



AFRICA CASSAVA CONFERENCE

"ACC 2025" (2nd Edition)

With

ABSTRACTS

Theme:

**BUILDING SUSTAINABLE
& QUALITY DRIVEN
CASSAVA INDUSTRIES
IN AFRICA.**



Mon. 17th - Wed. 19th
November, 2025.



NICON Luxury Hotel,
Abuja - Nigeria.

ADVERT



PAN AFRICAN ALLIANCE OF SMALL & MEDIUM INDUSTRIES (PAOSMI)

(A Pan African Organization for Small & Medium Industries)

PAOSMI is a premier organization that unify the voice of Small & Medium Industries (SMI's) across Africa with a mandate to drive the continent's Industrialization through SMI's powered by Value Addition and Innovation. As a confederation, it represents the interest of over 60+ affiliate Networks across 39+ Countries, and in 15 industrial Sectors. The association admits those in manufacturing, processing, mining and service industries.

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- Promote inclusivity.
- Boost innovation/Technology adoption.
- Promote commercialization of R&D outcomes.
- Promote cluster initiatives/Common facilities.

For Enquiries/Registration, Contact Us:

Continental Secretariat:



P. O. Box 2020 Kigali, Rwanda.

Ambassador Albert I. Osakwe
House, 1473 Inner-block, Central
Business District, Abuja - Nigeria.



+250 726 104 339

+234 818 888 0143



info@paosmi.org



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AFRICAN UNION ANTHEM

Let us all unite and celebrate together
The victories won for our liberation
Let us dedicate ourselves to rise together
To defend our liberty and unity

O Sons and Daughters of Africa
Flesh of the Sun and Flesh of the Sky
Let us make Africa the Tree of life

Let us all unite and sing together
To uphold the bonds that frame our destiny
Let us dedicate ourselves to fight together
For lasting peace and justice on the earth

O Sons and Daughters of Africa
Flesh of the Sun and Flesh of the Sky
Let us make Africa the Tree of life

Let us all unite and toil together
To give the best we have to Africa
The cradle of mankind and fount of culture
Our pride and hope at break of dawn

O Sons and Daughters of Africa
Flesh of the Sun and Flesh of the Sky
Let us make Africa the Tree of life



NIGERIA NATIONAL ANTHEM

Nigeria, we hail thee,
Our own dear native land,
Though tribe and tongue may differ,
In brotherhood we stand,
Nigerians all, and proud to serve
Our sovereign Motherland.

Our flag shall be our symbol
That truth and justice reign,
In peace or battle honour'd,
And this we count as gain,
To hand on to our children
A banner without stain.

O God of all creation,
Grant this our one request,
Help us to build a nation
Where no man is oppressed,
And so with peace and plenty
Nigeria may be blessed.



AGENDA

PROGRAM

2ND AFRICAN CASSAVA CONFERENCE 2025

Theme: “Building Sustainable & Quality-Driven Cassava Industries in Africa

DAY 1: MONDAY, NOVEMBER 17TH, 2025

TIME	ACTIVITY	
8:00 - 9:00am	Arrival and Registration	
	OPENING SESSION	
9:00 - 9:10 am	Opening Comments / House Keeping by MC and Establishing Protocol - Ebere Young	
9:10 - 9:15am	Anthem and Pledge (AU and Nigeria Anthems)	
9:15 - 9:20 am	Welcome Remarks by Prof. Pierre Damien Habumuremyi, <i>Former Prime Minister, Republic of Rwanda, Kigali and Continental Chair, Pan African Alliance of Small and Medium Industries (PAOSMI)</i>	
9:20 – 9:40am @ 5 Mins Each	Ministerial Remarks - Senator Abubakar Kyari, <i>Hon. Minister, Federal Ministry of Agriculture and Food Security.</i> - Senator Abubakar Atiku Bagudu, <i>Honorable Minister of Budget and Economic Planning</i> - Dr. Kingsley Tochukwu Udeh, SAN, <i>Hon. Minister, Federal Ministry of Innovation, Science and Technology</i> - Hon. Hussain Abdubagi Akol Agany <i>Minister of Agriculture and Food Security Republic of South Sudan</i>	
9:40 - 10:40am 3Mins Each	Goodwill Messages ▪ Global Alliance for Improved Nutrition (GAIN), Republic of Benin. ▪ African Export-Import Bank (Afrexim Bank). ▪ United Nations Industrial Development Organization (UNIDO) ▪ European Union Delegation to Nigeria and ECOWAS ▪ Embassies ▪ African Accreditation Cooperation (AFRAC). ▪ Federal Ministry of Industry, Trade and Investment. ▪ Food and Agriculture Organization (FAO). ▪ ECOWAS Commission. ▪ Sasakawa Africa Association (SAA), ▪ UNESCO International Centre for Biotechnology (UNESCO ICB ▪ Nigeria Export Promotion Council (NEPC)	▪ African University of Science and Technology. ▪ State Governors. ▪ Kenyan Nutritionist and Dietician Institute. ▪ Nigeria Cassava Growers Association. ▪ 1890 Universities Center of Excellence for Global Food Security and Defense (CEGFSD), USA. ▪ National Root Crops Research Institute, Umudike. ▪ Ugandan Parliament (Her Excellency Dr. Agnes A. Atim) ▪ National Agricultural Development Fund (NADF) ▪ Strategy Implementation Task Office for Presidential Executive Order 5 (Non-oil and Gas Sector)
10:40 – 10:50am @ 10MINUTES	Address by the Conference Chair, Dr. Henry E. Emejuro, <i>Director General / CEO, Pan African Alliance of Small and Medium Industries (PAOSMI)</i>	
10:50 -11:20am @ 30MINS	Presidential Address / Declaration of the Opening of the Event by the Special Guest of Honour, His Excellency, Senator George Akume, Secretary to the Government of the Federation (SGF) of Nigeria, Abuja, Nigeria.	
11:20 – 11:35am	Group Photograph / Exhibition Tour / Tea Break	
11:35 -12Noon	Keynote Speaker: H.E Amb Philbert Abaka Johnson, UNIDO Regional Director for Nigeria and ECOWAS Topic: Building Sustainable and Quality Driven Cassava Industries in Africa	



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12:00 - 1:00pm	High Level Panel Discussion on Keynote Paper Presentation and the role of Cassava in African Economy vis-à-vis food security, Value addition, nutrition, and export. Chair: His Excellency, Senator Abubakar Atiku Bagudu , Honorable Minister of Budget and Economic Planning. Moderator: Prof. Hillary I. Inyang , Founding Chair and Distinguish Professor, Global Institute for Sustainable Development, Advanced Analyses and Design (GISDAAD), Concord, NC, USA Panelists: 1. Federal Ministry of Budget and Economic Planning (FMBEP). 2. Federal Ministry of Agriculture & Food Security (FMAFS). 3. Federal Ministry of Innovation, Science and Technology (FMIST) 4. African University of Science and Technology (AUST). 5. Nigeria Agro Business Group. 6. Ministry of Agriculture and Food Security, South Sudan. 7. Sierra Leone Association of Cassava Producers and Processors. 8. Agbeyewa Farms Limited 9. Pan African Alliance of Small & Medium Industries (PAOSMI)	
1:00 - 2:00pm	Lunch - MC – Mr S.T Kuti-George /Shulamite Paul.	
2:00pm- 3:00 pm	SESSION A on SUSTAINABLE CASSAVA PRODUCTION <i>Presentations of Papers (20 Min Each)</i> Paper 1: Influence of Agro-Climatic parameters on sustainable Cassava Production across the Climatic belts of Nigeria- by Okoye N. N - <i>National Root Crops Research Institute, Umudike, Nigeria.</i> Poster presentation 1: Sustainable Drying Technologies for Cassava: A Review on Energy Efficiency, Quality Retention and Rural Adaptability - by M. A. Abu - <i>The National Agency for Science and Engineering Infrastructure (NASENI).</i> Poster presentation 2: Sustainable Cassava Production in Nigeria: Field Innovations and Institutional Synergy for Climate Resilience - by Mazza Mary-Ann - <i>National Root Crops Research Institute, Umudike, Nigeria.</i>	SESSION B on QUALITY ENHANCEMENT AND VALUE ADDITION <i>Presentations of Papers (20 Min Each)</i> Paper 1: Sensory Profile and Consumer Preferences of Agbeli made from Cassava Varieties Biofortified with Provitamin A - by Noël AKISSOE - <i>University of University of Abomey-Calavi, Bénin, Benin Republic.</i> Poster presentation 1: Monitoring the Food Safety of Cassava Processing Methods in Rural Communities in DRC Congo - by Mbala Mavinga Blaise – <i>University of Kinshasa DRC</i> Poster presentation 2: Proximate and Functional Properties of Fortified Cassava Flour (Garin Danwake) and Cassava Starchy - by Zahrau Bamalli Nouruddeen, Aliko Dangote University of Science and Technology, Wudil, Kano, Nigeria
3:00pm - 3:50pm @ 25minutes each	Country Experience and Review (20 min) Chair: Emeritus Prof. Umezuruike Linus Opara , Executive Director, UNESCO International Centre for Biotechnology (UNESCO ICB), Nsukka, Nigeria - Country Experience with Cassava Production in Democratic Republic of Congo (DRC) by Prof. Marie Claire Yandju D. L <i>Deputy Rector, University of Kinshasa, Democratic Republic of Congo.</i> - Country Experience with Cassava in global Market, China Via Green Agriculture West Africa (Wang Yingqi -Minister Counsellor, Economic and Commercial Office, Chinese Embassy)	
3:50 - 4:00pm	Closing Remarks by Prof. Ibrahim Hussaini Doko, <i>Former Director- General Raw Materials Research and Development Council (RMRDC), Abuja, Nigeria and Continental Co- Chair, PAOSMI.</i>	
	Closure of Day 1	



