The Tanzanian Pulses Sector

A sector diagnostic in support of identifying opportunities for improved sector governance

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Contents

Executive Summary

Pulses farmers in Tanzania grow a range of crops, including pigeon pea, chickpea, cow pea, green gram, and common beans. Pulses take up 12% of the perennial crops production in Tanzania and are an important subsistence and cash crop for the mainly small-scale farmers. The pulses sector in Tanzania is a potentially profitable value chain for all actors, but development is constrained by price volatility, insecure supply, weakly organized small-scale producers, and a poor service delivery.

In order to look for opportunities to enhance the governance of the sector, VECO East Africa commissioned Aidenvironment to conduct a sector diagnostic. Sector governance refers to the capabilities of the Tanzanian pulses sector to align and coordinate its stakeholders, to collect revenues and re-invest in the sector and to provide an enabling regulatory environment. Enhanced governance should result in a more effective production base, service sector and market system and therefore, should improve the performance of the sector as a whole.

This diagnostic was conducted in support of the Tanzanian Pulses Network (TPN), a loosely organized multi-stakeholder platform, hosted by the Eastern African Grain Council (EAGC). The focus of the diagnostic was on pigeon peas and chickpeas, and particularly the export to India. Many of the findings and recommendations are also applicable to other pulses.

Assessment of the current sector performance
The sector is relatively competitive in the lower quality segment of the Indian market during a relative short market window. Pulses are also relatively sustainable (in social and environmental terms) and resilient to climate change. The most important systemic issues seem to concentrate on:

- profitability (notably the incapability of current models to move farmers beyond poverty levels)
- inclusiveness (farmer's access to services and fair markets)
- the sector's slow responsiveness to changing market demand
- price volatility and the lack of market intelligence at the production base
- limited value addition through processing

The combination of uncoordinated market access, lack of price discovery and unfair trading practices reduces value capture by farmers and the incentives to invest in production. It also impedes the development of longer-term trading relationships along the value chain.

Assessment of current sector dynamics and systems
In terms of sector governance, there seems to be an emerging alignment of stakeholders through the TPN. The relationships between the TPN and other relevant platforms is not yet clear. The TPN is not yet recognized by the government as formal dialogue partner. The fact that it is not registered as an organization contributes to this lack of recognition. There seems to be little coordination within the government regarding the pulses sector, although it considers setting up a regulatory board. So far, pulses are not a priority crop for the government, which negatively affects the investments in the sector. There is not a system for sector-specific revenue generation although the investments needed in research, organizing farmers and capacity building are high.

The majority of farmers is unorganized. Those farmer-based organizations that exist often lack the competences to create value for members and buyers. There are some efforts to organize farmers by district councils, NGOs, research institutes and exporters. However, scaling the organization of farmers around service delivery and market access requires high investments in capacity building. Some of the regulation that governs farmer organizations also reduces the competitiveness of farmer organizations.

The service sector is absent or scattered, however, services are needed to improve farm profitability, productivity and product quality. There is a weak business case for commercial service delivery except for service delivery linked to direct purchasing agreements between exporters and farmer groups. Regulation related to seeds and fertilizers pose some constraints to the performance of the sector.

The supply chain structures vary highly and the number of intermediaries also varies. Relationships can be flexible or stable. Competition seems to be high between a few major exporters as well at the more upstream levels of the supply chain. Export prices follow Indian market fluctuations, but the lack of price discovery creates space for collusion at various levels. Unfair trading practices can exist at every level of the supply chain from farmers to importers in destination countries. Examples of such practices include side-selling, deception on quality, fraudulent and uncalibrated weighing scales, unjustified quality claims and rebates. Certain rules regulating trading relationships and processing reduces competitiveness of the sector. The government considers introducing market management instruments such as warehouse receipt systems, auctions and a commodity exchange, although the potential impact on sector performance is not clear at this stage.

Recommendations for enhanced sector governance

Of the many options that would enhance sector governance a few key priorities stand out. To improve alignment and coordination, it is recommended that the TPN becomes a formal organization allowing it to become an official dialogue partner to the government. This also enables the TPN to bring the pulses stakeholders under its leadership. The mandate of the TPN could be expanded to alignment and coordination of its members, lobby and advocacy, knowledge generation and dissemination. Through its membership and partners, the TPN should extend its reach to the sub-national level. It should build partnerships with TPFS, TCCIA and other relevant organizations that enable an effective dialogue with the government at the national and sub-national level.

A key activity of the TPN should be the development of a sector-wide vision as basis for strategy development for the short and medium term. The vision should include the desired profile of future producers (e.g. scale, farming system and productivity), desired supply chain structures and service delivery models. Such a vision and strategy should be driven by deeper insights into what the competitive advantage of the Tanzanian pulses sector (e.g. price, quality, value addition) should be in its markets (domestic, regional, Asian and European).

To enhance the performance of the sector, it will be important that the government assigns a central coordination point as direct counterpart for the sector. In case a regulatory board is created, it will be important that it has a mandate dedicated to the pulses sector. One option may be to include the TPN in the board's leadership.

Another key priority is to identify potential aggregation and trading models that will improve sector performance. There is urgency for these models since the government might introduce models that may potentially reduce performance. Other activities include the promotion of a market intelligence system, a one-stop-shop for export permits and improved regulation and investments around seeds. It should also advocate for a dialogue between the Tanzanian and Indian government to discuss the impacts of Indian policies on prices and production volumes in Tanzania and to explore options to reduce unfair trading practices.

In order to finance research (e.g. on seed varieties) and the organization and capacity building of the farmers, the TPN should explore opportunities to earmark some taxes raised at the district level for pulses-relevant investments. Another strategy would be to install an additional levy (at district or export level) for re-investments. An option to explore is whether (part of) these revenues could be redistributed via a trust-fund so it can support private sector and non-profit sector-led service delivery.

Introduction

Pulses farmers in Tanzania grow a range of crops, including pigeon pea, chickpea, cow pea, green gram, and common beans. Pulses take up 12% of the perennial crops production in Tanzania and are an important subsistence and cash crop for the mainly small-scale farmers. The pulses sector in Tanzania is a potentially profitable value chain for all actors, but development is constrained by price volatility, insecure supply, weakly organized small-scale producers, and a poor service delivery.

The Tanzanian Pulses Network (TPN) is a loosely organized multi-stakeholder membership platform that exists to support coordination for planning and implementation of activities under Value chain roadmap for Pulses in Tanzania 2016-2020. It is hosted by the Eastern African Grain Council (EAGC) and supported by the ITC program Supporting Indian Trade and Investment for Africa (SITA). The network was launched in November 2016 and to date members of the TPN include pulses producers, traders, processors, farmers' organizations, apex private sector organizations and government agencies and authorities.

To strengthen the roadmap, VECO East Africa commissioned Aidenvironment to conduct a sector diagnostic to identify the needs and opportunities for and constraints on sector governance. The focus of the diagnostic was on pigeon peas and chickpeas and particularly the export to India. Despite that most observations were based upon information from these crops, most findings and recommendations are also applicable to all pulses and wider sector dynamics.

In May this year, TPN, VECO East Africa and Aidenvironment jointly conducted a two-week field visit to interview supply chain actors, producers, public sector representatives, researchers, and service providers. The methods used were based on previous work by Aidenvironment with IIED, Sustainable Food Lab, and New Foresight (Molenaar et al. 2015 & Molenaar et al. 2017). The results of the diagnostic have been validated in a workshop with TPN members.

This report presents the findings of the diagnostic and consequent recommendations. It starts with a brief introduction to the concepts of sector performance and sector governance. This is followed by a description of the sector dynamics and systems. Chapter three presents an assessment of the sector performance. This paper ends with a presentation of opportunities on how improved sector governance could improve this performance.

1. Sector performance and governance

The last two decades have seen an increasing emphasis on supply chain driven approaches to promote sustainable production and trade of agricultural commodities. Large food and commodity traders, processors and brands – sometimes supported by development donors – have congregated around the value chain as the locus for interventions in support of legality, sustainability, productivity and quality. These initiatives have sometimes achieved remarkable success with benefits to both farmers and commercial partners. However, there are also many situations where the successes of individual supply chain projects are less than expected or remain limited in scale. It appears that supply chain initiatives are limited or undermined by structural weaknesses in the sector, including price volatility, poor quality management, weak organization of small-scale farmers and poor service provision. There is increasing awareness that to reach scale and sustainability, inclusive chains need to be part of better performing sectors (i.e. more competitive, resilient, inclusive, etc. -see **Error! Reference source not found.**).

