

Cashew production and processing in Nigeria: lessons learned

VET Toolbox project: training of cashew producers and processors



The VET Toolbox programme aims to improve the effectiveness of VET systems in selected sub-Saharan African countries by making them more opportunity-driven, turning investments into drivers for inclusive economic growth, social development, and decent job creation. It is co-funded by the European Union (EU) and the German Government (BMZ), and implemented by the British Council, Expertise France, GIZ, and LuxDev. GIZ is implementing the VET Toolbox in Kenya, Mozambique, Nigeria, Tanzania, and Uganda.”



Introduction

For Nigeria's nascent cashew industry to thrive and become a leading global player, key actors along the value chain – producers and processors – must be uplifted. One cannot truly succeed without the other, and the cashew industry cannot succeed without either.

Farmers need to grow more cashew nuts, of higher quality, and graduate from subsistence to commercial farming; processors need to create an end product that can compete on the world stage – and provide important product transparency and traceability to export markets.

The answer for both revolves around people and providing them with vital knowledge and practical *skills*. In a nutshell this means good agricultural practices (GAPs) and business training for farmers, and specialist production and quality management training for processing employees.

The VET Toolbox cashew project in Nigeria created precisely such a dual training regime – and its impact is already significant.



Context

Cashew production in Africa has grown strongly in the past decade and continues to do so as the nut's global (and local) popularity, both as a snack and a desirable food ingredient, increases. Nigeria, which produces high-quality cashews but has only recently begun to develop this sector in earnest, lags far behind more established African competitors such as Côte d'Ivoire, Benin and Tanzania.

According to market research firm Mordor Intelligence, in its *Africa Cashew Market Size & Share Analysis - Growth Trends & Forecasts (2023-2028)* report¹, Africa's cashew market size is worth US\$793.37-million in 2023, growing at a forecast compound annual growth rate of 3.67%. By far the biggest producer is Côte d'Ivoire, which produced 837 850 tons of cashews in 2021; by comparison, Nigeria produced only 118 620 tons in the same period.

But there is huge growth potential. According to a report by the Delegation der Deutschen Wirtschaft in Nigeria (AHK), "Global productivity as well as international demand for cashew are on a constant rise. In fact, recent trends in cashew reveals a global annual growth rate of 7-10% and projected demands are estimated to reach 4.5-million metric tons by 2023/2024. Although 57% of raw cashew nut is produced in Africa, the continent is still under-producing."²

A skills audit by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH's

VET Toolbox project in Nigeria identified the cashew sector as one ripe for support and informed a two-pronged training approach - for cashew producers and the young Nigerian cashew processing industry respectively.

The VET Toolbox programme aims to improve the effectiveness of vocational education and training (VET) systems in selected Sub-Saharan African countries by making them more opportunity-driven, turning investments into drivers for inclusive economic growth, social development, and decent job creation. It is co-funded by the European Union (EU) and German Federal Ministry for Economic Cooperation and Development (BMZ), and implemented by Enabel, the Belgian Development Agency; the Luxembourg Development Cooperation Agency (LuxDev); the British Council (BC); Expertise France (EF); and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. Apart from Nigeria, GIZ implements VET Toolbox actions in Kenya, Uganda, Mozambique and Tanzania.

The VET Toolbox follows an opportunity-driven approach, accompanying investments to help improve local benefits by addressing skills gaps. In Nigeria, cashew training curricula were devised and implemented by the GIZ VET Toolbox Nigeria team and its partners, and already the outcomes achieved for both producers and processors have been transformative.

