Rapid Assessment of the Soybean Sector in Uganda

Introduction

The Climate Resilient Agribusiness for Tomorrow (CRAFT) project, wanted to assess the potential of the soybean sector in Uganda. In order to identify key limitations and critical areas of improvement, that impede development of the soybean sector, a rapid assessment took place in 2021. The purpose was to gain a better understanding of stakeholders' perspectives on the performance of the soybean sector and make an inventory of the opportunities and challenges to strengthen the sector.

Methodology

A. Define sector boundaries and activities

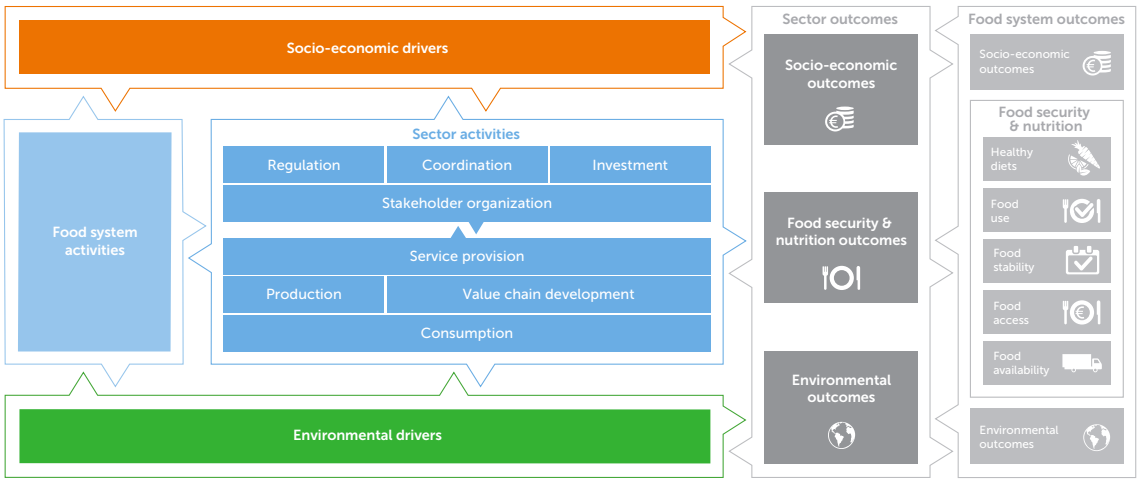
At first, the relevant activities of the soybean sector that need to be assessed are selected. The sector model developed by AidEnvironment, as adapted by the Wageningen Centre for Development Innovation (WCDI) to support sector transformation within a larger food system. The integrated sector and food system framework (Figure 1), reflects eight sector activities (production, value chain development, service provision, consumption, stakeholder organization, coordination, regulation and investment) and the socio-economic and environmental drivers that determine sector outcomes.

The framework generates insights into the contributions of different activities and drivers, their synergies, and trade-offs to food security and nutrition, and socio-economic and environmental outcomes at sector and food system level (Borman et al., 2022).
Based on the sector expertise within the CRAFT team and secondary information, the main challenges of the soybean sector are identified for each of the activities and drivers. The list of challenges is prioritized, providing focus on certain topics within the rapid assessment.

B. Establishing a panel of experts

In the second step, a multidisciplinary panel of experts is established to participate in the survey. The panel includes representatives of various expert groups familiar with the context and includes at least four representatives per type of expert group. The stakeholder groups involved in the soybean rapid assessment are: smallholder farmers, commercial farmers, producer organizations, extension officers (public and private), transporters, processors (incl. value addition), aggregators, service providers (incl. input suppliers), government institutions, financial institutions, research & educational institutes and development programmes & NGOs. The geographic distribution over regions predominant in soybean production in Uganda, was put into consideration during the stakeholder selection process. A total of 111 experts participated in the survey (Table 1).