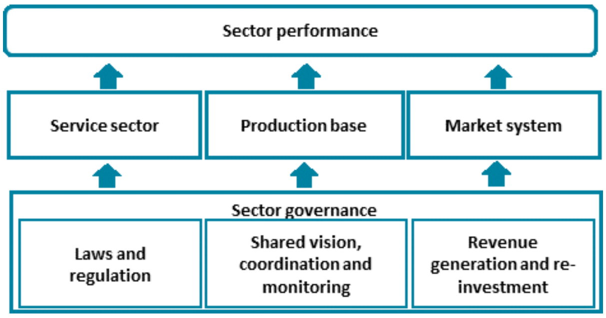
Text box 1: Indicators of sector performance (Molenaar et al., 2017)

1. **Competitive**: in price and quality
2. **Profitable**: to farmers, workers and supply chain actors
3. **Resilient**: to price volatility and climate variability
4. **Innovative and adaptive**: to market trends
5. **Sustainable**: protects the environment, respects labour rights and applies fair trading practices
6. **Inclusive**: to the most vulnerable to participate
7. **Resistant to rent seeking**, elite capture and red-tape
8. **Transparent:** in trade flows and information

Hence, the need to explore more coordinated approaches to transform a sector and improve its performance as a whole. An important strategy in transforming sectors is improving its governance. Sector governance concerns the institutions, policies, rules and strategies congregated around a commodity (Molenaar et al, 2017). In this diagnostic, the sector refers to the Tanzanian pulses sector and relevant private sector, public sector and civil society. It comprises the following mechanisms:

- **Shared vision, coordination and monitoring**: the capability of a sector to define a shared vision and strategy for a performant sector, align the key stakeholders and organize accountability around investments and commitments.
- **Laws and regulation:** the capability of the sector to define legal and regulatory frameworks that improve the sector performance.
- **Revenue generation and re-investment**: the capability to generate revenues at sector level (rather than looking to donors or lead firms) and to re-invest in the sector.

Figure 1: Sector governance framework



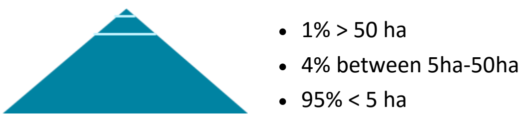
And it looks at how these mechanisms support:
- The organization of the **production base** around market access, service provision and voice at sector level.
- The **service sector** to provide services sector-wide to ensure short-term and long-term development.
- The promotion and management of **the market** with mechanisms that determine the basic rules on trade, prices, quality, sustainability and supply chain transparency.

2. The dynamics of the Tanzanian pulses sector

2.1 Basic production and trade figures

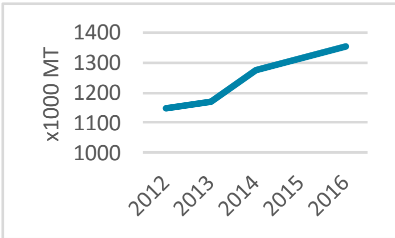
In the United Republic of Tanzania, pulses occupy about 12 % of the land cultivated for annual crops. Among the numerous types of pulses grown in the United Republic of Tanzania are dry beans, cowpeas, chickpeas, mung beans (green, black, yellow grams) and pigeon peas. Four main zones, namely Lake, Central, Southern and Northern, are the leading pulse producing regions in the country. Approximately 95% of the farmers are smallholders with less than 5 ha dedicated to pulses production.

Figure 2: Farm size dedicated to pulses



Source: Ringia 2017

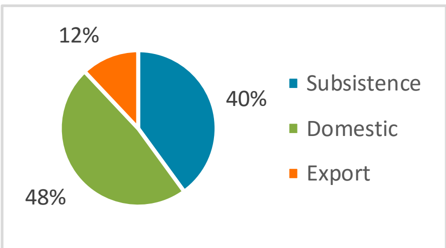
Figure 3: Production volumes of all pulses combined in Tanzania



Source: Ringia 2017

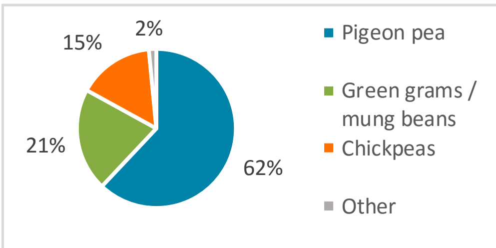
Total production of pulses has grown steadily in recent years and attained 1.35 million tonnes in 2016 (see Figure 3). Pulses are an important subsistence crop and 40% of its production is consumed by farmer households (Figure 4). Of the remaining 60% to 80% is sold in domestic market while the remaining 20% is sold in the export markets.

Figure 4: Markets for pulses in Tanzania



Source: Ringia 2017

Figure 5: Proportion in total pulses export from Tanzania



Source: Ryez, 2017

Tanzania is a small player in the global pulses sector. Main exporters are Canada, Myanmar, USA, China, and Argentina (ITC, 2016). The timing of the harvest makes Tanzania and other East-African countries strategic suppliers of India during a particular period of the year. Other important producers in the region are Kenya, Malawi (both pigeon peas) and Ethiopia (chickpeas) (FAOStat, 2014 figures).

In 2016, pigeon peas represented the bulk of Tanzania's export, followed by green grams / mung beans and chickpeas (see Figure 5). India is the primary export market for these products. Other markets include Pakistan, the Middle East and the Indian diaspora in the EU and Canada. In 2014, the total value of pulses exports from Tanzania was approximately 84 million US$ (ITC, 2016). Contrary to pigeon peas and chick peas, green grams are also consumed domestically. Tanzania is an important origin for Indian imports and India's dependency on imports is expected to rise significantly in the near future as population is expected to grow faster than production (ITC, 2016).

2.2 The current state of sector governance

2.2.1 Shared vision, coordination and monitoring

Key findings
- So far coordination within the government regarding the pulses sector is unclear, but it considers to set-up a regulatory board
- The TPN, a sector platform, promotes alignment although expectations and commitments vary a lot within the membership and has no membership driven leadership
- Other platforms exist, but the division of roles is not clear
- There is no monitoring of farm or sector performance

There is no central **public coordination body** or regulatory board within the government of Tanzania. However, the Ministry of Agriculture, Food Security and Cooperatives (MAFSC) is considering to create such a body for cereals and other produce, including pulses. Currently, the regulatory power concerning the pulses sector lies within different ministries in Tanzania. The MAFSC is the most central one. It is responsible for developing, coordinating and implementation of policies in the agricultural sector, including research, extension, crop protection, agricultural inputs, mechanization, irrigation and cooperative development. Another important ministry is the Ministry of Investment and Trade (MIT), responsible for guiding the development of industry and facilitating regional and international trade (ITC, 2016). It also has the mandate to collect market information and promote Tanzania in export markets, although available resources for this are limited. The communication between Ministries is sometimes a challenge and there is no clear focal point to address strategic issues or urgencies in the sector.

At regional and district levels, public sector led platforms or consultation for a exist to inform local policy making and investments. The continuation and effectiveness of these platforms vary per district but are relatively weak.

Several **sector platforms** exist, of which some of the most relevant are:
- The Tanzania Pulses Network (TPN): it has been set-up in 2016 with support by the SITA program and is hosted by the Eastern African Grain Council (EAGC). The voluntary network consists of producer organizations, supply chain companies, Ministries, research institutes, service providers and development partners. It has a role to facilitate the coordination of the pulses actors, promote recognition of the pulses sector within the government, to attract and align investments improving sector performance and collect and disseminate relevant data.
- Tanzania Private Sector Foundation (TPFS): it is responsible for facilitating the overall growth of the private sector. It undertakes policy impact programes aimed at influencing national policies in favor of private sector businesses, as well as providing capacity-building and other member services, and seeking to improve enterprise competitiveness. They organize a dialogue between their members and the national government. At regional and district level, they work through the TCCIA. They also run a capacity building program to strengthen the sub-national dialogues in Dodoma and Goroma. In terms of membership and activities there is some overlap with EAGC/TPN.
- The Tanzania Chamber of Commerce, Industry and Agriculture (TCCIA): it facilitates the development of the United Republic of Tanzania's private sector, undertaking sector-specific advocacy and lobbying while providing a forum for business dialogue. This is also the institution tasked with providing certifications of origin, business information, and sector-specific surveys, trainings and workshops (ITC, 2016). One of their strengths is the presence of strong local (district and regional) chapters that are regularly involved in dialogue with the regional and district offices.