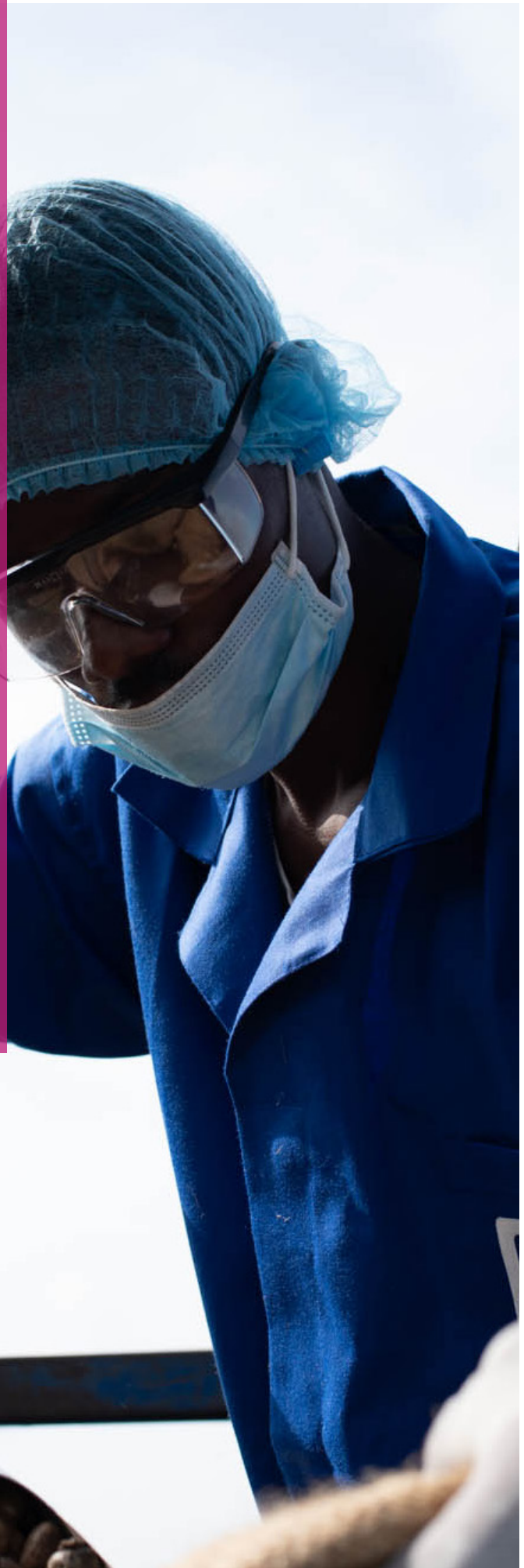
¹ <https://www.mordorintelligence.com/industry-reports/africa-cashew-market#:~:text=Cashew%20nuts%20are%20edible%20kidney,Benin%2C%20Tanzania%2C%20and%20Burundi>

² Cashew Roundtable Report, AHK, 2022

Objective of VET Toolbox

VET Toolbox's objective is to drive the sustainable growth of Nigeria's cashew sector through training programmes to farmers, and processors' quality management and procurement staff. Specific project objectives included:

- Developing a training programme for cashew production and processing
- Training of Trainers (ToT) for cashew producers, primarily smallholder farmers, and processing factory employees, specifically quality managers and procurement staff of Julius Berger Nigeria (JBN)
- Promoting the role of women in cashew production and processing
- Committing ToT-trained lead farmers to cascade what they have learned down to other farmers, leading to improved and increased cashew nut yields
- Similarly, getting processor trainees, who are workplace supervisors, to cascade their new knowledge and skills to their teams
- Upscaling the training beyond JBN: Vertex Agro Limited, Nuts Link Limited, HSF Foods Limited and Prudent EFFSOW Commodities Limited, as well as the Federal Ministry of Industry, Trade and Investment (FMITI)



Implementation

“We see the impact of the learning,” says cashew farmer Jimoh Mukaila, of Ogbomosho, a prime cashew-producing area in Oyo state. Trained in GAPs such as tree management techniques, pest control and better storage practices, as well as business management, Mukaila says his cashew yield doubled season-on-season from 20 to 40 tonnes.

The VET Toolbox Nigeria team and its partners initially implemented the cashew project, developing and implementing cashew production and processing training courses, respectively, for farmers and factory staff, in 2021 and 2022/23. A decision was taken to focus on impactful, industry-based training implementation, which was possible within the project timeframe, and later seek the integration of the training into the formal VET system to guarantee its long-term sustainability.