AGENDA

DAY 2: TUESDAY, NOVEMBER 18TH 2025

TIME	ACTIVITY	
8:00 - 9:00am	Arrival and Registration	
9:00 – 9: 30am	RECAP OF DAY 1 BY Prof. Yemisi Jeff Agboola	
9:30 – 9:10am	ANNOUNCEMENTS BY THE MODERATOR	
9:10 – 9:30am	SESSION C on TECHNOLOGY AND SMART SYSTEM INTEGRATION AND SUSTAINABILITY <i>Presentations of Papers (20 Min Each)</i> Paper 1: The Role of Computer Aided Engineering in Realizing Efficient Agricultural Equipment for an Improved Cassava Value chain in Sub-Saharan Africa By Adedeji Aremu, <i>Coventry University, UK.</i> Poster presentation 1: From Technology to Business: Scaling Rural Transformation Through Integrated Cassava Agro processing in Nigeria. By Emmanuel Okogbenin - <i>African Agricultural Technology Foundation (AATF).</i> Poster presentation 2: Technological Interventions for Post-Harvest Loss Reduction in Fresh Cassava in Nigeria By Peter Azikiwe Onwualu – <i>African University of Science and technology, (AUST).</i>	SESSION D on GLOBAL CASSAVA MARKET DYNAMICS <i>Presentations of Papers (20 Min Each)</i> Paper 1: Harnessing the Green Gold: Strategic Pathways for Benue State to Emerge as a Global Hub for Processed Cassava Exports By Dorcas Nguemo Kundam, - <i>University of Mkar</i> Poster presentation: Drivers of Cassava Commercialization in South-East Nigeria and Implications for Food Security, Poverty Alleviation, and Inclusive Growth. By Okoye, B.C, <i>National Root Crops Research Institute, Umudike, Nigeria</i>
9:30 – 10:30pm	Business to Business Matchmaking / Exhibition Tour	
10:30 – 11:00am	Tea / Health Break	
11:00 – 11:40am	SESSION E on CASSAVA CULTIVATION IMPACTS AND STAKEHOLDERS' INCLUSION <i>Presentations of Papers (20 Min Each)</i>	SESSION F on CASSAVA INDUSTRY FINANCING AND BUSINESS DEVELOPMENT <i>Presentations of Papers (20 Min Each)</i>



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	Paper 1: Comparative Analysis of the Impact of Adoption of Improved Cassava Technologies on the Livelihood of Women Farmers in Akwaibom and Anambra States, Nigeria. By Pearl Amadi, <i>National Root Crops Research Institute, Umudike, Nigeria.</i> Poster presentation: Gender Analysis of Adoption Level of Improved Cassava Production Technologies in Abia State, Nigeria By Nwokocha Ivy Nwamaka - <i>National Root Crops Research Institute, Umudike, Nigeria.</i>	Paper : De-Risking the "White Gold": Innovative Financing Models to Attract Private Capital for Cassava Industrialization By Babatunde Ajayi - <i>United Bank for Africa, (UBA).</i>
11:40 – 12:20pm	Country Experience and Review (20 min each) Chair: Dr. Ojo Michael Country Director, Global Alliance for Improved Nutrition (GAIN), Abuja, Nigeria - Country Experience with Cassava Production in Ghana. - Country Experience with Cassava Products and Value Addition in Indonesia / Philippine. - Experience with Kenya Nutritionists and Dieticians Institute: Critical Analysis of the Value Chain of Cassava in Food Systems Strengthening: A Case of Kenyan Consumption And Commercial Market by Dr. David Omondi Okeyo. Chief Executive Officer, Kenya Nutritionists and Dieticians Institute (KNDI)	
12:20 - 1:20am	PANEL DISCUSSION SESSION G on POLICY AND PARTNERSHIPS FOR GROWTH OF THE CASSAVA INDUSTRY Moderator: Dr Ajoku B. Kemjika <i>Presentations of Papers (20 Min Each)</i> Paper 1: Driving African Cassava Development through R&D Commercialization and Industry Linkages - Prof. Ibrahim Katampe, Central State University (USA) Paper 2: High Quality Cassava Flour (HQCF), Policy and Legislation- Dr. Jummai Tutuwa, Director-General, Federal Institute of Industrial Research (FIIRO) Paper 3: Developing value-added products with focus on high-quality cassava flour (HQCF), industrial starch, sweeteners, ethanol, and animal feed for economic development by Gbenga Apampa , Regional Ethanol Consultant, Middle East & Africa, U.S. Grains & BioProducts Council Panelists: - Samuel Ogunleye- Project Coordinator -African Agricultural Technology Foundation (AATF) - Dr Tony Bello - Chairman, Shine Bridge Global (SBG) - Nigeria Cassava Industrialization Group (NCIG) - African Accreditation Cooperation (AFRAC) - Engr. (Dr) Ibiam Oguejiofo ,FNSE , National Coordinator, Strategy Implementation Task Office for Presidential Executive Order 5 (Non -oil and Gas Sector) - Senate Committee on Agricultural production services and rural development, Nigeria - University of Juba, South Sudan - European Union Aviation Safety Agency - EASA. - Academic Staff Union of Research institutions- ASURI	



AGENDA

12:20 – 1:00pm	LUNCH
1: 00 – 2:00pm	PANEL DISCUSSION SESSION H on CASSAVA VALUE CHAIN DEVELOPMENT Moderator: Mr. Abraham Abdul Rashid Conteh <i>Presentations of Papers (20 Min Each)</i> Paper 1: Harnessing Cassava as a raw material for accelerated African Industrialization- Opportunities and challenges by Prof. Ken Ife, Lead Consultant on Private Sector Development, ECOWAS Commission. Paper 2: Utilizing Modern Machinery in Cassava Farming to Boost Food Supply and Industrial Growth by Prof. Emmanuel Bobobee, Kwame Nkrumah University of Science and Technology, Ghana. Panelists: 1. National Root Crops Research Institute, Umudike, Nigeria. 2. Farmer Kola Adeniji, Niji Group. 3. University of Kinshasa 4. Food and Agriculture Organization of the United Nations (FAO) 5. Pan Africa Alliance of Small & Medium Industries (PAOSMI) 6. Federal Ministry of Agriculture & Food Security (FMAFS). 7. Sasakawa Africa Association (SAA),
2:00 - 2:40pm	Country Experience and Review (20 min) Chair: Prof. Michael Kenyi, University of Juba, South Sudan ▪ Country Experience with Cassava Production in Sierra Leone ▪ Country Experience with Cassava Production in Benin Republic
2:40 - 3:40pm	Country Experience and Review (20 min) Chair: Prof. Chiedozie N. Egesi ▪ Country Experience with Cassava Production in Nigeria ❖ Federal Ministry of Budget and Economic Planning ❖ Enugu State ❖ Benue State ❖ Kogi State ❖ River State
3:40 – 4:40pm	Business to Business March-Making / Exhibition Tour / Meeting of PAOSMI and Collaborating Organizations
4:40 – 5:00pm	Closing Remarks by Dr. Celestine Okanya, Chairman AFRAC
	Closure of Day 2



AGENDA

DAY 3: WEDNESDAY, NOVEMBER 19th, 2025

TIME	ACTIVITY
8:00 - 9:00am	Arrival and Registration
9:00 - 9:20am	RECAP OF DAY 1 & 2 By Mr Emmanuel Evbodaghe
9:20 – 9:30am	ANNOUNCEMENTS BY THE MODERATOR
9:30 – 10:00am	- Country Experience with Cassava Production in Nigeria - Federal Ministry of Agriculture & Food Security (FMAFS). - Kano State - Abia State - Cross Rivers State
10:00 - 10:30am	Tea / Health Break
10:30 – 10:50am	Country Experience and Review (20 min) Chair: Prof. Yemisi Jeff Agboola - Experience with the South African National Food and Nutrition Program by Prof. Thokosane Simelane. - Cassava Residues as Feedstock for Sustainable Aviation Fuels: Building A New Industry and Value Chain for Africa Damiana Serafini - Question –and-Answer Session
10:50 – 11:30pm	Business to Business March-Making / Exhibition Tour
11:30 – 2:30pm	Town Hall Workshop: Advancing the Cassava Value Chain for Export Agriculture and Food Security in Africa. Introduction of the Town Hall Meeting by The Moderator (15 Min) Chair: Prof. Azikiwe Peter Onwualu, <i>President, African University of Science and Technology (AUST), Abuja, Nigeria</i> Moderator: Dr. Victoria O. Madedor, <i>Structured & Project Finance Advisor, Bank of Industry.</i> Speakers - Financing, Investment and Market Access by African Export-Import Bank (Afreximbank) and United Bank for Africa - Access to land for Cassava Cultivation By Hon. Patrick Nwabueze Ubru . Commissioner, Ministry of Agriculture and Agro-industrialization Enugu State, Nigeria - Standardization Process as it concerns Cassava Value Addition and Trainings/certification By African Accreditation Cooperation (AFRAC) - Climate & Environmental Issues: ‘Extending the Cassava Value Chain to Energy Markets by Nigeria Civil Aviation Authority (NCAA) - Nutritional Issues, Global Alliance for Improved Nutrition (GAIN) - Nigerian Bill on 10% mandatory inclusion in bread production, Nigeria Senate - Townhall Guests - The Executive Secretary, National Agricultural Development Fund - The Executive Director, Nigeria Export Promotion Council (NEPC) - Ugandan Parliament – Her excellency Dr. Agnes A. Atim - Federal Ministry of Innovation, Science and Technology (FMIST) - Federal Ministry of Industry, Trade and Investment - United Nations Industrial Development Organization (UNIDO) - United world Congress of Diplomats - Etsu Nupe - HRH Dr. Uche Egenti - Hakimin Kurudu



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2:30 – 3:30pm	Lunch
3:30 -3:45pm	Development and Presentation of the Conference Communique
3:45 – 4:00pm	Closure of Regular Sessions and Announcement by the Moderator
7:00 – 9:00pm	Dinner / Awards
9:00pm	Closure





H. E. Sen. George Akume

Secretary to the Government of the
Federation (SFG) of Nigeria,
Abuja, Nigeria



Sen. Abubakar Kyari

Hon. Minister of Agriculture and Food
Security.
Federal Republic Of Nigeria.





**H. E. Prof. Pierre Damien
Habumuremyi**

Former Prime Minister, Republic of Rwanda, Kigali
and Continental Chair, Pan Africa Alliance of Small
and Medium Industries (PAOSMI).



Prof. Ibrahim Hussaini Doko

Former Director General Raw Materials Research
and Development Council (RMRDC), Abuja Nigeria
and Continental Co-Chair, PAOSMI.



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Dr. Henry E. Emejue MD, MPH

Director-General, Pan African Alliance of Small and Medium Industries (PAOSMI).



**H. E. Ambassador Philbert
Abaka Johnson**

UNIDO Regional Director for Nigeria and ECOWAS

KEYNOTE SPEAKER



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SPEAKERS



Dr. Stephen L. Tubene

Associate Director, 1890 Universities Center of Excellence for Global Food Security & Defense (CEGFSD), and Chair, Department of Agriculture, Food and Resource Sciences, University of Maryland Eastern Shore (UMES), USA.



Dr. Godwin Atser

Country Director, Sasakawa Africa Association (SAA), Nigeria.



Francoise Lema Sayi

Country Director, Global Alliance for Improved Nutrient (GAIN), Republic of Benin



Prof. Marie Claire Yandju D. L.

Vice-Rector and Coordinator of Réseau Congolais des Acteurs de l'Innovation (RCAI), University of Kinshasa.



Prof. Umezuruike Linus Opara

Executive Director, UNESCO International Centre for Biotechnology (UNESCO ICB), University of Nigeria, Nsukka, Nigeria.



