



Australia Awards



THE UNIVERSITY  
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CREATE CHANGE

Australia Awards Short Course

Agribusiness 2018

# Kenyan Indigenous Chicken Value Chain



## Participant

Sheila Apopo is a Senior Livestock Production Officer at the Department of Livestock in Nairobi City County, with experience in extension and capacity building for smallholder livestock farmers in urban areas. Having acquired knowledge and skills on Value Chain Thinking from The University of Queensland Australia, she aspires to be a consultant in livestock value chain development that integrates consumer research, as well as empowers and inspires women and youth to initiate and attain growth in their livestock businesses. She has a Master of Science in Animal Genetics, Breeding and Reproduction from the Huazhong Agricultural University, China; a Bachelor of Science in Animal Production from Egerton University, Kenya, and trained in Dairy Farming and Entrepreneurship at the Dairy Training Centre in Oenkerk, Netherlands.

Feeding of indigenous chicken in an urban farm



## 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](http://aciar.gov.au/publication/mn178).

## Context

After completing the Australia Awards Short Course in Agribusiness, Sheila applied her new Value Chain Thinking knowledge and skills to indigenous chicken in Kenya. “The growth in Kenya’s urban middle class is creating more demand for healthy foods. Indigenous chicken is considered lean, nutritious and tasty when raised in a natural environment without growth hormones, and so fetches premium prices.” However, to tackle undersupply, improved indigenous chicken breeds had been developed with higher productivity, but they did not reflect consumers’ preferences. “The course taught me this was classic ‘supply chain thinking’: focusing on production, not consumption.”

Accordingly, Sheila saw the opportunity for developing consumer-driven value chains. “Conducting a Value Chain Analysis would reveal what product characteristics mattered to consumers, and what farmers needed to do to meet the stricter product and service standards required by formal outlets like supermarkets, where the middle class shops more frequently.”

Indigenous chicken production is especially suitable for young farmers in urban settings because it requires few resources and little land. “However, agriculture is usually seen by young people as the profession of last resort, so I hoped if we could make farming more entrepreneurial and with better returns, it would become more attractive.”

## Study

Sheila conducted her project in Embakasi West, a suburb in Nairobi. “The research had two phases. Firstly consumer research, and then I walked the chain, from farm-to-fork, both to identify where and how consumer value is created and destroyed, and to understand the current state of relationships and information flows, so recommendations would be chain-specific.”

## Consumer research

“It was essential to understand the product attributes in detail. Just saying “taste” or “colour” doesn’t tell us how activities need to change to deliver each attribute.” Accordingly, to explore these attributes in more detail, Sheila conducted four focus groups, with a total of 45 participants, followed by observing and interviewing shoppers at a supermarket, an open market and eateries. This enabled her to characterise 15 product attributes that influenced consumers’ decisions over whether, where and how often to buy indigenous chicken, and what price to pay. The results are set out in Table 1, along with the Critical Control Points of Value for each attribute, highlighting the inputs and activities across the entire chain, which positively or negatively affect each attribute. “If chain members are to align themselves collectively with their target market, they all need to focus on improving all these activities, otherwise the positive efforts of some actors are undone by the carelessness of others.”

Table 1: Critical Control Points of Value

Product Attribute	Valued Characteristics	Sources of Valued Characteristics
<b>Taste</b>	<ul style="list-style-type: none"> <li>Not flat/bland taste so no need to add spices, contrasting with ex-layers, broilers or the improved breeds</li> </ul>	<ul style="list-style-type: none"> <li>Selecting breeds, since they contain different levels of flavour precursors leading to various types and concentrations of volatile compounds that affect taste and aroma</li> <li>Feed: scavenged and supplemented with suitable feed, for example high in amino and fatty acids and in carbohydrates</li> <li>Building the capacity of farmers in feeding and nutrition</li> </ul>
<b>Food safety</b>	<ul style="list-style-type: none"> <li>No injection of growth hormones and no unnecessary use of antibiotics</li> </ul>	<ul style="list-style-type: none"> <li>Aggregating only healthy chickens</li> <li>Providing vitamins to reduce chicken stress and mortality</li> <li>Maintaining biosecurity measures, hygiene and fumigation of poultry houses to minimize disease and unnecessary use of antibiotics; adhering to the withdrawal period of antibiotics</li> <li>Feeding birds with balanced rations to attain growth, eliminating need for growth hormones</li> </ul>