Consequently, the VET Toolbox team piloted the training in close cooperation with JBN, the

processor that buys Mukaila’s crops. The training was subsequently upscaled to other processors and farmers, including Vertex Agro Limited and companies from the Cashew Packaging and Processing Association of Nigeria (CAPPAN).

The project was supported by the consultancy Gesellschaft für Agrarprojekte in Übersee (GFA) on aspects such as employment partnerships, capacity building, training implementation and knowledge management (lessons learnt and policy recommendations). Additionally, a team of international experts provided advisory services, supporting the training development and implementation. The project also consulted relevant projects operating in the cashew sector: GIZ/MOVE, ProCashew and AHK Nigeria, as well as the Cashew Desk in the Ministry of Agriculture.

For the production training implementation, two experienced consultants from the Cocoa Research Institute of Nigeria and Ghana’s Ministry of Food and Agriculture were contracted by GFA.





A seasoned international technical consultant implemented the processing training.

Trained as a trainer, Mukaila has cascaded his learning to 75 other farmers along with a procurement officer from JBN, which works closely with its suppliers. “When the farmers see how I benefited [from the training], they come to my farm and I train them,” he says, beaming.

For female cashew farmer Akanbi Adebisi, also from Ogbomoso, the VET Toolbox training that she and others have received has made her a commercial cashew farmer who can accurately plan her business and a better future for her family. “I can earn better, save more money and support my family,” says Adebisi, who has trained 20 more farmers – and inspired three others to take up cashew production.

Mukaila and Adebisi are just two among many: so far, 333 farmers (164 of them women) have been trained in four states: Oyo, Lagos, Kwara and Niger. Fifty trainers – comprising lead farmers and procurement officers (seven of them women) – are cascading the training to other farmers. A total of 44% of trainees reached are women.

For processors, the training impact has been as impressive. Clinton Kayser, operations manager of JBN’s cashew processing factory in Epe, a town in Lagos State, says training his quality

control and procurement staff has driven greater professionalism, informed improvements to the factory process, and increased output from 12 to 30 tonnes daily.

The processing training has been rolled out to five processors in two states, Abuja and Lagos, with a total of 61 procurement officers and quality managers (among them 12 women) trained, as well as two participants from FMITI. In total, 20% of trainees reached are women – and some of them are training other women and helping them earn substantially better incomes.

The 250 women who manually shell cashews that are not automatically processed (as much as 2.4 tons per day of JBN’s output), are paid according to the quantity of nuts they process. Where they previously shelled between 5kg and 7kg of kernels per day each, earning NGN150 per kilogram and twice that above 12kg, after training by JBN’s trainers they now average between 12kg and 14kg of kernels each per day. They have more than doubled their incomes.

“I was very happy when the training came along,” says Kayser, as it has given his staff vital skills and confidence. “You could see the change in behaviour and mentality post-training.” He now aims to increase JBN’s output to 70 tonnes daily – but more training will be needed.

Lessons learned

Key successes

The VET Toolbox cashew project has achieved several notable outcomes, each of which was vital to the initiative's overall success.

Creating synergies

Cooperation is at the very heart of the cashew project's success: between partners, with consultants, trainers and trainees, processors and farming communities, industry bodies and the authorities.

Sharing responsibility, trust in the consultants and trainers, close coordination and collective decision-making were all key to the project's objectives being met. Previously mentioned African cashew projects and consultants provided the VET Toolbox project with training materials, technical expertise and a previously developed technical and vocational education and training (VET) curriculum on cashew production.

Even between competitors is the understanding that cooperation fosters mutual success. For instance, Samuel Hensley, general manager: operations at Vertex Agro, says, "Our approach [to processing workflows] might be different, but the aim of a better industry is the same."

Competency-based training

The training approach for both farmers and processors was opportunity-driven and innovative, and developed using the VET logic: a modular, interactive, participatory and learner-centric approach combining theoretical and practical elements, with model farms for demonstration.

