



Australia Awards



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

CREATE CHANGE

Australia Awards Short Course

Agribusiness 2018

Nigerian Ginger Value Chain



Participant

Janet Ogbeyalu Nwaekpe is a senior research scientist working for the National Root Crops Research Institute, Umudike, Nigeria, which focuses on the production, processing, marketing and utilisation of root and tuber crops of economic importance. Her role primarily involves conducting research into value chain development to support job creation, poverty alleviation, and inclusion of smallholders and small entrepreneurs. Her experience includes the empowerment of women and youths through training on value-addition technologies. She has a Bachelor of Science and a Masters in Rural Sociology and Development, and is currently pursuing a PhD in Rural Sociology and Agricultural Extension in Nigeria.

Janet with ginger farmers during ginger cultivation



Value Chain Approach

A value chain approach means taking a whole-of-chain perspective from primary producers and their input suppliers, through every stage until the product reaches the end consumer. It examines the flows of products, money and information, with a focus on how these are influenced by the relationships among chain members. Of particular importance is the need to understand markets and consumers, and the state of collaboration among chain members. A value chain approach highlights how effective partners can align better their skills, resources and behaviour to deliver products and services to different market

segments and to reduce waste, with the resultant financial returns being distributed equitably so as to sustain partnerships within the chain. This improves the competitiveness of each business and helps chain members to recognise their interdependence, and the consequent benefits of solving shared problems.

Detailed advice on adopting a value chain approach is provided in *A Guide to Value Chain Analysis and Development for Overseas Development Assistance Projects*, by Ray Collins, Benjamin Dent and Laurie Bonney, available free at aciar.gov.au/publication/mn178.

Context

After completing the Australia Awards Short Course in Agribusiness, Janet applied her new knowledge and skills to Nigerian ginger. This is grown mostly as a cash crop, mainly in Kaduna State in Northern Nigeria. "Our ginger is amongst the best in the world because of its high quality essential oils, mainly gingerol and oleoresin. Around 90 per cent is exported as dried ginger, but production is declining due to inefficiency and low yields, so I wanted to investigate how to tackle these problems, as well as the potential for developing the domestic market, by helping smallholders to adopt a value chain approach."

Study

The Nigerian Exports Promotion Council examined the ginger sector in 2017. Its report identified many challenges including a lack of organised market information system; inadequate warehouses for large buyers to store their stock; lack of cleaning and drying centres in the ginger producing areas; sun-drying ginger next to highways which affects the quality; production records not available which affects planning; inadequate extension services to farmers; lack of value addition; inadequate training for the farmers on new farming techniques; high cost of transportation; and ginger processing done manually due to lack of technology. "The report contained a lot of insights, but it did not include any consumer research, and so no recommendations for how to align value chains to become more market-orientated. The Australia Awards training taught me how critical this was, and so my objective was to plug this gap in our knowledge."

Janet's value chain analysis was conducted in Abia State, in South-East Nigeria, home of the National Root Crops Research Institute (NRCRI), which has the mandate to conduct ginger research. She purposively sampled 57 participants: 3 input suppliers, 8 farmers, 1 wholesaler, 4 retailers, 1 processor and 40 consumers. She used qualitative methods consisting of three consumer focus groups, 10 shopper intercept interviews, and then semi-structured interviews with chain members to understand their operations, how and where waste is created in the chain, and how they interact with other chain members.