Prof. Hilary I. Inyang

Distinguished Professor and Founding Chair, Global Institute for Sustainable Development, Advanced Analyses and Design (GISDAAD), Concord, NC, USA and Abuja, Nigeria



Prof. Azikiwe Peter Onwualu

President, African University of Science and Technology (AUST), Abuja, Nigeria.



Dr. Ojo Michael

Country Director, Global Alliance for Improved Nutrient (GAIN), Abuja, Nigeria.



Prof. Samuel Besong

Professor and Chairperson, Department of Human Ecology, Delaware State University. Chair, Diaspora Coordination and Resources Mobilization for PAOSMI Africa.



SPEAKERS



Prof. Ibrahim Katampe

Pro-Chancellor, Cosmopolitan University (Abuja, Nigeria), Assistant Director for Innovation Technology Transfer, Central State University, USA.



Prof. Maxwell Darko Asante

Director, Council for Scientific and Industrial Research-Crops Research Institute (CSIR-CRI) CSIR-Crops Research Institute Kumasi, Ghana.



Prof. Emmanuel Y. H. Bobobee

Department of Agriculture and Biosystems Engineering, Kwame Nkrumah University of Science and Technology (KNUST), Nkumrah University, Ghana.



Dr. Celestina Okanya

Chairman, African Accreditation Cooperation (AFRAC), Pretoria, South Africa, and Director-General, Nigeria National Accreditation System (NINAS), Abuja, Nigeria.



Prof. Chiedozi N. Egesi

Executive Director, National Root Crops Research Institute, Umudike, Abia State, Nigeria.



Prof. Yemisi Jeff Agboola

Consultant to the University of Missouri, Columbia, Missouri, USA on Africa Food Safety Initiative (USDA), and President of Mycotoxicology Society of Nigeria.



Prof. Thokozani Simelane

Professor of Practice, Faculty of Engineering and Built Environment, University of Johannesburg, South Africa.



Prof. Jeroen Rijnenberg

President Director, SBDI Center Foundation.



H. E. AMB. Prof. Tunji John Asaolu

Secretary General, United World Congress of Diplomats (UN-WCD)





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THE ABSTRACTS FOR 2ND CASSAVA AFRICA CONFERENCE

THEMATIC AREA 1: CASSAVA CULTIVATION IMPACTS AND STAKEHOLDERS' INCLUSION

COMPARATIVE ANALYSIS OF THE IMPACT OF ADOPTION OF IMPROVED CASSAVA TECHNOLOGIES ON THE LIVELIHOOD OF WOMEN FARMERS IN AKWAIBOM AND ANAMBRA STATES, NIGERIA

Pearl Amadi, Ivy Nwokocha and Helen Anyaegbunam

National Root Crops Research Institute, Umudike, Umuahia Abia State, Nigeria pearlamadi@gmail.com
ivyamaka.nn@gmail.com

ABSTRACT

About 70% of women are very much involved in agricultural practices, especially in the area of cassava production. Cassava (*Manihot esculenta*) is a multipurpose crop and an important staple food that has improved food security and income generation over the years. In order to relieve farmers from the problem of poor yield in cassava, the International Institute for Tropical Agriculture (IITA) Ibadan, and National Root Crops Research Institute (NRCRI), Umudike, collaborated to develop many hybrid cassava varieties and technologies through selective breeding, capable of adapting to a wider range of ecological conditions and farming systems. Progressively, the developed improved cassava technologies have been distributed to many households in Nigeria and adoption study have also been carried out in those locations. Therefore, the need to find out the extent the adopted technologies have positively impacted on the livelihood of the women cultivators came up. This is because the women dominate the cassava production in Nigeria.

This study comparatively presents findings on the impact of adoption of improved cassava technologies on the livelihood of women farmers in Akwaibom and Anambra States, Nigeria. Specifically, the study determined the level of adoption of improved cassava technologies; determined the extent to which the technologies positively impacted on the livelihood of women farmers in the study areas; accessed the level of farm income before and after the adoption of the technologies by women farmers and identified constraints to adoption. A purposive and multistage random sampling procedure was used to select a sample of 100 cassava women farmers (50 from Akwaibom and 50 from Anambra). Data were collected using structured questionnaires and were analysed using frequency, percentage and mean count rating. The level of adoption of cassava technologies was high in both states with a grand mean of ($\bar{x}=2.27$) in Akwaibom and ($\bar{x}=2.39$) in Anambra which is higher than the mean cut off of 2.0. The adoption had positive impact on the livelihood of the women, mostly on paying of children's school fees, good health and nutrition, increased availability of food, and income generation in both states. The study concluded that majority of the women farmers willingly adopted the improved technologies and it has increased their farm income levels and livelihood to an extent. It is highly recommended that, the women farmers should be encouraged by providing timely information on improved technologies, availability of the stem and provision of incentives to enable them enhance their level of adoption and greatly boost their livelihood.

Keywords: Adoption, Impact, Cassava, Livelihood, Women Farmers, Nigeria



GENDER ANALYSIS OF ADOPTION LEVEL OF IMPROVED CASSAVA PRODUCTION TECHNOLOGIES IN ABIA STATE, NIGERIA

Nwokocha Ivy Nwamaka, Tokula, Mark and Amadi, Pearl Edward

National Root Crops Research Institute, Umudike, Abia State, Nigeria.

ivyamaka.nn@gmail.com

mhtokula1@yahoo.com

pearlamadi@gmail.com

ABSTRACT

The study analysed gender adoption level of improved cassava production technologies in Abia State, Nigeria. Data were collected from a sample size of 120 cassava farmers through the use of questionnaire. Data collected were analysed using both descriptive and inferential statistics. The result showed that female farmers had mean age of 35 year while the male farmers had mean age of 36.2 years and mean the education level was 12 years in both genders. The result revealed that adoption level of improved cassava production technologies for females was grand mean of 2.47 while the grand mean for the males was 2.44 on a three point rating scale. The result revealed that 91.67 % of both genders indicated that high cost of labour was the major constraint militating against their adoption of improved cassava production technologies, followed by 78.33 % of females indicated that high cost of fertiliser and 70% of males indicated low finance. The result of regression analysis showed that age, educational level, participation in activities of association, household size, and farming experience were significant in both genders at 5% and 1% alpha levels. The study therefore, concluded that both genders had high level of adoption of improved cassava production technologies. The study therefore, recommended that younger female and male farmers should engage in cassava farming and adopt improved cassava production technologies for increased productivity and food security in the State.

Keywords: Gender, Adoption, Improved Cassava Production and Technologies

THEMATIC AREA 2: SUSTAINABLE CASSAVA PRODUCTION

INFLUENCE OF AGRO-CLIMATIC PARAMETERS ON SUSTAINABLE CASSAVA PRODUCTION ACROSS THE CLIMATIC BELTS OF NIGERIA

^{1*}Okoye N. N. and ²Nwagbara, M. O.

¹Agro-met Unit, National Root Crops Research Institute, Umudike, Abia State, Nigeria

²Department of Water Resources Management and Agrometeorology, Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria

¹nkimmoore@yahoo.com

²moses.nwagbara@mouau.edu.ng

ABSTRACT

This study analysed the variability of the agro-climatic parameters that impact cassava production across different climatic belts of Nigeria. To achieve this, two agro-climatic parameters (Rainfall and Temperature) were considered for the period spanning 40years (1980–2019). Rainfall and Temperature data were obtained for the study from Nigerian Meteorological Agency, Abuja while cassava yield data were collected from Agricultural Development Programme and Nigerian Bureau of Statistics, Abuja. These data were analysed using simple Linear Regression, Correlation and Analysis of Variance.



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Results obtained showed that in the Tropical Monsoon Climatic belt, rainfall and temperature significantly predicted cassava yield ($F, 16.0892 = p < 0.05$) which indicates that these climatic parameters play significant role in the yield of cassava in the belt ($b_1 = R; .123 P < 0.05, b_2 = T.532 P < 0.05$). The model revealed a positive relationship ($r = .891$) and the R^2 was .794. This means that rainfall and temperature jointly explained 79.4% of variation in cassava yield in this belt of Nigeria. While in the Tropical Savanna, rainfall and temperature significantly predicted cassava yield ($F, 34.2346 = p < 0.05$) which indicates that the parameters play significant role in the yield of cassava in the Tropical Savanna Climatic environment ($b_1 = R; .316 P < 0.05, b_2 = T.372 P < 0.05$). The model revealed a positive relationship ($r = .632$) and the R^2 was .399 implying that climate jointly explained 39.9% of variation in cassava yield in the belt. Also, in the Warm Semi-Arid rainfall and temperature significantly predicted cassava yield ($F, 11.8671 = p < 0.05$) which signifies that climate plays significant role in the yield of cassava in this environment ($b_1 = R; .329 P < 0.05, b_2 = T.421 P < 0.05$). The model also shows a positive relationship ($r = .762$) and the R^2 was .581 with the implication that rainfall and temperature jointly explained 58.1% of variation in cassava yield in this belt. Furthermore, in the Warm Desert Climate, rainfall and temperature significantly predicted cassava yield ($F, 8.9234 = p < 0.05$) which shows that the parameters play significant role in the yield of cassava in the environment ($b_1 = R; .332 P < 0.05, b_2 = T.185 P < 0.05$). The model indicates a positive relationship ($r = .452$) and the R^2 was .204 meaning that rainfall and temperature jointly explained 20.4% of variation in cassava yield in this climatic belt of Nigeria. In conclusion, there is a significant relationship between rainfall and temperature (climate) and cassava yield across the climatic belts with implication for sustainable cassava production in Nigeria. Therefore, the study recommends among others that cassava production in the country should align with the emerging seasons as found in each of the four climate belts.

Key words: *Climate Parameters, Climate belts, Climate change, Cassava production, Sustainable production*

SUSTAINABLE CASSAVA PRODUCTION IN NIGERIA: FIELD INNOVATIONS AND INSTITUTIONAL SYNERGY FOR CLIMATE RESILIENCE

Mazza Mary-Ann, Chijioke Ugo, and Abah Simon Peter

National Root Crops Research Institute, Umudike, Abia State, Nigeria

maryannmazza61@gmail.com

ABSTRACT

Cassava is a strategic crop for Nigeria's food security and agro-industrial growth, yet its production is increasingly threatened by climate variability, soil degradation, and input scarcity. This study, led by the National Root Crops Research Institute (NRCRI) in Umudike, presents results from a multi-year field program conducted across Abia, Benue, and Cross River States, Nigeria aimed at enhancing cassava sustainability through integrated agronomic and socio-economic interventions. Trials involving 120 smallholder farmers demonstrated that intercropping cassava with legumes (e.g., cowpea and soybean), combined with bio-fertiliser application and improved NRCRI-bred varieties (e.g., TMS 419 and NR87184), increased yields by 28–35% while improving soil organic matter by up to 18%. Collaborations with local extension service providers, farmer cooperatives, and agro-processing SMEs facilitated knowledge transfer and market linkages, resulted in a 22% rise in household income among participating farmers. Policy analysis revealed critical gaps in input distribution and land tenure systems, underscoring the need for coordinated support from the Federal Ministry of Agriculture and Food Security and private



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sector partners. This work affirms that sustainable cassava production in Nigeria is achievable through science-driven innovation, inclusive partnerships, and responsive policy frameworks.