Apart from these, there are several other platforms that may to a certain extent be relevant for the pulses sector. The division of roles between these platforms is not always clear and some overlap may exist. The TPN has positioned itself as the dedicated pulses platform regrouping the most important stakeholders. Although it has not a formal mandate by the government as sector platform, the Ministries do use the TPN to inform and consult on policy issues. The TPN is still a young platform and interviews with members revealed different expectations on its objectives and organizational statute. Most respondents agreed that the TPN needs to become an organization with an independent governance structure and dedicated staff. Currently, the platform is managed on part-time basis by an EAGC employee. This will be insufficient to realize current ambitions.

The establishment of the TPN and the development of the 2016 – 2020 pulses value chain roadmap introduced much more communication between stakeholders and some degree of **alignment and coordination**. The value chain roadmap is endorsed by most relevant stakeholders in the sector. The status and priorities remain however vague and commitments to act upon it vary widely among the stakeholders. The impression is that different organizations have endorsed the road map partly to position themselves for future funding or subsidies. Coordination of investments by different stakeholders is still weak. Furthermore, the roadmap seems to lack a clear vision on where the sector would like to be terms of performance in the next 10 to 20 years. Considering the nature of the sector, any future alignment and coordination will need to take place both at national and regional or district level.

TPN monitors the implementation of the roadmap (the activities) and communicates this with its membership. Despite these efforts, **accountability** remains still weak. Nor TPN or the public sector has a systematic farm and sector level monitoring, communication and learning system in place.

2.2.2 Revenue generation and re-investment

Key findings:
- Taxes are raised at district level but not earmarked for reinvestment
- Government development programs do not prioritize pulses, although priority is given within some districts and regions

There is no coordinated mechanism for revenue generation and re-investment. **Taxes** are only raised at district level and are not earmarked for re-investment in the sector. Actual use of these taxes in the pulses vary highly per district. Taxation also varies highly between districts. The national agricultural **development programs** do not prioritize the pulses sector. However, the Agricultural Development Strategy II allows District Councils to choose their own priorities. Several have chosen pulses. This could result in additional investments. As mentioned in section 2.3 investments in subsidized fertilizers and seed are limited and often ineffective.

The relevant laws and regulation will be discussed in the next sections.

2.3 Organization of the production base

Key findings:
- Majority of farmers is unorganized. Those organizations that exist often lack competences
- The lack of organization is the main constraint to realize fairer market access and more effective service delivery
- There are some efforts to organize by the district councils, NGOs, research institutes and exporters. However, scaling the organization of farmers around service delivery and market access requires additional investments in capacity building

The majority of smallholders is unorganized. There exist however many farmer organizations, including associations, Agricultural Marketing Co-operative Societies (AMCOS), Savings and Credit Cooperative Societies (SACCOS), businesses and second-level unions. Only a few of these organizations manage to perform well over a longer period. Organizational, leadership and business skills is a challenge to many of them, as well as their financial sustainability. One explanation may be that most of the farmer organizations were initiated by donors, NGOs, government for political and or livelihood issues and thus lacking a strong business focus. The lack of farmer organization negatively affects the quality of market access for farmers including their ability to capture more value (e.g. by skipping the middlemen or negotiate better prices with exporters). It also impedes effective service delivery.

Organizing farmers around service delivery and market access requires investments in capacity building. As farmers and organizations are unlikely to pay for this (at least in the initial stages), this requires external funding. In some districts, the government invests in the capacity building of some of the farmer organizations. Some traders, research institutes, financial institutions and NGOs also do this, often with donor funding. Except for these few projects, there is no investment by exporters or their customers into their supply base.

While the government invests in farmer organizations, the regulation regarding the governance of farmer organizations can be cumbersome. There seems to be too much bureaucracy and control by government around the governance of AMCOS and unions. This results in additional costs and rent-seeking by the government agents and may affect trust levels within these groups. This has led to some farmers organizations to opt for less regulated and cumbersome registration under the companies act (BRELA-Business Registration and Licensing Agency).

2.4 The service sector

Key findings:
- The service sector is absent or scattered, however, services are needed to improve farm profitability, productivity and product quality
- Services are not bundled, except for some NGO projects and direct purchasing schemes
- There is a weak business case for commercial service delivery. Farmer organizations and direct trading relationships with exporters are an important condition.

Farmers have generally no or poor access to services. Those services available are rarely bundled, except for some exporter and NGO programs. For a more detailed description of the service sector see ITC 2016. Some key observations per type of service are:
- Public **extension** services are understaffed compared to the number of farmers and farmer groups. The private led or NGO capacity building programs reach only a small fraction of the producers. These programs pay increasing attention to farming as business concepts, in addition to the promotion of good agricultural practices. There is no national curriculum for pulses.

- The lack of affordable high performing **seed** is an important constraint. Farmers tend to use saved seed for too long which negatively influences yield and profitability. There is a lack of commercially available improved pulse varieties and deficient seed multiplication system, including for Quality Declared Seeds (QDS) (ITC, 2016). Commercial seed companies do not invest in the pulses because it is an open pollinated variety. High yielding seed varieties can be imported, but it regulation prescribes three years of testing before they can be released.
- **Fertilizers and pesticides** are imported. Their use varies between farmers and years (this can be based upon financial resources or weather patterns). The government provides subsidized seed and fertilizer to a small fraction of farmers, but often too little and sometimes too late. They are only available for a few selected strategic crops, including maize and rice which can be used in rotation or in intercropping with pulses. There is the fear that recent regulatory reforms that introduced a tendering process for the imports of fertilizers will promote blanket application and impede site-specific application.
- Access to formal **finance** is limited to those few well-organized farmer groups that are part of an exporters purchase agreement program or mid to large-scale farmers. For other farmers, access to finance is limited to community-based initiatives including SACCOS and Village Community Banks (VICOBA) or to credit advances from village traders and brokers. Inadequate access to credit and advances from intermediaries leads to rampant side-selling (where contract schemes exist) as poor farmers look for quick cash to finance harvesting costs and address livelihood needs. It also reduced the negotiation position of these farmers towards these intermediaries. Financial institutions (e.g. NMB and TABD) are interested to increase their client base in agriculture, including pulses.
- The level of **mechanization** is reported to be limited, although the field visit showed various examples of farmers having access to tractor services (mainly for land preparation). Mechanical land preparation is however not always preferred by farmers, due to its unfavorable impact on soil structure and plant spacing.
- **Marketing services** are absent for the unorganized farmers and poorly developed for the majority of organized farmers. In absence of market information, transport services, bags, and harvesting pre-finance they have no other option than to sell to traders and brokers.

Only a few service providers that are private businesses exist and most of them seem to rely on payments from exporters or NGOs rather than the farmers themselves. The viability of professional service delivery is weak due to the limited client base and willingness/capacity to pay of farmers (groups). Scaling service delivery will require some initial investments (or subsidies) before a viable client base will exist. The presence of guaranteed purchasing agreements with buyers seems to be a condition for financial service providers.

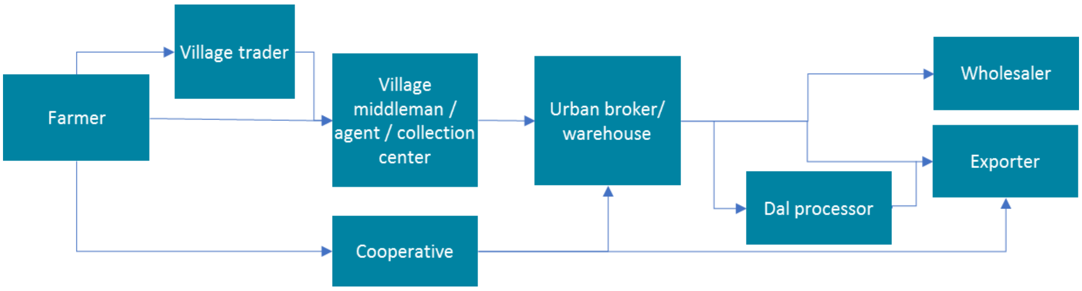
2.5 The market

Key findings:

- Supply chain structures vary highly. Relationships can be flexible or stable. There is an emergence of purchase agreement programs by some exporters.
- Competition seems to be high between a few major exporters
- Export prices follow Indian markets, but lack of price discovery creates space for collusion at various levels
- Unfair trading practices can exist throughout the supply chain
- Regulation governing trading relationships and processing can reduce competitiveness
- The government intends to manage the market more strictly, but its potential impact on sector performance is not clear

Supply chain structures vary highly. For the majority of farmers there are two to four intermediaries between them and wholesalers and exporters. The well-organized farmers sell directly to regional branches of exporters (see
Figure 6). On the one hand, there are many examples of stable trading relationships. For example, most wholesalers and exporters work with fixed brokers and agents, possibly based upon exclusive relationships. Farmers may also have stable trading relationships with village traders, often based upon social ties. On the one hand, trading relationships within conventional supply chains can fluctuate highly and be opportunistic. The influx during harvesting season of village traders, agents and Indian traders seem to be one of the causes that undermine stable relationships.

