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INCREASING YOUTH ENGAGEMENT IN AGRICULTURE IN NORTHERN UGANDA: SITUATION REPORT AND PROPOSED STRATEGIES

NU-TEC Market Development Programme: A study to support better understanding of youth in agriculture in Northern Uganda

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Acronyms and abbreviations

AFARD	Agency for Accelerated Regional Development
AFSRT	Agency for Sustainable Rural Transformation
BTVET	The Business, Technical and Vocational Education and Training
CBFs	Community-based facilitators
CSA	Climate Smart Agriculture
DFCU	Development Finance Company of Uganda Bank Limited
DRC	Democratic Republic of Congo
ESL	Equator Seeds Limited
FICA	Farm Inputs Care Centre
FGD	Focus Group Discussions
FTF	Feed the Future
GAP	Good Agricultural Practices
ICT	Information and Communication Technology
ISSD	Integrated Seed Sector Development Program
LSB	Local seed businesses
NGO	Non-governmental organisation
M4P	Making Markets Work for the Poor
MFI	Micro-finance Institutions
NU-TEC MD	Transforming the Economy through Climate-Smart Agri-Business Market Development
RALNUC	Restoration of Agricultural Livelihoods in Northern Uganda
SSI	Semi-structured Interviews
SACCOs	Community Savings and Credit Cooperatives
UOSPA	Uganda Oil Seed Producers and Processors Association
USAID YLA	USAID Youth Leadership in Agriculture
VSLA	Village Loan Saving Associations
VODP	Vegetable Oil Development Project
WFP	World Food Program
YET	Youth Empowerment Training Center

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Executive summary

This report aims to help better understand youth engagement in agriculture in Northern Uganda by highlighting existing patterns, challenges and opportunities to promote robust inclusion of the youth. It identifies significant 'youth entry points' for private sector linkages in the NU-TEC MD (Transforming the Economy through Climate Smart Agri-Business Market Development) programme's selected sunflower and soybean markets and the interconnected markets of seed, land preparation, storage and aggregation. The study also examines opportunities in alternative enterprises such as beans, maize, horticulture, sesame, sorghum and micro-distribution. For the above mentioned market segments, and for these alternative enterprises, the report suggests strategies and business models in areas where youth have incentives to actively participate and where there is a business case for firms to pursue practices that are more inclusive for the youth. The findings are based on fieldwork in the Lango, Acholi and West Nile sub-regions and involved semi-structured interviews and focus groups discussions with relevant stakeholders (e.g. youth producer groups, cooperatives, government officials, development partners, buyers, processors, and service providers). The report adopts a theoretical "inclusion" framework to identify and understand the dynamics and patterns of youth inclusion and exclusion in the selected NU-TEC MD markets.

Uganda has the youngest population in the world with 78 percent below the age of thirty. Young people (18-30 years) represent approximately 21 percent (close to 7 million) of the population and comprise about 64 percent of the unemployed persons in Uganda. In Northern Uganda, in particular, youth unemployment and underemployment is escalating, due to poor quality of skills and lack of job opportunities, and constitutes one of the most important conflict drivers in the region. Commercialising agriculture remains the key to unlock the potential of the youthful population and create a multiplier effect needed for growth of the manufacturing industry and ultimately the economy.

The reality of youth is heterogeneous. The fieldwork in Northern Uganda reveals that their active age in agriculture is between 15 and 35 years old, they are deeply embedded in family, social and business network (e.g. producer groups and cooperatives) and they are engaged in agriculture at different levels.

The research findings reveal a series of trends in youth engagement in agriculture and related driving forces and constraining factors. In general, youth attitudes towards agriculture is improving. More youth have decided that agriculture is the means through which they will realise their economic advancement. This is happening thanks to the emergence of role models. Peer influence has proven to be key in mobilising youth to engage in commercial farming. Another major trend that is emerging is that educated urban youth, traders and labourers are turning to farming as a business. This choice is also motivated by unemployment and underemployment in other sectors. In addition, youth enrolment in producer organisations like cooperatives and farming groups is steadily increasing, as they see the benefits in terms of market and resource access and the social capital as a safety net.

At the same time, a series of constraints limit youth engagement in market-driven activities in agriculture and range from the limited access to resources (such as credit facilities, knowledge and skills) for investments in agribusiness and the limited access by the youth to supportive mechanisms (such as training/mentoring and information about markets). In addition, many youth are discouraged by the high risk involved in agriculture, considering the current climate variability impacts and by the long-term nature for returns on investment from agricultural enterprises, given that most youth prefer quick returns.

The way in which youth are able to respond to the emerging trends, driving forces and constraining factors dictates their path towards inclusion or exclusion. From the youth groups interviewed in the field, two clear patterns emerge: youth producing with subsistence mind-set and practices; and youth who engage in farming as a business. These two main profiles correspond to different levels of 'agency, voice, and choice' of youth (which relate to the capabilities, skills, motivation, aspirations of youth). They also correspond to different degrees of 'market opportunities' and incentives of the private sector to engage with them. Robust inclusion is achieved when both the 'agency, choice and voice' of youth and their 'market opportunities' are high, which is likely to be achieved when youth engage with a farming as business mind-set. This is where young people participate with motivation as active players in the market and the private sector has a strong incentive in engaging with them. Conversely, most of the youth who are in a situation of exclusion or adverse inclusion are producing with a subsistence mind-set.

The findings of the field research and the strategies proposed suggest that the interventions to facilitate private sector engagement with youth should not target youth in isolation but as part of a group. This is a condition to ensure also the sustainability of the facilitation strategy when youth transition towards adulthood. Youth that could benefit from robust inclusion are those fully integrated in current farming structures in the communities which are: producer groups, cooperatives and savings associations. Operating within the context of the existing institutional and social structures provides youth with credibility and is more likely to attract the private sector.

NU-TEC MD's role will be to broker the relationship between the private sector and youth producer groups and cooperatives. The research work has revealed the limitations of the private sector in terms of competencies to deliver some interventions related to institutional capacity development of the cooperatives and youth producer groups. This is due to the fact that these activities are not considered core to the private sector's business model, which calls for the private sector to be facilitated to engage or hire capacity building experts or service provider organisations to support them in this aspect of interventions. This approach, besides strengthening the private sector supply chain, will also build a sustainable relationship between the private sector and service providers thereby enhancing continuous business engagement beyond the NU-TEC MD intervention.

There is no one-size-fits all for the whole of Northern Uganda but the research identified three different clusters (Cluster 1: Lira and Oyam; Cluster 2: Gulu and Dokolo; Cluster 3: Kitgum, Nebbi and Arua) displaying different patterns, challenges and opportunities for youth engagement in market-driven activities in agriculture. Given that the three clusters are at different levels of agribusiness development, the primary entry point in terms of the producers' organisation structure will vary.

In Cluster 1, the cooperative structure is fairly well developed and actively engaged with members and the processors, therefore the entry point for the private sector engagement and service provider support should be the cooperative (targeting those with a large membership of youth). The objective will be to strengthen the capacity of the cooperative to deliver on its mandate to members and obligations to the private sector. The cooperative should become a one-stop shop, providing skills, agro-inputs, primary mechanisation and saving mobilisation. In Cluster 2, youth producer groups are weaker, less organised than in Cluster 1 with a weak affiliation to cooperatives. This reflects the presence of weaker cooperatives. In this cluster, the entry point will be at the level of youth producer group and the service provider and private sector will work together to build the capacity of the youth producer groups to produce and federate into a cooperative. In turn, the cooperative will then become the institutional structure that will then engage with the private sector. In Cluster 3, where the few youth producer groups operate in isolation and there are very few and weak cooperatives, the service provider and the private sector will support the formation of groups in terms of building capacity of group dynamics and promote group cohesion. In order to achieve youth engagement, it is crucial to have a youth

support package which includes, in addition to production and marketing skills, also social elements (e.g. soft/life skills such as leadership and communication skills, financial literacy skills and savings for investment).

Where youth are engaged in alternative commodities (beans, maize, horticulture, sesame, sorghum) other than sunflower and soybean, it is critical to support youth inclusion by prioritising these commodities (which have a food security added advantage) alongside sunflower and soybean. It is important to conduct an assessment of the market feasibility and potential of these alternative commodities for youth inclusion. NU-TEC MD should also explore apprenticeship models for youth inclusion in agriculture, as illustrated by Agri-Query Solutions.

At the level of the market segments analysed, the cross cutting need is investment capital. It is therefore crucial to build financing capacity across all the market segments. NU-TEC MD can leverage its position to facilitate financing opportunities in a way that enables youth producer groups or cooperatives to invest in cost-cutting technologies and marketing infrastructure. Opportunities exist to invest in mechanisation as a service, primary aggregation centres and seed production. NU-TEC MD can facilitate access to trade and investment finance (e.g. provide collateral guarantees to financial institutions as well as trade finance). This will enable youth groups to access the capital to procure equipment (e.g. ox traction kits, tractors, threshers), to set up primary aggregation centres owned by producer groups through their cooperative, to acquire transport systems to move produce (e.g. tricycles), as well as seed handling infrastructure for seed multipliers.

In summary, the research proposes the following youth engagement strategies, which are exemplified by the figures below:

1. **Youth-led mechanization for land opening and on farm operations**; this can build around a service led intervention model to enable youth to invest in mechanisation services as a business (Figure 1a,1b,1c).
2. **Youth engaged in local seed business and distribution agency.** Youth can be engaged in specialized agricultural production ventures like seed production (Figure 2a) and as commission agents for input delivery and distribution systems (Figure 2b). The Community Based Agricultural Facilitators on Wheels model piloted by the seed company Equator Seeds Limited and the USAID Youth Leadership in Agriculture program in Gulu and Lira is a good example (see chapter 6).
3. **Youth engaged in production through demand driven approaches** to harness youth energy. Youth can be supported to engage in contract farming, built on commitment based forward contract arrangements, with oilseeds buyers/processors oilseeds (Figure 3).
4. **Youth participate in storage and aggregation markets**. Youth can function as buying agents or delivery agents in cases of input trading systems. For instance in the Lira Resort agency model, the company engages youth as buying agents and facilitates them by pre-financing and mentoring (see chapter 6). To improve the link between production and aggregation, youth producer groups can be supported with the provision of small bulking houses, and youth groups can act as primary aggregation centres (Figure 4).

Figure 1a: Strategy for Cluster 1 - Youth-led mechanisation for land opening and on farm operations. A 'service led intervention model'

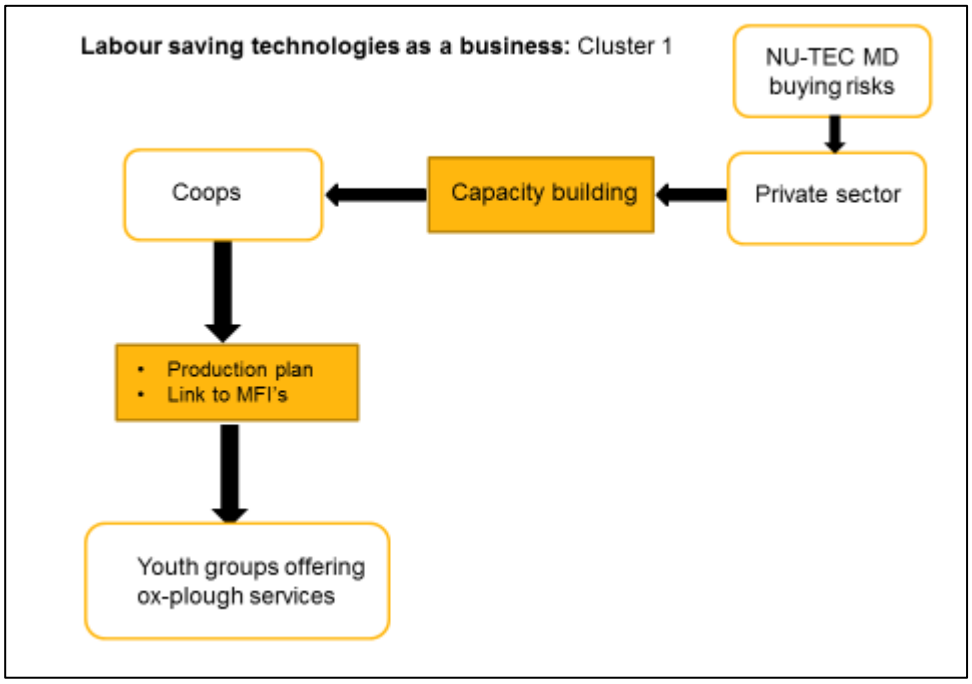


Figure 1b: Youth-led mechanisation for land opening and on farm operations. A 'service led intervention model in tractor operation'

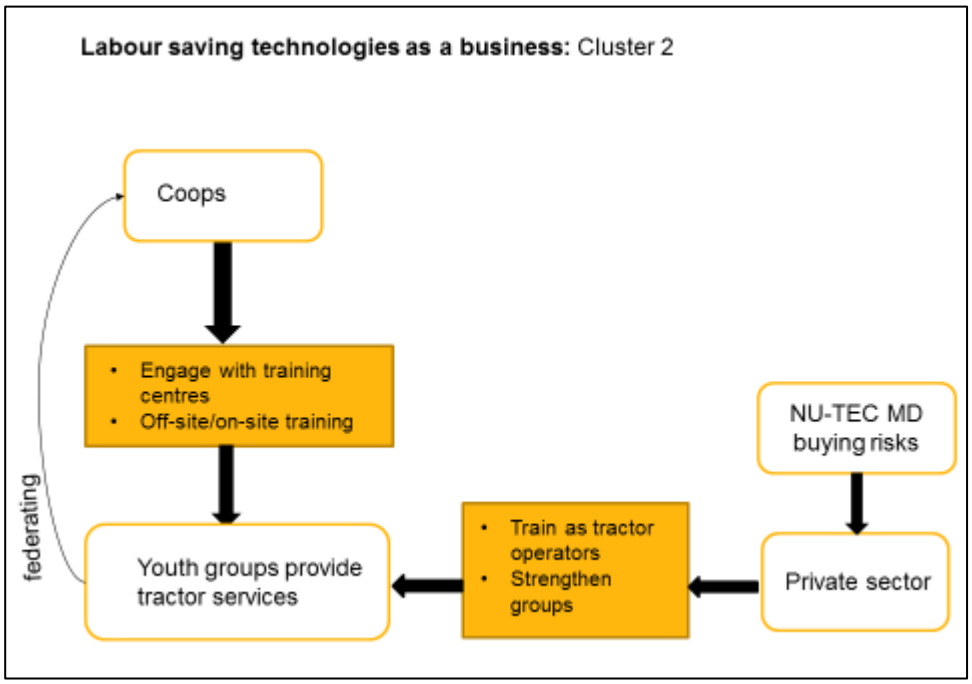
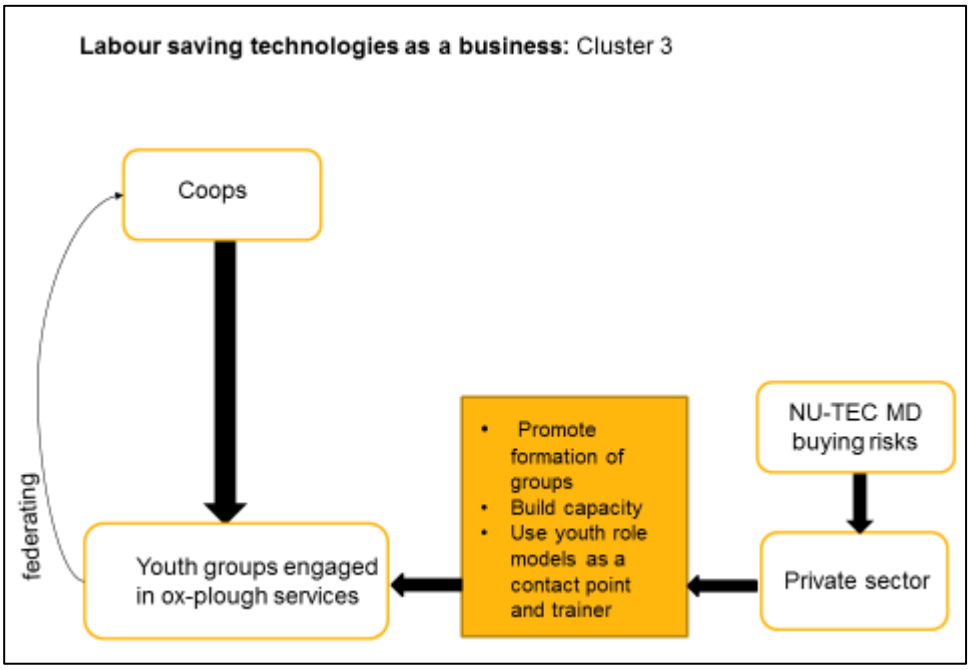


