INTRODUCTION

The macadamia nut, considered to be the world’s finest desert nut, is native to the coastal rainforested areas of southern Queensland and northern New South Wales in Australia. The two species of macadamia that produce edible kernels are Macadamia integrifolia and Macadamia tetraphylla which grow as medium-sized, evergreen trees. In 2016, Malawi accounted for 3% of total global macadamia production and accounted for 5% of total exports to 2015 (International Nut and Dried Fruit Council, 2017). The Government of Malawi has produced a National Agricultural Investment Plan which relies on an evidence-based approach to prioritise investment opportunities within the sector. Value chain analysis in this instance is, therefore, critical to unpacking the relationships, opportunities and constraints to address two key questions for Malawi’s macadamia industry:

1. Can Malawi increase its share of the global macadamia market?
2. What are the opportunities for and threats to the expansion of Malawi’s macadamia industry?

This value chain analysis attempts to address these questions by achieving the following objectives:

- To accurately describe the macadamia value chain in Malawi and identify the key actors within the value chain.
- To produce a value chain map.
- To evaluate the performance of the value chain at each level by detailing the opportunities and constraints faced.
- To trace movements in post farm gate margins over time.

METHOD AND DATA COLLECTION

The ValueLinks 2.0 approach to value chain analysis was used to guide the research. ValueLinks 2.0 comprises several modules, of which four were used: module 1 (value chains and development), module 2 (analyzing a value chain), module 3 (determining a value chain upgrading strategy) and module 4 (facilitating the value chain development process). Economic metrics, measures and parameters for the value chain analysis were prioritized. Functional (identifying and listing relevant business operations performed to create and sell products) and structural (value chain mapping) analyses of the commodity value chain were conducted. To gather the required data from actors within Malawi’s macadamia value chain, the authors utilised the following methods: desk research, key informant interviews with actors across the value chain and focus group discussions. Research was conducted across 3 regions and 5 districts within Malawi. Figure 1 shows images from two separate data collection field visits conducted by the authors.

VALUE CHAIN MAP AND ANALYSIS

The value chain mapping and analysis process revealed that the macadamia value chain is partitioned into three main nodes: production, processing and marketing. The structure, activities and actors within each node are depicted in Figure 2. Estates currently act as ‘single channel markets’ for smallholder growers who neither individually nor collectively own processing facilities and as such have no means of processing their macadamia further than manual de-husking. Commercial estates, therefore, make the bulk of the returns in the value chain (Table 1).

Margins at the production node of the value chain appear to be disproportionately high and in favour of commercial production. This is due to a commercial or estate sector characterised by high input application at production stage, relatively high fixed costs, high prices at factory door and modern processing facilities which increase the ‘crack-out’ percentage and sellable kernel yield. The concentration of production and processing activities in the Thyolo district also assists in reducing farm-factory transport and logistics costs.

There is an opportunity for smallholders to improve their margins on a per hectare basis through equivalent bias by improving production methods, reducing production costs and through aggregation/bulk-buying, and through improving ‘crack-out’ percentage by means of improved post-harvest handling and transport.

STUDY CONCLUSIONS AND RECOMMENDATIONS

The macadamia industry in Malawi is well positioned to increase its global market share. To achieve this the following interventions should be considered priority for both public and private investment:

1) Development of an updated Strategic Plan for the macadamia industry.
2) Adopting a phased, participatory smallholder development and training approach to further develop smallholder management. Figures 3 and 4 show planting and production trends from 1998 - 2016. Due to land scarcity, production is shifting from the Southern production-processing hub to Central and Northern regions of the country.
3) Commercial macadamia is rarely integrated into the macadamia value chain and all estates have processing facilities where ‘nut-in-shell’ is delivered, dried to produce dry ‘nut-in-shell’ (NIS), cracked and packaged during processing activities.
4) Exports are facilitated by nut traders/brokers and distributors. The end market segments for macadamia are urban and rural local kernel markets through which predominantly low-quality kernel is traded, and high value export kernel markets through which high value kernel is traded. Approximately 99% of kernel produced in Malawi is exported.

VALUE CHAIN OPPORTUNITIES AND ‘BOTTLENECKS’

Opportunities

- Consumption and production of macadamia globally is projected to increase.
- North America remains the most important market for macadamia nuts, even though total consumption in this region declined from around 13,000 tonnes kernel in 2004 to below 10,000 tonnes by 2011. See Figure 6.
- Demand in Asia (Japan and China) both for NIS and kernel has strengthened significantly since 2015.
- China is equal to North America in total annual kernel consumption and likely to become the largest and most important market for macadamia nuts moving forward.
- The European Union market is now showing steady growth again since 2015 and was estimated to exceed 8,000 tonnes of kernel in 2016-17.
- There are large tracts of land suitable for macadamia production particularly in the Central and Northern regions of the country. With the expansion of the estate sector restricted, expansion will need to come from the non-estate sector. See Figure 5.
- Demand for seedlings, particularly for smallholders exceeds supply. There is need to develop the seed and processing industry, particularly in the Central and Northern regions of Malawi.

Bottlenecks/constraints

- Smallholder macadamia growers lack access to quality seedlings, experience challenges in managing pests and disease, and are victims of rust and theft.
- Currently seedlings are priced at $3.00/seedling which is a prohibitive cost for many smallholders.
- There is a lack of quality extender services.
- There appears to be limited research into macadamia; dissemination of information and training to farmers at ground-level, is problematic.
- Reported reductions in annual rainfall have negatively impacted on production and kernel recovery.
- No up-to-date strategic plan to guide investment in place.
- Lack of data to show the sustainability of macadamia to different agro-ecological zones in Malawi, prohibits expansion.
- Lack of reliable power and poor road infrastructure increase the costs of processing and marketing.

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