Figure 1. Integrated sector and food system framework, Source: Borman et al., 2021[1]



1 Borman, G.D., De Boef, W.S., Dirks, F., Saavedra Gonzalez, Y., Subedi, A., Thijssen, M.H., Jacobs, J., Schrader, T., Boyd, S., Ten Hove, H.J., Van der Maden, E., Koomen, I., Assibey-Yeboah, S., Moussa, C., Uzamukunda, A., Daburon, A., Ndambi, A., Van Vugt, S., Guijt., J., Kessler, J.J., Molenaar, J.W., Van Berkum, S., 2021. Putting food systems thinking into practice: integrating agricultural sectors in a multi-level analytical framework. Global Food Security 32, 100591.

C. Developing the survey

The survey is developed based on the list of prioritized topics for the selected soybean sector activities and drivers. The questionnaire consists only of closed questions, asking respondents to rate the performance of the soybean sector on a specific topic. Respondents were given a five-point Likert scale, with scores ranging from 'very good' at one end to 'very poor' at the other end. Respondents can also indicate questions that are currently not applicable or that they do not know the answer to. Stakeholder groups answer different sets of questions based on their expertise.

D. Running the survey

The members of the panel of experts receive a link to the survey via email and can complete the questionnaire online from any device. Telephone interviews were conducted with those stakeholders that are unable to access internet.

E. Analysing survey results

The results of the survey are processed transforming the level of impact into numeric scores; for each question, the frequency over the various scores are calculated. This is complemented with a calculation of a stakeholder weighted average score, meaning that the average score for respondents in each stakeholder group is computed, which allows for in-depth comparison and analysis of contradictory views or conflicting interests. The average of the stakeholder groups concerned is then calculated by giving an equal weight to each weighted average score per stakeholder group, regardless of the number of respondents. This is to reflect that the input from a diverse range of stakeholder groups is valued equally.

The team subsequently develops a dashboard based on the outcome of the survey. The results for individual or grouped questions are linked to sector activities and drivers and inform the identification of key areas for improvement.

Soybean areas for improvement

The opportunities and challenges identified through the rapid assessment are summarized in areas for improvement, including the stakeholders that could be involved in further discussions on how to address the challenges.

Table 1. Survey respondents

Stakeholder group	Total
Smallholder farmers	18
Commercial farmers	7
Producer organizations	13
Extension officers	10
Transporters	5
Processors	6
Aggregators	9
Service providers	10
Government institutions	9
Financial institutions	9
Research & educational institutes	4
Development programmes & NGOs	11
Total	**111**

Photo: Woman hand sifting soybeans in Jinja market, Uganda

Table 2. List of questions integrated in the survey

Sector activity & driver	Sector performance:
Production	• How do you rate farmers' access to knowledge and skills on improved practices to increase soybean productivity? • How do you rate farmers' access to quality inputs for soybean production (i.e. improved varieties, quality seeds, fertilizers and pesticides)? • How do you rate soybean farmers' capabilities to respond to climate change? • How do you rate soybean farmers' adoption of climate smart agricultural practises (i.e. soil, crop and water management and conservation)? • How do you rate the management or reduction of post-harvest losses at farm level (e.g. drying, sorting, grading, storage)? • How do you rate the availability of labour for soybean production? • How do you rate soybean farmers' access to mechanization for production? • How do you rate farmers' access to finance to invest in soybean production? • How do you rate the ability of soybean farmers to access markets (i.e. larger buyers, off-takers, processors)? • How do you rate soybean farmers' ability to engage in crop diversification as a strategy to spread production and income risks? • How do you rate the competitive advantage of soybean production compared to other farming systems (i.e. other cash crops or food crops)?
Value chain development	• How do you rate the reliability of soybean supply in terms of volume? • How do you rate the quality of soybean supply regarding required or desired standards? • How do you rate the impact of price fluctuations along the soybean value chain (i.e. due to unregulated trading)? • How do you rate the stability of market relations along the soybean value chain? • How do you rate the affordability of transportation? • How do you rate the available soybean processing capacity for animal feed products? • How do you rate the available soybean processing capacity for human consumption products? • How do you rate the development of diversified soybean products for human consumption?
Services	• How do you rate the quality of storage facilities? • How do you rate the access to financial services by soybean value chain actors (other than farmers)?
Stakeholder organization	• How do you rate the performance of producer organizations in the soybean sector in terms of aggregation and marketing? • How do you rate the governance and professionalism of producer organizations? • How do you rate the financial management of producer organizations (i.e. internal capitalization, loan management)?
Consumption	• How do you rate the awareness on the nutritional value of soybean among domestic consumers? • How do you rate the practices to secure food safety in the soybean sector?
Coordination	• How do you rate the existence of a joint soybean sector vision and strategy (initiated by either the government or private sector)? • How do you rate soybean farmers' influence in the sector compared to other stakeholders and value chain actors (i.e. processors, traders, wholesalers)? • How do you rate the level of communication among soybean value chain actors (i.e. through SoyNet platform and district level platforms)? • How do you rate the participation of soybean actors in policy discussions relevant to the soybean sector? • How do you rate the collaboration between actors in the soybean value chain?