Figure 6: Supply chain structure in Tanzanian pulses sector



Some exporters have started to develop purchase agreements with farmer groups. Agreements may refer to volume, time of delivery, pre-finance conditions and quality specification. Some also include a floor price, while actual prices are set on a daily basis. This model can be combined with the facilitation of access to finance and other services. An important success factors of such programs is the ability to pre-finance farmers in order to avoid they side-sell their crop to traders before harvest in exchange for a cash advance in order to meet household needs.

Competition appears to be fierce at each level of the value chain. Although relationships may be stable, farmers, middlemen, brokers and exporters generally have different options to sell to and demand usually exceeds supply. There are about five major Tanzanian exporters and a few SME exporters (which in recent year are complemented by a seasonal influx of Indian traders). Having access to affordable trade finance is an important competitive edge, as farmers expect immediate cash and clients usually pay after several weeks.

The **price dynamics** are highly influenced by the India and exporter behavior. Within Tanzania, pulses are traded on spot basis and paid in cash. Daily prices are set by the exporters based upon prices in India. Besides the exporters, other supply chain actors in Tanzania are unaware of these prices. The lack of price discovery in combination with the limited number of exporters may create space for possible collusion in price setting between exporters. There are also concerns for collusive practices among Indian importers. Also at local level brokers may individually or collectively take advantage of farmers being unaware of prices in Dar Es Salaam. The lack of price discovery affects trust levels between supply chain actors.

Prices in India are heavily influenced by production figures in India and its key supplying countries. For example, in 2016, prices were exceptionally low due to India's good crop and the year before exceptionally high due to drought and resulting poor crop in India. Fluctuations in the production of India and other supplying countries can heavily influence the market window of Tanzanian pulses. Farmers have no information on production trends in Tanzania or other markets. They need this as it will influence prices and thus their investment decisions.

India's policies also influence prices. Since 2006, India's installed an export ban on pulses which positively influences world market prices. It also applies various other policy instruments. In 2016, it introduced limitations to domestic stocks (which had a downward effect on prices), issued a public procurement tender (which appears to have a downward effect on prices) and this year it installed an import levy (which has a downward effect). India's policy objective is to ensure sufficient supply at reasonable prices. However, it is not clear to which extent they know how their policies may influence the long-term supply from countries such as Tanzania.

There is little **price discovery** upstream the value chain. Prices in India and export prices are unknown to all except for exporters. Farmers are generally unaware of prices paid in Dar Es Salaam or towns, while brokers generally have. The relationship between prices in Tanzania and market dynamics in India is not always clear.

The lack of price discovery and weak organization of the producer base puts the **balance of power** in favor of buyers throughout the value chain. Sellers are price takers. Having a quality product and larger volumes can increase the seller's leverage towards a buyer (both in domestic trade and export). India buys any quality (e.g. a lot of the grading and value addition happens in India or Middle East).

Storage is hardly a viable strategy for sellers to improve one's relative market power. Although pulses can be stored relatively easy, they are generally sold quickly because:
- Farmers need immediate cash at harvest
- Traders and exporters need the cashflow in order to buy new pulses
- The market window is short (notably for pigeon peas to India) and thus storage requires 6 months to meet the next market window
- Price developments are insecure and thus risks are high
- Storage is expensive (particularly in Dar Es Salaam)

Unfair **trading practices** exist throughout the value chain. Farmers are confronted with unreliable weighing scales by traders. In turn, they employ their own tricks by adding foreign matter to bags in order to increase volumes. The middle segment may collude against farmers, but can be confronted by unjustified quality control or unexpected charges by exporters. Exporters may collude against their suppliers but may be confronted by unjustified use of the pre-finance by their suppliers. Exporters also face unfair trading practices in the international market. For example, they can be confronted with price rebates in case the market price falls between contracting and delivery or based upon unjustified quality claims. They have little means to defend themselves against this due to lack of use and availability of affordable arbitrage mechanisms.

There is no **price regulation** in place. In 2016, following the sudden drop of prices, some district councils did set a compulsory floor price. However, exporters thought the price was too high compared to export prices stopped buying pulses for a while. This made district councils to withdrew their policies.

One way the government intends to influence price setting is by engaging in the marketing of products themselves. The Cereals and Other Produce Board (CoPB) is public marketing board and plans to procure pulses the coming season. This development is linked to an MoU that should be signed between the Indian and Tanzanian government and concerns the supply 150 MT of pulses to India in 2017. The expectation from the government is that is can buy at higher prices than the exporters. Within interviews there was however skepticism on whether the CoPB has the capacity to organize this. If they have, there are also concerns that this may negatively affect the viability of the Tanzanian industry. The CoPB mandate has potential for advancing the sector but also there are risks of damaging it as well.

Some of the regulation related to the governance of **trading relationships** seem to reduce the competitiveness. Export procedures are lengthy and more so after most responsible departments were transferred from Dar Es Salaam to Dodoma. Regulation to require a permit for trade transactions of several cooperative structures is also lengthy, regulation around obtaining export permits and regulation in setting up processing plants. Exporters mentioned the need for a better regulatory environment for purchase agreement programs and contract farming, which should result in the respect of contracts and reduction in side-selling.

The interview with the CoPB revealed the ambition by the government to become more involved in the management of trading relationships. The government does consider the installment of local buying posts and local auctions (inspired by the livestock sector). An important consideration is to what extent this could support or obstruct other market management models such as purchase agreement programs. Another instrument that is considered is the introduction of a commodity exchange which should also cover pulses (ITC, 2016). Also at district level there are plans to introduce more market management. For example, the Manyara District Council wants to promote value capture by farmers by promoting farmer organizations and outlawing farm-gate buying. Instead farmers are obliged to sell through licensed buying centers to which only licensed traders have access. Their intent is that this should take out the village traders and illicit agents. It remains to be seen whether they have sufficient capacity to enforce such regulation.

The government has no predominant role in the **quality management** of pulses, beyond the phytosanitary inspections at export. Regulation regarding the **social and environmental sustainability** of pulses production, trade and processing is similar to other countries in the region, although enforcement (e.g. of illegal pesticide use) is a challenge. There is no minimum wage for rural labor.

3. Sector performance

This chapter presents the performance of the Tanzanian pulses sector according to 8 categories of criteria. It starts with a summary overview in which are scored on a poor, medium and good scale (see Table 1). The details and sources of the findings in Table 1 are described in the next sections.

Table 1: Summary overview of sector performance
(dark shading is good performance, medium shading is medium performance and light shading is poor performance)

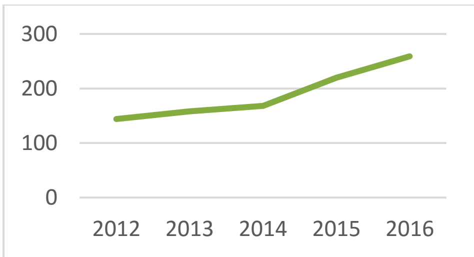
	Quantitative data	Qualification
1. Competitiveness	**The sector competitiveness in key markets is average**	
- Production	1.6 million tons (all pulses, 2014)	4% annual growth
- Global market share	~5 % pigeon peas (2014) ~1% chickpeas (2014)	Stable (2011-2014 period)
- Productivity		20%-30% of potential
- Cost of production	20-88 US$ per ha (pigeon peas)	Low input = low costs
- Supply chain efficiency	Export takes 17,5 days + export permit	Relative high costs and long export procedures
- Quality reputation		North is good, South is poor
2. Profitability	**Profitability of farmers and value chain actors is poor to medium, limiting investments**	
- Farm profitability	65-254 US$ per ha (pigeon peas)	Some profit, but poverty persists and not capacity to invest
- Value chain actor profitability	A 1-5% margin for exporters	Margins for exporters vary from good to poor, partly depending on various risks
- Value capture	Farmers capture 73% - 83% of export value	Value capture by farmers seems to be unfair in certain periods
3. Resilience	**Climate resilient, but price volatility starts to undermine performance**	
- Price volatility		Increased in recent years
- Climate change		Drought resistant
4. Innovation and differentiation	**Moderate responsiveness to market dynamics, good product differentiation and poor value addition**	
- Responsiveness to market dynamics		Good on price, poor in varieties, medium on regulatory changes
- Product differentiation		Done for varieties, quality and geography
- Value addition		Little domestic processing
5. Sustainability	**Relatively limited social and environmental issues**	
- Social		Occupational health and safety around pesticide use
- Environmental		Low water needs, restoring fertility
6. Inclusiveness	**The organization of stakeholders around market access, service provision, in sector governance emerging**	
- Market access		Unorganized for smallholders
- Access to services		Insufficient scale and quality
- Voice at sector level		Challenge to represent farmers at sector level
7. Resistance to rent-seeking and elite capture	**The lack of good governance has some negative effect on the performance of the sector**	
- Elite capture, red-tape, rent-seeking	136 of the 190 World Bank Ease of Doing Business ranking	Harms trade, export and investments in processing

8. Supply chain transparency	There is moderate visibility across the value chain in some niche markets	
- Supply chain transparency		Origin district is generally known, no traceability
- Formality of trade		Informal trade is small, but side-selling risks are evident
- Transparency of information		Structural lack of information on prices, market and production trends at producer base

1. Competitiveness (medium): Tanzania is still competitive as production and export volumes increase, particularly those focused on the Indian market like pigeon peas during a particular market window.