Product Attribute	Valued Characteristics	Sources of Valued Characteristics
<b>Convenience</b>	<ul style="list-style-type: none"> <li>Some consumers want particular cuts, not whole birds</li> </ul>	<ul style="list-style-type: none"> <li>Butchering by processor or retailer</li> </ul>
<b>Colour of skin and shank</b>	<ul style="list-style-type: none"> <li>Yellow is preferred, because it is associated with more nutrients, and ensures yellow meat and soup colour</li> </ul>	<ul style="list-style-type: none"> <li>Selecting breeds: Yellow skin is related to an allele, making the potential to deposit yellow carotenoids in the skin partially genetic</li> <li>Proper nutrition: Diets enriched with carotenoid pigments (e.g. sweet potato vines, carrots, dark leafy greens); vegetation containing xanthophylls (e.g. papaya) which are deposited in subcutaneous fats, increasing carcasses’ colour intensity, and so of the cooked broth</li> <li>Farming practices: Skin colour intensity increases in slow-growing, free-range birds</li> </ul>
<b>Low fat</b>	<ul style="list-style-type: none"> <li>High ratio of flesh to fat: should not be too fat, especially legs, which otherwise suggests it is not an indigenous chicken</li> </ul>	<ul style="list-style-type: none"> <li>Selecting breed</li> <li>Nutrition: match feed consumption to energy requirements, because excess energy is stored mostly as fat</li> </ul>
<b>Production system</b>	<ul style="list-style-type: none"> <li>Free-range</li> </ul>	<ul style="list-style-type: none"> <li>Using free-range systems</li> <li>Employing an affordable but trusted traceability system</li> </ul>
<b>Size and weight</b>	<ul style="list-style-type: none"> <li>1.2-1.5kg dressed weight and 2-3kgs live weight</li> <li>Non-protruding keel bone in dressed chicken</li> </ul>	<ul style="list-style-type: none"> <li>Selecting breed</li> <li>Proper balanced ration</li> <li>Selecting suitable slaughter weights</li> </ul>
<b>Freshness and shelf-life</b>	<ul style="list-style-type: none"> <li>Birds should retain yellow pigmentation and not turn to a deep red pigmentation when stored</li> </ul>	<ul style="list-style-type: none"> <li>Not subjecting bird to stress prior to slaughter, and proper bleeding afterwards</li> </ul>
<b>Nutrition and health benefits</b>	<ul style="list-style-type: none"> <li>Higher protein content, lower fat content and favourable fatty acid.</li> <li>White meat benefits those with lifestyle diseases, such as hypertension</li> </ul>	<ul style="list-style-type: none"> <li>Genetics</li> <li>Free-range production</li> </ul>
<b>Origin</b>	<ul style="list-style-type: none"> <li>Some consumers believe that indigenous chicken with the desired attributes are only found in rural areas of Western and Eastern regions</li> </ul>	<ul style="list-style-type: none"> <li>Employing an affordable but trusted traceability system</li> </ul>
<b>Retailers’ service</b>	<ul style="list-style-type: none"> <li>Retailing/ slaughtering practices to assure shoppers that birds are genuinely indigenous chicken</li> </ul>	<ul style="list-style-type: none"> <li>Employing an affordable but trusted traceability system</li> <li>Slaughtering live birds in front of shoppers</li> </ul>
<b>Price</b>	<ul style="list-style-type: none"> <li>Cock: Ksh. 1,000-1,500*</li> <li>Hen: Ksh. 800*</li> <li>*live weight prices</li> </ul>	<ul style="list-style-type: none"> <li>Efficiency across the chain in feeds, drugs and vaccines, chicks, brooding, housing, transport, packaging and storage</li> </ul>
<b>Health of bird</b>	<ul style="list-style-type: none"> <li>No drooping wings; alertness; no diarrhoea at the vent area; no mites on feathers and skin</li> </ul>	<ul style="list-style-type: none"> <li>Farming practices: Isolate and treat sick birds to prevent mass infection; adhere to vaccination schedule of cyclic diseases; routine management practices such as fumigation of houses; deworming; use of dust powder; cleaning and disinfecting drinkers and feeders</li> </ul>
<b>Age of bird</b>	<ul style="list-style-type: none"> <li>Cock: no long protruding spur nor big comb</li> <li>Hen: not have lain more than two cycles</li> </ul>	<ul style="list-style-type: none"> <li>Synchronise production, and stock birds of same ages together</li> <li>Keep records on when birds hatched to know exact age</li> <li>Weigh birds</li> </ul>
<b>Plumage colour</b>	<ul style="list-style-type: none"> <li>Multi-coloured, owing to varied cultural perceptions and superstitions</li> </ul>	<ul style="list-style-type: none"> <li>Selecting breed</li> </ul>

## Whole of Chain Perspective

“Very few people look at the whole chain. People are usually experts in particular aspects, but I learnt that interventions need to be coordinated across the chain, and based on observing how activities are undertaken now, and the current state of information sharing and relationships. Recommendations need to start with this current state of each chain, otherwise they can be either too ambitious, or fail to take advantage of strong foundations in existing relationships.”

Although most relationships and information flows were basic, Sheila found a strong relationship between farmers and the supermarket they supplied directly. “Having been trading for almost five years, trust has built up through experiencing each other’s behaviour. Farmers reliably deliver chicken to the agreed specification, and in return always receive payment within 30 days, usually less. Communication is ongoing, both by phone and in-person when deliveries are made, and involve price, specifications, orders and consumer feedback. Equally, if farmers have a problem, they tell the supermarket in enough time for the manager to source alternatives. There are no contracts, but none is needed because of the strength of the relationship. Contrastingly, farmers distrusted butchers, offering very limited scope for working together.”