Keywords: *Cassava, field innovation, institutional synergy, climate resilience, sustainability.*

HARNESSING THE GREEN GOLD: STRATEGIC PATHWAYS FOR BENUE STATE TO EMERGE AS A GLOBAL HUB FOR PROCESSED CASSAVA EXPORTS

Dorcas Nguemo Kundam^{2,3} and Zacharys Anger Gundu¹

¹University of Mkar, Mkar. Gboko, Benue State, Nigeria.

²Department of Food Science and Technology, University of Mkar, Mkar. Gboko, Benue State, Nigeria.

³Centre for Food Technology and Research, Benue State University, Makurdi, Benue State, Nigeria

²dorcamo@yahoo.com

dnkundam@umm.edu.ng

ABSTRACT

Cassava (*Manihot esculenta*), universal third-largest source of food carbohydrates in the tropics, holds enormous economic potential for Nigeria. Nigeria is the world's leading producer of cassava, making over 60 million metric tonnes annually. Despite this massive output, the country's participation in the global export market for high-value processed cassava derivatives—such as High-Quality Cassava Flour (HQCF), industrial starch, ethanol, and dried chips/pellets remains minimal. This disparity gives an insightful disconnect between primary production potential and value-added market realisation. Benue State, Nigeria, renowned as the "Food Basket of the Nation," is Africa's single largest cassava-producing region, yet, its vast output is overwhelmingly channeled into subsistence farming and local food markets. The University of Mkar, Mkar; Benue State capitalising on this potential, have engaged in vast farming of the variety 419 and engaged in processing and value addition along the cassava value chain to transition from raw tuber supplier to a primary source of processed cassava exports—specifically focusing on High-Quality Cassava Flour (HQCF), industrial starch, and cassava chips/pellets. Benue State has comparative advantage of its fertile land, high yields, high cultivation density, favourable climate supporting exceptionally high cassava production and existing processing expertise at the Department of Food Science and Technology, University of Mkar, Mkar. However, significant constraints, such as fragmented supply chains, poor access to finance, inadequate processing technology, and weak infrastructure (especially roads and reliable power), post-harvest losses, insufficient industrial-scale processing technology, quality control and standardisation issues for international markets, and inadequate infrastructure (power, transportation) currently limit export competitiveness. This paper therefore, concludes that a concerted, multi-stakeholder strategy (public-private partnerships) involving targeted investment in mechanisation, industrial-scale processing, contract farming, and infrastructure development are imperative to unlock this immense economic potential. Implementing these strategic imperatives will not only position Benue State as a major global exporter but also drive industrialisation, job creation, significantly boost Nigeria's non-oil export revenue and sustainable economic expansion.

Keywords: *Green gold, Food basket, Subsistence, Post-harvest losses, Processing, Export.*



SUSTAINABLE DRYING TECHNOLOGIES FOR CASSAVA: A REVIEW ON ENERGY EFFICIENCY, QUALITY RETENTION AND RURAL ADAPTABILITY

M. A. Abu, Dr. J. O. Mahmud, G. A. Shiru, S. O. Adeagbo and M. T. Yari

The National Agency for Science and Engineering Infrastructure (NASeni)

abu.mikairu@nsel.naseni.gov.ng

Mahmud.ja@sedim.naseni.gov.ng

shiru.grace@nsel.naseni.gov.ng

adeagbo.sulaiman@nsel.naseni.gov.ng

yari.mukhtar@nsel.naseni.gov.ng

ABSTRACT

Cassava (*Manihot esculenta*) is globally a key staple with high socio-economic value, most especially in tropical regions. Africa dominates its production with Nigeria leading at over 59 million metric tons annually. Within Nigeria, cassava is a dietary staple especially in rural and urban households with over 70% processed into cassava flakes (garri), a key food item consumed daily. In processing of cassava flakes, drying is essential for its preservation, quality retention and safety. Traditional drying methods such as sun drying and firewood drying are common but have many drawbacks. These include long drying times, exposure to contamination, nutrient loss, and significant environmental damage. This review examines various drying technologies for cassava flakes, focusing on sustainable options that save energy, keep nutritional quality, and suit rural communities. Mechanical and thermal dryers speed up drying but often rely on non-renewable energy sources and risk damaging cassava quality. Solar-powered drying technologies offer a promising alternative that uses renewable energy to reduce drying time, enhance product hygiene and lower environmental impact. Despite these benefits, challenges remain, including high initial costs, difficulty scaling, precise temperature control issues and limited adoption in rural areas. This paper compares various drying methods based on energy use, product quality, environmental effects, and suitability for rural deployment. It also highlights future research directions such as hybrid renewable energy systems and user-centered design improvements. The goal is to promote development and widespread use of off-grid and energy-efficient drying technologies. This will empower smallholder farmers, reduce post-harvest losses and support sustainable agricultural practices in cassava production.

Keywords: *Cassava flakes, Sustainable drying, Rural adaptability, Solar-powered drying, Traditional drying.*



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HARNESSING THE ROLE OF INDEGENOUS KNOWLEDGE IN PROMOTING SUSTAINABLE CASSAVA FARMING PRACTICES IN NIGERIA: PROSPECT AND CHALLENGES

Agoh E.C, Chukwuemeka O.S, Uwanamodo O.A, and Onwuka S

National root crops research institute umudike, Abia State Nigeria.

echima64@gmail.com

ABSTRACT

Cassava is a vital crop for food security and rural livelihoods in Nigeria, yet its production faces growing challenges such as soil degradation, climate variability, and rising input costs. Indigenous knowledge (IK), built over generations of farming experiences, provides valuable strategies for sustaining cassava production through practices that are both environmentally friendly and culturally relevant. This paper explores the prospects and challenges of harnessing indigenous knowledge to promote sustainable cassava farming in Nigeria. The prospects include its affordability, reliance on locally available resources, enhancement of biodiversity through intercropping, and capacity to build resilience against climate-related shocks. However, indigenous practices are increasingly constrained by factors such as the erosion of traditional knowledge, weak intergenerational transfer, limited scientific validation, and inadequate policy support. The study argues that integrating indigenous knowledge with modern agricultural innovations can improve soil fertility, strengthen pest and disease management, reduce environmental impacts, and enhance food security. To achieve this, deliberate efforts are needed to document, validate, and mainstream indigenous practices into extension services and agricultural policies. Such an approach will create a more resilient and sustainable cassava production system in Nigeria.

Keywords: Indigenous, knowledge, sustainable, cassava and farming.

THEMATIC AREA 3: QUALITY ENHANCEMENT AND VALUE ADDITION

SENSORY PROFILE AND CONSUMER PREFERENCES OF AGBELI MADE FROM CASSAVA VARIETIES BIOFORTIFIED WITH PROVITAMIN A

NoëlAKISSOE, Laurent ADINSI, Mathias Hounsou, Joseph Hounhouigan

Department of Nutrition and Food and Technology Sciences, University of Abomey-Calavi, Bénin, Benin Republic

Noel.akis@yahoo.fr

adinsil2003@yahoo.fr

mathiashounsou@gmail.com

hounjos@yahoo.fr

ABSTRACT

Biofortification of cassava with provitamin A could contribute to reducing vitamin A deficiency in developing countries. In Benin, only white-fleshed cassava varieties were cultivated until recently. Since 2019, five yellow-fleshed cassava varieties have been introduced. However, no data are



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available regarding their suitability for processing or the acceptance of derived products. Acceptance of the yellow cassava varieties over traditional white varieties is a prerequisite for their adoption by consumers. The study aimed to evaluate the sensory profile, consumer preference, and purchase intention related to *Agbeli* derived from provitamin A biofortified varieties. Five (5) biofortified cassava varieties (I011412, I090090, I083724, I090151, I070539) and one traditional/control white-fleshed variety (RB89509) were used to produce *Agbeli* in two replicates at two-week intervals. In total, two batches of fresh *Agbeli* (Rep1f and Rep2f) and two other equivalent batches of cooked *Agbeli* (Rep1c and Rep2c) were subjected to sensory tests. The samples from the first production (Rep1f and Rep1c) were evaluated using a nine-level hedonic test to assess consumer acceptability ($n = 108$ and 102 , respectively). They were also evaluated using the “Rate-All-That-Apply” (RATA) test, to determine the most appropriate sensory attributes for the *Agbeli* samples, and then to specify the intensity of the terms deemed relevant using a three-level scale (low, medium and high). The samples from the second production run (Rep2f and Rep2c) were subjected to a ranking test using a list of key attributes ($n = 5$ and 4 , respectively), and evaluation of consumer intention to purchase ($n = 30$). The six samples of fresh or cooked *Agbeli* received positive favourable ratings, with acceptability scores varying between 6.4 and 7.3 . The *Agbeli* made from the control white variety RB89509 obtained the highest score in both cases. The RATA test revealed a significant difference ($P < 0.001$) between the fresh and cooked *Agbeli* for most of the evaluated attributes, with specificities according to its state, fresh or cooked. variety I070539 was the most yellow (fresh *Agbeli*), least rich in starch, richest in fibres and least attractive. In addition, it was also the least suitable for making cooked *Agbeli* of acceptable quality, since the cooked *Agbeli* obtained was the least extensible of the 6 varieties. The biofortified cassava varieties I083724 and I011412 and the traditional white variety RB89509 were among the varieties whose fresh and cooked *Agbeli* presented the preferred characteristics. The biofortified cassava varieties I083724, I011412, and I090090 received an intention to purchase score varying between 6.7 and 8 , whereas variety I070539 received a score of 3 on a scale of 1 to 10 . Thus, biofortified cassava varieties show promising consumer acceptance since three of them (I083724, I011412, I090090) demonstrated excellent sensory profiles comparable to traditional white variety

Key words: Biofortified cassava, *Agbeli*, Consumer perception, Acceptability

MONITORING THE FOOD SAFETY OF CASSAVA PROCESSING METHODS IN RURAL COMMUNITIES IN DR CONGO

Yandju Dembo D'a Letshu Marie-Claire, Disashi Dongolongo Fiston et Djamba Okenda Emmanuel, Mbala Mavinga Blaise

Laboratoire de Microbiologie appliquée et nutrition, Faculté des Sciences et Technologies, Université de Kinshasa, RDC

marieclaire.yandju@unikin.ac.cd

ABSTRACT

Cassava is the staple food for the people of the Democratic Republic of Congo (DRC) and is the country's main food crop. It is also the main source of energy and income for the population. However, all parts of the plant contain cyanogenic glycosides that can release hydrocyanic acid, which is a poison. Several studies have shown that consumption of cassava that has not been completely detoxified or poorly detoxified contributes to the impairment of thyroid hormone function. This dysfunction is the basis of cretinism, goiter, and Konzo.