Sector activity & driver	Sector performance:
Regulation	• How do you rate the rules and regulations governing the soybean sector? • How do you rate the level of attention within the government to support the development of the soybean sector?
Investment	• How do you rate the level of existing infrastructure enabling soybean actors to maximise their operations/practices (i.e. roads, internet access, storage facilities, power)? • How do you rate the ability to maximize profit margins within the soybean sector? • How do you rate the attractiveness to re-invest profits in the soybean sector (i.e. increase production / R&D / value addition / equipment)?
Socio-economic drivers	• How do you rate the level of youth engagement in the soybean sector? • How do you rate the level of participation of women in the soybean sector? • How do you rate the division of benefits among men and women along the soybean value chain?
Environmental drivers	• How do you rate the known effects of climate change on soybean production (i.e. higher temperatures, erratic rainfall patterns)? • How do you rate the water management practices at farm level (i.e. irrigation, water harvesting)? • How do you rate the contribution of soybean production on farm conditions (i.e. nitrogen fixing, preserving moisture and control soil erosion)?

Photo: Soya flour being sold at a local stall in a traditional market in Kampala

Dashboard

- Poor
- Below average
- Above average
- Good

Details	Result
Production	
Access to knowledge and skills on improved production practices	
Access to quality inputs, labour and markets	
Farmers' capabilities to respond to climate change and adopt climate smart practices	
Reduction of post-harvest losses at farm level	
Access to mechanization	
Access to finance	
Ability to engage in crop diversification to spread risks	
Value chain development	
Quality and reliability of soybean supply	
Impact of price fluctuations along the value chain	
Affordability of transportation	
Soybean processing capacity for animal feed production	
Development of diversified soybean products for human consumption	
Services	
Impact of counterfeit products on the demand for quality inputs	
Access to reliable and timely weather information	
Support the development of climate smart innovations and farmer adaptation	
Quality of storage facilities	
Access to financial services along the value chain	
Stakeholder organization	
Aggregation and marketing of producer organizations	
Governance and professionalism of producer organizations	
Financial management of producer organizations	
Consumption	
Consumer awareness on nutritional value of soybean	
Food security practices	
Coordination	
Joint soybean sector vision and strategy	
Participation of soybean actors in policy discussions	
Collaboration among soybean value chain actors	
Regulation	
Rules and regulations governing the soybean sector incl the supply of inputs	
Government attention to support the development of the soybean sector	
Investment	
Existing infrastructure to maximize operations	
Attractiveness to re-invest profits in the sector	
Socio-economic drivers	
Youth engagement in the soybean sector	
Opportunities for small land holders and women participation in the soybean sector	
Environmental drivers	
Water management practices at farm level	
Contribution of soybean production on farm conditions	
Known effects of climate change on soybean production	

Area 1

Soybean production and service provision

Opportunities

- Relatively good farmers' knowledge and skills on improved practices
- Relatively good access to quality inputs for soybean production
- Sufficient labour availability for production

Challenges

- Use of counterfeit products instead of quality inputs
- More than 60% of the respondents rate the access to (appropriate) mechanized farm equipment 'poor' to 'very poor'
- Low quality of storage facilities
- Unreliable / untimely weather information (by metrological department)
- Unsustainable water management at farm level (i.e. irrigation, water harvesting)

Stakeholders

- Smallholder and commercial farmers
- Producer/farmer organisations
- Extension officers and agricultural research
- Ministry of Agriculture, Animal Industry and Fisheries (MAAIF)
- (Private) service providers
- Processors
- Development NGOs