Figure 1c: Youth-led mechanisation for land opening and on farm operations. A 'service led intervention model in tractor operation'



Source: Authors' elaborations

Figure 2: Increasing youth engagement in the seed market: youth engaged in LSB and distribution agency

Figure 2a: Youth engaged in local seed multiplication business (Cluster 1)

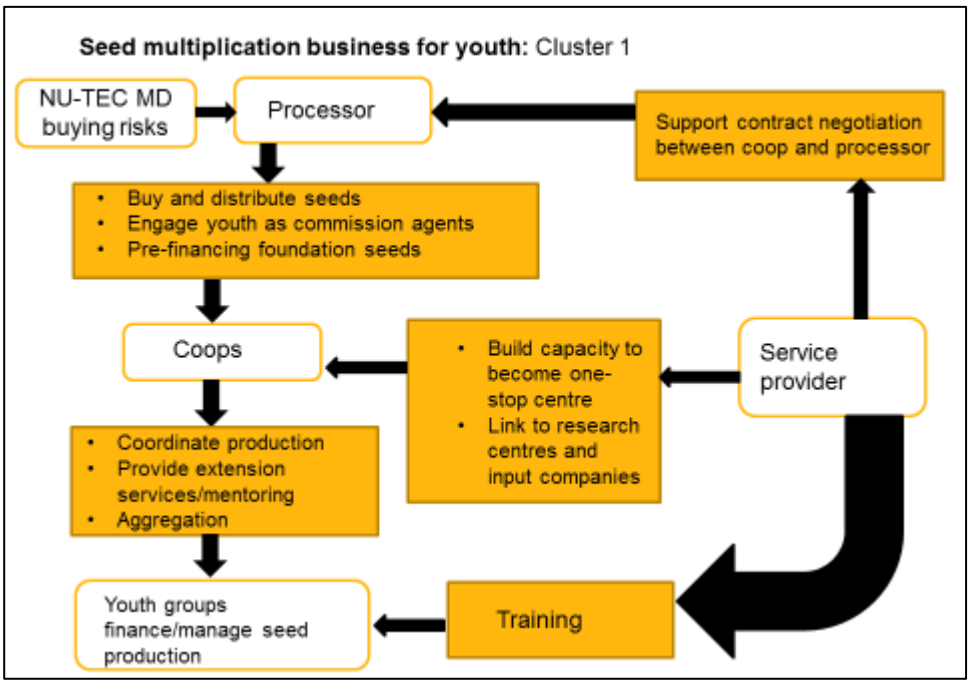
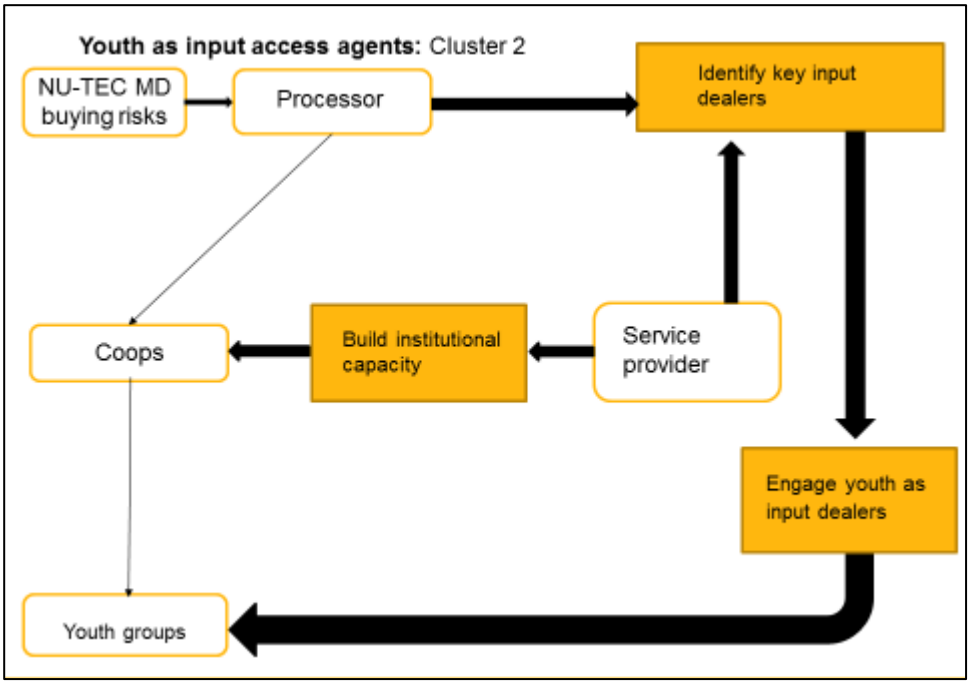
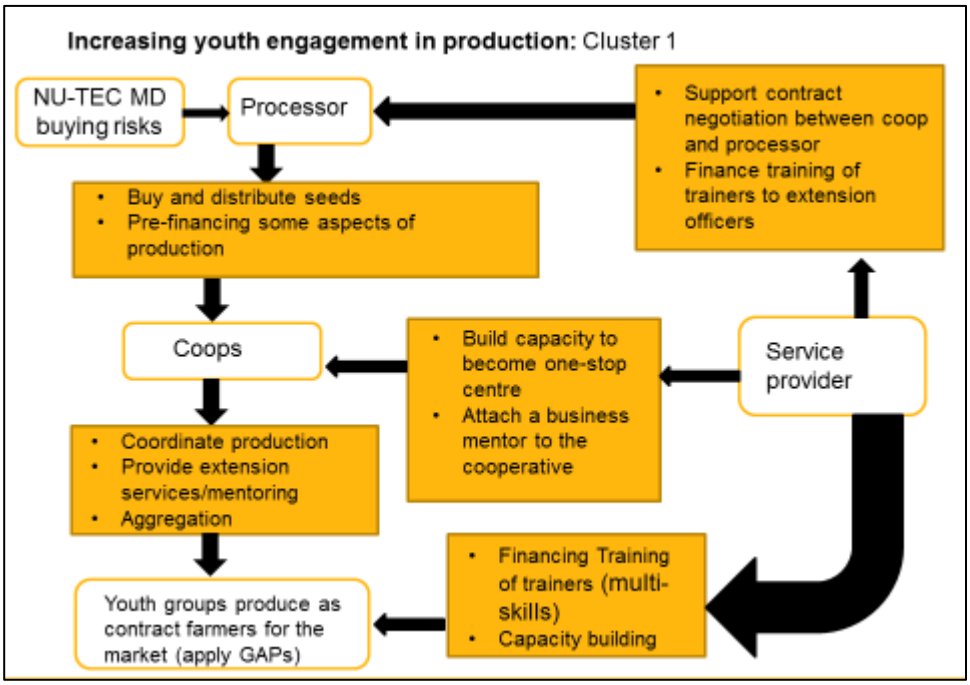


Figure 2b: Youth engaged as inputs agents (Cluster 2)



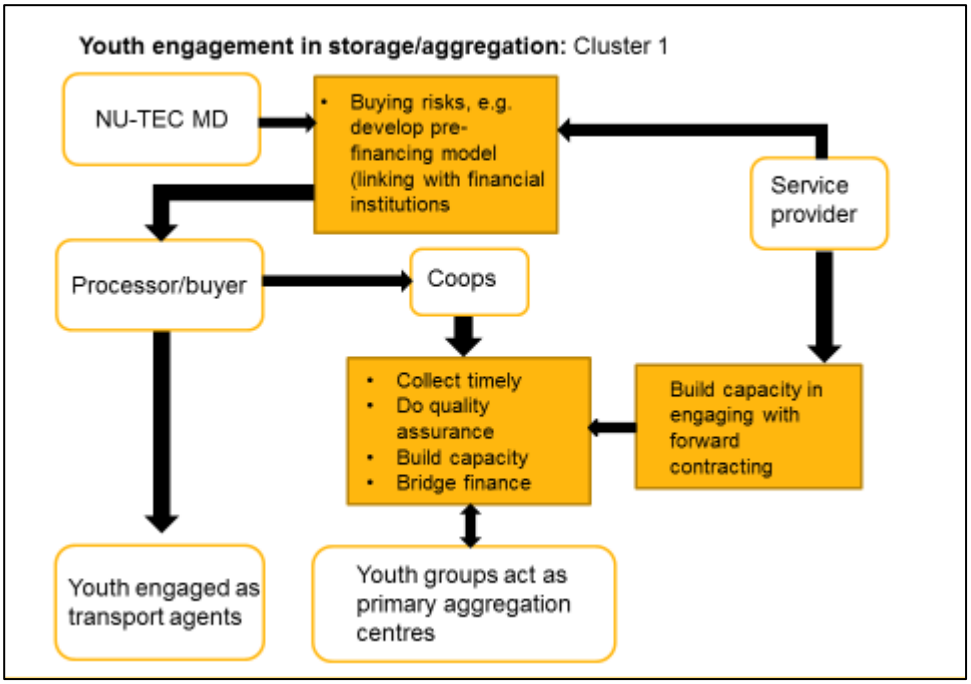
Source: Authors' elaborations

Figure 3: Increasing youth engagement in production: contract farming built on commitment-based forward contract arrangements with oilseeds buyers/processors of oilseeds.



Source: Authors' elaborations

Figure 4: Increasing youth engagement in storage and aggregation markets



Source: Authors' elaborations

1. Introduction

The DFID-funded programme NU-TEC MD (Transforming the Economy through Climate-Smart Agri-Business Market Development) contracted KIT to undertake a study to better understand youth roles in agriculture. More specifically, the study provides analysis on youth dynamics and opportunities and suggests business models and strategies for greater youth engagement in NU-TEC MD selected markets: sunflower and soybean, and the interconnected markets of land preparation, storage and aggregation. The report also highlights other commodities, such as beans, horticulture, maize, and sesame, in which youth are actively engaging which offer incentives and market opportunities.

Efforts to accelerate agricultural growth and improve food security have often been separated conceptually from efforts to create jobs and opportunities for young people (Filmer & Fox, 2014). Limited attention is given to shaping young men and women's futures in the agricultural sector and few development projects and programmes successfully reach them, despite efforts by multilateral organisations (Hivos, 2014). This means that rural areas are deprived of potentially productive, dynamic and innovative community members and agripreneurs.

In this report, the findings of the fieldwork and related theoretical framework and methodology will be revealed. In addition, strategies and business models will be suggested in areas where youth have incentives to actively participate and where there is a business case for firms to pursue practices that are more inclusive for the youth.

Chapter 2 of the report provides the definition for youth, adopted for this study, as well as an illustration of the theoretical framework used to understand the dynamics and patterns of youth inclusion and exclusion in the selected NU-TEC MD markets. The framework analyses the dimension of 'agency, choice, and voice', which relate to the capabilities, skills, motivation, aspirations of youth, as well as their decision-making power with a focus on agriculture and related markets. The second dimension analysed is 'Market opportunities' and pertains to the different opportunities available to youth and thus the possibilities for participation or inclusion in the market. Chapter 3 illustrates the methodology; the stakeholders interviewed and the geographical scope of the study. A cluster of questions related to the theoretical framework is also presented.

Chapter 4 reviews the extent of youth engagement in agriculture in Northern Uganda, exploring whether it is an occupation of choice or of last resort, and identifying two main youth profiles: those still engaged in subsistence farming; and those who have embraced farming as a business. These profiles correspond to different levels of 'agency, choice and voice' and to different degrees of opportunities created by the market and the social environment as well as different incentives for the private sector to engage with them. These incentives and opportunities link back to the theoretical framework with the main objective being to allow youth to advance to the 'robust inclusion' quadrant (see Figure 1), by being motivated to take advantage of the high level of different opportunities in the market.

There is no one-size-fits all for the whole of Northern Uganda, but there are different realities on the ground. Therefore, chapter 5 identifies three clusters (Cluster 1: Lira and Oyam; Cluster 2: Gulu and Dokolo; Cluster 3: Kitgum, Nebbi and Arua) which are differentiated on the basis of the patterns in terms of youth engagement in market-driven activities in agriculture, the challenges young people face, and the incentives and opportunities for their greater involvement. The ability and potential of youth engagement depends on the overall performance of the cluster. Each cluster calls for different potential strategies for NU-TEC MD.

Chapter 6 highlights the current promising initiatives of private sector engagement with youth for each market segment (in the sunflower and soya market, seed, land preparation, storage and aggregation) and suggests possible strategies and business models which NU-TEC MD can support, tailored to the three clusters. The focus is on strategies and models which promote robust inclusion of youth and from which the private sector can benefit. As substantiated by the interviews, the private sector is willing to work with youth who have a finished product to offer. This chapter identifies a number of advantages youth bring in certain segments of the value chain that could make them a group of choice for the private sector. In particular, the chapter analyses ways to increase youth adoption of labour-saving technologies for land preparation and turn them into business. It also explores the incentives and business case for companies to successfully engage youth in the business of seed multiplication or input distribution and delivery agents. A strategy is also proposed to increase youth engagement in oil seed commercial production through demand-driven approaches to harness youth energy. Youth can also be engaged in storage and aggregation as buying agents or delivery agents in cases of input trading systems.

Chapter 7 suggests opportunities and promising business models for youth engagement in alternative commodities. Chapter 8 provides some concluding remarks.

2. Research questions and theoretical framework

2.1 Research questions

In the already challenging context in which agribusinesses and small farmers operate in Uganda, youth and women, in particular, face additional challenges. This has implications for food security and socio-economic development, as well as security issues. Therefore, NU-TEC MD targets vulnerable groups in particular (women, youth, persons with disabilities, and the very poor) to stimulate pro-poor growth while improving the position of vulnerable groups.

Adopting a Making Markets Work for the Poor (M4P) approach, NU-TEC MD has selected the following key areas: sunflower and soya markets, as well as the interconnected markets of seeds, land preparation, storage and aggregation as entry points to improve access in Northern Uganda to the agri-economy of beneficiaries. NU-TEC's approach is to pilot inclusive business models and, if successful, further scale them up. In order to promote the inclusion of these vulnerable groups, and ensure that they will benefit from increased investment into the Northern Uganda's Agro economy, NU-TEC MD commissioned this study to provide evidence on youth incentives, opportunities, and constraints to engage as active participants in the selected NU-TEC MD markets.

The key research questions are as follows:

"How can youth inclusion make the NU-TEC MD selected markets more efficient and profitable and impact youth and other NU market actors at scale, and what aspects should NU-TEC MD consider when selecting additional markets to provide for more youth participation?"

