Policy and Structural Arrangements Affecting the Global Market Opportunities for Malawi’s Pigeon Peas and Pigeon Peas Products

Market Access - Key for Sustainable Development
IN BRIEF

Pigeon pea production in Malawi is dominated by smallholder farmers with limited access to market information and who are also faced with lack of access to improved varieties. The local pigeon pea market is highly fragmented and disorganised. Despite the availability of ready markets in India, the competitiveness of Malawi pigeon pea exports is being jeopardised by high freight costs and low pigeon pea grain quality as compared to countries like Tanzania and Kenya.

Policies that aim at improving market institutional innovations through the use of farmer organizations, commodity exchange, provision of market information, and farmer capacity building have the potential of improving the competitiveness of the Malawi producers. There is also a need for expanding the scope of Malawi pigeon pea market by exploring the existing markets in Europe (e.g. United Kingdom), China, United Arab Emirates, United States of America and Canada. Currently the main destiny for Malawi pigeon pea is India where it faces high competition from other countries that offer the produce at a lower cost.
Introduction

Pigeon pea (Cajanus cajan (L) Millspaugh) is one of the major grain legume (pulse) crops of the tropics and subtropics. At the global level, it accounts for almost 5% of the total world pulse production (Hillocks et al. 2000). It is essentially a smallholder crop, grown on poor soils in drought-prone areas, where its ability to tolerate dry spells and harsh conditions can be a key factor in household food security. The crop provides multiple benefits to the rural poor.

First, its protein-rich edible peas can be consumed both fresh and dry and provides a cheap source of protein for the poor farmers in the drylands. Pigeon peas provide a good supplement to a staple-based meal. They complement the protein profile, supply iron and are a strong source of micronutrients, including vitamins A, C, and B, and calcium.

Second, its leaves and hulls are used as livestock feeds and the stems as fuel wood.

Third, it has the ability to fix atmospheric nitrogen (and make iron-bound phosphorus soluble) into available forms for the current crop and subsequent ones. This is significant because most soils in semi-arid regions are deficient in nitrogen and phosphorus (Jones et al., 2002).

Traditional varieties are generally intercropped with food crops such as maize, sorghum, beans, and cowpea, and non-food crops such as cotton. Low input requirements and the long duration of local landraces make the crop particularly suitable for the smallholder farming system (Joshi et al., 2001). Pigeon pea’s deep root system enables it to exploit moisture from deeper soil layers, making it well suited for these drier areas of ESA.

Despite the numerous benefits, small-scale producers of pigeon pea have not benefited much from the market share due to lack of market information and access, exploited by middle men. Studies indicate that despite an effective market demand regionally and internationally, pigeon pea farmers remain very poor. The market is highly fragmented and therefore, small scattered units of production make it difficult to form valid associations that would help with collective bargaining. They end up being price takers in a highly volatile market. The situation is worsened
by policy and structural weaknesses such as poor storage facilities which forces farmers to sell pigeon pea when prices are still low. Poor storage facilities also deter smallholder farmers from accessing export market for green peas.

The majority of farmers are not able to utilize pigeon pea produce. It is estimated that only 10 percent of processed pigeon pea in Malawi is absorbed by the domestic market, and the commercial export market remains the primary focus for Malawian producers.

Therefore there is need for a policy restructuring that would provide an enabling environment for pigeon pea marketing in Malawi. The paper calls for the need to provide an enabling environment for research institutions, government and private sector actors to identify the challenges and opportunities for the growth of the national and regional pigeon pea industries, marketing strategies and provide useful information for research and trade policy interventions.

### Key findings

A study to identify policy and structural arrangements affecting the global market opportunities for Malawi’s pigeon peas and pigeon peas products revealed a number of issues that need particular attention by both government, NGOs, research institutions, input suppliers and other processing and marketing agents. The study was supported with information through desk research and direct observations.

The research department has done a good job in introducing new medium duration pigeon varieties that meet the export demand in terms of seed size, colour and easiness to dehull. These varieties support the existing long duration variety called Kachangu; the only variety that met the demands of the export market.
Production of pigeon pea has been on the increase (Figure 1). Out of the total production of pigeon peas in Africa, the largest production comes from Malawi (6%) with an estimated 80,000 metric tons per year, followed by Kenya (2%), Uganda (2%) and then Tanzania (0.8%) (Shiferaw et al., 2008). However, increase in production for Malawi has not translated into dominance in export market where countries like Tanzania are leading Malawi. Against the world production, Malawi contributes 6.1% to the total production of pigeon pea; ranked number 3, 4 and 7 in terms of quantity produced, area harvested and productivity respectively.