Consumer research

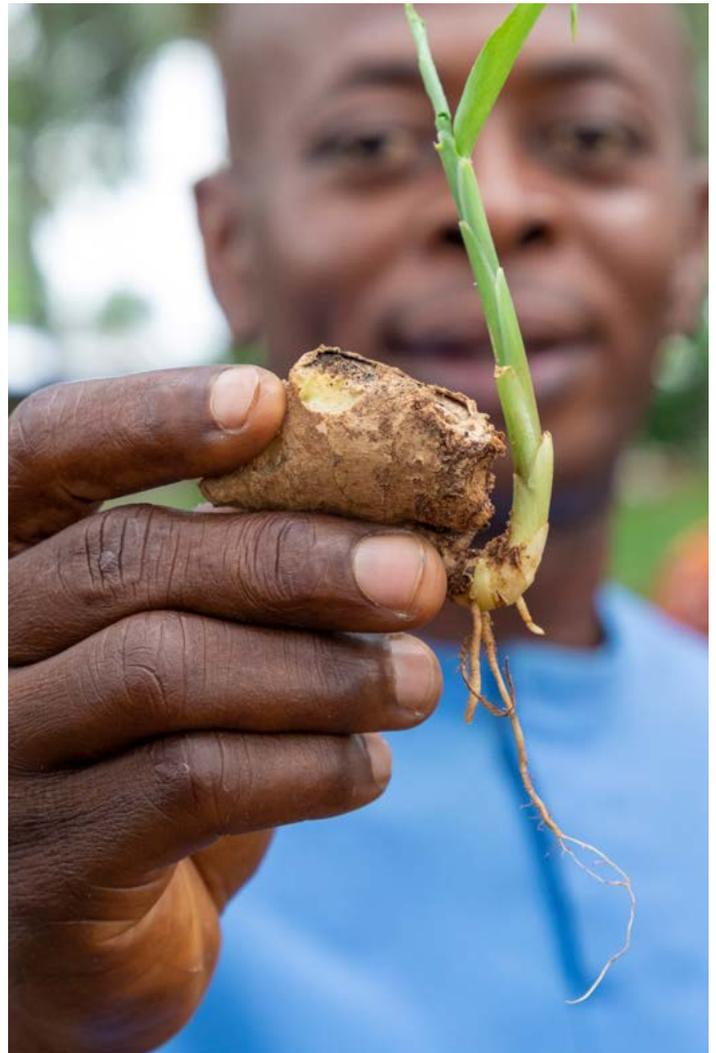
Janet's consumer research identified the eight product attributes which most influence consumers' decisions over whether, where and how often to buy, and what price to pay. The results are set out in Table 1, along with the Critical Control Points of Value for each attribute, which are the inputs and activities across the entire chain that positively or negatively affect each of those product attributes. "Every chain member needs to improve the critical activities for which they are responsible, otherwise the improved attributes created by some members are destroyed by others."

Janet also found that consumers' priorities varied depending on what they were using the ginger for. "Those who use it for culinary purposes value pungency, freshness, availability and size, and they only buy what they need immediately. Those who drink it for weight control and other health purposes value all the attributes of ginger because they buy in bulk and store, and they are willing to pay more to get those attributes. In addition, a few consumers, especially amongst the more affluent, were willing to pay more for organic ginger, so we found that there are different segments needing different changes upstream."

Her research also revealed an important challenge to ginger value chains. "There was no significant feedback from consumers about any problems with the ginger they bought, because instead of complaining about their purchases, shoppers said they just swapped to a different retailer."

Table 1: Critical Control Points of Value

Product Attribute	Valued Characteristics	Sources of Valued Characteristics
Pungency	• Very hot and spicy	• Improved seed varieties • Storing and transporting
Aroma	• Strong, spiced smell	• Improved seed varieties • Storing and transporting
Taste	• Strong acidity and spiciness	• Improved seed varieties • Storing and transporting
Size of rhizome	• Medium	• Improved seed varieties • Soil type • Land preparation • Mulching • Sorting and grading
Freshness	• Not shrunken, but tender and juicy	• Improved seed varieties • Agronomic practices such soil type and texture, land preparation, time of harvesting • Storage
Physical appearance	• Cleanliness	• Soil type • Post-harvest handling • Sorting and cleaning
Availability	• All year round	• Irrigation • Storage and processing
Shelf-life	• Up to 1 month	• Improved seed varieties • Harvesting • Transporting • Storage • Processing
Production system	• Organic is preferred by the more affluent	• Weeding and fertiliser application



Ginger seedling

Whole of Chain Perspectives and Recommendations

Through examining the whole chain, Janet identified related improvements across the value chain, which, if implemented, would create systemic change, rather than isolated, uncoordinated pockets of better practices. “Too few analyses look at the whole chain, but the course taught me to look to align interventions.”