The report analyses therefore two dynamics: How youth can better engage in the NU-TEC selected markets and, how markets can benefit from the increased participation of youth.

The objective is to explore and identify:

- The extent to which youth are already engaged in agriculture, particularly in the four selected markets.
- Where youth focus their activities, and investment of labour and resources.
- Significant 'youth entry points' for private sector linkages and youth engagement in each target market.
- Skill development necessary to respond to the needs of agribusinesses serving the NU economy.
- Feasible partnerships to promote youth inclusion in the NU-TEC MD selected markets.
- The business case for selling youth as viable actors to the private sector

2.2 Definition of youth

Before explaining how the research questions have been addressed, it is crucial to provide a definition of youth adopted in the study.

Definitions of the age range of youth vary significantly. For example, according to the United Nations, youth encompasses those between 15 and 24, while the African Union defines youth as those between 15 and 35. In line with the NU-TEC MD approach, this report focuses on young people aged 18-30 years, adopting the national definition of youth in Uganda. However, based on the findings, the active age for youth in agriculture is between 15 and 35 years old.

In general, youth cannot be targeted as a homogenous group. The reality of youth is heterogeneous, deeply embedded in networks of families and social relations and characterised by age, norms, socio-economic status,

etc. The transition from child to youth to adult is non-linear and multi-dimensional (Pyburn *et al.*, 2015). For example: "A 16 year old married female has different needs and perspectives than a 30 old female university graduate."

Through semi-structured interviews (SSIs) and focus group discussions (FGDs), the research zooms in on youth roles, perceptions and relationships within the selected markets. Roles, perceptions and relationships are expected to differ significantly among youth, and, as mentioned earlier, they are not only affected by age but also variables such as skills, marital status, gender, access to land, education, household relations, etc.

At the same time, youth share some universal characteristics. They are energetic, purposeful, willing to take risks, ambitious, have a strong drive to achieve their dreams, and are quick learners and adopters. These are all characteristics and comparative advantages that can make them a group of choice for the private sector to engage with, as illustrated in the strategies (*see* Chapter 6).

NU-TEC MD's key target group is young farmers who are sufficiently far along the transformation continuum that they can respond to the processors' price signals and extension messages. Typically, these farmers will understand farming as a business but may not be practising anywhere near optimum productivity.

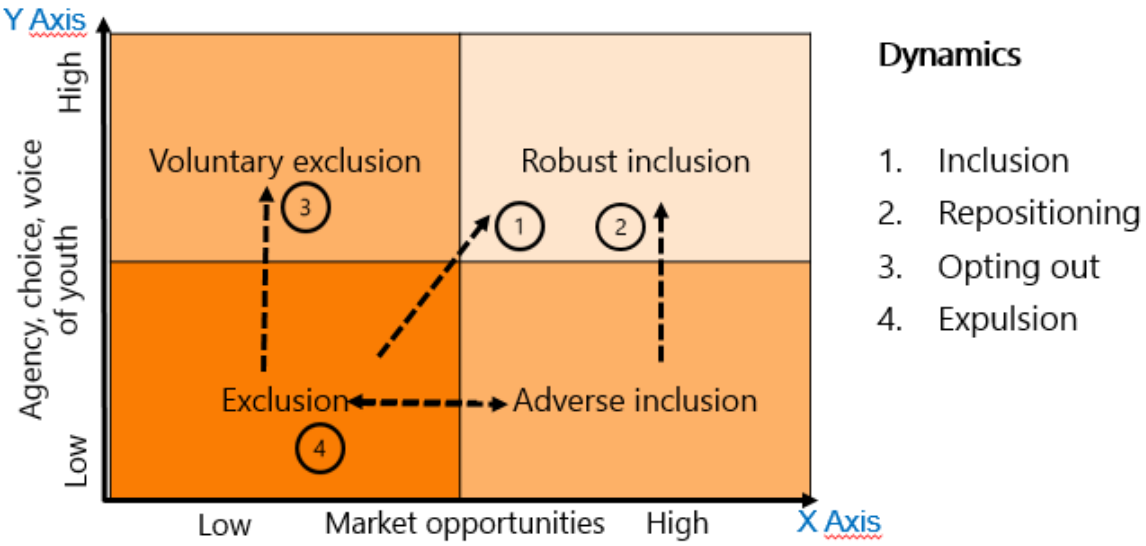
2.3 Theoretical framework

The report adopts a theoretical framework to identify and understand the dynamics and patterns of youth inclusion and exclusion in the selected NU-TEC MD markets. This framework is reflected in the methodological approach and guides the formulation of the strategies and business models. Indeed, it will provide guidance to NU-TEC MD in practice – for example, matching interventions to youths' different realities - and upscaling.

Two main dimensions are analysed:

1) **Agency, choice, and voice** is the first dimension and it relates to the young people themselves (Y axis). This dimension is explored to understand the capabilities, skills, motivation, aspirations of youth, as well as their decision-making power with a focus on agriculture and related markets. Skills, capacity, and motivation can vary from low to high.
2) **Market opportunities** is the second dimension (X axis). It pertains to the different opportunities available to youth and thus the possibilities for participation or inclusion in the market. It can vary from low participation/inclusion in the market to high participation/inclusion.

Figure 1: Dynamics between inclusion and exclusion in the NU-TEC MD markets



Source: Adapted from Pyburn *et al.* (2017, forthcoming)

An analysis of the framework (illustrated in Figure 1) tailored to the realities of NU youth and to the specificities of the NU-TEC MD selected markets allows improved identification for the conditions under which NU-TEC MD interventions can promote 'robust inclusion' of youth.

Quadrant 1: **Exclusion**. This situation occurs when the 'agency, choice and voice' of youth and 'market opportunities' are both low. Exclusion from the NU-TEC selected market can be of a different nature: competitive exclusion (e.g. farm assets, location); and discriminatory exclusion (e.g. gender). It captures the situation where youth are not interested or able to participate in the market, and there are no (or few) opportunities for participation.

Quadrant 2: **Adverse inclusion**. This situation occurs when there are high 'market opportunities' but low 'agency, choice and voice' for youth. This circumstance corresponds to loss of autonomy, lack of decision-making power, and increased vulnerability of youth. Youth may be participating, but this can be due to lack of other options. Work conditions and terms are key here. In the NU-TEC selected markets, this may correspond to a situation where youth can be easily hired by the private sector but under exploitative conditions (e.g. as indicated in the NU-TEC MD sunflower and soybean Market System Assessment (Envision, 2016), p.26 "One of the seed companies interviewed claimed to have a preference for working with the youth in undertaking seed multiplication because youth are more willing to do informal contracts than their elders.").

Quadrant 3: **Voluntary exclusion or 'opting out'**: This occurs where the 'agency, choice, voice' of young people is high, but their choice is not to participate or to opt out of market participation. These are cases in which inclusion is not necessarily viable or desirable for youth. It depends also on agency and power relations, terms of engagement, context (e.g. geography) and institutional framework. NU-TEC MD might, for instance, provide market linkages between a cooperative and a buyer or processor to ensure a market for soybean and sunflower. However, when the profitability is not guaranteed, when the cooperative is not well functioning in supporting its members, the youth might opt out and side sell to middlemen rather than doing collective marketing via the cooperative. Understanding the reasons for voluntary exclusion or 'opting out' may shed light on conditions that would make participation in the NU-TEC market more interesting for youth.

Quadrant 4: **Robust inclusion** is achieved when the 'agency, choice and voice' of youth and their 'market opportunities' are both high. This situation involves high motivation and decision-making power by youth together with high levels of interesting opportunities in the market. This is where young people participate with motivation as active players in the market and the private sector has a strong incentive in engaging with them. As is illustrated in detail in the findings, the proposed strategies suggest that targeting youth, which are part of producer groups and cooperatives, is more effective in promoting their robust inclusion. Operating within the context of the existing institutional and social structures provides youth with credibility and is more likely to attract the private sector.

The report also uses a gender lens to evaluate opportunities, incentives and constraints for youth engagement. In adopting the framework, the report considers, in addition to the dimensions of 'agency, choice, and voice' and 'market opportunities', the structural constraints that affect young women specifically (e.g gender norms, laws, rules in the community) which may prevent their 'robust inclusion' in the NU-TEC MD selected markets.

Indeed, women face severe constraints with regards to time and access to resources that prohibit improved participation in agricultural markets. Women are overloaded with household and farming work: They carry workloads that "considerably exceed those of men" (Alinyo & Leahy, 2012). Women also bear the main "responsibility for domestic duties and food production, while men spend time on productive activities or at leisure." The severe time constraints that women face, in addition to difficulties in mobility, affect their general access to resources, as well as to agricultural information, good agricultural practices and market conditions. This, in turn, limits women's ability to make informed decisions on production.

NU-TEC MD support will be beneficial in advancing along both axes of the framework; in reinforcing youth 'agency, choice and voice', as well as in providing more 'market opportunities'. The report allows the identification of smart opportunities and entry points for youth and targeted and tailored recommendations for support initiatives. Ideally, NU-TEC interventions will contribute to a shift from the 'exclusion' to the 'robust inclusion' quadrants of the framework. Indeed, as per the framework, the report advises NU-TEC MD to promote business practices that benefit both youth and the private sector, in particular in reducing the risk of falling into the 'adverse inclusion' quadrant (e.g. under employment, exploitation, health and safety, work burden).

3. Methodology

3.1 Stakeholders interviewed and geographical scope

The main focus of the primary research was qualitative and allowed the identification of the opportunities and entry points for greater inclusion of youth. The field research was conducted in the following sub-regions (Acholi, Lango and West-Nile). In particular, the geographical scope included: Lira, Dokolo, Oyam, Gulu, Kitgum, Nwoya, Nebbi, Arua and Koboko.

In total, a series of SSIs were held with a selection of relevant stakeholders, namely: local government representatives (6), development partners (11), processors (9), buyers/warehouses (5), business and technical vocational training institutes (BTVET) (1), cooperatives with significant youth membership, and youth and women producer groups involved in storage and aggregations (8), seed production (7), and land opening/production (34). In particular, 18 FGDs were held with young farmer groups (11) and women's groups (7). In total, 191 youth (95 male, and 96 female), with an average age of 26 years, were interviewed and a total of 161 women were interviewed. Annex 1 illustrates the detailed clustering of identified respondents.

Additional information was drawn from project reports and/or other relevant secondary sources.

The findings and strategies were validated at a workshop, which took place in Lira on 27th March, 2017. The list of the participants is provided in Annex 2.

Picture 1. Youth explaining in which phase of agricultural production they are involved in, during the FGDs

Photo credits: Ingrid Flink

3.2 Clusters of questions related to the theoretical framework

The present section sketches some questions related to the theoretical framework, which aim to explore the extent of youth participation, challenges and motivation in engaging in the selected markets, as well as incentives for the private sector to include youth. The questions are organised in three clusters: those that relate to 'agency, choice and voice', those related to 'market opportunities' and those related to the dynamics of inclusion: "Approaches which allow a shift from exclusion towards robust inclusion."

Questions related to: 'Agency, choice and voice':

- What are youth's perceptions and potential roles in the NU-TEC MD selected markets? (e.g. satisfaction, adequate earnings, empowerment, possibilities for 'upgrading' of jobs and career development, etc.).
- How are skills acquired? What are the skill gaps?
- What is happening in terms of youth engagement in apprenticeships, engagement through sector representatives and unions, and mentorship by agribusiness players, etc.?
- What is the propensity and willingness of the youth to adapt new ideas and concepts in order to better engage with the private sector?
- How strong is the voice of youth in agricultural markets (i.e. in decision-making or bargaining)?

Questions related to: 'Market opportunities'

- What challenges do youth face to engage in NU-TEC selected markets?
- What opportunities exist for linking young people with the private sector?
-
- What business opportunities allow youth to incorporate climate-smart agriculture practices?

Questions related to the 'HOW': Which approaches allow a shift from exclusion towards robust inclusion of Youth in the selected markets?

- Which youth inclusive business models work? Where do youth have the potential to scale up their participation?
- How to increase youth adoption of labour-saving technologies for land preparation and turn them into business?
- How to promote access to financial services, such as leasing and asset financing?
- How to develop a business case for private sector investment in tractor services for young women? (and provide the necessary tractor operation skills, including ploughing skills?)
- How can youth be involved in the commercial production of seeds?
- What can be done in terms of capacity building to increase youth involvement in production?
- What should be done to reinforce cooperatives in order for them to become a one-stop shop (providing agro-inputs, primary mechanisation and marketing services)?
- How can the voice of youth in agriculture markets be strengthened and what is the likely impact?
- How to promote young women in leadership roles to allow greater access to resources, decision-making opportunities, and technical skills?
- How can young women scale up their involvement in the selected markets?
- Which sectors have the best potential impact for youth and can yield results for a demonstration effect to allow crowding in?

Question related to the WHY: W**hy or why not should there be youth-specific interventions?**

- Why the business models illustrated can attract and benefit youth?
- Which is youth comparative advantage in engaging with the private sector?
- What incentives make the business case for firms to pursue practices that are more inclusive of and empowering for the youth?

These questions are articulated and expanded in the guidelines for SSIs to youth, private sector, government representatives, and development partners. They were also used to guide FGDs with youth producer groups. Both the SSIs and FGDs allowed the researchers to explore the two dimensions of 'agency, choice, and voice' and 'market opportunities' to better understand perceived and potential roles of youth in NU-TEC MD selected markets, motivation, bargaining power, professionalism, incentives, constraints, institutional and cultural barriers. Furthermore, the SSIs aimed to explore the incentives for the private sector to engage youth and the role of other stakeholders in facilitating this process, and how support mechanisms can better address this potential demand for youth (self) employment.

Questions in the SSIs and FGDs were open-ended and tailored to the particular stakeholders and market.

In particular:

1. SSIs with youth and FGDs were carried out in the three sub-regions (through youth producer groups), disaggregated as much as possible by sex, level of education, access to assets, etc. The guidelines used for the SSIs and the FGDs are illustrated in Annex 1-6 of the inception report. In line with the theoretical framework variables, the following dimensions were explored:
    - Realities and perceptions of youth in the four selected markets;
    - Skill gaps and skills required;
    - Access to finance;
    - Benefits of participating in youth producer groups/cooperatives;
    - Aspirations of youth;
    - Challenges and opportunities to foster youth involvement in the sunflower/soybean markets;
    - Linkages with the private sector.
2. SSIs with private sector firms along the value chain focused on:
    - Area of business of the company;
    - Perception of reality of youth;
    - Current youth engagement in the company;
    - Current female youth engagement;
    - How to foster youth integration in the selected markets;
    - Own role as private sector and linkages with other actors in promoting youth inclusive business models.
3. SSIs with local government representatives and development partners explored the following dimensions:
    - Perception of the reality of youth;
    - Activities carried out to support youth (training, support in transition to (self-) employment, etc.);
    - Female youth engagement;
    - Linkages with other actors (in particular private sector) in promoting youth engagement in the selected markets.

More details on the methodology can be found in the inception report.

4. Existing patterns and emerging trends of youth engagement in agriculture in Northern Uganda:

4.1 Contextual issues

Uganda has the youngest population in the world with 78 percent below the age of thirty (Economic Policy Centre, 2013). Young people (18-30 years) represent approximately 21 percent of the population (close to 7 million). Uganda's population structure clearly demonstrates the demographic pressures the country is facing today with such a large youth population and an even much larger child population moving to enlarge the youth population in the future. This clearly highlights the need to create more employment and income-generating opportunities, specifically for young people (Konrad-Adenauer-Stiftung, 2015).