Production volumes have increased steadily in recent years with on average 4% per year (all pulses) (Ringia, 2017). This is driven by increased demand and profitability of the crop. Tanzania's global **market share** (2014) is about 5% for pigeon peas and 1% for chickpeas (FAOSTAT, 2014 figures). Between 2011 and 2014 these shares remained relative stable. **Productivity** is low, approximately 20%-30% of potential yields (Ringia, 2017). The main causes are the limited use of quality seed, pest and diseases, no fertilizer use (which is recommended before planting) and poor post-harvest practices (particularly relevant in more humid areas). An important factor affecting productivity is that most pulses are intercropped with maize. While this reduces the yield per hectare of pulses dramatically, it is considered a good farming strategy from a risk mitigation and profitability point of view. The **cost competitiveness of production** is relatively good as a result of the low-input farming systems. It is not clear what the effect of more intensive production systems would be on cost competitiveness.

Figure 7: Export volumes (MT) of all pulses combined in Tanzania (Ringia, 2017)



The **supply chain efficiency** is harmed by the relatively high costs of storage in Dar Es Salaam. But what is particularly harmful is the time it takes to export. The number of days to export pulses takes 17,5 days excluding time required to obtain an export permit (ITC, 2017) and this is a constraint considering the short market window. Globally, Tanzania stands at 180 in the ranking of 190 economies on the ease of trading across borders (World Bank, 2017). Tanzania's **quality reputation** varies per pulse and production region. For example, pigeon peas from Northern Tanzania (particularly Babati) have a much better reputation and receive better prices on the export market than pigeon peas from the South. The origins of India, Myanmar and Australia have generally a better quality reputation than Tanzania (based upon variety, bean size and uniformity).

2. Profitability (poor to medium): Pulses can be a profitable crop for farmers and value chain players, however poverty among farmers is persistent. Farmer value capture by farmers could be improved with improved organization, increased productivity and price discovery.

Profitability for producers is poor to medium and, depending on varieties and production systems (e.g. intercropping). Pulses foresee in an important subsistence need and cash income. In places with adequate rainfall, the relative profitability is lower than some other crops (e.g. sunflower and maize). In semi-dry areas, little profitable alternatives exist. However, current production systems hardly raise producers above the poverty level or provides them with the resources needed to invest in their farms. Profitability could be enhanced by using better varieties and practices, increasing scale and direct market access (see Figure 9). **Profitability for value chain players** is medium to good. The gross margin for exporters is estimated at 1% to 5%. Competition between traders can be fierce and risks are high as they pre-finance their agents and are several weeks long in the crop. Margins increase for higher quality products and processed peas. Margins seem to be considerably higher for quality pulses destined to Europe.

Figure 8: Gross margin analysis pigeon peas in TSZ per acre; low-input system and excluding 85 days of family labor (ITC, 2016)

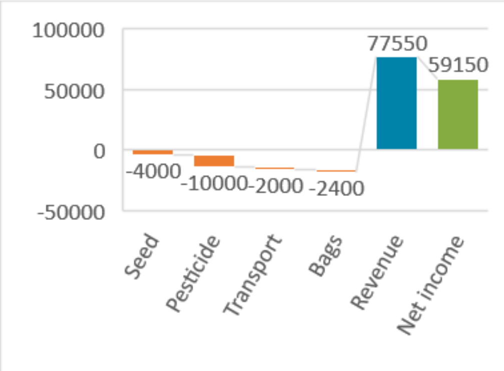
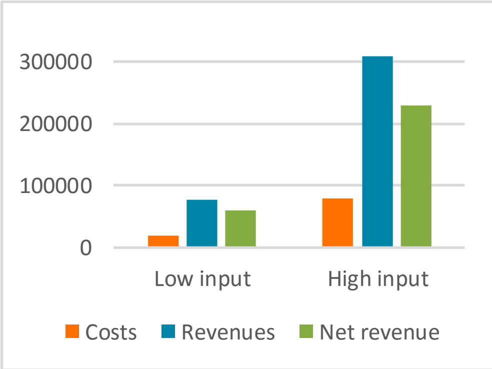


Figure 9: Gross margin analysis in TSZ under local and improved variety, excluding 85 vs 103 days of labor (ITC, 2016)



The **value capture** by farmers seems to be hampered by informal trading relationships and a lack of transparency in price setting. This leaves room for collusion between local brokers, exporters, and Indian importers. Table 2 shows that farmers receive, depending on the price levels, between 73% and 83% of the export price (CNF India).

Table 2: Distribution of value in pigeon peas chain (own calculation)

	% of CNF India price
Farm-gate price	73%-83%
Costs from farm-gate to Dar Es Salaam	8-11%
Costs from Dar Es Salaam to India	8-11%
Exporter margin	1-5%

3. Resilience (medium to good): Prices have become more volatile in recent years. Pulses are relatively climate change resilient.

In recent years, the sector became more affected by **price volatility** caused by a variation in key producing countries, particularly India. Before these events, prices across seasons were less volatile, although prices tend to decline in the past five years caused by increase in production in major producing countries including Myanmar, Canada, USA, Australia, Ethiopia and Mexico (Ringia, 2017). Prices during the season show large fluctuations, primarily linked to the relative short market window Tanzanian pulses have in the Indian market. This requires Tanzanian pulses to be as quick as possible to India (and hence the importance of an efficient logistical chain).

Pulses are relatively **climate change** resilient. They can bear harsh climatic conditions as they need little water and are usually rain-fed (ITC, 2016). The changing climate increases the relative attractiveness compared to other crops (e.g. maize). However, delays in rainfall or high rain affects productivity and can influence a farmer's decision not to apply fertilizers (e.g. in maize and peas intercropping systems).

4. Innovation and differentiation (low to medium): The sector does respond to price signals, but is slow in responding to a demand for new varieties. There is differentiation according to variety, quality and geography. The bulk of exports is of low quality without any value addition.

The sector responds to **market dynamics** as farmers respond to price fluctuations in their planting decisions for the next crop cycle. It lacks however the means to increase production significantly in a short period. Responsiveness to a demand for new varieties is slow as it takes three years to introduce them. The public sector's responsiveness to changing regulation in India, such as the requirement to fumigate with Methane Bromide, is rather slow. **Product differentiation** is done according to variety, quality (e.g. cleanness, size, maximum residue levels) and geography. There is no international accepted quality grading system in place. **Value creation** is limited. Most large exporters clean, dry and grade, although for large volumes this is also done in India. India excepts any quality. Only a small percentage of the pulses are processed in dal.

5. Sustainability (poor to good): It is a relative environmentally-friendly crop, sustainability issues exist around the use of crop protection products

In terms of **social sustainability** there are health and safety issues around the use, storage and disposal of crop protection products. At community level the access to education, health and water is generally good. Pulses are an **environmental** friendly crop. As a leguminous they restore soil fertility and if intercropped with maize it reduces soil depletion. The first projects for Organic certification are in development. No other certification exists.

6. Inclusiveness (poor): Market access to farmers is generally unorganized and access to services limited. Supply chain actors can have a voice at sector level (national and local) but it is a challenge to scale farmer representation.