Given the importance of cassava in their diet, indigenous peoples have developed several techniques for processing and preparing cassava in order to reduce the risk of exposure to cyanide in specific dishes characteristic of the Congolese diet.



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Several studies on cassava food processing have shown that these techniques are mainly based on wet fermentation (retting) or open-air fermentation (dry fermentation) before or after cooking, using native microorganisms of various origins. These traditional technologies currently in use are still rudimentary and unhygienic, far from guaranteeing the safety of cassava-based foods. In traditional technologies, particularly wet processing, the pH and temperature of the processing water are important factors in the elimination of cyanides, as well as the duration of processing alongside the fermenting microorganisms. The presence of toxin-producing molds in the retting water poses a risk of aflatoxin production in cassava products, particularly FUFU. After fermentation in water, drying is a crucial step that determines the shelf-life and quality of fermented cassava flour.

To address the weaknesses of traditional processes regarding health risks, a methodological approach to control high-risk steps was implemented to manage risks in accordance with food manufacturing standards. This method is adapted to the necessary evolution of regulations and good hygiene practices for food processing.

The proposal of the present work involved conducting five cassava retting trials in the laboratory and three at rural production sites. The main idea was to replace solar drying by a drying system with a controlled drying area. This would prevent windborne impurities and microorganisms from entering the cassava flour. By controlling the drying temperature as well, mesophilic microorganisms (bacteria and molds) would be inactivated or killed, preventing the production of aflatoxins in fermented products.

Studies initially conducted at the Laboratory of Applied Microbiology and Nutrition (LAMAN) at the University of Kinshasa and replicated in four rural trials have led to the development of a controlled fermentation process in transforming cassava into high-quality fermented flour known locally as FUFU, cyanide- and aflatoxin- free products. It has been developed two pilot units, whose technological results in rural areas have demonstrated the preservation of vitamin A in biofortified cassava species, the control of aflatoxin production, the reduction of fermentation time to 24 hours, and the total reduction of cyanide levels.

The results obtained from the analysis of traditional fermentation products highlighted the negative impact of repeated retting system installed along water canals, which become increasingly acidic (pH between 3 and 4), inhibiting the action of linamarases. Furthermore, since traditional drying takes place at ambient temperature (25-32°C), various mesophilic microorganisms, particularly toxin-producing molds, continue to develop, often leading to the production of aflatoxins.

The applied method consists of maintaining the pH values of the cassava retting and cleaning water at 6-7. This activates linamarases, enabling the removal of cyanides before and during fermentation. By controlling the drying temperature, mesophilic microorganisms (bacteria and molds) were inactivated or killed, preventing the production of aflatoxins in the fermented products. Covering the cassava products with a metal sheet accelerated drying by controlling the deposition of windblown impurities in the cassava flour, known as fufu. Trials conducted in farmers' fields using a local variety of biofortified cassava demonstrated the preservation of vitamin A.

We have developed a technology that can be used by farmers at low cost to produce cassava flour that meets quality standards. Adjusting the pH of the water, controlling the temperature and improving the drying area have made it possible to improve product quality by eliminating cyanide before and during retting, thereby extending shelf life.

Key words: *aflatoxins, cyanide, retting, fufu, fermented products*



PUTTING FARMERS' VOICES FIRST: HOW TRICOT CITIZEN SCIENCE IDENTIFIES TRAIT PREFERENCES FOR LIVELIHOOD AND FOOD SECURITY

Onwuka S.^{1,2}, Madu T.¹, Teeken B.², Ejechi M.¹, Abolore B.¹, Olamide D.¹, Okoye B. C.², Onyeka J.², and Egesi C. N.^{1,2}

¹ National Root Crops Research Institute (NRCRI), Umudike, Nigeria.

² International Institute of Tropical Agriculture (IITA), Ibadan, Nigeria.

sammionwuka@gmail.com

ABSTRACT

Cassava is critical to Nigeria's agricultural economy, serving as a primary food and cash crop for millions of smallholder farmers. Despite advances in breeding, the adoption of improved cassava varieties remains limited, often due to a misalignment between breeder priorities and end-user preferences. This study employed the Triadic Comparison of Technologies (TRICOT) citizen-science methodology to identify the key traits driving cassava variety preference among Nigerian farmers and processors, and to propose a pathway for accelerating adoption. A total of 120 farmers across six states in Nigeria's major agro-ecological zones participated in the on-farm TRICOT trials, evaluating eight improved cassava genotypes. Data on agronomic performance, processing qualities, and sensory attributes were collected. Analysis was conducted using descriptive statistics, correlation matrices, econometric modeling (multinomial logistic regression), and decision-tree analysis (Classification and Regression Trees). The analysis revealed that processing and sensory qualities, specifically gari processability ($p < 0.001$), eba texture ($p < 0.001$), and gari color ($p < 0.01$); were the most significant predictors of variety preference. Socioeconomic variables such as age, education, and gender played statistically minor roles. Decision-tree models confirmed that food-quality traits formed the primary decision nodes for farmers' selections. Gender and regional analysis showed that while women placed a higher emphasis on peeling ease and product color, and northern farmers valued drought tolerance, processing quality remained a universal and dominant driver. The findings underscore the critical need for demand-led breeding that prioritises real-world farmer and consumer preferences. Integrating the TRICOT approach into national breeding programs can bridge the adoption gap by ensuring that released varieties align with market and household demands. When linked with robust seed systems and inclusive extension services, TRICOT-based participatory breeding has the potential to transform cassava innovation, strengthen rural livelihoods, and enhance food and nutrition security across Nigeria.

Keywords: Cassava, TRICOT, Citizen-Science, Trait Preferences, Adoption, Nigeria, Participatory Breeding, Food Security.



QUALITY EVALUATION OF THE PROCESSING SUITABILITY OF PROVITAMIN A CAROTENOIDS CASSAVA INTO LAFUN USING TEXTUROMETER

Laurent Adinsi^{1,2}, Alexandre Bouniol³, Sègla Wilfrid Padonou^{1,2}, Thierry Tran³, Dominique Dufour³, Noël Akissoé²

¹ ESTCTPA, Université Nationale d'Agriculture, 01 BP 55 Porto Novo, Benin

² Laboratoire de Sciences des Aliments, Faculté des Sciences Agronomiques, Université d'Abomey-Calavi, 03 BP 2819 Jéricho, Benin

³ CIRAD, UMR QUALISUD, F-34398 Montpellier, France

adinsil2003@yahoo.fr, alexandre.bouniol@cirad.fr, w_padonou@yahoo.fr, thierry.tran@cirad.fr, dominique.dufour@cirad.fr, noel.akis@yahoo.fr

ABSTRACT

Lafun is made by fermenting and drying cassava chunks, which are then milled into flour before cooking into dough. The after-cooking stability of the dough is one of Lafun's the key quality attributes because the dough can be eaten or stored for one to three days, sometimes with a loss of textural quality especially for those from improved varieties. This study aims at study the textural properties of fresh lafun dough and their changes during storage at 45 °C for 5 and 24 h, in order to determine after-cooking storability. Lafun flours were produced from two types of cassava varieties: seven provitamin A carotenoids (pVAC) varieties and two local white-fleshed varieties; and processed into lafun doughs. Three groups of hardness behaviour were observed: increase in hardness, decrease in hardness (softness) and no modification; Two promising pVAC varieties were identified, based on stiffer texture than local varieties during storage. Undesirable varieties were also found, which softened during storage instead of hardening. Optimum texture of lafun dough was obtained after 5 h of storage.

Keywords: *Cassava roots, hardness, screening, dough*

PROXIMATE AND FUNCTIONAL PROPERTIES OF FORTIFIED CASSAVA FLOUR (GARIN DANWAKE) AND CASSAVA STARCH

Zahrau Bamalli Nouruddeen¹, Umar Garba², Alkasim Kabiru Yunusa¹, Musa Rilwanu Babale², Ibrahim Katampe³

¹ Department of Food Science and Technology, Aliko Dangote University of Science and Technology, Wudil, Kano, Nigeria

² Department of Food Science and Technology, Bayero University Kano, Kano, Nigeria

³ Department of Agricultural and Life Sciences, Central State University, Wilberforce, Ohio State 45384, USA.

zbamalli@kustwudil.edu.ng

ABSTRACT

Cassava (*Manihot esculenta*) is a drought-tolerant, pest and disease-resistant tuber crop extensively cultivated in tropical and subtropical regions. *Danwake* is one of the products derived from cassava flour and consumed as a traditional food in northern Nigeria. However, information on nutritional and functional properties of the flour is lacking. this research aimed to determine the proximate and functional properties of cassava flour (*Garin Danwaake*) fortified with carrot, sweet potato and moringa leaves. Proximate and functional properties were determined using standard methods. The finding showed that the proximate contents ranged 2.11 to 7.41%, 0.20 to 2.20 %, 0.04 to 15.67%, 3.61 to 7.51%, 0.07 to 2.76% and 64.56 to 94.41% for moisture, crude ash, crude fat, crude protein, crude fiber and carbohydrates.



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Cassava starch showed significantly ($p < 0.05$) lower content in all the parameters except for carbohydrate. While for the functional properties, the finding ranged from 0.60 to 0.75, 0.95 to 2.30%, 1.95 to 2.75% and 65.50 to 71.00 °C for bulk density (BD), water absorption capacity (WAC), oil absorption capacity (OAC) and gelatinization temperature respectively. Cassava starch showed significantly ($p < 0.05$) highest values in BD, OAC and gelatinization temperature. It can be concludes that cassava products such as cassava flour and starch are potentials ingredients for the processing of varieties of products.