Area 2

Financial situation of soybean actors

Opportunities

- Especially smallholder farmers, transporters, processors, development programmes & NGOs consider it attractive to re-invest profits in soybean sector (i.e. increase production / R&D / value addition / equipment)

Challenges

- Low access to finance for farmers
- Insufficient financial management of producer organisations (i.e. internal capitalisation, loan management)

Stakeholders

- Smallholder and commercial farmers
- Producer/farmer organisations
- Financial institutions/ banks
- Processors
- Aggregators
- Transporters
- Private service providers

Area 3

Soybean sector coordination and regulation

Opportunities

- Strengthen the communication and collaboration between soybean value chain actors
- Stakeholder groups rate the existence of a joint soybean sector vision and strategy very differently with farmers being most positive and research & educational institutes and development programmes & NGOs most negative

Challenges

- Low attention of government to support the development of soybean sector
- Low participation of soybean stakeholders in policy discussions

Stakeholders

- Producer/farmer organisations
- Extension officers and agricultural research
- MAAIF
- (Private) service providers
- Processors
- Transporters and aggregators
- Development NGOs

Area 4

Socio-economic and environmental potential of soybean

Opportunities

- Good opportunities for small land holders to engage in soybean production
- Stable access to markets for farmers (i.e. large buyers, off-takers, processors of soybeans)
- Soybean remains preferential product in farmers' diversification strategies and 70% of the respondents rate the competitive advantage to produce soybean compared to other farming systems 'good' to 'very good'
- Comparative advantage of soybean in farm plan: contribution to SWC (i.e. nitrogen fixing, preserving moisture and control erosion)
- Nearly 70% of the respondents rate the level of participation of women in the soybean sector 'good' to 'very good'

Challenges

- High market price fluctuations of soybean
- Low water conservation (water harvesting)

Stakeholders

- Smallholder and commercial farmers
- Producer/farmer organisations
- Extension officers and agricultural research
- MAAIF
- Development NGOs

Partnership and collaboration

SNV Netherlands Development Organisation has entered into a strategic collaboration with Wageningen Centre for Development Innovation (WCDI), part of Wageningen University & Research (WUR) for SNV CORE-Africa. This rapid assessment of the soybean sector in The Climate Resilient Agribusiness for Tomorrow (CRAFT) project in Uganda resulted from the strategic collaboration. CRAFT was designed to address climate change related challenges affecting the agriculture sector. CRAFT collaborated with the following local stakeholders to implement the rapid assessment: MAAIF- Crop Husbandry Department, Makerere University Crop Science Department, VODP, GIZ, PSFU, AGRITEERA, SMARTS Foods Uganda Ltd, Farmers Initiative Project on Ox Plough Project, Dokolo ACE, DFCU Bank, Post Bank, Centenary Bank, Alito Joint Farmers Multipurpose Cooperative Ltd, District Local Governments (Packwach, Mubende, Bulambuli, Hoima, Kole, Dokolo, Bugweri), ISSD, BuZARDI, UNMA, HAMWE, Oasis Agribusiness Uganda Ltd, Fit Insights, Pearl Seeds, Gold Seed International, WENFAC, NDFA, Bulambuli Farmers Multipurpose Cooperative Society, Malongo SACCO, BUDFA, HODFA, MADFA, TRAFORD, SESACO, PANYIMORU Cooperative, OKEBA, AGRINET, RECO.

Rapid assessments

The WUR team has conducted rapid assessments in several countries where WUR guides and collaborates in processes of sector transformation. Where appropriate, the sector transformation programmes in which WUR collaborates assumed responsibility for informing decision-makers; where relevant and appropriate, the programmes initiated and supported action. The purpose of the assessments varies, a series of assessment addressed the impact of COVID-19 on the functioning of sectors, they include the seed, fertilizer, sesame, potato, horticulture, dairy, flower, cotton, and marine fishery sectors ranging in eight countries in Africa. The assessments can be found in a dedicated WUR website that can be accessed through this link.

This brief is published within a series of 'Rapid Assessments' in multiple (sub)sectors and countries, and is a Sector Transformation publication of the WCDI.

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Climate resilient value chains for improved livelihoods

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