Experienced, qualified trainers, consultants and sector experts assisted in leading technical discussions, quality-managing technical aspects of the training, reviewing training modules and developing training implementation checklists, as well as supporting quality management processes.

The production training was developed in close collaboration with farmers, through interviews, and targeted to their training needs. GAPs and harvest/post-harvest handlings were underlined using real stories, the use of adult learning techniques and hands-on farming operations, focusing on aspects that farmers can quickly implement. An innovation added to the training was the return-on-investment calculation per GAP of their production.

Overall, the cashew farmers took their acquired competencies to heart, which is vital for their ongoing role of trainers to other farmers. Younger people came to see that cashew farming is an attractive and economically valuable option. Having women as trainers resulted in far greater engagement with other female farmers who then benefited from the cascading. Processing companies were pleased with the holistic training approach and its outcomes, which they said cemented their relationships with farmers and guaranteed future raw material procurement.

JBN quality analyst Akeem Babatunde, the only employee to do both production and processing training, says that before the training the kernel outturn ratio (KOR) - the calculation of a consignment's quality - of raw cashew nuts received was poorer, with more premature, spotted and void kernels.

He helps farmers to improve the all-important KOR, saying: “The KOR directly correlates with the final product. It is the most important factor in determining the final quality.”

The training participants of the five processors, all supervisors who had been selected by the trainer and their management, enjoyed a fully fledged processing curriculum where there had previously been no standard training. Content focused on their needs, incorporating topics identified during the training preparation.

Both the farmers and JBN trainers (some of whom underwent both production and processing training to better link the two value chains) proved to be enthusiastic participants - and the impact on them and the way they work is often remarkable.

For example, Dr Dele Omoyele Adeniyi, an expert contracted for the cascading element of the training, quotes a JBN warehouse manager in his February 2023 report on the cashew project, Supervision and Upscaling of JBN Network of Farmers and Farming Associations: “As a warehouse manager, all the necessary things to be done have been done in preparation for the coming new season. Pallets are ready. Jute bags are ready, and other equipment. The warehouse is wearing a new look in readiness for the season.”

In the same report a cashew farmer says the mysteries of determining a crop’s quality (and thus its fair value) have been revealed: “Now land preparations before harvesting, like weeding, pruning, and fire belt and controlled burning, will be part of our activities. The knowledge about cashew quality, for example the kernel outturn ratio, is now exposed to me as a farmer; before, only the buyers and procurement officer just know how to cut and calculate [price].”



Pursuing TVET system integration

The cashew project, developed using the VET logic, ToT and the cascading training approach, links farmers and processors through training and creates long-lasting relationships. It was rolled out in the way it was because getting the course outline and contents approved and accredited was not possible in the project timeframe; nevertheless, the way the training was developed will allow other VET project to take it up and work on accreditation.

In addition, based on evidence from the cashews project and the needs of the private sector, cashew as a tree-crop curriculum needs to be pursued in standardised training.

Nevertheless, formalising both production and processing training within the VET system will guarantee their longevity beyond this pilot phase and support the upholding of high training standards.

The actions of individual partners can and will also make a difference. For example, processors such as Vertex Agro and JBN have decided to continue providing cascading training to its farmers, an investment both in its supply chain and internal expertise.

The positive impact of the training on both farmers and processors has been demonstrated by the VET Toolbox cashews project, and it has provided the NBTE with sufficient proof of its potential to perhaps revisit the dialogue around institutionalising such training.

The next step is getting the curricula adopted by Nigeria's vocational training institutions - for example, by incorporating cashew production into a tree-crop curriculum, or including processing in a food processing curriculum, says Kikelomo Collins-Chibeze, head of GIZ's VET Toolbox project: "There is a need to formalise this training in the VET sector."