Keywords: Cassava, *Danwake*, Fortification, Proximate, Starch

NUTRITIONAL PROFILE AND FUNCTIONAL FOOD APPLICATION OF CASSAVA FLOUR AND ITS COMPOSITE: A REVIEW

Zahrau Bamalli Nouruddeen¹, Umar Garba² Alkasim Kabiru Yunusa¹, Ibrahim Katampe³

¹Department of Food Science and Technology, Aliko Dangote University of Science and Technology, Wudil, Kano, Nigeria

²Department of Food Science and Technology, Bayero University Kano, Kano, Nigeria

³Department of Agricultural and Life Sciences, Central State University, Wilberforce, OH 45384, USA.

zbamalli@kustwudil.edu.ng

ABSTRACT

Cassava (*Manihot esculenta*) is a drought-tolerant, pest and disease-resistant tuber crop mainly grown in tropical and subtropical regions for human consumption. According to Food and Agricultural Organization of the United nation, cassava forms an essential part of diet for over half a billion individuals majorly serving as carbohydrate source. Nigeria leads global cassava production, followed by Brazil and Thailand, with an estimated annual output exceeding 230 million metric tons. The nutritional composition of cassava and functional properties of its flour varied significantly due to many factors such as geographic locations, variety, age of plant and environmental factors. Cassava has wide applications in foods, flour, starch, bioethanol, animal feeds, and industrial products such as thickeners, gluten-free flours, and raw material for sweeteners and adhesives. Despite the prospect of cassava in driving economic and food security especially in Africa and Asia, its utilization particularly as food remain however, limited due a number of factors such as high fibre, presence of antinutritional factors, low energy content as well as low nutritional value. While soaking, proper cooking and other processing operations can detoxify the anti-nutrients in cassava, the limited nutritional value can be enhance through Bio-fortification to increases its protein, vitamins and mineral contents. Many researches demonstrated the applications of composite flour of cassava, in many cases, it is fortified with legumes, cereals and vegetables to improve nutritional and functional properties for food processing applications. This review aims to provide an overview of the nutritional composition, functional characteristics, and potential applications of cassava flour and its composites, with a focus on their suitability as functional food ingredients and enhancing their value in food systems.



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THEMATIC AREA 4: POLICY AND PARTNERSHIPS FOR GROWTH OF THE CASSAVA INDUSTRY

Amb. IDAH O. K. David
JOBS FOR AFRICANOW
jobs4africanow@gmail.com

ABSTRACT

The cassava sector holds immense potential as Africa's next frontier for inclusive and mass employment. This paper presents JFAN's Policy and Partnership Framework as a model for driving job-led industrialization within the cassava value chain. Through a Five-Point JFAN Policy Agenda—emphasizing harmonized standards, innovation funds, PPP-led industrial zones, youth apprenticeship systems, and gender-inclusive partnerships—JFAN demonstrates how strategic collaboration can turn cassava from a food security crop into an employment security crop. Cassava as Africa's Employment Engine Africa currently accounts for over 65% of global cassava production, yet its industrial conversion ratio remains below 10%. JFAN argues that transforming cassava into an employment engine requires policies that institutionalize cassava-based industries within national development plans.

The Job-Led Cassava Transformation Model (JLCTM) rests on Institutional Policy Reforms, Inclusive Value Chain Governance, and Employment Integration.

JFAN promotes a Public–Private–Community Partnership (PPCP) model as a practical mechanism for sustainable cassava industrialization.

The Five-Point JFAN Agenda for Cassava-Driven Job, Growth: Harmonized Regional Standards, Cassava Innovation and Employment Fund, PPP-Led Agro-Industrial Zones, Youth Apprenticeship Framework, and Gender-Inclusive Partnerships form the core of JFAN's agenda.

JFAN's policy agenda aligns with AU Agenda 2063, AfCFTA, CAADP, and the SDGs, ensuring that cassava industrialization supports inclusive development. Human Capital and Institutional Development Central to JFAN's proposition is the belief that policies must first empower people. Cassava policies must be deliberately human-centered and capacity-based.

Case Studies and Policy Inspirations Nigeria's Presidential Initiative on Cassava, Thailand's Cassava Industry Policy, and JFAN's Pilot Programme in Enugu State provide replicable policy lessons

Institutionalize cassava in national employment plans, establish policy desks, mobilize regional cassava funds, enhance accountability, and promote research–industry linkages.

From Crop to Continental Catalyst Cassava stands as a transformative instrument for Africa's industrial and employment renaissance. JFAN's Policy and Partnership Framework embodies a pragmatic optimism where cassava becomes a seed of prosperity across the continent.

Keywords: Agenda for Cassava-Driven Job, Growth: Harmonized Regional Standards, Cassava Innovation and Employment Fund, PPP-Led Agro-Industrial Zones.

CRITICAL ANALYSIS OF THE VALUE CHAIN OF CASSAVA IN FOOD SYSTEMS STRENGTHENING: A CASE OF KENYAN CONSUMPTION AND COMMERCIAL MARKET

Dr. David Omondi Okeyo
Kenya Nutritionists and Dieticians Institute
ceo@kndi.institute

ABSTRACT

The current food systems value chains require concerted efforts to re-introduce foods in the traditional value chain where they have been ignored by the current generation in Africa. It is evidence that a lot of indigenous foods that formed the main starch have lost value in the utility yet there is high level



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l potential impact on food security that can be re-gain at household level. Cassava has been identified as a food product that would spur economic growth and rural development for many nations in Africa, Kenya included. The purpose of this paper is to explore the potential solutions that Cassava has both in food security and economic capacity in rural development. The paper will give critical analysis of the value chain of Cassava in the Kenyan Context and market dynamics. Kenya has significantly recorded great investments on Cassava as a commercial product. A situation that can be upscaled to higher levels. The consumption at home now stands at 30 percent while commercialization stands at 25 percent. The total average potential demand for Cassava in Kenya is 3 million Tons per annum. Many gaps still exist that hinders the upscaling of commercial aspect of the industry which this paper will explore in the Kenyan context. There is a policy charge on private sector investment of significant value. In conclusion, the paper identifies key factors that require concerted efforts towards embracing Cassava in the food value chain as well as small and medium enterprise engagement as key players in the value chain. Key recommendations are given on matters of policy to jump start regional talks on re-emergence of this noble food

Key Words: *Cassava, food value chain, Food consumption, small and medium enterprises, Commercialization.*

THEMATIC AREA 5: TECHNOLOGY AND SMART SYSTEMS INTEGRATION & SUSTAINABILITY

Amb. IDAH O. K. David
JOBS FOR AFRICANOW
jobs4africanow@gmail.com

ABSTRACT

JFAN-Driven Smart Technologies for Sustainable Job Creation in Africa's Cassava Value Chain

Africa's cassava industry represents both a foundation for food security and an untapped platform for industrial innovation and job creation. Guided by its flagship mission, Jobs For Africa Now! (JFAN) advocates that the integration of smart technologies and system-based sustainability mechanisms can transform cassava from a subsistence crop into a mass employment generator across production, processing, logistics, research, and technology services. This presentation articulates a comprehensive JFAN-defined approach to embedding smart systems within Africa's cassava value chain, emphasizing digital integration, renewable energy-driven mechanization, and inclusive capacity frameworks. It argues that Africa's transformation depends not only on yields and exports, but on the **activation of human capital**—ensuring that every stage of technological advancement translates into sustainable, inclusive livelihoods. Africa holds over 60% of the world's uncultivated arable land and produces more than 180 million metric tonnes of cassava annually, yet the continent still imports food and raw starch derivatives worth over US\$4 billion each year (FAO, 2024). JFAN asserts that to unlock Africa's agricultural transformation, technology must serve as a **job creation** engine rather than merely a productivity enhancer. JFAN's methodology follows a “**Triple-S Integration Model**” that aligns Smart Systems, Sustainability, and **Social Inclusion**. JFAN holds that no technology is sustainable without **human ownership** and **capacity**. Therefore, its interventions focus on Human Capital Value Chain Management (HCV-CM)—a model that ensures every technological insertion corresponds with a human skills expansion. JFAN's approach directly aligns with several strategic frameworks and conventions such as **AU Agenda 2063**, **AfCFTA**, and **SDGs 8 and 9**. Prospective Smart Processing Cluster envisaged for Ogun State would increase local processing output by 45% while generating 220 direct jobs in one year. Similarly, JFAN's prospective Cassava Waste-to-Energy Pilot in Cross River State would transform peels and effluents into



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biogas for community energy. To mainstream smart technologies across Africa's cassava value chain, JFAN proposes **National Cassava Digitalization Policies**, **Cassava Smart Technology Fund**, and **Regional Skills Harmonization**. JFAN's interventions reaffirm that Africa's greatest resource is its **people**—and the most sustainable technology is the one that **creates** and **secures livelihoods**.

THE ROLE OF COMPUTER AIDED ENGINEERING IN REALIZING EFFICIENT AGRICULTURAL EQUIPMENT FOR AN IMPROVED CASSAVA VALUE CHAIN IN SUB-SAHARAN AFRICA.

Adedeji Aremu, Ishaya Musa Dagwa, Nathan Williams and Isaac Dalbuto

Coventry University, Loughborough, England, United Kingdom

deji.aremu@coventry.ac.uk, dagwa.ishaya@uniabuja.edu.ng, mustardseed4u@gmail.com,

aidalbuto@gmail.com

ABSTRACT

Cassava offers numerous benefits for the Sub-Saharan African (SSA) economies. Yet inefficiencies in its value chain, especially those associated with processing machinery, have heavily constrained such benefits. Cassava's constituents and caloric density make it an excellent source of nutrients, biofuel, animal feed, bioplastics, adhesives and syrups. Unfortunately, imported machinery used for converting cassava from its raw state into finished products are often too expensive for the small holder farmers. This is compounded by “poor farm to industry” transport facilities and cassava's high perishability, thereby, exposing a huge proportion of the small holder farmers to arduous tasks. Locally manufactured machinery rarely fills this gap given their inferior quality, thereby, creating a situation that necessitates the exploitation of computer aided engineering (CAE) to support the realisation of efficient and affordable local agricultural implements across cassava value chain. CAE promotes the virtual validation and optimisation of engineering equipment, accelerating time to market of such equipment while reducing the need to experimental testing of their performance. Consequently, it reduces greatly the cost of such equipment, offering an opportunity to proliferate certain savings to small holder farmers. There is a broad number of numerical methods within CAE, a lot of which can be mapped to machineries used to support the conversion of Cassava into high value products. Some of such methods include finite element analysis, computational fluid dynamics, discrete element simulations, optimisation and machine learning. Unlike in SSA, these CAE techniques have been extensively exploited by the developed world to efficiently realise novel engineering solutions. Several other papers have further demonstrated how CAE can be used to improve the performance of agricultural equipment. CAE could be used to realise energy efficient cassava processing implements across the value chain. However, the cost of most commercial CAE software is also quite high, consequently inhibiting its use in promoting sustainable development goals across Africa. Yet SSA strong mathematical talent pool could develop indigenous CAE software. In this paper, we elucidate a roadmap to exploiting CAE for novel cassava processing machinery across the value chain. Particularly, focussing on how it can be harnessed for affordable cassava implements in small and agricultural industries while overcoming the CAE software licence barrier.

Keywords: Computer Aided Engineering, Cassava, Machinery, Sub-Saharan Africa



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INTEGRATING SMART TECHNOLOGIES INTO CASSAVA FARMING AND PROCESSING: A REVIEW OF AI, IOT, AND DIGITAL INNOVATIONS IN AFRICA

Nkechi Gloria Ajaegbo¹, Rajesh Prasad², Hadiza Isa Abdullahi³

¹Computer Science Department, African University of Science and Technology, Abuja, Nigeria.

