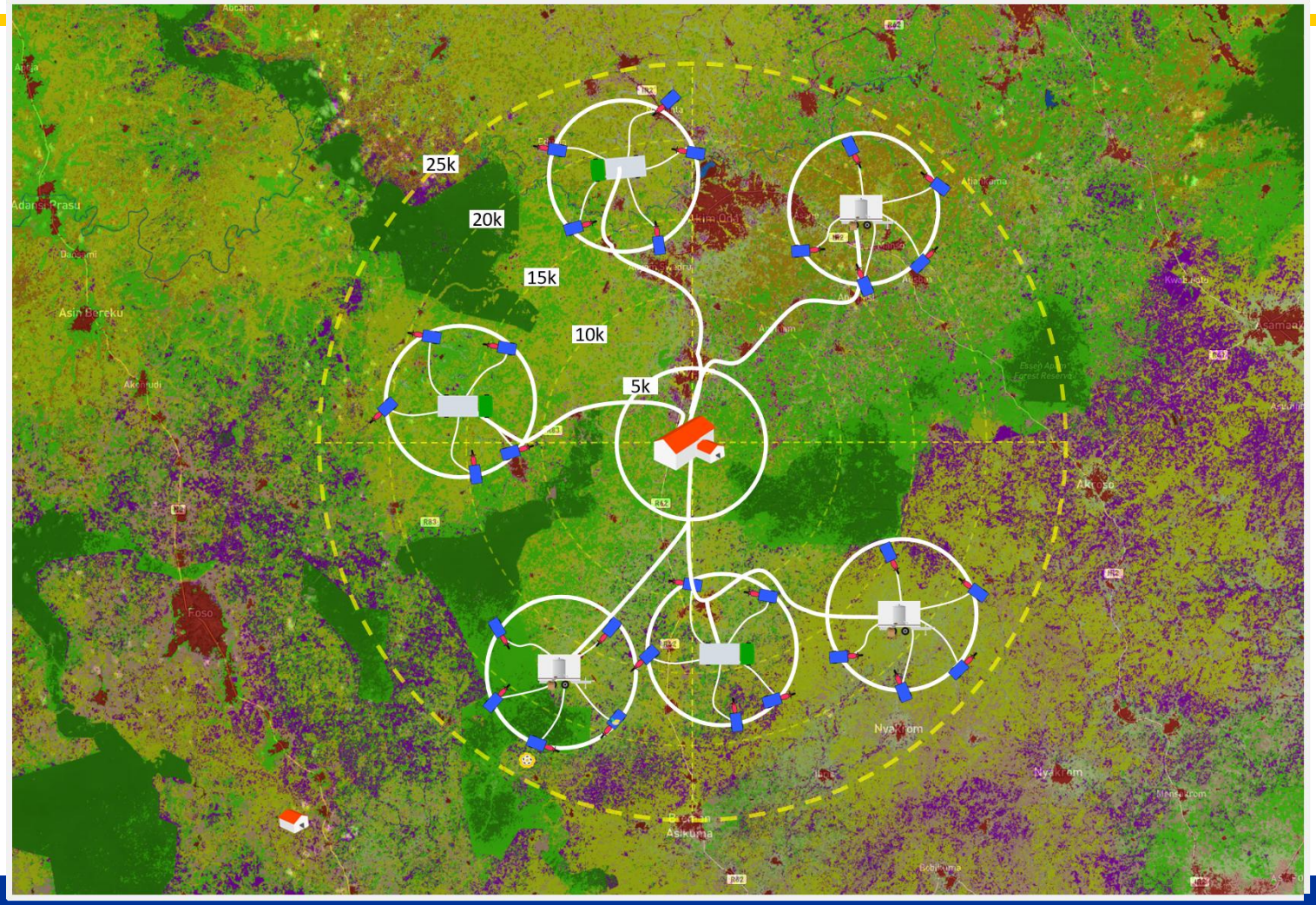


german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

From Cocoa Pulp to Cashew Apple



Decentralised illustration with multiple Units

PRODUCTION SIMULATION

CMPU

Cocoa fruit

Cashew Apple


KOA
WE IMPACT

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Business Support Facility for Resilient Agricultural Value chains

Cashew Apple Valorization Conference

OPPORTUNITIES, CHALLENGES AND INVESTMENT STRATEGIES FOR CASHEW APPLE BY-PRODUCT DEVELOPMENT

Accra, 30th April 2026

ESTHER GYEDU-AKOTO
CRIG, TAFO

ComCashew

Cashew by-product development in Ghana
Cashew apple processing

- The apple forms about 90% of the fruit and it is non-climacteric
- Currently it is being wasted
- A couple of small-scale processors in Ghana
- CRIG has developed protocols for the processing of cashew apples

Estimated cost of fresh apple juice drink

i. To produce 5,600 L during the production season
ii. Estimated cost of production is ***88,895.43***
iii. Selling price of 25.00/L
iv. Estimated revenue generated is ***140,000.00***
v. Gross profit of **57.5%**

Estimated cost of cashew apple processing into fresh juice

i. Estimated cost of production is ***122,252.76***
ii. Selling price of 40.00/750 mL
iii. Estimated revenue generated is ***298,666.67***
iv. Gross profit of 144**%**

Table 1: SWOT Analysis of apple processing in Ghana

Strengths

- Relatable scale of business, not too big
- Fits with rural ethics
- Friendly environment
- Available local demand
- High cost/profit ratio
- Cashew production is growing steadily in Ghana