The key drivers of this growth seem to have been changes on the supply and demand profiles within the Indian economy. Rapid urbanisation and development means that productivity in the domestic agricultural economy in India is not keeping pace with demand. India is looking elsewhere for supplies of strategic food of which Malawi is one of the largest suppliers.

Urbanization and income distribution changes are also driving changes in consumption habits through:

(1) increasing demand for prepared food and for convenient, ready-to-cook and ready-to-eat food products, particularly for urban women who have less time to prepare meals; and
(2) increasing consumption of food and meals outside of the home. Perhaps with the decreasing quantity of rainfall in the region and climate variability, pigeon pea has also become a darling for many smallholder farmers in Malawi.

However, the increase in production is largely a result of area expansion rather than increase in yields. Under smallholder management, yields of local pigeon pea varieties have been found to be significantly lower than the regional average, at less than 350 kg ha⁻¹ of usable seed weight, and inconsistent across areas and seasons (Ritchie et al., 2000).

Low productivity is a major hindrance to improved trade prospects. The low productivity is attributed to the following factors, particularly, the crop’s low status in the cropping system, its being often relegated to marginal soils, its intercrop with cereals and cotton, its receipt of little or no inputs, and the fact that it attracts much of farmers’ crop management attention for pests and diseases including livestock damage. Chemical treatment for pigeon pea pests remains unaffordable to the smallholder farmers. In terms of utilization, pigeon pea consumption is largely concentrated in India in form of tur dhal. India is the world largest producer of pigeon pea yet it does not meet its domestic demand for consumption.

This creates high demand for import of the product from other countries such as Malawi to fill the domestic gap. Nevertheless, it makes an important contribution to their diet, particularly resource-poor farmers, of the southern and some parts of northern region of Malawi; especially when the main staple crop fails as a result of drought. But the importance of pigeon pea in the smallholder economy goes beyond the food dimension, since the plant also provides fodder, fuel, and wood (Mergeai et al. 2001).
‘Tur dhal’

‘Tur dhal’ is a soft paste made from rehydrated decorticated pigeon pea seed which is a staple in the diet of people of Indian descent. The processing of pigeon pea grain into tur dhal consists of three basic operations: soaking and drying, dehulling, and splitting the whole grain.

The grains are generally pre-cleaned, soaked in water or oil, and dried to loosen the grain tegument. This facilitates dehulling and the subsequent splitting of the grains. Both these processes are performed by the same equipment, commonly roller machines that abrade the surface of the grain to first remove the husk, and finally to split the two cotyledons apart.

The efficiency of the process depends largely on how strongly the tegument adheres to the kernel, although other factors such as shape of the grain play an important role. Across ESA region, it is estimated that the efficiency of conversion from grain to tur dhal ranges between 60% and 70%, somewhat lower than in India.

The dhal industry in Malawi has relatively efficient decorticators and cleaning and drying machines, adequate for meeting the quality standards required by international markets, which are the major outlet for processed pigeon pea from these two countries.
**Key constraints to achieving Malawi’s market growth for pigeon pea include among others:**

1. Under-investment in productivity enhancing technologies for pigeon pea.

2. Limited access to technology demand and delivery channels - with 60 - 75% of households estimated to have no contact with research and extension services;

3. Un-managed risks with significant exposure to variability in weather patterns with periodic droughts. The impact of these events is amplified by the dependency on rain fed agriculture and the limited capacity to manage land and water resources;

4. Lack of partnerships among the value chain actors

5. Being landlocked Malawi faces higher freight costs and longer shipment times than neighbouring countries, the cost of exporting a 20-foot container of pigeon peas to Mumbai in India is US$ 1800 for Malawi compared to US$ 800 - 1200 for Tanzania, and US$ 500 - 800 for Kenya (NES, 2013-2018).

6. Limited white seeded large grain pigeon peas are produced by Malawian farmers, this limits exporter’s supply of high quality pigeon peas to export, which are required to compensate them for the high cost of shipping.

7. Limited competition with sometimes only one trader in more remote areas means that smallholders are disadvantaged when selling their crop and are forced to sell it for very low prices.

8. Myanmar has become a major exporter of whole pigeon peas to India and there is growing evidence that it can do so at lower cost than countries in eastern and southern Africa.
Pigeon pea marketing is widespread throughout ESA, with varying degrees of integration into commercial channels. Pigeon pea market channels in Malawi are not organised like those found in most developing countries in Africa and other developing areas. They are characterised by highly fragmented marketing channels based on individual family enterprises.