²Computer Science Department, Ajay Kumar Garg Engineering College, Ghaziabad, India.

³Computer Science Department, African University of Science and Technology, Abuja, Nigeria.

najaegbo@staff.aust.edu.ng

rprasad@aust.edu.ng

ahadiza@staff.aust.edu.ng

ABSTRACT

Cassava is Nigeria's staple food, eaten in most homes. It assures food security and contributes to the economic development in Africa, yet its yield and value addition are often inhibited by traditional farming systems, and the processing methods. The various advances in Artificial Intelligence (AI), internet of Things (IoT), mechanisation, and digital tools present opportunities to transform cassava value-chains. This paper reviews the current applications and emerging trends in smart technologies for cassava cultivation, harvesting, processing, distribution and preservation.

Applications of IoT-based soil and weather sensors have improved farm-level decision making, while AI-driven crop monitoring systems optimises yields and enable early detection of crop diseases. Mechanisation innovations, such as motorised peelers, precision farming technologies, robotic spraying systems, automated watering systems, and automated graters, enhance production efficiency and reduce post-harvest losses. At the processing and market level, blockchain-enabled traceability systems and mobile-based digital platforms are helping to improve quality assurance, farmer-to-market linkages, and consumer trust.

However, affordability, infrastructure gaps, farmer digital literacy, and limited policy support for adoption still remains an issue. The review highlights successful models of private partnerships and donor-driven pilot projects that demonstrate scalability when tailored to local contexts. In mobilising financial support and fostering innovations for wider acceptance of smart cassava technologies, the Triple Helix approach, where government collaborates with academia and industry has shown positive effects.

The paper concludes that AI, IoT, and other digital technologies can transform cassava industries to a more sustainable and robust system. Therefore, investments in digital infrastructure, farmer training, and supportive policies should be prioritised for these innovations to thrive.

Keywords – Cassava, Artificial Intelligence (AI), Internet of Things (IoT), Smart Farming, Digital Tools, Value Chain, Mechanisation, Triple Helix approach.

IMPROVING PRODUCTIVITY OF CASSAVA THROUGH CLIMATE SMART AGRICULTURAL PRACTICES

Onyekwere, I.N., Eke-Okoro, O.N., Uzoechi, A. and Nnabue I.

National Root Crops Research Institute, Umudike

Innonyeoma@gmail.com

ABSTRACT

As a contribution to boasting cassava production and meet its domestic demand in Nigeria, an agronomic study was conducted at the National Root Crops Research Institute, Umudike experimental field, to improve productivity of cassava through climate smart agricultural practices.



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. The soils of the trial fields were sampled prior to the trial with an auger at a depth of 0-20cm and analysed alongside the cow-dung used for the trial. The soil was sandy clay loam in texture and other parameters had the following values pH, 4.7 organic carbon, 6.7 gkg⁻¹, total Nitrogen, 0.6 gkg⁻¹, available phosphorous 30.00 mgkg⁻¹, exchangeable potassium 0.09 cmol (+) kg⁻¹. Whereas cow dung parameters are characterised with the following values pH 8.2, nitrogen 2.5 %, Phosphorous 0.58 % and Potassium 0.66 %. Based on nutrient requirement for production of cassava, nutrient composition of soil and cow-dung, four treatment composition were formulated and used in conducting the trial using TME 419 cassava varieties and was replicated four times on plot size of 5m x 10 m. Treatment application of both organic and inorganic was done using climate smart agricultural practices. The yield results showed that the root yield of cassava ranged from 10.10 to 32.18 t/ha, with treatment three (1,800kg cow-dung + 45 kg N + 6.0) applied using climate smart agricultural practice. The study revealed that this treatment was more productive than other treatments for cassava production. For improving cassava productivity in Nigeria and food security, farmers are advised to adopt this treatment.

Key words: *Cassava, Climate, Smart, Practices, Productivity*

TECHNOLOGY AND SMART SYSTEM INTEGRATION AND SUSTAINABILITY: HARNESSING BLOCKCHAIN, ARTIFICIAL INTELLIGENCE, AND INTERNET OF THINGS FOR AGRICULTURAL SUPPLY CHAIN TRANSFORMATION IN AFRICA

Jude Ozinegbe
Cyberchain, Abuja
trijude@gmail.com

ABSTRACT

Africa needs agricultural ecosystems that are smarter, reliable, and traceable. This paper looks at how Blockchain Technology (BCT), Artificial Intelligence (AI), and the Internet of Things (IoT) can improve agricultural supply chains in Africa. While it focuses on cassava production, the goal is to create a clear, data-driven, and lasting agro value chain. Farming is very important to Africa's economy, but some challenges negatively impact its growth. A few of these challenges are post-harvest wastage, poor logistics, and the inability to track the value chain.

This paper proposes a Blockchain-AI-IoT Integrated Framework (BAIIF) to enhance supply chain coordination. It ensures transparent data sharing for all stakeholders, from farmers to processors, distributors, and policymakers. With this plan, IoT sensors gather data on things such as soil health, moisture, and weather. AI algorithms can then make predictions and advise on crops, pests, and when to harvest. This data is then programmed into the blockchain to keep records secure.

Combining these technologies can improve reliability. Blockchain offers trust. AI makes analytics perform better. IoT makes it easier to see where things are in the supply chain as they are happening. Farmers can now get access to applicable information. Smart contracts can set up automatic payments, help with microloans, and allow fair trade using tokenized platforms.

For regulators, blockchain records that cannot be changed can help with decisions and enforce compliance. With data from IoT sensors and AI models, farmers can adopt measurable farming practices. This will cut waste, ensure food is safer, and help Africa's economic growth.

This paper suggests that using Blockchain, AI, and IoT in Africa's agricultural value chain is the way to go for long-term productivity. To make this achievable, governments, research groups, and innovators need to collaborate. By employing innovation, policies, and capacity development, Africa can move to a more connected and smarter agro-economy.



TECHNOLOGICAL INTERVENTIONS FOR POST-HARVEST LOSS REDUCTION IN FRESH CASSAVA IN NIGERIA

Peter Azikiwe Onwualu, Onuoha Prisca Nneka, Mike Amony
African University of Science and Technology (AUST), Abuja
aonwalu@aust.edu.ng, ponuoha@staff.aust.edu.ng, mamonye@aust.edu.ng

ABSTRACT

Cassava production is a cornerstone of Nigerian agriculture, positioning the nation as the world's largest producer, with an output accounting for approximately 20% of the global total. The crop is fundamental to national food security, serving as a primary source of daily calories for millions, and is a critical pillar for the economic well-being of the nation's smallholder farmers who rely on it for their primary income. However, this vital resource is threatened by severe post-harvest losses (PHL). The central problem lies in the crop's biological characteristics: fresh cassava roots are highly perishable and undergo rapid Post-Harvest Physiological Deterioration (PPD), a process driven by high moisture content and enzymatic activity that causes the roots to degrade and spoil within 24 to 48 hours of harvest. This extremely short shelf-life is severely compounded by secondary factors, including mechanical damage from improper manual harvesting, poor rural road networks that delay transport, and a widespread lack of adequate storage facilities. This combination of factors leads to massive quantitative and qualitative waste, with some estimates placing losses as high as 50%, resulting in significant financial losses for producers and a direct threat to food security.

This paper provides a comprehensive review to identify and assess the technological interventions available to address Nigeria's cassava PHL crisis. The study's objective is to examine both established and emerging technologies across the critical stages of the post-harvest value chain: improved harvesting, advanced processing, and enhanced storage solutions. The paper employed a descriptive methodology based entirely on the collection and analysis of secondary data. A thorough literature review was conducted, synthesizing information from peer-reviewed academic journals, official government reports, and publications from international development agencies to analyze the current technological landscape and its documented impacts.

The findings confirm that a suite of technological innovations has significantly contributed to minimizing cassava losses. Advanced processing has proven to be the most effective preservation strategy, with key technologies including mechanical peelers and chippers, High-Quality Cassava Flour (HQCF) technology that creates a stable product with a shelf-life of over six months, and the "waste-to-wealth" High-Quality Cassava Peel (HQCP) technology, which transforms peels into nutritious livestock feed. In harvesting, the introduction of mechanical harvesters has been shown to reduce labor costs and root damage. Furthermore, several low-cost storage and preservation technologies, such as waxing, plastic film wraps, and storage in moist sawdust, have proven effective in extending the short-term shelf-life of fresh roots.

Despite the availability of these effective technologies, the review reveals that significant constraints persist, acting as barriers to their widespread adoption by smallholder farmers. These include the prohibitively high initial cost of equipment, limited farmer awareness and technical knowledge for operation and maintenance, and poor supporting infrastructure, particularly unreliable electricity and dilapidated rural roads, **design of affordable multipurpose machine for washing-peeling-grinding of cassava and cassava peels for small holder farmers**. The persistence of these constraints implies that technology development alone is insufficient. The paper concludes that a robust strategy for dissemination and implementation is required, centered on a multi-pronged policy approach. Key recommendations include training of smallholder farmers on how to use the multipurpose machine, government investment in rural infrastructure, the creation of financial support mechanisms like subsidies or credit, the strengthening of farmer training via extension services, and the fostering of public-private partnerships (PPPs) to bridge the gap between research institutions and private sector distributors.

Keywords: Cassava, post-harvest losses, technology, Nigeria, storage, value chain



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MECHANISATION INNOVATIONS TO REDUCE DRUDGERY IN CASSAVA PRODUCTION - EXPERIENCES FROM KNUST, GHANA

Emmanuel Y.H. Bobobee*, Pearl N. Yakanu, Selasi Biantey, Abebrese K. Agyeman, David A. Wandusim, and Peter Dakudzi

Kwame Nkrumah University of Science & Technology, Kumasi, Ghana

*emmanuel.bobobee@gmail.com

emmanuel.bobobee@knust.edu.gh

ABSTRACT

Cassava is a nutritious root that serves as a staple food, animal feed, and a raw material for industrial products, including ethanol, starch, and high-quality cassava flour (HQCF). Despite its importance, cassava production in most parts of the continent remains largely manual and inefficient, constrained by labour shortages, low productivity, aversion of the youth, and high drudgery and postharvest losses. The lack of appropriate mechanisation solutions has limited cassava's ability to drive agro-industrial transformation and rural development in Africa. The objective of this paper is to present an overview of innovative mechanisation technologies and systems developed to sustainably mechanise cassava production, with a focus on affordable and scalable solutions from the Kwame Nkrumah University of Science & Technology (KNUST) in Ghana. The TEK Mechanical Cassava Harvester (*OAPI Patent 17192*), an indigenous solution developed by African academics and engineers to address the unique challenges of harvesting cassava roots grown in diverse soils, is one most transformative innovations. Unlike imported technologies, the TEK harvester is adaptable, rugged, cost-effective, and, when coupled with ridging, planting, weeding, and coppicing innovations, can transform cassava production on the continent. Field evaluations show that the TEK mechanical harvester reduces harvest time from 5-10 min/plant manually to 1 second per plant, reduces root damage by up to 80%, and overall labour costs by more than 70%, making it a game-changer for smallholder and medium-scale farmers. Beyond harvesting, other mechanisation interventions have been developed, including double-row disc and mouldboard ridgers that enhance land preparation efficiency, soil moisture conservation, precision planting, weeding, improving crop spacing and stand establishment, and reducing labour-intensive manual weeding and harvesting. Additional innovations being prototyped, such as tractor-drawn stem coppicers, motor-powered peelers, and slicers, also enable rapid harvest and postharvest processing, improved product quality, and enhanced value addition, particularly for women-led rural enterprises. A multi-stakeholder approach is advocated to bring together researchers, policymakers, the private sector, and development partners to co-create solutions, reform policies, and invest in resilient infrastructure. In conclusion, mechanisation innovations tailored to Africa's cassava and tuber crops production systems are central to achieving the continent's broader goals of sustainable agricultural transformation, food security, climate resilience, and rural industrialisation. The experience from the Kwame Nkrumah University of Science and Technology (KNUST) on its developed TEK harvester and related innovations demonstrates that Africa can lead in developing and scaling its mechanisation solutions that are not only sustainable and inclusive but also globally competitive.