Weaknesses

- Large startup costs
- Consumer education and awareness is low
- Low purchasing power of local consumers
- Limited access of products to consumers
- Inadequate funds for the processors

Opportunities

- Ghana's population of about 30 million provides a huge market for cashew products
- Agritourism
- Job creation for rural population which is in line with poverty alleviation and economic growth

Threats

- High international market demands
- Inaccessibility of finance

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Business Support Facility for Resilient Agricultural Value chains

Cashew Apple Valorization Conference

Enhancing the Utilization of Cashew Apple for Climate Resilient, Increased Income and Food Security of Smallholder Farmers in Tanzania and Mozambique

Accra, 30th April 2026

Elídio Zitha & Institute of Nuts of Mozambique

ComCashew

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Enhancing the Utilization of Cashew Apple for Climate Resilient, Increased Income and Food Security of Smallholder Farmers in Tanzania and Mozambique

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Enhancing the Utilization of Cashew Apple for Climate Resilient, Increased Income and Food Security of Smallholder Farmers in Tanzania and Mozambique

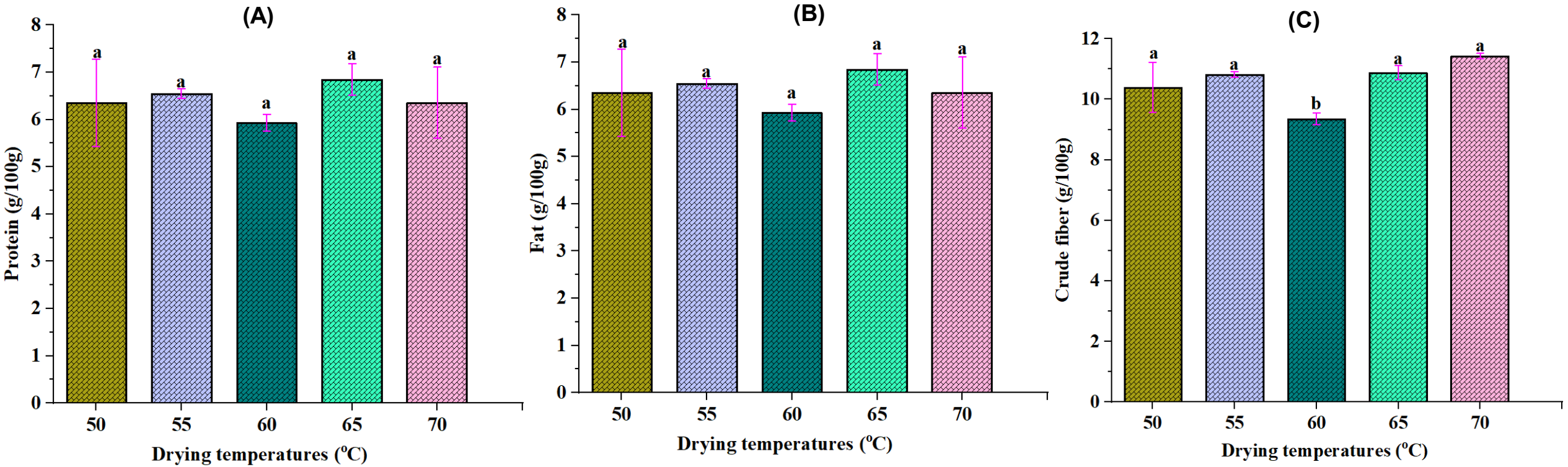


Figure 1: Contents of protein (A), fat (B), and crude fiber (C) of the cashew apple dried at different temperatures. The mean value is given in the center of each bar. Bars topped with the same letter are not statistically different ($p \leq 0.05$) according to Scott-Knott's test. Values were expressed as Mean ± SE.

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Enhancing the Utilization of Cashew Apple for Climate Resilient, Increased Income and Food Security of Smallholder Farmers in Tanzania and Mozambique

Implemented by

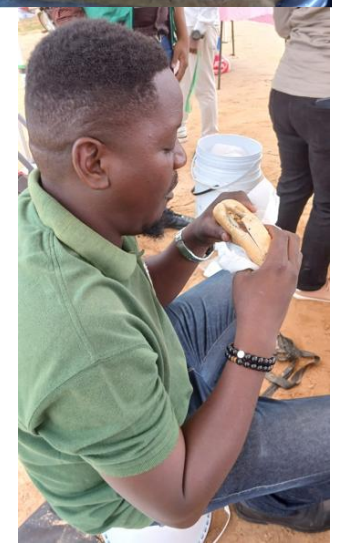
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH









german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Enhancing the Utilization of Cashew Apple for Climate Resilient, Increased Income and Food Security of Smallholder Farmers in Tanzania and Mozambique

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Business Support Facility for Resilient Agricultural Value chains

Cashew Apple Valorization Conference

Which financial products can GIRSAL offer to SMEs for Investment at Scale

Accra, 30th April 2026

Samuel Yeboah
Chief Operating Office GIRSAL Ghana

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Cashew Apple Valorization Conference

Shaping the Future:
Next Steps for Cashew Apple Valorization

Accra, 30th April 2026

Market Oriented Value Chains for Jobs and Growth in the ECOWAS region (MOVE)
Business Support Facility for Resilient Agricultural Value Chains

ComCashew

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

THANK YOU FOR JOINING US TODAY!

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Co-funded by the European Union

Implemented by
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Be the first to know!

Follow us on social media for updates on the Cashew Sector!

@ComCashew

@comcashew