However, in Malawi it is largely limited to southern region where the bulk of produce originates and processing and exporting companies are based. This situation makes smallholder farmers consider pigeon pea production for commercial purposes a risky venture. At the same time the fragmented nature of the market makes smallholder farmers vulnerable to exploitation by vendors.

Access to markets is essential if subsistence farmers are to be convinced to increase production to the levels required to transition to commercial farming, which can create positive change in the socioeconomic conditions of smallholder farmers in sub-Saharan Africa including Malawi. For this change to be achieved, a number of developments are required and among them include:

» **Market infrastructure** must be developed to reduce the high transport costs incurred in areas with poor quality roads and increase farmers’ interest in selling food and cash crops.

» **Improved access to financial services.** Insufficient financial services for smallholder farmers are seen as a major barrier to purchasing and accessing equipment, seed, fertiliser and pesticides.

» **Creation and promotion of small medium enterprises (SMEs)** for the grain legumes. The transition of staple crops as food crops to cash crops will depend largely on the development of small and medium enterprises in the sub-sector.

» **Organizing Farmer Cooperative Societies/Associations.** As more farmers will be able to commercialise their produce, business will deal with producer organisations. This collective action enables smallholder farmers to sell quality grain at higher prices and in good quantities.
» **Market linkages:** moving from food crop to cash crop implies the need to develop market linkages for small holder producers and processors/business.

» **Competitiveness:** improvements in economies of scale, reduction in transaction costs, quality enhancement and a more enabling environment present significant progress for the pigeon pea industry in Malawi.

» **Market demand driven research.** Some of the breeding objectives on pigeon pea should focus on regional and international market demand, especially grain quality standards

» **Government policy.** The dissemination of improved cultivation techniques had been insufficient, and the development and dissemination of new varieties has been slow. This has not kept pace with the emerging markets for grain legumes including pigeon pea.

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**Structural arrangements to overcoming inefficiencies in the pigeon pea value chain**

To overcome the inefficiencies in the value chain, the following solutions are proposed:

» **Partnership breeds opportunity.** The partnership among value chain actors offers an opportunity to bring resources together from across the value chain to promote the innovative development of pigeon pea industry with improved uses, markets, nutrition, functionality and sustainability.

» **Trade being mainstreamed into national policies and planning.** Trade barriers, inadequate logistics and a lack of agents to advocate and promote products generally restrict or prevent small-scale farmers from accessing high-end markets.

» **Improved policy and institutional frameworks** that support development and competitiveness of the export sector.
» **Good communication is vital.** Small-scale pigeon pea farmers lack information on the prices that will prevail in the markets at harvest time. Smallholder farmers, traders, processors and others from poor rural areas should learn and be capacitated to build market chains linking producers to consumers.

» **Improve farmers’ access to inputs** by expanding and strengthening rural retail networks, and offering financial services to farmers.

» **Strengthen farmer capacity** through training and outreach in grades and standards required by the different markets.

» **Improve supply-chain efficiency** through streamlined logistics and warehousing, and working with value-adding intermediaries. Investments in better transportation, warehousing, infrastructure, storage and intermediaries can boost returns over the long term for all participants in the supply chain.

» **Increase access to financial services** by adopting innovative strategies to provide credit, savings and insurance for individual farmers; creating mobile cash transfer systems; developing new novel risk-mitigation instruments; and providing capital funding for small business

» **Strong linkage between research-extension-farmer** on pigeon pea promotion. Awareness campaigns on pigeon pea production should take into account the market requirements so that farmers have informed choices on right varieties to use that meet the market standards.
### Key enablers for leveraging pigeon pea export

Export of pigeon pea could take a positive twist if we are to fully utilize Export Enablers outlined in the National Export Strategy (2012) based on the needs of exporters and potential exporters to develop the capacity to export. These are:

1. **Access to Skills** - exporters and potential exporters, as well as public institutions, require access to a pool of skills necessary to allow for the required capacity to be able to compete on external markets.

2. **Institutional Capacity** - exporters and potential exporters require effective institutions that can address market failures in an appropriate manner and provide the necessary institutional service of trade facilitation.

3. **Access to Markets** - this includes the facilitation of trade, favourable trade policy, affordable transportation to markets, affordable cost of meeting standard requirements, affordable cost of required packaging.

4. **Access to Inputs** - this includes affordable access to water, energy, fertilizer and seed.

5. **Access to Finance and Contract Law** - this includes the affordable ability to finance capital, inputs and the ability to secure the returns from assets.

6. **Access to Business Development Services** - this includes affordable access to legal, accountancy, technical specialised services, marketing, extension services, entrepreneur and start-up support.