All smallholders have **access to markets**, most in an unorganized way via agents. There are also some farmer groups, varying from poor to fairly well-functioning, and, on a smaller scale, purchase agreements between farmer groups and a few exporters. In general, farmers have limited leverage in the value chain. **Access to services** is generally poor, except for those farmers who are part of purchase agreement programs. All value chain actors, including producers have a **voice at sector** level through the Tanzanian Pulses Network. TPN has for example several farmer organizations as member, although they represent only a small proportion of the total number of farmers. The distance between the important producing areas and Dar Es Salaam, the basis of the TPN, is a constraint for effective participation for farmer organizations. Through TPN and other platforms, actors can influence government policy, although effectiveness is yet to be determined as the network is still young. Some districts and regions consult local stakeholders on their development plans, although often at an ad-hoc basis. The Manyari region has a multi-stakeholder consultation platform, but it has not been operative for two years. The TCCIA also performs some lobby and advocacy at regional or district level.

7. Resistance to rent-seeking (poor to medium): Elite capture, red-tape, rent-seeking reduce competitiveness.

Elite capture, red-tape, and possible rent-seeking can exist at local to national level. Red-tape and rent-seeking around the issuance of trading and export permits, as well as investments in processing facilities affects the business negatively and reduces competitiveness. Tanzania's ranks 136 of the 190 countries in the World Bank's Ease of Doing Business ranking (World Bank, 2017).

8. Supply chain transparency (medium to good): Supply chain transparency is medium and the formality of trade rather good. Informational transparency is poor.

There is some degree of **supply chain transparency** as most bags in local warehouses are labelled. Separation of Northern and Southern quality take place following different rewards in the market. No traceability is in place, there is neither demand for it. Most of the internal and external trade goes through **formal** trade channels. There is some illicit intra-district trade resulting in tax evasion. There is an important **information** asymmetry. Particular producers lack basic information on prices, production and market trends in key markets.

The sector is relatively competitive in the lower quality segment of the Indian market during a relative short market window. Pulses are also relatively sustainable (in social and environmental terms) and resilient to climate change. The most important systemic issues seem to concentrate on:
- profitability (notably the incapability of current models to move farmers beyond poverty levels)
- inclusiveness (farmer's access to services and fair markets)
- the sector's slow responsiveness to changing market demand
- price volatility and the lack of market intelligence at the production base
- limited value addition through processing

The combination of uncoordinated market access, lack of price discovery and unfair trading practices reduces value capture by farmers and the incentives to invest in production. It also impedes the development of longer-term trading relationships along the value chain.

Figure 10: Sector performance scores

4. Opportunities for enhanced sector governance

A few key systemic issues emerge from the sector diagnostic presented in chapter 2 and 3. The first issue is the lack of organization of farmers, impeding access to services and a fair access to markets. The absence of a viable service sector is another key constraint in raising farmer's performance. The lack of price discovery affects the value capture by farmers. In combination with the recent price volatility, it reduces incentives to invest in production and longer-term trading relationships. Tanzania's competitiveness in the international market is affected by cumbersome regulation around processing and export.

The purpose of this diagnostic is to identify opportunities for improved sector governance in raising the performance of the sector as a whole. This partly depends on the **competitive edge** the Tanzanian pulses sector should pursue in different markets. Different options may exist, each resulting in different priorities for sector governance:

- Focus on price: this requires the promotion of farming efficiency, increase scale of production, reduce supply chain costs and improve the time to market
- Focus on quality: this requires the ability to introduce and adopt new varieties more quickly, improved quality management and market promotion of Tanzanian pulses in export markets
- Focus on value addition: this requires an improved enabling environment for investments in processing

There is a need for more detailed information on future market opportunities domestic, regional, Asian and European markets and the required competitive advantages. These options may also differ for northern and southern Tanzania considering their current characteristics and future potential. Despite the need for this information, it is still possible to suggest options for improved sector governance. They will be presented below.

4.1 Shared vision, coordination and monitoring

Strategic options:

- Formalize and strengthen the Tanzania Pulses Network in becoming a platform for alignment and coordination, knowledge generation and dissemination, and lobby and advocacy at national and sub-national level
- Develop a more comprehensive vision of the sector as basis for strategy development for the short and medium term.
- Build strong partnerships between the TPN, TPFS and TCCIA to inform public policy (and the CoPB)
- Promote a central coordination point within the government or a pulses-dedicated regulatory board

Strengthen the Tanzania Pulses Network as the sector platform

The TPN has made an encouraging step in creating an emerging alignment and coordination at national level. It is recommended to strengthen its mandate as sector platform. In support of this it is suggested to formalize the TPN into an independent association in which producers and supply chain actors have a central place in the leadership. Other actors, such as NGOs, research and the government could become associate members. An option is to let the EAGC to continue hosting the Secretariat and facilitate member based working groups on specific themes.

Below the possible key functions of the platform are presented.

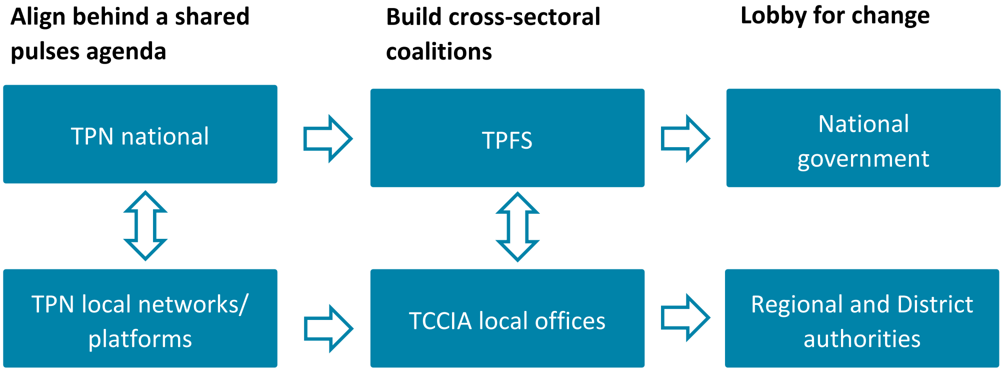
Alignment and coordination

The TPN should continue to rally stakeholders behind a common agenda and promote collaboration between them. It is recommended to develop a more comprehensive vision of the sector as basis for strategy development for the short and medium term. The vision should include the desired profile of future producers (e.g. scale, farming system and productivity), preferable supply chain structures and service delivery models. This vision can result in an updated strategy and road map with milestones and aligned roles and responsibilities of the different stakeholders.

Alignment in vision and strategy should also take place between the national and regional and district level. TPN could facilitate this by creating local networks or platforms of its members in key production areas. These networks should inform the national dialogue but also enable stakeholders to coordinate on-the-ground activities on a regular basis. The facilitation of these local networks could be done by TPN or its partners. Any lobby and advocacy work at local level could be organized through the TCCIA, in collaboration with stakeholders from other relevant sectors.

Lobby and advocacy
A key function of TPN is to strive for a more enabling regulatory environment for sector performance. TPN should have the mandate of its members to inform the government in policy making. The actual lobbying and advocacy could take place through TPSF and TCCIA. These organizations already have in place the networks and dialogue mechanisms. TPFS is well established at national level. At Region and District level it could work through the TCCIA or other organizations with a good presence. Some Regions also have platforms to discuss policy matters. Working through the TPFS and TCCIA also facilitates building coalitions with other sectors behind shared priorities (e.g. regulation on export licenses and seed). Working through organizations such as the TCCIA will require to some safeguards to ensure they can do this in an unbiased way representing all stakeholders. The following figure could represent the future relationships schematically.

Figure 11: Potential TPN, TPFS and TCCIA lobby and advocacy partnerships



Knowledge generation and dissemination
TPN should act as intelligence center for its members by conducting and promoting studies relevant to the improvement of the sector and inform policy making. An immediate need includes obtaining a better insight in the advantages and disadvantages of possible market management structures (e.g. auctions, warehouse receipt systems). It could also promote the development of a national curricula on pulses production and post-harvest practices, farming as a business and farmer organization management. This will support consistent messaging to farmers across the sector. It is recommended to focus curricula not only on pulses production, but on the wider farming systems (including inter-cropping and rotation systems). TPN members already have a lot of relevant input for such curriculum. Another potential activity is the implementation of a monitoring, evaluation and learning system that systematically measures the sector's performance (at farm and sector level) and identifies opportunities

to improve. A possible starting point could be to start monitoring production volumes, traded volumes and price trends (e.g. in collaboration with RATIN, the EAGC Regional Agricultural Trade Intelligence Network).

Other roles: Fund-raising
The TPN could support fund-raising by its members for strategic investments into the sector. In order to avoid a donor-driven business model, it is recommended that the implementation of donor-funded programs is done as much as possible by its members and partners. Donor funds, possibly based upon public-private partnership investments, is particularly relevant for studies and pilots. Funding opportunities already exist e.g. Agriculture Markets Development Trust (AMDT) and the Agricultural Fast Track Fund. The investments required to scale solutions should ideally be carried by the sector itself, without donor funding (see section 4.2 on revenue-generation). The TPN could also act as coordination platform for donors willing to invest in the sector. In order to ensure long-term continuity without donor dependency, the TPN should stay as lean as possible and progressively work towards a revenue model based on for example membership fees.