“I also found that while farmers belong to a cooperative, they have yet to start farming cooperatively. Given that their holdings are only about 0.15 hectares, and their yields are less than half what they should be achieving, there was plenty of scope to become more efficient.”

An important lens to look at the whole chain is how prices are determined. Janet discovered that local markets do not differentiate what they pay for better quality rhizomes. “This means there is no incentive for farmers to understand the market; learn skills to improve the quality of their ginger crops, or even just to grade their products, because they get the same price whatever they do, so, naturally, farmers just focus on yield. Productivity is important, but so too is creating value, so the chain must introduce value-based pricing.” This involves incentives that reward suppliers for optimising the Critical Control Points of Value, and for their commitment and reliability to their customers – it is the foundation upon which a value chain shares the increased financial returns for becoming more effective in producing more products with the attributes consumers want. This became one of Janet’s recommendations.

Janet also found problems with relationships between many of the farmers and the processor, with farmers claiming they were still owed payment from previous harvests. As a result, the processing centre had been temporarily shut down because it could not secure sufficient supplies. Again, Janet applied Value Chain Thinking principles to identify a solution. “The farmers already have a strong relationship with the National Root Crops Research Institute from their previous experience of the provision of training and seeds, so why not build on this, and have the Institute act as a trusted off-taker? As both the farmers’ supplier of better genetics and agronomic advice, and as the farmers’ customer, the Institute could become pivotal to driving improvement in the upstream end of the chain.”

Further downstream, she also found grounds for optimism. “The retailers I interviewed had good relationships with wholesalers, often being allowed to buy on credit – again, this trust is something we can build on to encourage deeper collaboration.” However, she also found sources of waste: “I witnessed offloading from trucks by unskilled labour, with bags being thrown carelessly, causing bruising. This practice would need to be eliminated as part of upgrading the whole chain, otherwise the value created by farmers would be destroyed.”

Janet created a prioritised action plan using the Impact/Difficulty matrix she had been taught on the course (Table 2), with lower difficulty, higher impact actions done first (“Do It Now”), and ending with the activities which either have less positive impact, or will be harder (“Do It Later”).

How Janet benefited from the course

“My Australian experience exposed me to both the theoretical and practical aspects of Value Chain Thinking. At The University of Queensland, we learnt the principles and heard about case studies, and then crucially saw it in practice for ourselves through lots of site visits. My professional skills were also enhanced through sessions on public speaking, gender mainstreaming, negotiation and conflict resolution, as well as working as a team.”

“In Ghana, my group conducted a rapid value chain analysis on yam. As well as exposing me to the realities of conducting such studies in an African setting and so gaining experiences that I replicated in my project, my interactions with the chain actors led directly to me developing a proposal to conduct a full-scale consumer-focused value chain analysis of yams in Nigeria.”

“Finally, the presentation of my project during the Institute’s annual research review exposed my colleagues to this new approach, and many of them are excited to adopt Value Chain Thinking.”