7. **Ease of Meeting Tax and Regulatory Obligations** - every exporter and potential exporter has to meet their tax and regulatory obligations. This therefore includes identifying the minimum obligations and facilitating the ease of meeting these obligations.

8. **Macroeconomic Prudence and Stability** - price stability, affordable access to foreign exchange, affordable access to debt.

9. **Access to Information** - this includes access to key information on consumer preferences, on accountability, to policy coherence and constructive stakeholder dialogue.

10. **Fair competition** - exporters and potential exports require a level playing field to maximise output.
While pulses imports are liberal, exports are highly restricted. A restricted export policy works against farmers’ interest. **Keeping both export and import open and free with effective and positive regulations would make for a progressive foreign trade policy.** Exports would improve the marketability of the crop, benefit growers, enhance capacity utilisation in the processing industry and earn foreign exchange.

The ‘pockets of effectiveness and dialogue’ suggest the need to look beyond policy to include urban-rural dynamics and agro-food institutions as drivers of agricultural change. Policy-makers dealing with food security and agricultural development in Malawi should pinpoint the most successful agricultural products over the past decade and determine the reasons for their good performance. **Engaging with the main stakeholders around successful agricultural value chains can generate insights about the perceived strengths and weaknesses of particular value chains, including government policies and practices at various scales.** Therefore, questions to guide systematic follow-up research include.

1. What does the value chain for a successful agricultural product look like? Which are the main production and consumption areas and how are they linked into the chain? And who are the major stakeholders in the chain itself?
2. Which are the main supporting agencies and institutions (government, business and/or others) and how do they assess the performance of successful agricultural products?
3. What are the local, national and international elements in the chain of innovation and how are they related?
4. What have been the major incentives and disincentives in recent production and yield increases and marketing arrangements according to farmers and stakeholders in the production-consumption chains?

Currently there are very few actors that participate on the domestic marketing as well in the export market for pigeon pea in Malawi. **It is important to explore other innovations that increase the participation of private traders as well as innovations that improve farmer’s access to domestic, regional and other export markets.** Institutions like NASFAM,
AHCX and ETG have already set an example. Furthermore, for countries in eastern and southern Africa to remain competitive, productivity needs to increase, transaction costs have to be reduced, and quality standards be improved. Therefore, government and other private institutions should put deliberate efforts for capacity building of farmers to impart knowledge and skills in the pigeon pea sub-sector as well as trade industry.

Prices at farm gate level must be monitored by the government in order to protect the farmers from exploitation by vendors. The government should also take a deliberate effort in disseminating market information to farmers on pigeon pea as is the case with tobacco. Further measures are needed by government to ensure that cross-border transactions on pigeon pea and other pulses are properly documented.

Crucially, efforts should be made to reduce inefficiencies in the pigeon pea value chains. These changes can significantly reduce overall marketing costs as well as improve pigeon pea trade that will eventually improve livelihoods of the smallholder farmers in Malawi and the overall economy of the country.

**Collaborative efforts between public and private institutions are needed to invest enough in extension services.** Farmers require the right information and skills in the production of pigeon pea if export is to be competitive.

**Promotion of contract farming to avert some of the market risks that farmers incur.** Contract farming offers farmers with market access, increased incomes, reduction in the risk of price fluctuations, credit and financial intermediation, timely inputs and production markets, monitoring and labour incentives, facilitate product and quality standards and requirements.

The study recommends that no single policy is a panacea for addressing all the challenges of smallholder farmers and entrepreneurs are facing in accessing domestic and global markets for pigeon pea, but rather different policies—e.g. technology adoption, microfinance, social protection, export and import regulations, farmers’ rights—should be integrated appropriately.
Conclusion

In short, the pigeon pea value chain in Malawi has a number of value chain actors at various points. As a country, we need to explore leverage points for impact from research up to marketing stage. Despite the improvements in the value chain, joint efforts are needed to overcome the various inefficiencies that the pigeon pea value chain faces. Arrows point to the fact that we need to build partnerships, improve policy and institutional frameworks, capacitate farmers in both production knowledge and marketing skills if the export market for pigeon pea is to improve and farmers get the largest market share.

Further reading


Jones, R., Freeman, H.A. and Le Monaco, G. 2002. “Improving the access of small farmers in Eastern and Southern Africa to global pigeon pea markets.” AgrenNetwork paper 120, ODI.


The views and recommendations in this policy brief do not necessarily reflect those of the individuals or organizations that have kindly contributed to its production. This Policy Brief is intended to contribute to debates on important agricultural policy on improving the Rice Seed Industry in Malawi.

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