The main threats to economic transformation are the high levels of youth unemployment, as well as underemployment. Young people (18-30 years) comprise about 64 percent of the unemployed persons in Uganda (UBOS, 2013). Overall, urban youth are more likely to be unemployed (12 percent) than rural youth (3 percent). In addition, female youth are twice as likely to be unemployed compared to male youth. Yet rural youth are also highly underemployed in vulnerable jobs that are unable to offer them decent incomes. Interestingly, Ahaibwe *et al.*, 2013, notes that unemployment increases with level of education attained: unemployment is lower among persons with no education and primary education, and higher among those with secondary education and above. Informal employment accounts for the highest proportion of employed youths outside agriculture. In 2011, about 95 percent of youth in non-farm enterprises were in informal employment (UBOS, 2013).

In Northern Uganda, in particular, youth unemployment and underemployment is escalating due to poor quality of skills and the lack of job opportunities and this constitutes one of the most important drivers of conflict in the region (DFID, 2014). In the West Nile region, with 2.7 million people (50 percent are youth), many suffered from 27 years of prolonged conflict and insecurity, which led to significant population displacement, socio-economic losses, a breakdown in social infrastructure, severely weakened governance structures and service delivery, and community and household asset depletion, among other others (APMEI, 2016).

In a context where over 80 percent of the population lives on subsistence farming, and relies on rainfed agriculture in rural areas, the agricultural sector can be a vehicle for job creation both downstream, through the supply chain services, and upstream, through the off-take market channels which include industrial, tourism, hospitality and household consumer markets. Commercialising agriculture remains the key to unlocking the potential of the youth and creating a multiplier effect needed for growth in the manufacturing industry (Ariko Okelai, 2014).

The NU-TEC MD gender and social inclusion field scoping mission in October 2015 found that at least 36 percent[1] of youth are engaged in agriculture in the sub-regions of Acholi, Lango and West Nile. In addition, a report by APMEI (2016) on "Exploring the High Youth Uptake of Agriculture Employment in West Nile region" states that many West Nile region rural youth have agriculture as their primary source of employment. Other alternative forms of employment like petty trade and *boda boda* motorbikes are ventured into because of a number of disincentives that curtail the full realisation of the 'returns to labour' from agriculture. Table 1 highlights some of the main activities in which rural youth are involved in, the majority being engaged in crop production.

[1] Research findings (October-November 2015) by African Youth Initiative Network (AYNET)

Table 1: Main activities in which agricultural households are involved in (including youth)

Main activity	18-30	31-59	60+	All	Estimated population
Crop production	74.5	79.3	80.0	77.5	6,014,998
Livestock	1.8	1.9	2.4	1.9	147,730
Fisheries	0.5	0.5	0.2	0.5	36,893
Forestry	0.2	0.2	0.2	0.2	15,151
Horticulture	0.6	0.2	0.4	0.4	31,537
Trader	2.9	4.0	1.6	3.3	254,742
Artisan	0.5	0.6	0.5	0.6	44,248
Agricultural paid job	0.8	0.7	0.4	0.7	56,069
Non-agricultural paid job	6.4	6.6	2.7	6.1	470,259
No activity-looking	2.1	0.5	0.4	1.1	85,478
No activity-not looking	1.8	0.9	5.8	1.8	139,604
Household work	7.8	4.7	5.4	6.0	464,252
Total	100	100	100	100	7,760,961

Source: Calculations by Ahaibwe *et al.* (2013) based on Uganda National Household Survey 2005/6 and Uganda National Panel Survey 2009/10 individual data.

4.2 Emerging trends, driving forces and constraining factors

The research findings reveal a series of trends in youth engagement in agriculture and related driving forces and constraining factors. In general, as illustrated in Table 2 and confirmed by our fieldwork, youth attitudes towards agriculture is improving. A number of youth have decided that agriculture is the means through which they will realise their economic advancement. This is happening thanks to the emergence of role models. Peer influence has proven to be key in mobilising youth to engage in commercial farming. In addition, the choice of an enterprise depends on the level of awareness of opportunities. In Lira, for instance, where most sunflower and soybean processors are located, youth have a strong focus on these crops. In terms of constraining factors, although youth are, in general, willing to take risks, the length of the cash gestation period can discourage them to engage, as well as the current climate variability impacts. Another major trend that is emerging is that educated urban youth, traders and labourers are turning to farming as a business. This choice is also motivated by unemployment and underemployment in other sectors. In addition, youth enrolment in producer organisations like cooperatives and farming groups is steadily increasing, as they see the benefits in terms of market and resource access and the social capital as a safety net. Finally, parents also have an improved perception of agriculture and are encouraging youth to return from school and farm or run the family agribusiness enterprise. In terms of constraining factors, although youth are in general willing to take risks, the length of the cash gestation period can discourage them to engage, as well as the current climate variability impacts. Other constraining factors include: limited access to knowledge, skills, and capital.

Table 2: Youth involvement in agriculture: trends, driving forces and constraining factors

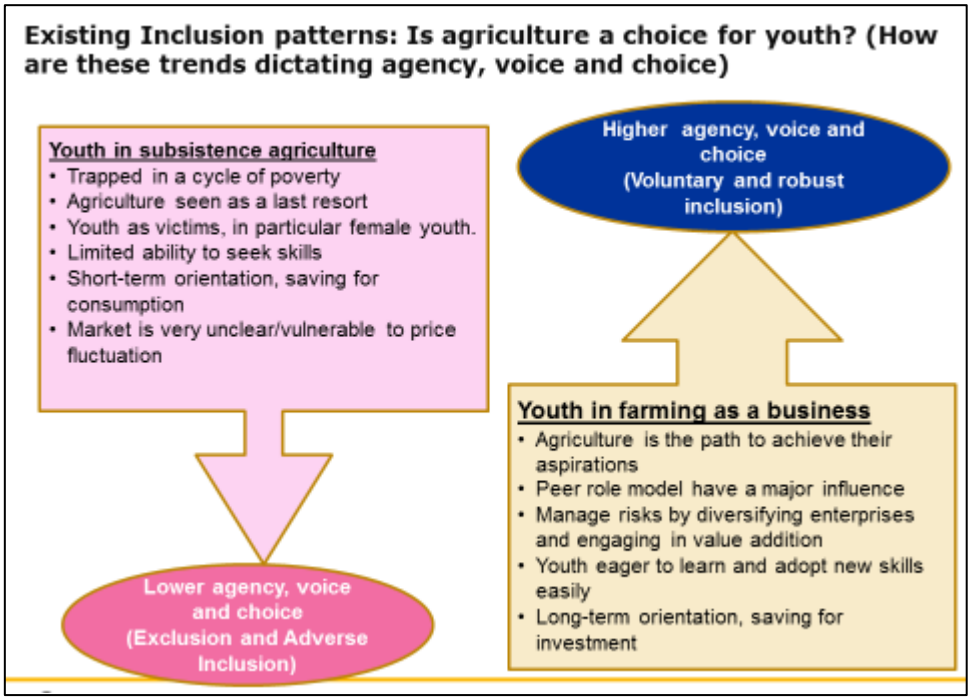
Trends	Driving forces	Constraining factors
Youth attitudes towards agriculture as a wealth creation opportunity are changing for the better	• Role models • Awareness of opportunities • Ready market • Parental inspiration • Early marriages and school drop out rates	• Cash gestation periods • Climatic risks
More youth are taking up farming as a vocation	• Parental support • Market certainty	• Skills limitations • Climate risks
Elite youth (urban traders/labourers and graduate youth) are turning into farming as a business	• Increased exposure • Savings and earnings accumulation • Personal quest for success • Unemployment/underemployment	• Fear of social rejection • Failed dreams
Youth enrolment in producer organisations like cooperatives and farming groups is steadily increasing	• Market access • Resource access • Social capital as a safety net	• Limited effort to include youth • Poor credibility
The attitude of parents towards youth in agriculture is changing. Parents are encouraging youth to return from school to farm or run the family agribusiness enterprise.	• Need for income security • High unemployment rates • Fear of bad peer influences • Role models	• Inability to provide seed capital

Source: Authors' elaborations

4.3 Exclusion and inclusion patterns of youth engagement in agriculture: youth engaged in subsistence farming and youth engaged in farming as a business

The way in which youth are able to respond to the emerging trends, driving forces and constraining factors dictates their path towards inclusion or exclusion. From the youth groups interviewed in the field, two clear patterns emerged: Youth producing with subsistence mind-set and practices; and youth who engage in farming as a business. These two main profiles correspond to different levels of 'agency, voice, and choice' as well as different degrees of' market opportunities' and incentives of the private sector to engage with them. Most of the youth who are in a situation of exclusion, or adverse inclusion, are producing with a subsistence mind-set.

Figure 2: Existing inclusion patterns: youth in subsistence agriculture and youth in farming as a business



Source: Authors' elaborations

All the youth producer groups interviewed favour commercialised enterprises but a large proportion of them still produce with a subsistence mind-set and practices. An explanation for this is due to the fact that their parents are also involved in subsistence agriculture and they still control the farming activities. Few youth make decisions of the farm work and crops to grow (Butler and Kebba, 2014). Subsistence farming is generally less profitable, and has few role models, who youth can look up to and replicate their success stories. While many youth aspire to non-farm businesses (48%) and salaried jobs (31%), many also end up in subsistence farming and casual wage employment (Banks and Sulaiman, 2009: 62).

A margin analysis conducted with two youth producer groups during this study revealed that they operate at a loss given that they internalise some of the costs incurred, in particular, the activities of winnowing and threshing, which are commonly carried out by young women and not compensated. In addition, there is no investment in agriculture; savings, in the form of VSLA (Village Saving and Loan Associations), which are mainly invested in consumption (buying food etc) and in the payment of school fees. Their focus is on food sovereignty. Their knowledge and application of good agricultural practices (GAP) and climate-smart agriculture (CSA) is almost absent, they also lack planning for timely planting. Some of the youth we encountered recognise that they would need more skills in modern agronomic practices. The youth groups which belong to the subsistence profile are also not well connected to a cooperative, which could support production and marketing; they operate in isolation with poor visibility of market patterns. Indeed, these youth lament price instability as an important challenge. These youth also bemoan lack of money as a constraint to agribusiness success. Some groups have not received any form of business-related training and are very low in ambition towards the agricultural sector. When they are asked about their aspirations, they see themselves moving out from agriculture and engaging in more profitable activities, which provide quick returns, such as *boda boda* (motorcycle taxis), petty trade or beauty salons. Indeed the *boda boda* transport segment is a leading employer of youth and guarantees returns of about UGX 300,000 per month. Earnings from *boda boda* are generally used to pay for living expenses in the

urban or peri-urban setting. There is no tendency by these youth to save or invest the money in the long-run which leaves them in a cycle of poverty and vulnerability to criminal influence and exploitation. Overall, this youth profile lack vision and awareness of opportunities for entrepreneurship within the agricultural sector and, therefore, do not unlock their employment or economic growth-generating potential. This profile corresponds to a low level of 'agency, choice and voice'.

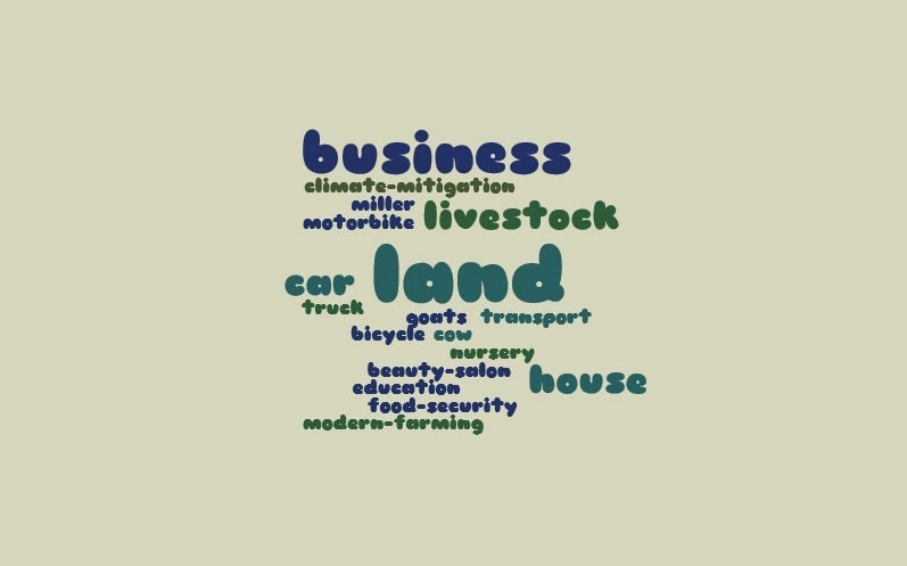
These findings are also confirmed by the literature. Based on reports on a situation analysis of youth in agribusiness in Uganda by Oluwaseum (2014), Action Alert (2013), and Agriprofocus (2014), the major reasons why youth in Uganda shun agri-business are as follows:

- Ignorance and poor attitude about agribusiness by the youth;
- Agriculture is a high risk venture considering the current climate variability impacts;
- Complete lack of - or limited access to resources (such as credit facilities, knowledge and skills) - for investments in agribusiness;
- Limited access by the youth to supportive mechanisms (such as training/mentoring and information about markets) which advance agricultural productivity;
- Weak investment in agriculture, particularly value addition through agro-processing in which many youth would get employed;
- Limited availability of individuals who are successfully running agricultural enterprises and business and who are willing to mentor youth to follow in their footsteps;
- The long-term nature for returns on investment from agricultural enterprises and yet most youth prefer quick returns. Thus, most youth take up other careers associated with quick returns such as transport (operating taxis and *boda boda* riding).

Conversely, for some other young farmers, agriculture is the lead contributor to achieve their aspirations (farming as a business profile). Farming is their primary occupation. These youth are attracted to agriculture because it is perceived as a pathway for capital accumulation. They have a long-term orientation and save for investment (e.g. in the expansion of acreage cultivated). Overall, there is also a greater knowledge of production costing and time management, although greater skills are needed in terms of record-keeping and separation of business expenditure from private expenditure. These youth are also particularly inspired by their successful peers and are eager to learn, which makes skills development easier, and technology adoption faster and most of all, makes them 'agents of change', which are needed for the transformation of community agriculture. In general, they have a better adoption of GAPs and tend to normalise risk by diversifying their enterprises. Indeed, beyond the core crops of sunflower and soybean, many youth engage in other crops such as beans, maize, sesame and sorghum, or in poultry, piggery and horticulture, which can bring quick returns. Parents tend to encourage these youths by providing land to cultivate every other year, depending on their results. This profile corresponds to a higher level of 'agency, choice and voice'. If opportunities to engage with the private sector emerge, these youth are well placed to fall into the robust inclusion quadrant.

The youth groups were also invited to share their dreams and aspirations for where they wanted to be in three to five years' time. Acquiring assets, such as land, transportation and livestock, was a key issue brought up by many youth group members. Furthermore, setting up a business (not necessarily in agriculture but not exclusive to non-agricultural businesses either) was also a key aspiration for youth. Another dream, which was mentioned more often, was buying a permanent house to live in with their family. Other dreams were mitigating climate change, acquiring a miller, food security, improving their education level and even food security.