Set up a central coordination point within the government or a regulatory board
The performance of the sector depends on different policy dimensions, including agriculture, trade and industrialization. To promote comprehensive sector improvement, it is recommended that the government assigns a central coordination point for the sector functioning as link between the TPN, its members and the different Ministries.

An alternative is to pursue the existing plan of creating the Cereals and Other Crops Regulatory Board. The Board should have the mandate to develop sector specific policies and to coordinate policy development between different Ministries. It will act as central dialogue partner for all sector related issues. Critical success factors will be the Board's ability to align policies with the priorities defined by the pulses stakeholders and to create a transparent and accountable decision-making. Having TPN as member in the Board could promote this.

4.2 Revenue generation and re-investment

Strategic options:
- Earmark existing levies and taxes at district level for investments in the sector
- Raise an additional levy at export, region or district level earmarked for re-investment in the sector
- Allocate revenues to national and district level and create a trust-fund for sector development projects

The diagnostic identified a strong need for investments in research and sector-wide organization and capacity building of farmers. Depending on the sector improvement strategy, investments may also be required in developing a sector-wide quality management system, market infrastructure and market promotion. A healthy sector is able to make these investments with its own surplus value and does not depend on other sectors or foreign donors. This section discusses the options to organize revenue generation and re-investment at sector level.

This diagnostic identified two options to generate revenues at sector level:
- Install an export levy earmarked for re-investment in the sector
- Earmark part of the District taxes and levies collected on pulses for re-investment in the sector

The first option has the limitation that it will cover only part of the total pulses production and may reduce competitiveness in the international market disproportionally. Alternatively, one could install an additional levy at regional or district level. Compared to the first option, this will cover larger volumes and allow for an easier link between where revenues are collected and where they can be re-invested. It will however entail a larger coordination challenge to use this system for funding national activities.

Part of the revenues could be used to finance activities at national level (e.g. coordination, research and market promotion). Part of the revenues could be invested within the districts (e.g. extension, market infrastructure). Similarly, to the Tanzania Coffee Development Trust Fund (TCDF), part of the revenues could be channeled into a trust-fund open to research, private or non-profit sector with sound proposals (e.g. supply chain projects, and the development of viable service provision models). A Trust-Fund could be set-up at national or regional level.

In order to avoid additional levies, one could investigate the opportunities to earmark existing levies at district level for investments in the pulses sector. This will require engaging in the budgeting process at District level. Such trajectory could also be used to promote more harmonized taxation between districts.

In order to assess the feasibility of a sector-wide revenue generation model it is important to understand the potential revenues each model could generate, as well as the required investment and management costs. It also requires determining up-front the scope of investments it is supposed to support in order to assess its value to the sector. Critical success factors will be the transparency and accountability in decision-making within the system. This will require multi-stakeholder based decision-making. Another success factor to justify the revenue collection is monitoring the effectiveness of the investments.

The next sections discuss the potential focus of investments and regulatory aspects concerning the production base, service sector and market management and promotion.

4.3 Organization of the production base

Strategic options:
- Invest in farmer organizations, buying centers and purchase agreement programs
- Improve regulation and enforcement in support of these organizational models

In addition to the required sector-wide investments to organize and build capacities of farmers, the regulatory environment of farmer organizations should be improved. This is applicable to different models, including SACCOS, AMCOS, unions and companies (under BRELA). If farmer organizations are to become the aggregation points for market access and service delivery, the regulation that governs them should allow them to do so in an effective and efficient way. This diagnostic identified a need for less cumbersome regulation around business management and sales permits. It is recommended to conduct additional analysis on how the regulatory environment should further improve in support of competitive farmer organizations (or draw from available research concerning this). Particularly attention is needed to promote the scale of farmer organizations, possibly by creating second or third tier organizations. A critical success factor will be that farmer organizations add value to their members not only related to pulses but also other products they produce. Similar strategies have been tried in coffee sector with varying success. It is recommended to analyze the constraints and key success factors in the coffee sector, and potentially others, and consider how they apply in the pulses sector.

A second strategy is to organize farmers around buying centers. This may reduce the need to invest in leadership and governance aspects which are often a challenge in farmer organizations, though it still requires investments in the capacity building of the management of these centers. A third strategy is to create better conditions for direct trading relationships between farmers and buyers. This may require lighter forms of farmer organizations and can generate co-investments by buyers in the capacity building activities. This requires a segmented analysis of the market opportunities and production potential to really understand the pre-conditions for direct trading relationships.

4.4 Strengthening of the service sector

Strategic options:

- Linking service providers with farmer groups and create service hubs for bundled service provision around buying centers and direct trading relationships
- Invest in research on seed varieties, good agricultural practices and mechanization options
- Revise regulation to reduce required time for seed certification, inspection and labelling

While subsidies may finance the initial stages of organizing and training farmers, the ambition of the sector should be to develop sound business models for market based service provision. This could be facilitated by linking farmer groups with service providers and to create service hubs for bundled service provision around buying centers and direct purchasing programs. Potential services include seed, fertilizer, pesticides, mechanization services, transportation, credit, insurance and specialized advice. This will require the regulatory environment to improve the performance of these centers and schemes.

The service sector could be further strengthened by additional investments in research on seed varieties, good agricultural practices and mechanization. Particular attention is needed to improve the availability and use of high performing seed as this is critical for productivity, product quality and farm profitability. The pulses value chain roadmap (ITC, 2016) has identified a list of relevant activities to improve seed quality and availability. In terms of governance, the government could invest more in dissemination of the latest seed trial information and testing of current varieties in new zones. This diagnostic identified also options to improve the regulatory environment in support of this. They include the need to reduce the time to certify new varieties which will improve the capacity to respond to changing market demand more quickly.[1] Furthermore, in support of commercial seed multiplication the procedures for seed inspection and labelling should be shortened. The sector should also carefully review tendering procedures for fertilizer import and evaluate how this will affect opportunities for site and crop specific nutrient management. These topics are not pulses specific and requires lobby and advocacy for improved regulation will need to be done in intense collaboration with other sectors.

4.5 Market management and promotion

Strategic options:

- Promote sector relevant aggregation and trading models and improve regulation and enforcement around it (e.g. buying centers, buying permits and direct trading relationships)
- Reduce duration of export procedures
- Set-up a market intelligence and dissemination system
- Organize a dialogue between the Tanzanian and Indian government to discuss impacts of Indian policies and explore options to promote trade under Gafta
- Introduce centrally managed quality control
- Differentiate markets (export and domestic)
- Create a more enabling regulatory environment for investments in processing

[1] While writing this report, the government introduced new regulation reducing the time of certifying new varieties under certain circumstances

Supply chain structures and trading relationships
There is a clear need for more organized supply chains to improve market access for farmers. As recommended above, this could be done by promoting farmer organizations, buying centers and more direct trading relationships. This can be facilitated by introducing enabling regulation for farmer organizations, the licensing of buying centers, issuing buying permits and enforcing contracts. It will also require removing village traders and illicit agents from the market. A critical success factor is to have harmonized regulation in all production regions. A point of attention is that overregulation may reduce competition and favor only larger buyers. Any system should ensure fair competition between buyers and the possibility for new actors to enter the market.

The government may also introduce some compulsory models such as warehouse receipt systems in combination with auctioning, similarly to the cashew sector or a commodity exchange. These models could potentially improve value capture by farmers although there are also concerns that the costs of such systems may be detrimental to farmers and the overall competitiveness of the sector. A potential advantage of an auction or commodity exchange system is that it facilitates the collection of a levy for re-investment in the sector. It is recommended that any system does not exclude the possibility for direct trading relationships between exporters and farmer groups as this may deprive farmers from additional service delivery. Further analysis is needed to identify the potential value and limitations of each system for the pulses sector.

Regarding export there is a need for faster and less cumbersome export procedures in order to better capture the short market window in India. The sector would benefit from a one-stop-shop for processing of export permits and other documentation at the Dar Es Salaam port. Tanzanian exporters also need more protection against unfair trading practices by their buyers. An option is to oblige export contracts to follow the standards and arbitration of Gafta (the Grain and Feed Trade Association).