Recommendations

- Incorporate the cashew production training programme into a broader VET tree-crop curriculum. Similarly, integrate the cashew processing training programme into a broader national food processing curriculum and register both qualifications with the Nigerian Skills Qualification Framework (NSQF)
- Continued public-private dialogue and multi-stakeholder partnerships, such as with industry bodies, other businesses and VET institutions, will promote the large-scale transformation of Nigeria's cashew sector. Stemming from this can be more formal contractual agreements between partners (than the memoranda of understanding used in this project)
- Gathering farmers in one location for training can save costs, avoid transportation issues and negate possible security risks to the trainers
- On the production training side, it is important that the implementing organisation and the trainers constantly adjust to the training needs of farmers throughout the implementation and adoption of training content
- It is vital for processors to develop a procurement strategy and to cooperate with farmers or farmers' associations as their business partners, and if necessary adapt their processes, for better cashew traceability
- Trainees should work with tools and equipment of the highest quality to guarantee the best training experience and instil faith in their equipment
- During the processing training, learners were assessed after each session and a survey was conducted after every workshop. Assessment is critical to ensuring that participants achieve competency, and the survey feedback to further reviewing the course after piloting
- Upstream quality impacts downstream profitability, so processors have an ongoing role to play in improving production. Investing in their procurement chain – providing cashew farmers with much-needed agricultural training – offers a win-win scenario
- Continue employing cashew sector experts – local, regional and international – as consultants and trainers, and matching best practices to local conditions, in production and processing training
- Training selected lead farmers (ToT) to be trainers of other farmers (cascading) is the most effective and cost-efficient way of inculcating GAPs and transforming production. To have a major impact on cashew production in Nigeria, which is largely by small-scale farmers, production training should be more comprehensive and rolled out on a national scale





Challenges

Any project will inevitably face challenges and the VET Toolbox cashew project had its share. But with adversity comes invention, and many were overcome; most importantly, however, lessons were also learned.

With the production training, provision of equipment, tools and consumables for production training was expensive and sometimes difficult for partners to provide. In addition, practical production training quality was negatively impacted by the inaccessibility of demonstration farms. However, farms were picked where farmers could practise their skills, and those who underwent ToT training later cleaned their farms and used them as model farms when they cascaded the training. There were also issues with poor-quality and dissimilar moisture meters, with inaccurate readings for KOR tests. This

was addressed with regular calibration.

There was a marked disparity between male and female production ToT trainees, mitigated by the fact that 49% of trainees to which the content was later cascaded, were women.

As most of the farmers speak only Yoruba, and not English as well, the language of instruction was an issue. Fortunately, the training consultant was able to adapt and offer the training in Yoruba.

Also, the cascading of training may have been impacted because the best 10-12 ToT participants - chosen for their performance during their training - were subsequently not available to do so. Instead of being coached before providing cascading training, the replacement ToT farmers were instead supervised during the training they offered.

Regarding the processor training, the curriculum took longer than anticipated to develop because of the volume of work, and to ensure that it tallied with VET logic, but the outcome was a valuable resource for the cashew sector that remains one of a kind for processors.

Because processors do not have identical factory systems, the training content developed initially for JBN was not a perfect fit for the other four processors and had to be standardised. Tailoring of processor training will require more work in future.

However, while cashew processing training is likely too costly and specific to each processor to become a formal VET curriculum in its own right, it could be a registered qualification on the NSQF, opening the way for national certification options based on industry-sector standards. This is a matter for further discussion in the public-private dialogue

and requires intense cooperation among the private sector and with relevant VET institutions.

During the processor training sessions were sometimes complex and demanding, and it was a true challenge to transfer all of the required competencies to the learners. In addition, while it was harvest time and naturally the best period for learning, this was also the factory's (and farms') busiest season, forcing some to miss training sessions for work reasons.

Nevertheless, says Stephen Olatunji, JBN production manager, "The VET Toolbox training project was a successful one ... It really teaches you the fundamentals of processing." And the cascading of the training means most have benefited: "We are able to pass down what we learned to the lowest-paid worker. Everyone has benefited."