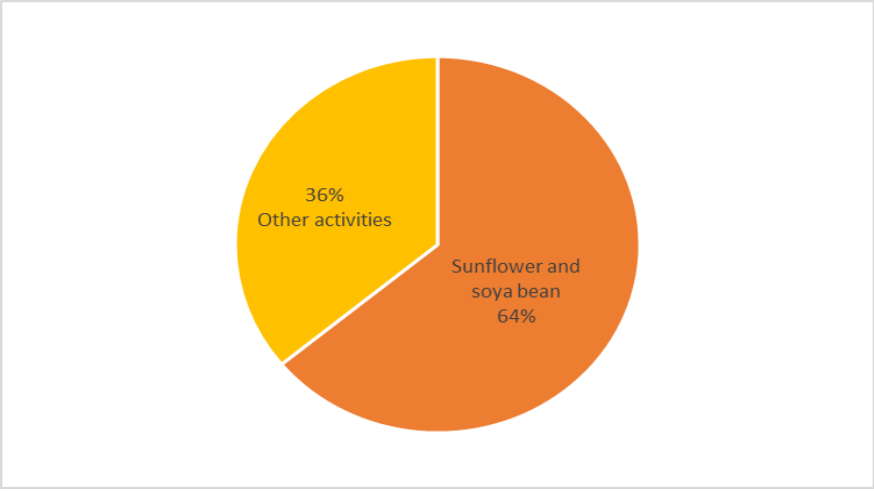
Figure 3: Word cloud based on youth's responses to the question: Where would you like to see yourself in the next 3-5 years? What is your dream?



Source: Authors' elaborations

Youth group members were also consulted with the question: How will sunflower and soybean contribute to achieving your dreams? In Figure 4, one can clearly see that over half of the youth members (64 percent) interviewed in Lira, Oyam and Dokolo stated that sunflower and soybean production will be the main contributor to achieving their dreams. The other activities score with a 36 percent, including activities such as: petty businesses (produce trade, retail shops, grinding mill, beauty salon, sale of cooked food), other crops (sesame, groundnuts, white sorghum, rice, chilli, okra, onions, beans, maize), tree planting (eucalyptus, pines), livestock (goats, piggery and poultry), sale of labour, *boda boda*, VSLA savings.

Figure 4: Youth responses to the question: How will sunflower and soybean contribute to achieving your dreams?



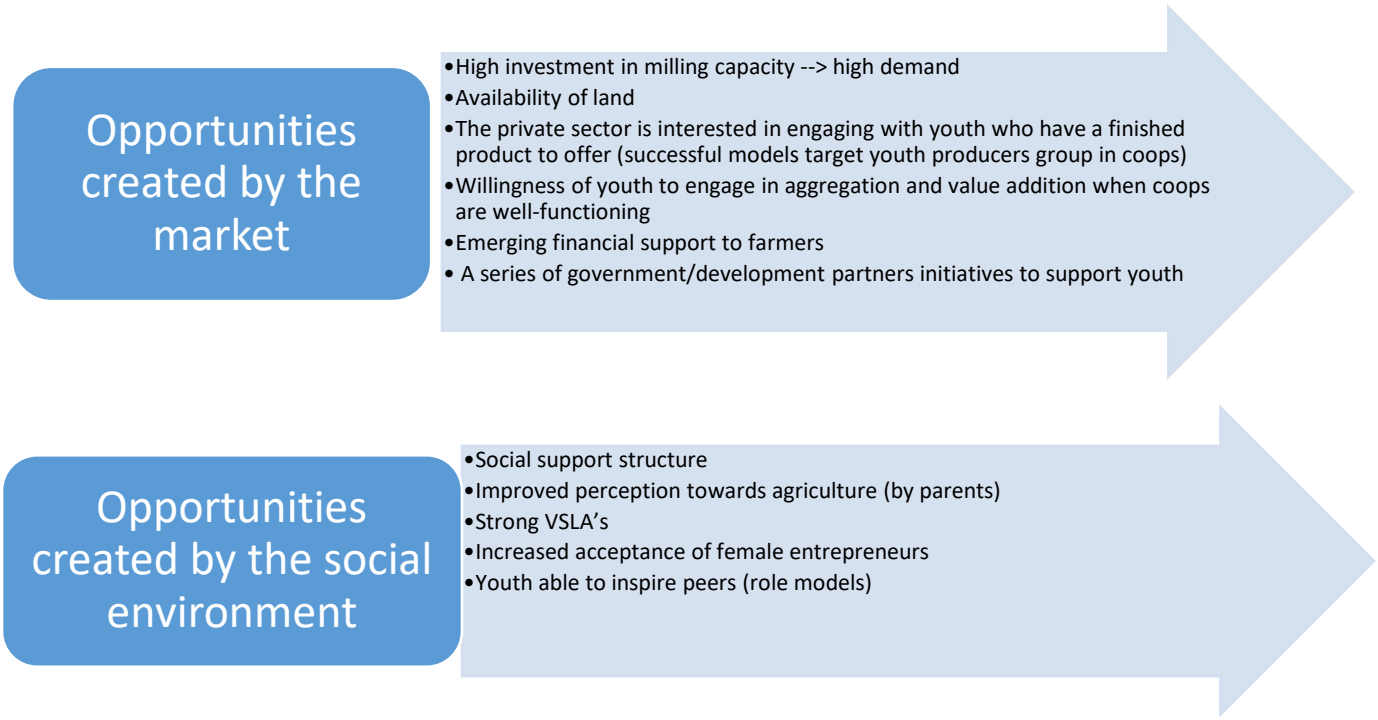
Source: Authors' calculations

4.4 How to move towards robust inclusion of youth in the oilseed sector? Incentives and opportunities created by the market and social environment

This section explores the incentives for youth to engage in the oil seed sector, as well as the opportunities created by the market (e.g. incentives by the private sector to engage with them) and the social environment (Figure 5). These incentives and opportunities link back to the inclusion framework illustrated earlier, with the main objective being to allow youth to advance to the 'robust inclusion' quadrant, by taking advantage of the different market opportunities.

These findings originate from interviews with private sector players, cooperatives, youth, youth groups engaged in the production of different enterprises, along with the core ones (soybean and sunflower).

Figure 5: Opportunities created by the market and by the social environment



Source: Authors' elaborations

There are a series of opportunities and incentives which are created by the market. Overall, in particular **in the Lango sub region, there have been substantial investment in milling capacity**. According to the NU-TEC MD Sunflower and Soybean Market System Assessment (Envision, 2016), the total installed expeller capacity amongst 40 small- to medium-sized millers is approximately 200 MT/day. In total, assessment estimates the processing capacity of Mukwano, Mount Meru and MMP/Nile Agro to be 950 MT/day. Overall, the volume of sunflower and soybean produced in Northern Uganda is well below the amounts needed to utilise the installed capacity at the three major modern processing plants.

The demand for vegetable oil for the domestic and the export market is high. Domestic demand is expected to grow, reflecting the population growth rate, growth in fast foods and convenience foods market, and accelerating urbanisation. In addition, the fall in the value of the Uganda shilling makes Malaysian palm oil more expensive so the opportunities to promote import substitution should continue for at least the short to medium term. The East African Community countries have a deficit in oilseeds and oilseed-derived products and Ugandan

oilseeds processors and other traders are exporting domestically produced soybean grain and soybean and sunflower feedstuffs (Envision, 2016).

Large availability of land also offers youth the opportunity to engage in production. According to interviews, the average land holding in Acholi sub-region is 100 acres, while in Lango sub-region it is 20 to 30 acres. In the West Nile sub-region there is a lower average land holding but it is relatively simple for youth to rent land. In general, the literature shows that about 70 percent of Uganda's arable land is under-utilised by Ugandan smallholder farmers, most of whom practice subsistence agriculture (Ariko, 2014). The under-utilisation of land in Northern Uganda is exacerbated by the fact that many tenants own gigantic plots of land and yet with little capacity to put them under optimum production.

The private sector is willing to engage with youth with a commercial orientation and belonging to a youth group and cooperative. The fieldwork investigated the interest and incentives of the private sector (e.g. big processors, buyers, micro-millers) to engage with youth and explored where they see youth having a comparative advantage in creating business opportunities for the private sector. It emerged that the private sector in Uganda *per se* has no interest in youth specifically, and can only be incentivised to work with youth who have something of market value to offer and not youth who have potential. Many respondents stressed that "*private sector wants finished products and not products to finish*."… "*They have no motivation to buy into a youth who have nothing on offer - small volume of product, poor quality products, etc."* As illustrated in Chapter 6, successful business models which promote youth inclusion in production are those that target them as an integral component of existing producer group structures. Operating within the current structures provides youth with credibility and is more likely to attract the private sector. The examples of the seed company, Equator Seeds Limited (ESL), and Ngetta Tropical Holdings (TH) illustrated in Chapter 6 show the business case of the private sector and the benefits of engaging with youth (for seed multiplication and production), which are part of an existing institutional structure (youth groups and cooperatives) once incentivised. ESL also engages successfully with young *boda boda* drivers, training them as extension agents as they find these youth motivated and easy to train. Lira Resort, a buyer of numerous commodities (sorghum, sesame, maize, beans, pigeon peas, sunflower seeds, and soybean), was also one of the key informants, and engages youth successfully as commission agents. Around 60 percent of the commission agents are youth. Youth are interested in engaging in Lira Resort because they see the opportunity for quick returns. They are perceived to be willing to learn, reliable and easy to track. The strength of this model lies in the strong relationship with the youth involved, who are trained and mentored and a strong link with the communities to which the youth belong.

There is an emerging willingness of financial institutions to support agriculture. Some financial institutions, for instance, Post Bank, Development Finance Company of Uganda Bank Limited (DFCU), Centenary Bank, Opportunity Bank and Microfinance Support Center have designed financial programmes tailored to farmers. However, these institutions rely on collateral-based lending, which naturally excludes youth because most of them lack access to acceptable collateral assets. In addition, banks demand business experience and focus on existing business not withstanding that most youth ventures are start-up businesses (Ariko Okelai, 2014). The Youth Venture Fund, launched by the government in 2014, was supposed to facilitate start-up venture channelling funds through commercial banks. However, only 10 percent of the funds went to start-ups in agriculture and predominantly male youth were receiving the funds. These findings are also supported by Ahaibwe *et al.*, 2013: "*The Youth Venture Fund set up by the government has largely remained urban and targeted at microenterprises other than agriculture*." Nonetheless, the fieldwork found that some of these institutions are circumventing these rigid requirements by lending to youth (and women) through cooperative societies.

There have been a series of initiatives by the government and development partners to support youth which could act as incentives for them to engage in agriculture. One example is the Government of Uganda's Youth Livelihood Fund. However, although this programme demonstrated the government's willingness and effort to harness the potential in youth, it brought very limited results. According to the assessment by the various district government officials interviewed, the repayment rates have been limited mainly due to the poor design and communication of the programme. The soft loan was released only to youth groups, which in some cases were created *ad hoc* to access the soft loan and subsequently dissolved; youth did not receive sufficient training (only one day) or proper mentoring and monitoring on the use of the fund. There have also been other initiatives that have promoted youth access entrepreneurial training.

Youth are willing to engage in production, aggregation and value addition when the cooperatives are well-functioning. Indeed if the cooperative can ensure support and centralise a series of services from access to inputs, mechanisation, transport and aggregation, youth feel supported. Some youth producer groups interviewed stressed that being in a cooperative has enabled them to access opportunities, such as building networks with other organisations that then provide them with training, or seeds or information on farming. They also talked about the skills and knowledge they have acquired, including information on new farming methods, in particular which crop to grow and when.

There were two youth groups who mentioned that they were involved in value addition, namely sunflower oil, soy flour, soy powder and fried soya. This was also strongly encouraged by the well-functioning mother cooperative and one youth group was also able to access cleaning facilities and millers which belonged to the cooperative (i.e. ACWEC OMIO cooperative).

A series of drivers and opportunities originate also from the social environment. According to the findings, some cooperatives provide a strong social support structure for youth, with cooperative leaders encouraging youth to have responsible behaviours and make good use of the land they cultivate, investing in high return enterprises. Through interviews with government representatives and cooperatives, youth are encouraged to group together, either as a youth group or being a cooperative member. Parents are willing to see their children remaining in agriculture and transmit a positive perception about farming to them.

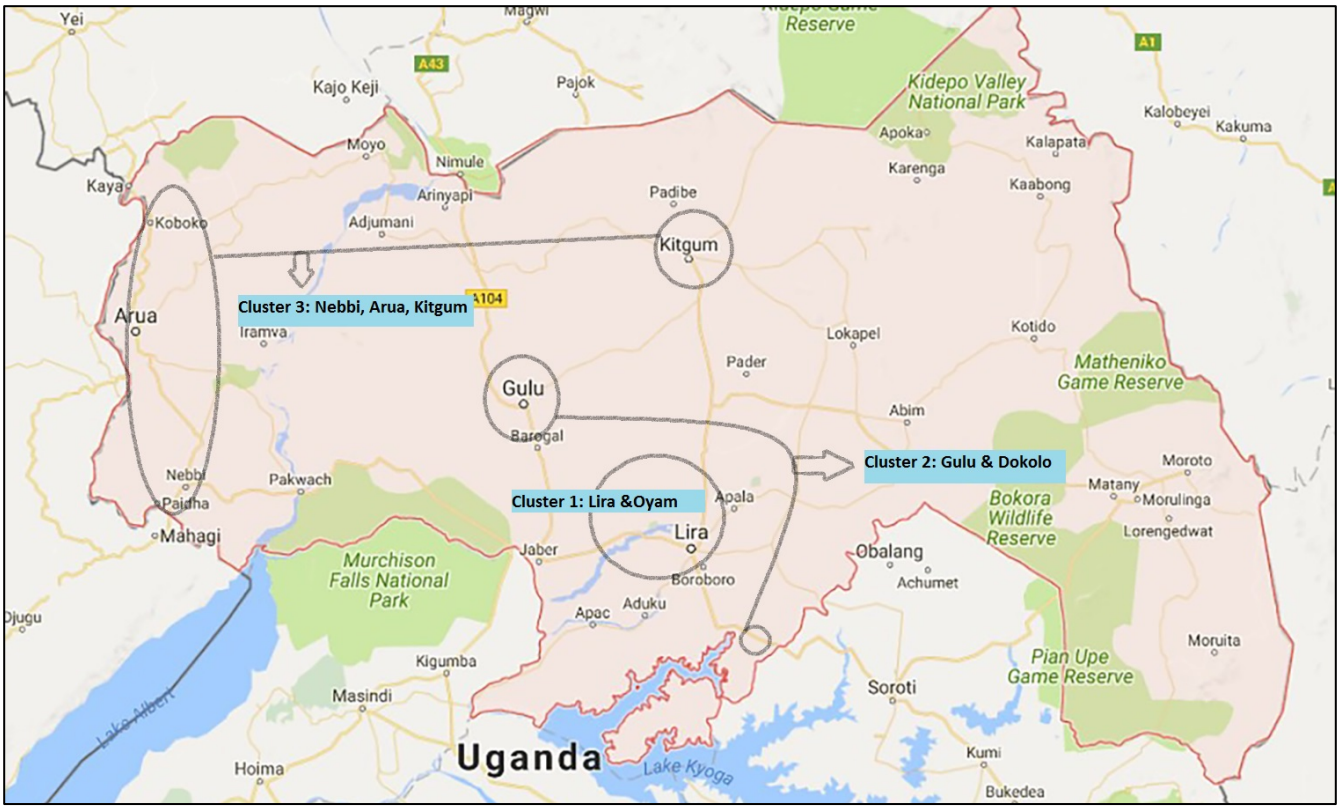
The VSLA also play an important role in the community. VSLAs are playing an important role in enhancing rural household welfare, manifested by: supporting household asset accumulation and education expenditure for rural household's children; reducing the school dropout rates amongst rural households; and supporting the development and diversification of income generation activities by households. Although for the moment savings and loans are mainly used to pay for school fees and for consumption, VSLA have the potential to become an important vehicle for investing in agriculture production or in other related business activities. Other activities, like agricultural extension services, can be integrated into VSLA activities, and formal financial sector actors can design policies which include the creation of linkages with the VSLAs (Odokonyero, 2012). There is therefore a huge opportunity to develop the financial literacy of group members to increase the use of VSLA's for investment.