Pricing instruments
The opportunities to introduce price setting and price stability schemes seem to be limited. Several factors contribute to this. Tanzania is a price taker and a too small producer to influence global prices. In absence of an international commodity exchange for pulses, there is no reference price that facilitates determining a minimum price (either as fixed or flexible price). Without a reference price and future markets there are limited opportunities to hedge against future price fluctuations. Any price setting or stabilization scheme then runs a high risk in either reducing the competitiveness of the sector (because prices are set above world market prices) or draining heavily on public finances (to pay for the differences between the minimum price and world market price).

The introduction of a commodity exchange for pulses in Tanzania could create a reference price. This could potentially support price setting policies, although such system will be complex to manage. An option is to promote a floor price in direct trading relationships. Some exporters do this already in their purchase agreement programs. It enables banks to provide finance to farmers.

On the shorter term, it is important to invest in a market intelligence system which disseminates price information India and Dar Es Salaam to supports farmer's negotiation position against potential buyers. ITC will soon launch a first version of such system. There is also a need for (estimated) production figures in key producing countries to support farmers in making production decisions. Possibly such service could be developed together with other countries that relay on export (e.g. Australia and Canada). Testing the feasibility of setting-up such system requires additional research, including the identification of a suitable implementer.

Another short-term strategy for the Tanzanian government is to start a dialogue with the Indian government in explaining the effect of Indian policies on prices and the consequent short and long-term supply from Tanzania. There may be a common interest to maintain a certain level of price stability. Such dialogue could also include the option to trade under Gafta. The TPN could also engage directly on such topics with its Indian counterpart, the India Pulses and Grains Association (IPGA).

Quality management, value addition and market differentiation
In order to reduce the dependency on India, the sector needs to explore other export markets and increase the domestic consumption of pulses.

For the moment, there is no need for a national quality management system. This may change when promoting quality is a key strategy to increase the sector's performance. Such model could be managed by the government. Many successful examples exist elsewhere in other countries.[2] If quality becomes a key competitive factor, the sector (either the government or the TPN) could invest in more active promotion of the "Tanzanian" brand in key exporting countries.

If value addition is the way forward, priority should be given in creating a regulatory environment which is supportive to investments in processing. This requires more transparent and stable regulation and sound practices in enforcement.

4.6 Priority actions

Of the many options that would enhance the sector governance a few key priorities stand out. To improve alignment and coordination it is recommended that the TPN becomes a formal organization allowing it to become an official dialogue partner to the government. This also enables the TPN to bring the pulses stakeholders under its leadership. The mandate of the TPN could be expanded to alignment and coordination of its members, lobby and advocacy, knowledge generation and dissemination. Through its membership and partners, the TPN should extend its reach to the sub-national level. It should build partnerships with TPFS, TCCIA and other relevant organizations that enable an effective dialogue with the government at the national and sub-national level. It can also start to identify the actors in key regions and districts that should be involved in such dialogue. One of the first activities at national level could be to advocate for a central coordination point within the government regarding the pulses sector. If the government pursues setting-up to set-up a Regulatory Board, the TPN should advocate to sufficient focus on pulses and to be member of its Board. In support of this, the TPN should make the case to the government on why the pulses sector needs attention (e.g. by providing information on number of producers, taxes raised, export value, food security relevance, climate change resilience).

A key activity of the TPN should be the development of a sector-wide vision as basis for strategy development for the short and medium term. The vision should include the desired profile of future producers (e.g. scale, farming system and productivity), required supply chain structures and service delivery models. Such vision and strategy should be driven by deeper insights in what the competitive advantage of the Tanzanian pulses sector (e.g. price, quality, value addition) should be in its markets (domestic, regional, Asian and European). Based upon this vision, one could consider developing a sector-wide national curriculum on pulses production and post-harvest practices, farming as a business and farmer organization management.

[2] See Molenaar et al. (2017) with examples on cocoa in Ghana and Ivory Coast and coffee in Colombia and Costa Rica

Another key priority is to identify potential aggregation and trading models that will improve sector performance. There is urgency for these models since the government might introduce models that may potentially reduce performance. This exercise should consider the value of each model in terms of fair and efficient market access and service delivery. There seem to be opportunities to pilot some models in certain key districts. Other activities include the promotion of a market intelligence system, a one-stop-shop for export permits and improved regulation and investments around seeds. It should also advocate for a dialogue between the Tanzanian and Indian government to discuss the impacts of Indian policies on prices and production volumes in Tanzania and to explore options to reduce unfair trading practices.

In order to finance research (e.g. on seed varieties) and the organization and capacity building of the farmers, the TPN should explore opportunities to earmark taxes raised at the district level for pulses relevant investments. Another strategy would be to install an additional levy (at district or export level) for re-investments. An option to explore is whether (part of) these revenues could be redistributed via a trust-fund so it can support private sector and non-profit sector-led service delivery. A first activity in testing the feasibility of more coordinated revenue generation and re-investment, should be to assess how much taxes are currently collected linked to pulses.

Appendix: Acronyms, references and respondents

Acronyms

- AMCOS Agricultural Marketing Cooperative Societies
- AMDT Agriculture Markets Development Trust
- BRELA Business Registration and Licensing Agency
- CoPB Cereals and Other Produce Board
- EAGC Eastern African Grain Council
- IPGA India Pulses and Grain Association
- ITC International Trade Center
- MoU Memorandum of Understanding
- SACCOS Savings and Credit Cooperative Societies
- SITA Supporting Indian Trade and Investment for Africa
- TCCIA Tanzania Chamber of Commerce, Industry and Agriculture
- TCDF Tanzania Coffee Development Trust Fund
- TPN Tanzania Pulses Network

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- World Bank (2017), Doing Business 2017

Interviews held with:
- Exporters: Afrisian, Quality Pulses Exporters, RV Exporting, ETG Farmers Foundation
- Intermediaries: Bajwa Farmers and Traders Limited, Kilimo Markets, Dikwe Suppliers Limited, Tandale Market Grain Sellers Association (TAMAGRASAI)
- Producer groups and farmer's organizations : MVIWATA Manyara, Rift Valley Cooperative Union (RIVACU), Gendi AMCOs + focus group discussion and interviews with farmers in Shinyanga, Babati and Karatu
- Private sector associations: Tanzania Private Sector Foundation (TPSF), Tanzania Chamber of Commerce Industries and Agriculture (TCCIA), Manyara office and Tanzania Graduate Farmers Association (TGFA)
- National government: Ministry of Agriculture, Livestock and Fisheries
- National Agencies and Authorities: Cereal and other Produce Board (CPB), TanTrade
- Sub-national authorities: Manyara Regional Office, Babati District Office, Karatu District Office
- Agricultural Research Institutes: Ilonga ARI, Selian ARI
- Banks: National Microfinance Bank (NMB)
- Service providers: Litenga Holding
- Sector development facilitators: ITC-SITA Tanzania office, EAGC Tanzania, VECO East Africa

The following organizations participated in the **kick-off and/or validation workshop** in Dar Es Salaam:
- Exporters: Maviga, ETG Farmers Foundation, Quality Pulses Exporters, RV Exporters
- Intermediaries: Bajwa Farmers and Traders Limited, Kilimo Market, Mindu Traders, JSR Traders Limited, Dikwe Suppliers Limited, G Market
- Producer groups and farmer's organizations : Tanzania Graduate Farmers Association (TGFA), MVIWATA Manyara, Rift Valley Cooperative Union (RIVACU), Gendi AMCOs, Galapo AMCOs, MTAVIWACHOMA, Homari AMCOs, RGEET, Minjingu AMCOs
- Private sector associations: Tanzania Private Sector Foundation (TPSF), Tanzania Chamber of Commerce Industries and Agriculture (TCCIA) Dodoma office
- National government: Ministry of Agriculture, Livestock and Fisheries (DRD, AD-PHS and DCD), Ministry of Trade, Industries and Investment (Crop and Marketing Department), Ministry of Foreign Affairs and East Africa Cooperation
- National Agencies and Authorities: Cereal and other Produce Board (CPB), TanTrade, Agriculture Seed Agency (ASA), Tanzania Investment Centre (TIC)
- Sub-national authorities: Manyara Regional Office, Dodoma Regional Office, Babati District Office, Karatu District Office
- Agricultural Research Institutes: Ilonga ARI, Selian ARI, Ukiriguru ARI
- Service Providers: MRA Associates, PPP Solutions, Litenga Holdings, Kilimo Business and Associates, B2B Associates
- Banks: Tanzania Agricultural Development Bank (TABD), National Microfinance Bank (NMB)
- Development organizations or programs: Marketing Infrastructure Value Addition And Rural Finance (MIVARF) Mtwara, Farm Africa, Women Craft
- Sector development facilitators: ITC-SITA Tanzania office, EAGC Tanzania, VECO East Africa