“The greatest opportunity was aligning the best farmers with the supermarket through a coordinated set of improvements to differentiate the farmers’ product and the supermarket’s service based on what we had learnt about shoppers’ requirements.”

## Recommendations

Sheila based her recommendations on the principles of Value Chain Thinking, emphasising the need for collaborative partners to coordinate improvements across the chain. This means that upgrading should occur across all the Critical Control Points of Value, although Sheila prioritised implementation using an Impact/Difficulty matrix she had learnt about on the course (Table 2).

“Low volumes are a major barrier to individual smallholders entering formal supply chains, so I recommended farmers synchronise chick hatching to improve consistency of supply to the supermarket. This experience should lead to forming a farmer Common Interest Group to coordinate supply, strengthen the benefits of accessing market information and using feedback, and improve economies of scale. However, group membership must be restricted to entrepreneurial, skilled and committed producers, otherwise such organisations break down quickly.”

“Equally, the supermarket needs to play its part, for example, by promoting genuine indigenous chicken, both in their stores and through social media. It also needs skilled butchers to provide new products, including separate cuts, well-packaged offal and testing other products. It should provide regular feedback to review whether the chain is delivering the right product characteristics, and how consumers are responding.”

To ensure higher retail prices are shared, value chains require greater emphasis on value-based pricing which reflects each bird’s compliance with a detailed product specification. “This means that farmers are rewarded for delivering both the product attributes consumers want, and the retailer’s need for consistency and reliability. Without such rewards, farmers will drift back to whatever is easiest, because there’s no incentive to sustain the improvements.”

Sheila also made recommendations to improve efficiency. “I witnessed poor hygiene and biosecurity standards causing higher mortality and the unnecessary use of antibiotics on preventable diseases, and birds transported in poorly ventilated or uncovered vehicles, also resulting in high mortality. Price always matters to consumers, and so eradicating these inefficiencies will increase the chain’s competitiveness.”

## How Sheila benefited from the course

While in Australia, Sheila saw how Value Chain Thinking is used to inform research, extension delivery and improvements across the chain. “During our week-long analysis of a dairy value chain, we saw how its reputation was geared towards delivering what consumers value, while encompassing the welfare of its farmers. I also learnt the importance of starting small, and then growing as performance improves by focusing on key product attributes and enhancing relationships, because trust builds business.”

“In Ghana, we conducted a rapid value chain analysis in small groups. I learnt how culture influences how the entire chain operates. For inclusive value chains, gender played a key role because some value chain activities are gender-specific.”

Sheila also learnt from conducting her own project. “Consumers always have underlying reasons why they purchase something and where they purchase it from, so the onus is on the chain members to tap into those values to create and deliver products and services to the different market segments. It also showed that recommendations must stem from data collected by engaging and observing the various chain members, but our assumptions were often wrong.”

Table 2: Recommendations

<b>HIGH</b> ↑ Impact ↓ <b>LOW</b>	<ul style="list-style-type: none"> <li>Farmers synchronise chick hatching to improve consistency of supply. Use this experience as part of filter for selecting most suitable farmers to be part of Common Interest Group (CIG) to work with supermarket long term</li> <li>Improve on-farm disease management, bio-security and vaccination program</li> </ul>	<ul style="list-style-type: none"> <li>Form and train a farmer Community Interest Group to ensure consistent supply; benefits from economies of scale, market information and regular feedback</li> <li>Introduce value-based pricing based on a detailed quality specification</li> </ul>	<ul style="list-style-type: none"> <li>Research and introduce improved indigenous chicken breeds with the attributes consumers want</li> </ul>
	<ul style="list-style-type: none"> <li>Include natural carotene-rich feeds, such as vegetable remains from market stalls, which contributes to yellow flesh colour</li> <li>Promote indigenous chicken in supermarkets, including birds’ origin and production system</li> <li>Provide regular feedback collectively to farmers regarding quality and consumer reaction to chicken</li> </ul>	<ul style="list-style-type: none"> <li>Trial new products, including separate cuts and well-packaged offal</li> <li>Train extension agents in value chain approaches to agri-food sector development to support CIG</li> <li>Use social media to promote benefits of buying indigenous chicken from the supermarket</li> <li>Ongoing consumer research to identify new market opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Introduce and promote an inspection/traceability system which assures shoppers about food safety, origin and production systems</li> <li>Build farmer CIG’s capacity to access finance and expand</li> <li>Use experience as a case study to encourage development of other value chains in other products</li> <li>Introduce branded online platform to sell chicken direct to consumers</li> </ul>
	<ul style="list-style-type: none"> <li>Create a forum to discuss this study’s results, proposed business proposition and Value Chain Thinking approach to implementation</li> </ul>		
	<b>LOW</b> ← <b>Difficulty</b> → <b>HIGH</b>		
	<b>Do it now</b> (short term)	<b>Do it soon</b> (medium term)	<b>Do it later</b> (long term)



Sheila and farmer assessing the crop and weight of chicks to gauge feed and water intake (in addition to breed selection), to influence growth rate and size of indigenous chickens

## Australia Awards Short Courses

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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.

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## 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.