Youth are able to inspire peers. The cross generation barrier is a major factor in youth learning and adoption of technologies. Youth training and communicating to youth has been found to be more inspiring and motivating to the youth. This emerged clearly from the evaluation of the 'Community Based Facilitator on wheels' model illustrated in section 6.2.2. Peer influence was key to advancing knowledge and mobilising youth to engage in commercial seed production. This has contrasted with the efforts of several actors that have consistently tried to rally youth into farming with little success (Ariko Okelai, 2016).

5. Youth in sunflower and soybean markets: a three clusters characterisation

It is important to mention that there is no one-size-fits all for the whole of Northern Uganda but there are different realities on the ground. In particular, based on the findings, three clusters have been identified. They do not reflect the geographic location, but are differentiated on the basis of the patterns in terms of youth engagement in market-driven activities in agriculture, the challenges young people face, and the incentives/opportunities for their greater involvement. The ability and potential of youth engagement depends on overall cluster performance. Each cluster calls for different potential entry points and strategies for NU-TEC MD. Figure 6 illustrates the geographical location of the three clusters.

Figure 6: A three cluster characterisation



Source: Authors' elaborations

5.1 Cluster 1: Lira and Oyam

As highlighted in Figure 7, the main pattern that characterises this cluster is the strong processors (Mukwano, Mt. Meru, Nile Agro, Ngetta TH) and buyers' engagement and the proximity of producers to large processors. The value chain is more vertically integrated: processors and millers work directly with farmers, although middlemen still play an important role. As highlighted earlier, Lira resort is a buyer based in Lira, which already successfully engages youth as commission agents. Youth producer groups focus on soybean and sunflower and there is little interest of youth to diversify production in other commodities.

There is also more horizontal integration, as farmers are more organised in groups and cooperatives. In general, cooperatives in this cluster are more developed relative to the other two clusters. In turn, thanks to the support and influence of the cooperative, there is more orientation of youth groups towards bulking and more

participation in collective marketing. Youth producer groups have a greater knowledge of GAPs but still limited knowledge on CSA practices. Youth producers groups in this cluster greatly utilise saving schemes as well as VSLAs and SACCOs.

The cluster has both institutional and cluster-wide challenges. Although cooperatives in Cluster 1 are relatively better structured and youth producer groups feel the benefits of being members (see Box 1), cooperatives still suffer from weak capacities to engage with the buyer, provide pre-financing for farmers, and mobilise bulking. In addition, in this cluster the level of mechanisation and application of technologies is low. Based on the interviews with youth groups, there is a high demand of labour-saving technologies for land opening and threshing.

In order to increase youth inclusion in the NU-TEC MD selected markets and simultaneously make these markets more efficient and profitable, it is crucial to strengthen the capacity of the cooperatives to provide services to youth producer groups and to better engage with processors/buyers. Acwec Omio Cooperative is an example of a cooperative which has strong linkages with producers, facilitating access to finance (e.g. via the DFCU) and providing auxiliary services (cleaning services). In turn, it has the volume and the voice to negotiate with the big processors (e.g. via forward contracting). A potential entry point for NU-TEC MD would be to facilitate business relations between the cooperatives and the private sector as a strategy to drive market inclusion for the youth. This requires strengthening the capacity of the cooperative to be able to better engage with buyers and to efficiently deliver services to youth producer groups in order to boost their production. The strategy is further developed in Chapter 6, defining the actions for each market segment.

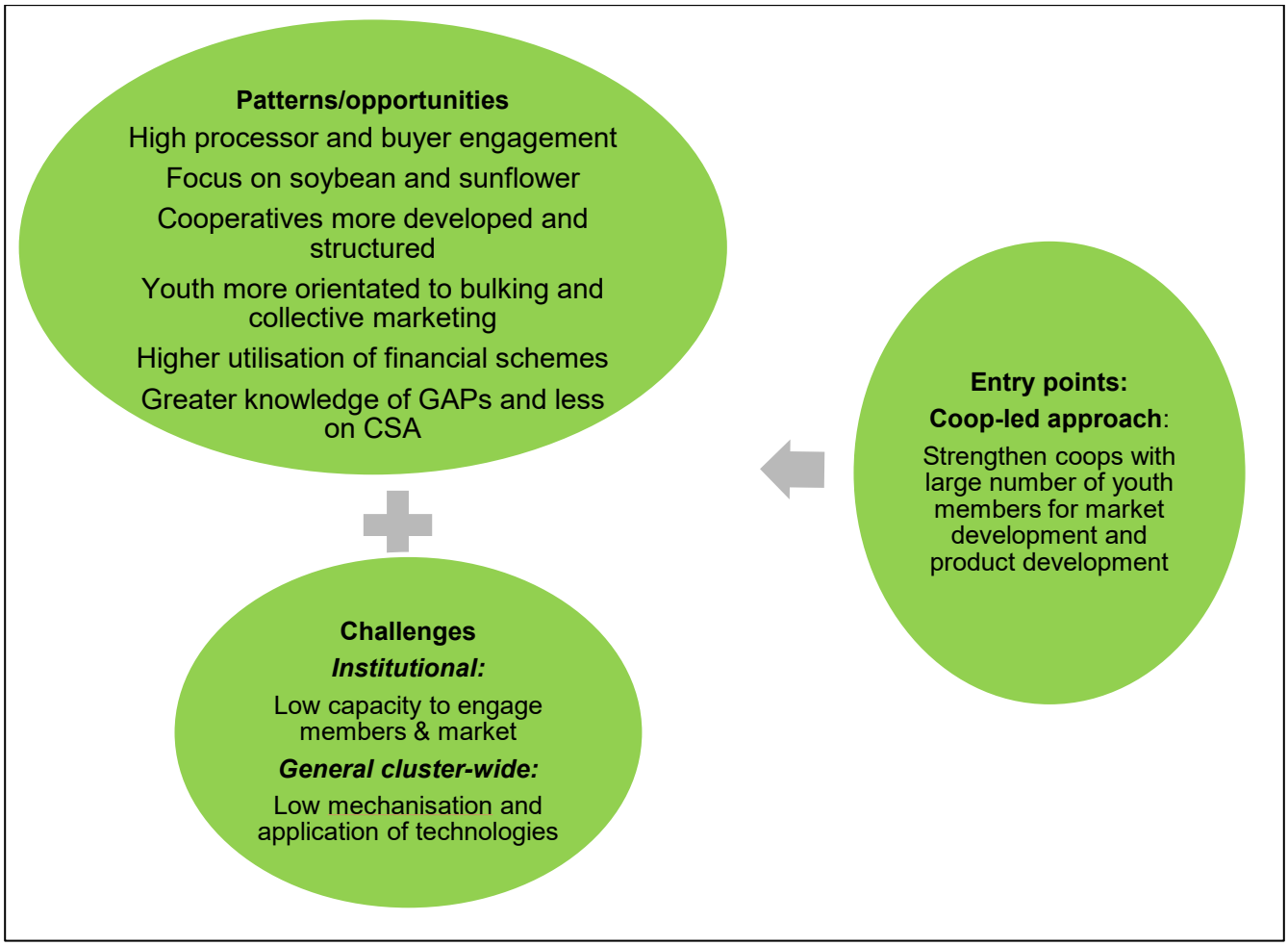
Box 1: Overview of the impacts of co-operative membership on young people

The literature shows that once young people become engaged with co-operatives, they benefit from the experience in a number of ways. Often, when the impact of co-operative membership is discussed it is often assessed in terms of the financial impact. However, the impacts of membership in co-operatives include social as well as economic benefits. This is important, as it highlights how the co-operative model can enable young people not only to better manage their economic situation but also how they view themselves and their future, as well as their relationships.

Economic Impact	Personal development
• Increases in income • Access to finance and financial services • Development of personal financial skills	• Development of psycho-social life skills (relating to internal process of thinking and feeling which affect how a person lives his/her life)
Skills development	**Social Impact**
• Technical skills • Vocational skills – including understanding of cooperatives	• Increased contacts and networks • Parents/guardians/teachers opinion of youth improves • Increased involvement and interest in the affairs of their community

Source: Based on interviews and adapted from Hartley (2011)

Figure 7: Main feature of Cluster 1: Capacity enhancement of the cooperative



Source: Authors' elaborations

5.2 Cluster 2. Gulu and Dokolo

This cluster is characterised by a weaker engagement of buyers (e.g. buying is agent driven). Overall, micro-processors wait for farmers to bring produce. In terms of enterprises, youth producers focus less on soybean and sunflower and engage more in alternative enterprises, e.g. sesame, maize, rice and beans. Horticulture is rapidly developing in Nwoya and Amuro district. As highlighted earlier, in general, there is greater availability of land compared to the first cluster. Many farming households own or have customary use of or access to large, fertile areas of land. In this area, in particular, there is a higher concentration of tractors which makes it cheaper for youth producer groups to rent tractor services for land preparation rather than the ox plough (e.g. the cost of tractor services per acre is UGX 80,000 compared to UGX 120,000 with ox plough). In general, VSLAs are the mostly widely used option for financing, which remain mainly focused on consumption but, according to the findings, there are some youth groups which save for investment. In terms of institutional challenges, youth groups are weaker, less organised than in Cluster 1 with a weak affiliation to cooperatives. This reflects the presence of weaker cooperatives. Youth producers do not see the incentive of engaging in collective marketing and practices, given that they do not receive enough support from the cooperative for product development (e.g. pre-financing, access to mechanised tools). In turn, youth engage mainly in individual sales. In this cluster, there is a very high concentration of bulking centres which are not utilised. In terms of cluster-wide challenges,

there is a weak outlet market for sunflower and soybean, and lower knowledge of GAPs and CSA practices (this reflects the lower incidence of extension agents compared to Cluster 1). NU-TEC MD could consider the youth producer groups as a first entry point and the cooperative as a second entry point. There are opportunities for NU-TEC MD to engage with a strategic partner to build the capacity at the level of youth groups (farming as a business) and subsequently on strengthening the capacity of the cooperative to support youth producer groups and develop market linkages.

Figure 8: Main characteristics of Cluster 2

Source: Authors' elaborations

5.3 Cluster 3. Kitgum, Nebbi & Arua

In this cluster there is very limited engagement of buyers, due mainly to the large distance to main processors and from the central market (e.g. buyers operate in a range of 150 km maximum). It is mainly up to promoters

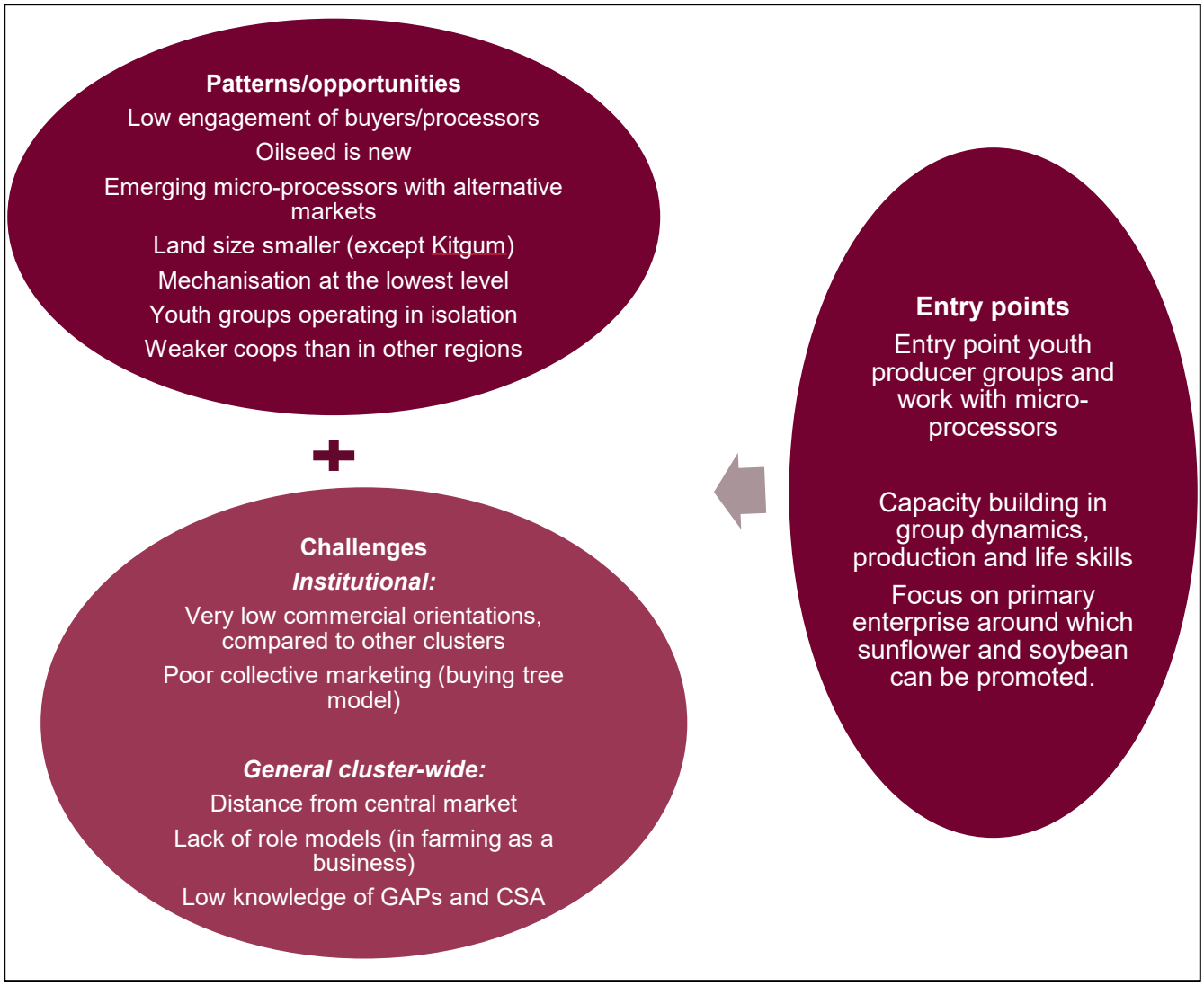
(NGOs and organisations engaged in youth support programmes) to look for buyers and develop market linkages. In general, there is small outreach programme promoting soybean and sunflower. However, it should be noted that there are emerging micro-processors (e.g St. Joseph Sunflower Millers, St. Francis Oil Press, and Nature Harvest). The latter has an alternative market in South Sudan and the Democratic Republic of the Congo- DRC). The first two micro-processors are church-based, and the oil mill were donated. St. Francis Oil Press do not have a youth-specific targeting approach and work directly with farmer groups, which include some young farmers. St. Joseph Sunflower Millers enable youth to use their oil miller for the sunflower oil, but the cattle cake remains with them. In addition, St. Joseph, as well as some other micro-millers, is engaged in training youth in piggery, poultry and horticultural projects.