Table 2: Recommendations

Impact	Difficulty		
	LOW	MEDIUM	HIGH
HIGH	<ul style="list-style-type: none"> Capacity building in good agricultural practices, record keeping and organic production Capacity building of all chain actors on value chain concepts to enhance performance and competitiveness 	<ul style="list-style-type: none"> Establish a ginger value chain committee to steer the improvements, including communicating market information and introducing differentiated prices for farmers based on consumer-focused quality specifications Train farmers on negotiation Promote ginger’s health benefits to consumers 	<ul style="list-style-type: none"> Establish certified ginger seed multiplication farm to give farmers access to certified seeds, and train best farmers on certified ginger production NRCRI to act as intermediary/off-taker, processing and exporting ginger NRCRI to consult farmers on increasing production
MEDIUM	<ul style="list-style-type: none"> Share project findings with chain, and explain business proposition and value chain approach to implementation Encourage farmers, wholesalers and retailers to grade and sell/price rhizomes based on specifications reflecting all the attributes consumers value Train chain actors on postharvest handling, for example improve offloading of trucks to avoid bruising 	<ul style="list-style-type: none"> Encourage farmer collaboration for market penetration and branding through cluster farm formation, helping them to take advantage of economies of scale and mechanization Replace the ginger dryer in Imo State with a dual heat source and more efficient dryer Link chain actors via social media, like Whatsapp, to exchange ideas and information to further strengthen relationships and build trust 	<ul style="list-style-type: none"> Establish a ginger market in South-east, Nigeria, like the one in Kaduna state, where it can be bought and sold in large quantities The institute links the processing centre with a private firm for partnership Develop more improved varieties of ginger with the attributes which meet consumers’ preferences
LOW	<ul style="list-style-type: none"> Link processing centre to other off-takers that can appropriately price their products based on what is obtainable at the international market 	<ul style="list-style-type: none"> Empower agro-dealers in the state to start selling certified ginger seeds Create value chains specifically to meet demand for organic and certified ginger 	<ul style="list-style-type: none"> Ensure split-dried ginger processors are incentivised through value-based pricing, including eliminating mould and particles Encourage farmers to irrigate, and so be able to supply ginger all year round Build ginger barn for long term storage
	Do it now (short term)	Do it soon (medium term)	Do it later (long term)



Ginger farm showing the main ginger variety planted by farmers

Australia Awards Short Courses

Australia Awards Short Courses are funded by the Australian Government and help to promote security and prosperity. They enable mid-career professionals and emerging leaders to tap into Australian expertise and gain valuable skills and knowledge. Australia Awards Short Course build enduring links between people and institutions both within Australia and in-country. They provide opportunities for recipients to undertake short-term study, research and professional development in support of key development and foreign affairs priorities.

Australia Awards Short Courses is a tailored program that aims to create skills development through short-term post-graduate training courses of three months or less that are delivered in Australia and/or the country or region specific to the course.

Australia Awards Short Course – Agribusiness 2018

The Agribusiness Short Course, designed by The University of Queensland's International Development unit specifically for participants from 15 African countries, provided learning experiences related to Agribusiness to enhance participants' ability to engage with and influence challenges regarding sustainable economic development in their home country, profession, workplace and community. Key features included using value chain methodology as the context around which the curriculum is delivered. The program balanced content and experiences to maintain engagement and interest, and enabled participants to access value chains of major Australian agricultural industries from a South-East Queensland training base. Furthermore, the course collaborated with African partners during the course design phase to ensure participants were supported upon their return to Africa.

The course comprised of 8 x 1 week long learning modules:

Week 1 – The Value Chain in Context; **Week 2** – Value Chain Innovation in Practice; **Week 3** – Smallholders and Small Business; **Week 4** – Public Sector Perspectives; **Week 5** – Analysing and Improving the Value Chain; **Week 6** – Professional Skills for Agribusinesses; **Week 7** – Value Chain Development in African contexts; **Week 8** – Rapid Value Chain Analysis.

Participants developed a Reintegration Action Plan (RAP) which detailed a unique project outlining an area of change that they will be addressing when returning to their organisation. These projects are devised with the expert knowledge and learnings gained from the course and enable the Course Leader, International Development and Australia Awards to monitor and provide feedback during various stages of the project.

Australia Awards—Africa : australiaawardsafrica.org

International Development: icte.uq.edu.au/international-development