Recommendations

- Aligning production training with the agricultural calendar allows for practical, hands-on learning and field demonstrations, stimulates GAPs and gives trainees the opportunity to apply such lessons immediately
- Assessing the educational, skill and competency levels of processing employees before training means being able to optimally adapt the training content and approach
- Because processing training is highly technical and can therefore be lengthy, the ideal group size for a single trainer to manage is 15 to 18 people
- It is estimated that as little as 30% of training material is common to all processors, which means the training programme needs to be flexible enough to meet all of their needs. This also suggests that processing training, when offered in a VET centre, must be complemented with in-company training
- Refresher training – to assess and remedy whether or not new skills have been correctly applied – should be considered



Jimoh Mukaila, cashew farmer

“We see the impact of the learning,” says cashew farmer Jimoh Mukaila.

Previously, Mukaila and his subsistence-farming peers had simply left cashews to grow; they had no yield expectations and therefore no way of forecasting incomes or planning for the future.

However, the GIZ-facilitated VET Toolbox 2 cashew producer training – Mukaila was in one of seven clusters of producers trained as trainers – has changed everything. In the space of a single season, he has been able to double his cashew yield from 20 to 40 tonnes.

Mukaila, chairperson of the 340-strong Surulere Cashew Association of Farmers in Ogbomosho, a prime cashew-producing area in Oyo state, south-western Nigeria, and his counterparts have been trained in a variety of tree management techniques, pest control and better storage practices. They have also received business management training, helping them to transition from subsistence farming to commercial agriculture.

And they are paying this forward: Mukaila has so far gone on to train 75 more farmers, along with a procurement officer from Julius Berger Nigeria (JBN), a multinational that recently launched cashew processing operations in Nigeria. JBN works closely with farmers who supply it with raw cashew nuts.

“When the farmers see the benefits [of the training] to me, they come to my farm and I train them,” Mukaila says.





Akanbi Adebisi, cashew farmer

“In this part of Ogbomosho, cashew farming is people’s livelihoods,” says cashew farmer Akanbi Adebisi.

Adebisi, a female farmer and secretary of the Surulere Cashew Association of Farmers in Ogbomosho, in Nigeria’s south-western Oyo state, adds that her peers would not survive without a cashew crop.

But the VET Toolbox 2 training that she and others have received means that she can transcend the hand-to-mouth reality of subsistence farming, becoming a successful commercial cashew farmer who can maximise her yields and therefore her income, accurately plan her business in advance, and put away money for her family’s future.

“Then I can earn better, save more money and support my family,” she says.

The training has equipped her as a woman farmer to compete on an equal footing with her male counterparts (apart from certain physical strength limitations, for which she employs male workers).

Adebisi says she previously had “no idea” how much the good agricultural practices (GAP) training she received – such as around pruning and weeding, spacing trees and starting nurseries – would improve her yields. Now her farm is seen as a model and other farmers, male and female, are coming to her to learn.

So far, Adebisi has trained around 20 of her peers on how to employ GAPs and maximise their cashew yields – and she has inspired three others to switch to cashew farming for a living.



Conclusion

Everyone interviewed for this report – from small-scale farmers to the managers of enormous and complex industrial processes, from the people who have found new careers to the people who made the project happen – was unanimous: the cashew production and processing training pioneered by the VET Toolbox project has brought about the necessary knowledge and skills for this immense industry’s potential to be realised.

And they all say that there should be more such training. The VET Toolbox project has made a difference already – beneficiary farmers say they’ve doubled yields season to season, and now they have plans to double those again, farmers and processing staff alike have increased their incomes because of higher efficiency and productivity on the farm and in the factory – but it has just scratched the surface.

What remains to be done is for the production and processing training curricula to be formalised within the Nigerian VET system, so that they can be rolled out to many more people countrywide. That likely means incorporating each curriculum into existing offerings, such as absorbing the production training into a broader tree-nut course or the processing training into a wider food-processing qualification.

Only by institutionalising these curricula can they live beyond the initial VET Toolbox implementation, and their immense transformative potential be realised – and continue to be realised long into the future.

“It is very important that [training] continues,” argues JBN’s Kayser, pointing out that this is the only way to maintain the highest standards as the Nigerian cashew industry grows.



Thank you.

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