In general, the oilseed sector is new in this cluster and most youth are involved in other enterprises (e.g. sesame, cassava, horticulture, beans and rice). The wide differentiation of crops reflects also the different climatic zones of the West Nile sub-region (in the lower belt the focus is on horticulture; in the Nile belt on sesame; in the upper belt close to DRC, the main crops are: groundnuts, beans, rice). Mechanisation in terms of use of tractors and ox traction is at its lowest of the three clusters. This cluster presents institutional challenges greater than the first two clusters. There are few and weak cooperatives (with the exception of Tukalere and Wadelai cooperatives, which is very effective in inputs supply and in facilitating access to finance to members through MFIs and in providing training). The few youth producer groups operate in isolation and do not collaborate with other groups in the same location to join the market chains and produce the necessary quality and quantity. There is, in general, very low commercial orientation of young farmers. In turn, there is a general lack of role models among youth reflecting very limited skills of farming as a business. Also, knowledge and application of GAPs and CSA is very low. Storage facilities are very few and collective marketing is carried out at group level, using the 'buying tree model'; farmers meet under a tree to sell their grains rather than going to a bulking store. Even available public storage facilities constructed by Oxfam/World Food Program (WFP), especially in Arua, are not effectively used because there is no proper structure in charge of them.

A potential entry point for NU-TEC MD would be to facilitate the private sector to develop their supply chains through the formation and organizational strengthening of youth producer groups. In order to achieve this, it is crucial to clearly define the criteria for group formation, bringing together youth who are like-minded with common interests and purpose to engage in the production of crops for the market. The formation of a successful group can motivate other youth to create groups. Once a group is formed, support should involve training in farming as a business, as well as follow-up mentorship support. Peer learning, via the identification of a role model should also be promoted. Youth also need to be supported to identify and build market linkages with credible markets or buyers for sustainable farming as a business. It is important to note that, in order to achieve youth engagement, it is crucial to have a youth support package which includes social elements (e.g. soft/life skills such as leadership and communication skills, financial literacy skills and savings for investment). Restless Development, for instance, provides important training in both life skills for healthy living and sexual reproductive health. The youth, once properly integrated in groups and motivated, can expand acreage, deliver services and streamline market processes. Another area of intervention involves investment in primary aggregation facilities.

In terms of crop promotion, the strategy should focus on a primary enterprise around which sunflower and soybean can be promoted. In Kitgum, for instance, sesame has a clearer buyer line, and soybean and sunflower can be introduced later and in rotation. Integrating sunflower production into an already established enterprise, like sesame for instance, would encourage youth to adopt it without suffering adverse risks associated with a new crop, because the other enterprises provide a safety net to protect against the effects of the learning curve.

Figure 9: Main characteristics of Cluster 3



Source: Authors' elaborations

6. Strategies and business models to increase youth engagement in sunflower and soybean

This chapter analyses the key areas of focus for NU-TEC MD in the oilseed sector: land preparation, input markets, production, aggregation and storage markets. For each market segment, based on the findings, the chapter highlights the existing patterns (extent of youth participation), and the challenges - as well as the opportunities - for greater engagement of youth. The chapter also provides an overview of the current promising initiatives of private sector engagement with youth and suggests some business models which NU-TEC MD can support, tailored to the three clusters. It also points at potential partners and risks.

NU-TEC-MD's objective is to identify the comparative advantages that youth can bring into agriculture to interest the private sector companies to work with them as an integral stakeholder in their business models. As stated in chapter 4, the private sector is willing to work with youth who have a finished product to offer. The report identified a number of advantages youth bring in certain segments of the value chain that could make them a group of choice for the private sector. However, it is important to note that, as mentioned earlier, youth are a heterogeneous group, well embedded in community production structures which include producer groups, cooperatives and savings associations. The study of the different cluster patterns revealed that interventions targeting youth within these institutions will ensure the robust and sustainable inclusion of youth. Indeed, operating within the current structures provides youth with credibility and is more likely to attract the private sector. Lessons from the government-led Youth Livelihood Program and private sector engagements with youth especially (Mt. Meru and Mukwano) projects implemented by a number of organisations targeting purely youth show dismal outputs compared to those targeting youth within community producer groups and cooperatives. Secondly, for NU-TEC MD to support the inclusion of youth outside established producer group structures will be disruptive to the development of both the individuals and the organisational structures that provide them the social safety net through the existing group support and savings mechanisms. The strategies proposed are premised on the recommendation that NU-TEC MD and the private sector seeking to work with the youth should engage with them within the context of the existing institutional and social structures.

6.1 Increasing youth engagement in land preparation market: labour-saving technology as a business

6.1.1 Existing patterns, challenges and opportunities

The table below summarises the main patterns in the land preparation market, highlighting the challenges and potential opportunities for increasing youth engagement.

Table 3: Land preparation: existing patterns, challenges and opportunities

Market segments	Existing patterns	Challenges	Opportunities
Land preparation	• Hand hoe used (through communal labour) • Ox traction is emerging • Male dominated activity • In some cases, coops hired tractor services but limited	• Ox plough/tractor are expensive • Drudgery and labour intensive • Exclusive to groups • Lack of timely planning	• High demand for ox plough/ tractor (Acholi region: big farms emerging) • Turning land preparation technologies into a business (i.e. tractor hire use) if supported by a cooperative

The majority of youth involved in farming use rudimentary tools. They rely on paid communal labour for land opening using hand hoes. In general, youth find land preparation a drudgery and labour intensive work and it is a male dominated activity. In many youth groups visited, there is a high demand for draught animals and traction equipment (oxen, yokes, chains, ploughs). Ox traction is emerging with some youth groups owning or renting ox plough. Cases demonstrated by Bedigen Youth group (in Dokolo) and Utip Tam Youth Group (in Oyam), both under cooperatives, showed that even with 2-3 pairs of ox-traction the youth are able to open their land first then hire their ox-traction services at a fee to other community members. The revenues earned from this service has enabled both groups to increase the number of their oxen, improve their primary stores, and increase their VSLA portfolio. Overall, youth find it very expensive to individually acquire or rent ox ploughs and tractors and can afford them only when they are in groups.

Box 2: Financial and productivity gains related to animal traction

Below there is an assessment of AgriProFocus on the impact of animal traction loans released by Centenary bank to smallholder farmers in Northern Uganda. Each farming household benefitting from an animal traction loan has managed to cultivate at least 4-6 extra acres of land, on average, at the start of the season, putting the average amount of land under production at 7-11 acres, as opposed to about 3-5 acres with human powered technologies. In addition, the beneficiary households that already possessed a set of traction equipment and animals have doubled the area of land under cultivation to up to 22 acres during the first season. The high demand for animal traction technology has also enabled the beneficiary households to increase their incomes through hiring out of their animals. By providing ploughing services to neighbouring farmers, a household is able to realize UGX 90,000 a week during the peak season. The farming households that own more than one set of traction equipment and animals have especially made gains of over UGX 300,000 per month, as the second set of equipment is normally available for renting. The principal aim of accessing animal draught power technology is to boost labour productivity by reducing the labour requirement per unit acre of land. There is also a timeliness factor operating. A farmer without draught oxen could increase the area cultivated by hiring labour. For example, hiring four labourers would enable an additional 2.5 acres (1 ha) to be planted. However, it would take two weeks for the task to be completed. With a span of oxen, the same task could be completed in five days. Under rainfed farming every additional day's delay in planting seed means potentially lowering eventual crop yield. The cost of hiring four people for a period of two weeks to cultivate an additional one hectare (2.5 acres) is at least UGX 280,000. This is substantially more than the cost of hiring a span of oxen (UGX 75,000) to perform the same task. For a farmer who owns a span of oxen the cost of purchased inputs (veterinary medicines) comes to about UGX 35,000 per ploughing season. Therefore, the farming households that employ animal traction technology are able to save about UGX 1,000,000 in labour costs on every 10 acres of land cultivated. This is significant and, when coupled with the income from hiring out animals, the benefits that accrue to the household from the use of animal traction are equally significant.

Source: AgriProFocus (2016) Animal Powered Mechanization: Productivity Gains and Portfolio Performance

Based on some interviews with youth groups in Cluster 2 and 3, the cost of the first ploughing is UGX 120,000 and the second ploughing is UGX 100,000. It would be cheaper for them to hire a tractor (UGX 80,000 per ploughing). However, many farms have tree stumps that prevent use of mechanical ploughing. It would make economic sense for them to hire local labour to remove tree stumps and then hire tractor services. In some cases, cooperatives hire tractor services but it is still quite limited. In Nwoya and Amuro district, there is a high supply of tractors, which are predominantly used by an older generation of drivers. Many of these tractor operators are untrained, leading to a waste of machines which are broken and unused or call out fees for the few who know how to maintain and service the machines.

As emerged from interviews, there is a general lack of timely planning in land preparation (e.g. as long as the field has not received any rain, people do not open the land). This, in turn, can cause delays in planting.

Youth see an opportunity in turning land preparation technologies into a business (i.e. hiring ox plough or tractor and offering services) if they can be supported by a cooperative. They see the potential for hiring services to their local markets. The business case lies in the high demand for animal traction technology by farmers. In addition, there are big farms emerging, specifically in the Acholi sub-region. There is thus an opportunity for development of employable skills in the area of farm mechanisation.

6.1.2 Proposed strategies and business models

Figure 10 illustrates the strategies which NU-TEC MD could pursue, engaging with the private sector (e.g. tractor dealers, financial institutions, service providers) at the level of youth groups and cooperatives to support youth in turning land preparation technologies into a business. The strategies should be tailored to the specificities and level of capacities of youth groups in Cluster 1, 2 and 3.

There is need to build the capacity of youth to invest in ox ploughs, conceptualising the business opportunity. In Cluster 1, youth groups could specialise in offering ox plough services and the cooperative could support in building the ox plough business. For instance, the cooperative could support members to coordinate the planning, develop a production plan and promote youth groups' investment in equipment. This can be done by facilitating access to financial institutions to obtain animal traction lending, or the cooperative could develop a mandatory saving scheme to be used to purchase labour-saving equipment. Another way is that the cooperative provides kick starting capital (e.g. up to 30 percent of the value) to buy the oxen, oxen kit and the plough. A strategy could be to strengthen the youth service groups, first in ox-traction and then to upgrade them to tractors. In this case, the cooperative could lease tractors directly and hire them out to the youth members. NU-TEC MD can focus on enhancing the capacity of the cooperative to be able to provide this support to youth groups through patient asset financing models.

As mentioned earlier, the specificity of Cluster 2 is that there is a large supply of tractors and, in turn, it is cheaper for farmers to hire them rather than ox traction. There is a good incentive to train youth as tractor operators. As mentioned, the incentives are the big land size and the potential demand of tractor operators by the emerging big farms. There is an opportunity for skills development programmes targeting youth and youth groups to build service businesses in the area of tractor service provision, maintenance, and operation. Tractor dealers could also engage in setting up the so called 'tractor clinics' where youth can be trained in tractor operation and then offer mechanisation services as a business. The private sector can benefit from skilled operators of farm machinery, like tractors and ox-traction equipment. The entry point for NU-TEC MD would be to support the private sector and service providers engaging with youth groups, training them in entrepreneurship/tractor operator and strengthening them to operate as a coherent unit. At a second stage, the youth group could federate and start working as a cooperative. Then the cooperative could engage with training centres to provide on-site and off-site training.

In Cluster 3, the focus is, first of all, on promoting the formation of youth groups who share a common interest and purpose, promoting the transition of groups from subsistence farming to farming as a business in order to facilitate the uptake of labour-saving technologies. In terms of timing, the first two years should be devoted to creating group cohesion then, in the third year, groups could start federating in cooperatives.

In terms of potential risks, it should be noted that it might take time to see the results of this labour-saving technologies business. In order to mitigate operational risks, it would be important to clearly assign the roles (e.g. there should be a youth in charge of feeding the animal as well as grazing, and there should be regular veterinary inspections).

Figure 10a: Strategy for Cluster 1 - Youth-led mechanisation for land opening and on farm operations. A 'service led intervention model'

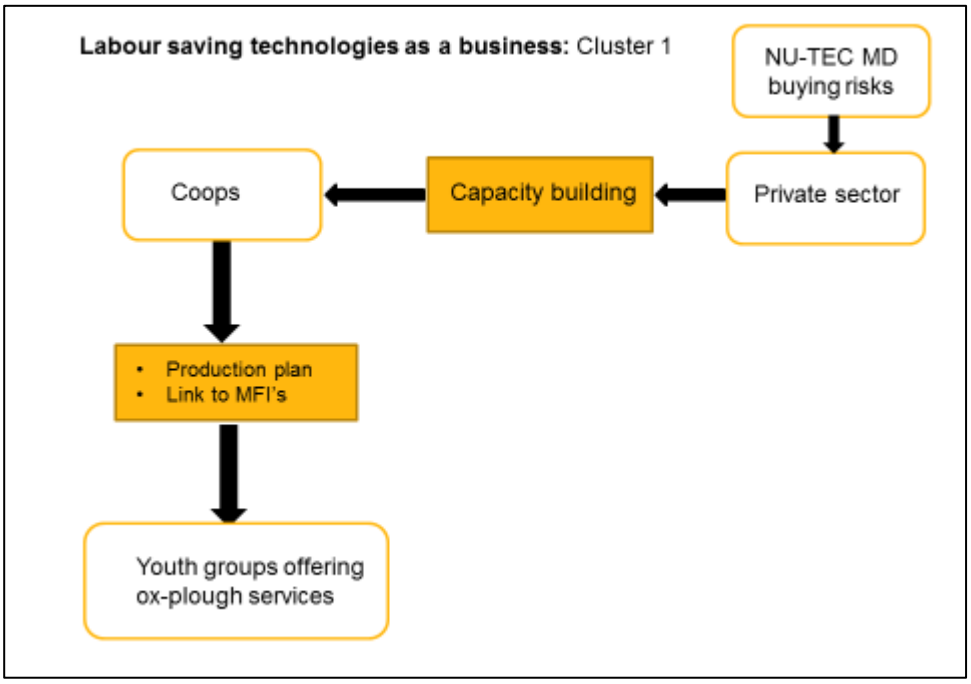


Figure 10b: Youth-led mechanisation for land opening and on farm operations. A 'service led intervention model in tractor operation'