Keywords: Cassava, TEK harvester Innovation, Agricultural Mechanization transformation.



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FROM TECHNOLOGY TO BUSINESS: SCALING RURAL TRANSFORMATION THROUGH INTEGRATED CASSAVA AGROPROCESSING IN NIGERIA

Emmanuel Okogbenin¹, Daniel Kyalo Willy¹, Kehinde Jimoh¹, Joyce Njuguna¹, Bernado Ospina², Samuel Ogunleye¹ and Kenneth Obichukwu¹

E.Okogbenin@aatf-africa.org, D.Willy@aatf-africa.org, K.Jimoh@aatf-africa.org, j.njuguna@aatf-africa.org, b.ospina@clayuca.org, s.ogunleye@aatf-africa.org, K.Obichukwu@aatf-africa.org

¹African Agricultural Technology Foundation (AATF), Nigeria

²CLAYUCA Corporation, Colombia

ABSTRACT

Cassava sustains millions of households in sub-Saharan Africa, yet the crop remains trapped in a cycle of low yields, high losses, and weak value chains. Nigeria, the world's largest producer, exemplifies both the promise and the missed opportunities. To unlock this potential, the African Agricultural Technology Foundation (AATF), with GIZ, CLAYUCA, Agridrive Nigeria Ltd, and state partners, is piloting an integrated cassava Agroprocessing model that fuses technology, training, and enterprise.

The centerpiece of the intervention is a high-quality cassava flour (HQCF) machine installed in Fasola, Oyo State. Processing eight tons of roots daily without peeling, and drying with LPG rather than wood, it produces two tons of HQCF and 0.6 tons of high-quality cassava peels for animal feed. By cutting waste and curbing pollution, the system improves efficiency and environmental performance while expanding downstream uses in food and feed industries.

We submit that technology alone is insufficient to drive holistic transformation, rather it needs to be bundled with farmer capacity strengthening, market linkages and value addition. More than 5,000 farmers have been trained in good agronomic practices, mechanization, and financial literacy, more than doubling yields from 9 to 25 tons per hectare. Women and youth make up over 40% of beneficiaries. Rural based micro food processors have also learned good manufacturing practices, packaging, and value addition, opening opportunities in confectionery and local bakery markets.

Three business models—industrial processing, toll milling, and micro-bakeries—are being tested to balance financial returns with social impact. By bundling mechanization, farmer capacity, and agroprocessing, the model links producers to processors in ways that enhance income, reduce losses, and foster entrepreneurship. The approach signals a scalable pathway for rural transformation: one that strengthens food security, diversifies markets, and builds inclusive agro-industrial ecosystems. This paper presents lessons from the Nigerian pilot and considers prospects for scaling across Africa's cassava belt as a lever for agricultural modernization and sustainable rural development.

Keywords: Technology; Business Model; Cassava Agroprocessing.



THEMATIC AREA 6: GLOBAL CASSAVA MARKET DYNAMICS

DRIVERS OF CASSAVA COMMERCIALISATION IN SOUTH-EAST NIGERIA AND IMPLICATIONS FOR FOOD SECURITY, POVERTY ALLEVIATION, AND INCLUSIVE GROWTH

^{1,2}Okoye, B.C., ³Anyim, G.C., ^{1,4}Obidiegwu, J.E., ¹Onyeka, J., and ^{1,5,6}Egesi, C.N.

¹National Root Crops Research Institute, Umudike, Abia State, Nigeria

²Dept. of Agribusiness and Management, Michael Okpara University of Agriculture, Umudike, Nigeria

³Umudike Seeds, Umudike, Nigeria

⁴Federal Cooperative College, Oji-River, Enugu State

⁵International Institute of Tropical Agriculture, Ibadan, Oyo State, Nigeria

⁶Cornell University, Ithaca, New York

okoyebenjamin@yahoo.com

ABSTRACT

Cassava (*Manihot esculenta* Crantz) is a critical staple and potential cash crop in Nigeria, the world's largest producer. However, its potential to drive food security, poverty alleviation, and wealth creation remains constrained by systemic inefficiencies within its market structure. This study investigates the role of transaction costs as a primary barrier to market participation among smallholder cassava farmers in South-East Nigeria. Utilising primary data from 360 households across Anambra, Abia, and Enugu States, the study adopted a three-tiered econometric approach comprising an ordered probit model for market participation (buyer, autarkic-not buying or selling, seller), a probit model for seller-type choice (on-farm and off-farm), and a Heckman selection model for the level of sales. The findings empirically demonstrate that high transaction costs, proxied by poor rural infrastructure (long distances to markets, poor road conditions), limited access to information and communication technology (digitisation), and a lack of productive assets (personal transportation, credit) significantly deter market entry and suppress volume of sales. For instance, farmers located far from towns or with poor road access are substantially more likely to be autarkic or sell at the less remunerative farmgate. In contrast, membership in cooperatives, access to communication facilities, and ownership of transport assets increase commercial engagement. The findings, therefore, indicate that these transaction costs perpetuate a cycle of subsistence farming, low incomes, and vulnerability, directly undermining national goals for agricultural transformation. To break this cycle, there is a need for integrated policy interventions aligned with the present administration's focus on food security and economic diversification. These include strategic public investment in rural infrastructure to reduce transport costs, the active promotion of farmer cooperatives to achieve economies of scale and bargaining power, the deployment of digital platforms to democratise market information and reduce search costs, and the facilitation of targeted credit schemes to unlock investment in productivity-enhancing assets. By systematically dismantling these transaction cost barriers, cassava can be transformed from a subsistence staple into a vital engine for rural wealth creation, poverty reduction, and sustainable food security in Nigeria.

Keywords: *Transaction costs, Market participation, Smallholder Integration, Exchange Frictions, Logistic constraints*



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CASSAVA RESIDUES AS FEEDSTOCK FOR SUSTAINABLE AVIATION FUELS: BUILDING A NEW INDUSTRY AND VALUE CHAIN FOR AFRICA

¹Mme. Oyetoun F. Adegbesan, ¹Mr. Eteka Ikpe, ²Mr. Santiago Haya Leiva, ²Mme. Damiana Serafini and ²Mr. Ralph Kossmann

¹Nigeria Civil Aviation Authority, ²European Union Aviation Safety Agency

Oyetoun.Adegbesan@ncaa.gov.ng, eteka.ikpe@ncaa.gov.ng, santiago.haya-leiva@easa.europa.eu, damiana.serafini@gmail.com, ralph.kossmann@easa.europa.eu

ABSTRACT

Nigeria, the world's leading cassava producer, is pioneering a transformative approach to link its agricultural base with green industrialization. Through the International Civil Aviation Organization (ICAO) ACT-SAF programme and with the financial and technical support of the European Union (EU), the Nigeria Civil Aviation Authority (NCAA), is advancing a national study on sustainable aviation fuels (SAF) as a central element of Nigeria's decarbonization pathway under its Nationally Determined Contributions (NDCs) and under its International decarbonization commitments for air transport. The initiative positions SAF as a primary mitigation option for the aviation sector while creating new opportunities for rural development and value addition within the cassava industry.

Cassava processing residues, principally peels, fibrous pulp, and starch-laden wastewater, constitute an abundant, underutilized biomass resource. Generated in millions of tonnes annually, the use of these residues for SAF processing can help the aviation sector achieve over 80% greenhouse gas reductions compared with fossil jet fuel. Their valorization not only supports ICAO's Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) compliance and Renewable Energy Directive (RED III) certification but also mitigates methane emissions from open disposal, reduces water pollution, and enhances livelihoods through economic development, particularly for women involved in cassava processing.

The ongoing ACT-SAF study identifies cassava residues as technically viable feedstocks for SAF production and highlights their contribution to sustainable industrial diversification. However, a key challenge lies in residue collection and aggregation. Fragmented processing operations, limited transport viability (typically under 30 km), and residues pre-treatment can constrain large-scale recovery. Addressing these barriers requires innovative logistics, feedstock conditioning systems, and cooperative aggregation models that link processors, transporters, and bioenergy developers within a coherent value chain.

The NCAA has established six technical working groups covering feedstock production, policy, technology, financing, environment, and logistics to develop the broader SAF value chain architecture. Yet, the feedstock supply segment remains an area where the participation of the cassava community, processors, farmer groups, researchers, and investors, is critical. Collaboration can accelerate data sharing, certification readiness, and the creation of bankable residue aggregation hubs at existing starch and ethanol plants, such as those in Kogi, Oyo, and other States.

By integrating sustainability certification, regulatory oversight, and inclusive partnerships, Nigeria can demonstrate how agricultural residues can become a cornerstone of a new sustainable economy.

This presentation will share preliminary findings from the ACT-SAF feasibility study as they related to the use of cassava residues for SAF processing and invite participants to contribute insights on practical models for sustainability certification, and residue collection and aggregation that can unlock cassava's full potential as a feedstock for SAF. Through coordinated policy, technology, and partnership, Nigeria aims to establish a replicable model for cassava residue valorization across cassava producing nations that can power sustainable aviation while building stronger, quality-driven cassava value chains across Africa.

Keywords: cassava residues, sustainable aviation fuel (SAF), circular economy, certification, partnerships,



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Ambassador Albert I. Osakwe House, 1473 Inner-block Street, Central Business District,
Abuja- Nigeria. Email: acc2025@paosmi.org Tel: +2349057934307, +2348109809083.