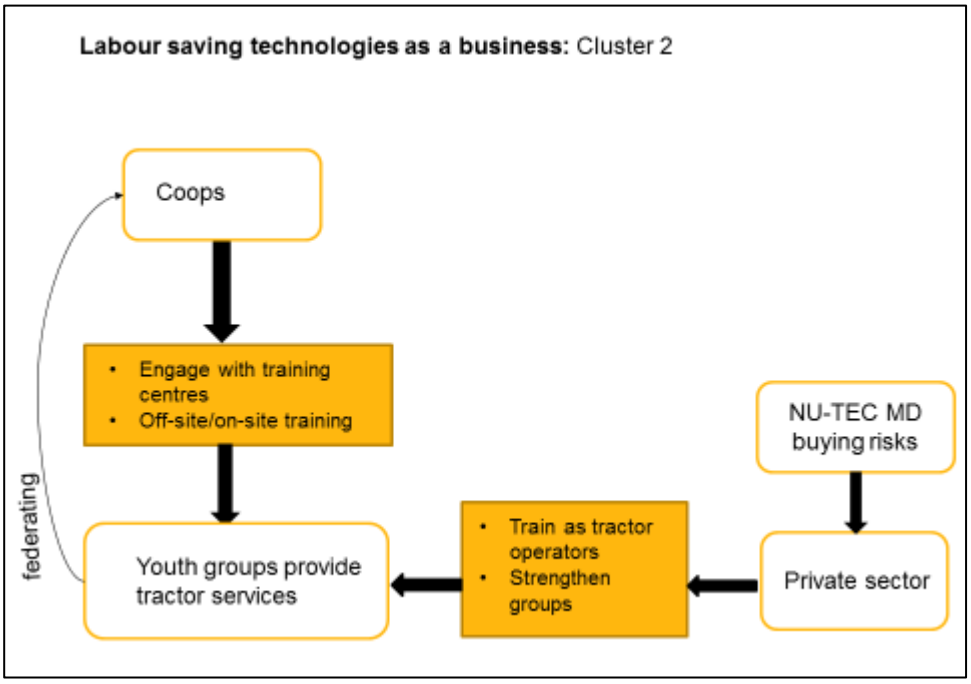
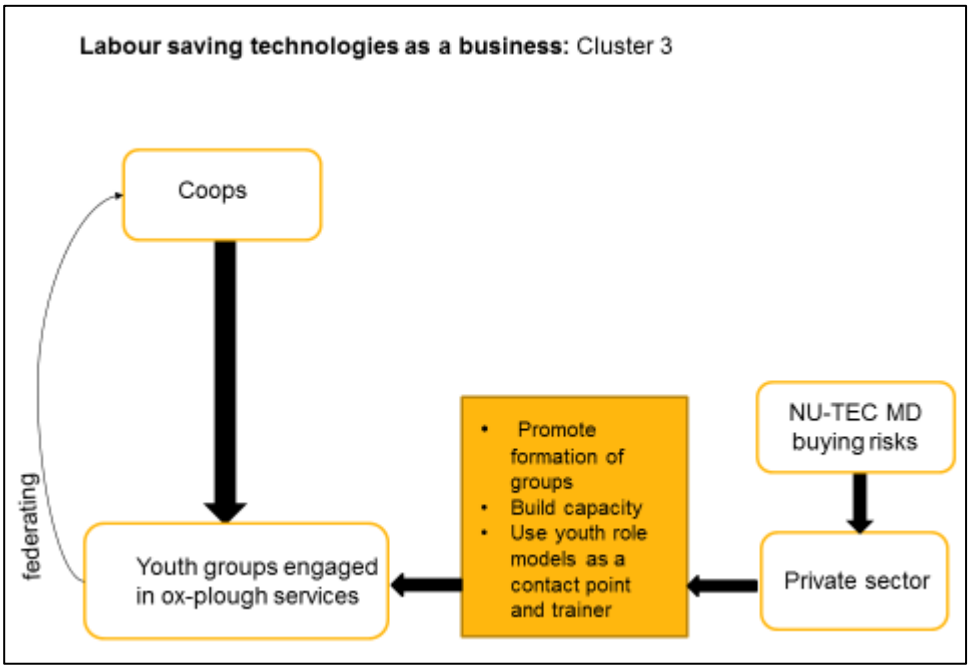


Figure 10c: Youth-led mechanisation for land opening and on farm operations. A 'service led intervention model in tractor operation'



Source: Authors' elaborations

There are promising initiatives on the ground, which support the development of farm machinery skills. USAID Youth Leadership in Agriculture (YLA) supports the NGO "Sing with me happily" (SWMH) in promoting training of (mainly) female youth as tractor operators. SWMH set up the Youth Empowerment Training Center (YET) which provide a six-week course. In its first cycle of training in 2016, the centre trained 15 young women as tractor operators, of which over 75 percent have already been employed. In the words of the director, "*We plan to train and get employed another 108 youngsters in 2017. We are registering males as well as girls but women have the majority of places on our courses, not only because young women need empowering but also because they are much kinder and responsible with the big agricultural machinery!*" Indeed, insurance companies are more willing to insure tractors if they know that a women is in charge of operating and maintaining it. The training centre hosts all the trainees, teachers and trainers in full board accommodation, so that trainees gain experience in maintaining high standards of hygiene, farming and nutrition.

Picture 2. Young women trained as tractor operator by the NGO "Sing with me happily"

Photo Credits: "Sing with me happily"

In terms of promoting agripreneurship in mechanised land services there is also the interesting experience of Hello Tractor, which can offer interesting lessons learned and can be promoted among youth, given their fast adaptation to Information and Communication Technologies (ICT). Hello Tractor is a social enterprise based in Nigeria that has built a network of 'Smart Tractor' owners that farmers request for services via SMS.

Box 3: Hello Tractor. Income creation and farming efficiency through an SMS/GPS platform which allows farmers to text to rent 'smart' tractors

Recognising the need among smallholder farmers for consistent and sustainable mechanisation services, Hello Tractor designed a versatile Smart Tractor with eight attachments to serve their needs throughout the farm production cycle. Each tractor is tailored with technologies, which enable Hello Tractor to pair farmers in need of services with a nearby Smart Tractor owner via text messaging. Through its mobile app, Hello Tractor connects tractor owners with nearby farmers who request tractor service via SMS text messaging. "*The new owner drives the tractor to the farm, provides the labour, and is paid USD 75 per hectare. It costs one-third of what manual cultivation does, and the tractor owner makes a good wage: after fuel, maintenance, and repair costs, as well as loan repayment, she clears about USD 25. Without the tractor, she makes USD 5."*

The technology allows small landowners to access affordable tractor services to increase their productivity, while Smart Tractor owners are given the opportunity to earn additional income with their machine. Through the partnership with

USAID, 24,500 smallholder farmers will gain access to tractor services. The partnership expects to train 100 youth entrepreneurs in the business of owning and maintaining a fleet of Smart Tractors. In addition, some 15 young technicians will benefit from trade skills to repair Smart Tractors.

Source: Authors' elaborations based on www.hellotractor.com

6.2 Increasing youth engagement in seed market: youth engaged in local seed business

6.2.1 Existing patterns, challenges, and opportunities

The table below summarises the main patterns in the seed market, highlighting the challenges and potential opportunities for increasing youth engagement.

Table 4: The input market: existing patterns, challenges and opportunities

Market segments	Existing patterns	Challenges	Opportunities
Agro-inputs	• Sunflower seeds processor-driven • Two major processors involved in hybrid seeds • Soybean: no organised seed programme	• Restricted seed access based on allegiance to established companies (Mukwano) • No sales point • Lack of skills to handle seeds (to be input dealers) • Low profit margins (disincentive for youth)	• High demand of seeds • Youth groups producing seeds on their own and sell skills on seed production • Coops partner with other organisations to produce seeds • Promising private sector initiatives (Equator Seeds and Ngetta TH) • Scale up youth producing seed business

In the case of sunflower, most of the miller-distributed seed is imported hybrids. Mukwano has an apparently exclusive arrangement with Pannar while other distributors have other brands (Envision, 2016). In general, seeds is a source of competitive advantage, with mainly big processors involved in buying and selling seeds. For smaller farmers without connections to the large mills, open pollinated variety (OPV) sunflower seeds are available from both commercial seed companies and community-based seed producers. The seed companies (NASECO, East African Seeds, FICA, UOSPA, Victoria Seeds, Equator Seeds Limited) supply to stockists on a cash-and-carry basis. (Envision, 2016).

In the case of soybean, the issues are more complex. Unlike with sunflower, improved soybean seeds are self-pollinating and can easily be multiplied in-country. Furthermore, smallholders recycle home-saved soybean seed over multiple generations. This means it is less attractive to seed companies as a product line to promote (Envision, 2016).

In general, youth producer groups interviewed are affected by restricted seed access for sunflower based on allegiance to importing companies. The limited availability of seed is also related to the lack of sales point, lack of skills to handle them and low profit margins associated with the trade in inputs. Indeed, according to some youth interviewed, there is no interest in working as input dealers given that the returns are low and there is insufficient knowledge on the use and handling of seeds, fertilisers and agro-chemicals.

The local seed companies face a challenge in producing sufficient seeds to meet demand because on their own they lack sufficient land to do so and the capital costs of acquiring land are prohibitive. Companies, such as Equator Seeds Limited which produce and market certified agricultural seeds (for instance in maize, soybean, sesame and beans), have opted to produce and market certified seeds through outgrower schemes but still face challenges to meet demand because of difficulty in the distribution of seeds to reach the rural farmers, shortage of farm labourers and lack of enough extension officers to monitor and support farmers.

There are opportunities to multiply local hybrids for sunflower to substitute the imported hybrids and take advantage of the space opened by the government which allows production of Quality Declared Seeds (QDS). In terms of current initiatives to promote seed production, there are some lessons that can be drawn from the Integrated Seed Sector Development Program (ISSD) in Uganda. The programme is working with 30 local seed businesses (LSBs) to produce QDS of locally adapted crops and varieties for local markets. The purpose is to develop them into commercially sustainable local businesses. At Kutoro youth group in Koboko is an example of an LSB multiplying and trading in QDS.

6.2.2 Proposed strategies and business models

Young people are energetic, ambitious and willing to learn new skills making them a good target group for seed production; they can facilitate the transfer of knowledge and technologies for productivity enhancement.

The private sector can play an important role in increasing access to seeds and in promoting the adoption of improved seed technologies. Seed production requires a strong extension service and support structure. In order to successfully engage youth in seed production, they need to be provided with access to foundation seeds, extension services, productivity enhancement skills and technologies. An interesting model that has brought the private sector to involve youth in seed multiplication is the Equator Seeds Limited (ESL) outgrower model illustrated below. The goal of the model, launched by ESL, in partnership with the YLA project under the USAID Feed the Future (FTF) programme, was to create employment opportunities for youth in agriculture by building a community-based agricultural facilitators (CBFs) model on wheels (Box 4).

Box 4: Youth Leadership in Agriculture (YLA) and Equator Seeds: The community-based agricultural facilitators on wheels model

USAID YLA piloted a programme where 6,500 youth farmers are engaged in producing seeds within the ESL's out-grower production scheme. ESL is a company producing and marketing certified agricultural seeds, which has developed a community based outgrower scheme for commercial production of maize, soybean, sesame and bean seed. Despite a growing interest within the community to be engaged, the number of outgrowers remains limited given that the costs of setting and maintaining a team of extension services workers to distribute seeds, train and conduct production/farm supervision to support farmers is prohibitive for the company. ESL has tapped into the youth potential and seen a business case to engage youth to participate in this commercial scheme at different levels of the value chain: production, extension services delivery, input distribution and market processes. This allows ESL to increase the production of quality and affordable certified seed, as well as to expand the outreach and monitoring of seed producers.

The project has targeted youth engaged in *boda boda* riding in urban and peri-urban centres with at least O' level standard education, because they were considered readily trainable. The intervention was carried out in the districts of Gulu, Nwoya and Amuru in 11 administrative sub-counties. A total of 65 *boda boda* youth were recruited as community-based facilitators (CBF) and trained to equip them with skills in extension services and input handling and distributions in the first level. In the second level, they will be trained in advanced farm business skills and as trainers. The strategy is to leverage the youth's resources (motorcycles and their community and peer relations), and use the youth to deliver inputs to youth farmers to mobilise other youth into commercial production of seed and provide first line extension and technical support to the farmers. A strong point of this model is that it hinges upon using peer influence to advance

knowledge and recruit youth to produce certified seed. Each of the CBFs has recruited an average of 47 youth (out of 100 farmers) and provides extension services to 3,500 youth farmers. ESL, with support from YLA, hired six agronomists to provide coaching/mentorship, and technical and supervisory support to the CBFs. ESL provided the farmers with foundation seed for soybean, beans, maize and sesame and coordinated with the inspection services at Ministy of Agriculture, Animal Industry and Fisheries (MAAIF) to carry out routine inspections leading to certification of the seed produced. YLA has provided technical support in designing the CBF programme, training of the CBFs, preparing and producing information, education and communication (ICE) materials and financial contribution towards the agronomist salaries for the first 12 months. The CBFs pay thereafter will be commission based and is calculated on the volume of seed delivered to ESL. The result is that ESL was able to build a large and strong extension service workforce that did not put direct strain on the company's cash flow and financial resources, but was self-financing and cost efficient and effective in increasing output.

Within this initiative, 65 CBFs were recruited and equipped with employable skills, added a commission income as a second income stream to their *boda boda* business, which has expanded income opportunities for them, and recruited 3,055 youth into the seed production business. Besides the youth businesses, 500 farm based labour-related jobs have already been created with an estimated conservative wage pay-out of UGX 180, 000 per head, with each putting in 15 man days of labour per crop cycle with an earning rate of UGX 3,000 per man day .

This model does not require high capital investment from the seed company nor capital investment by the CBFs outside the motorcycles they already own. The cost of fuel falls with normal expenditure and only a marginal increase is expected since the CBFs will be operating in their usual routes and only incorporate extension services visits into their routine. The commission earnings more than offset any marginal increases in the cost of fuel. The additional cost of fuel is currently being financed by ESL, on a recovery basis, the amount of which shall be recovered from CBFs during the payment of commissions.'

Source: Based on a case study prepared by John Ariko Okelai, Anthony Agaba & Tony Okello (2016) and Interviews

The CBFs on wheels model provides an interesting example to promote seed production, increase access to inputs, recruit more youth into commercial seed production and advance development of employable skills among the youth. As highlighted in box 4, this model is sustainable and has the potential for scaling up. It does not require high capital investment from the seed company or from the *boda boda* engaged. In a second phase the service of extension can be carried out privately by *boda boda* who can become specialised community extension workers. In addition, the model uses the youth peer influence, which is very effective in promoting learning and adoption of good farming practices. In the establishment of youth businesses in certified seed production, it opens up more opportunities to broaden the income generation base for the youth and other members of the same communities.

Picture 3. Boda boda youth

Photo credits: Oyungapala.com

In addition, the skills in seed production have a spillover effect to influence farming practices across the board resulting in increased use of better seed, better farming practices and increased farm yields. There might be opportunities to integrate the CBFs into the input supply chain to further strengthen their earnings and financial capacity to deliver and build more auxiliary services needed by the youth and other community farmers.

This CBF model is hinged on a specific comparative advantage that youth bring into the ESL business model which makes them attractive supply chain members. The youth are agile, energetic and quick to learn and adopt new technologies. The strict and time demanding activities, which call for energetic inputs, has been a major factor in ESL's decision to engage with youth; at the same time, the returns and integrated commission model payable by ESL has been a major factor in driving youth interest.

The comparative advantage youth hold in the input sector is two-fold:

I. As input distribution and delivery agents, youth are active and versatile in movement that can enable them to reach out to buyers in far locations. However, they suffer a credibility problem because of their unpredictable actions that pose a risk in entrusting them with business resources.

II. Youth are energetic, quick learners, fast adopters, ambitious and competitive, which makes them good candidates for seed production businesses. Youth also love certainty which makes them a preferred partner to engage in fore contracting arrangements as in the ESL model.

Based on these comparative advantages, NU-TEC MD, as a market facilitator, can develop agribusiness development programmes that promote youth engagement with the private sector. Figure 11 summarises potential strategies and entry points for NU-TEC MD.

For Cluster 1, NU-TEC MD could facilitate the development of LSBs for youth groups as an enterprise, and support training in seed multiplication so that groups can be formed around this skill. Private sector actors are more likely

to engage with a cooperative that is able to provide a full range of services which, in turn, generate commitment and loyalty from their members. Engaging with a cooperative increases the chances for contract compliance and ability to meet obligations to the buyers. This makes a case for NU-TEC MD to facilitate cooperatives to develop an integrated business model and become a one-stop-centre, which provides inputs and supports in production and marketing.

For Cluster 2 and 3, the NU-TEC MD strategy should focus more on facilitating access to seeds and other inputs, rather than on seed multiplication. This can be achieved by linking youth groups to seed producers (for instance cooperatives in Cluster 1) and by identifying key input dealers and build linkages with the seed producers. Youth here can be engaged as agents for input distribution on a commission basis.

Figure 11: Increasing youth engagement in the seed market: youth engaged in LSB and distribution agency

Figure 11a: Youth engaged in local seed multiplication business (Cluster 1)

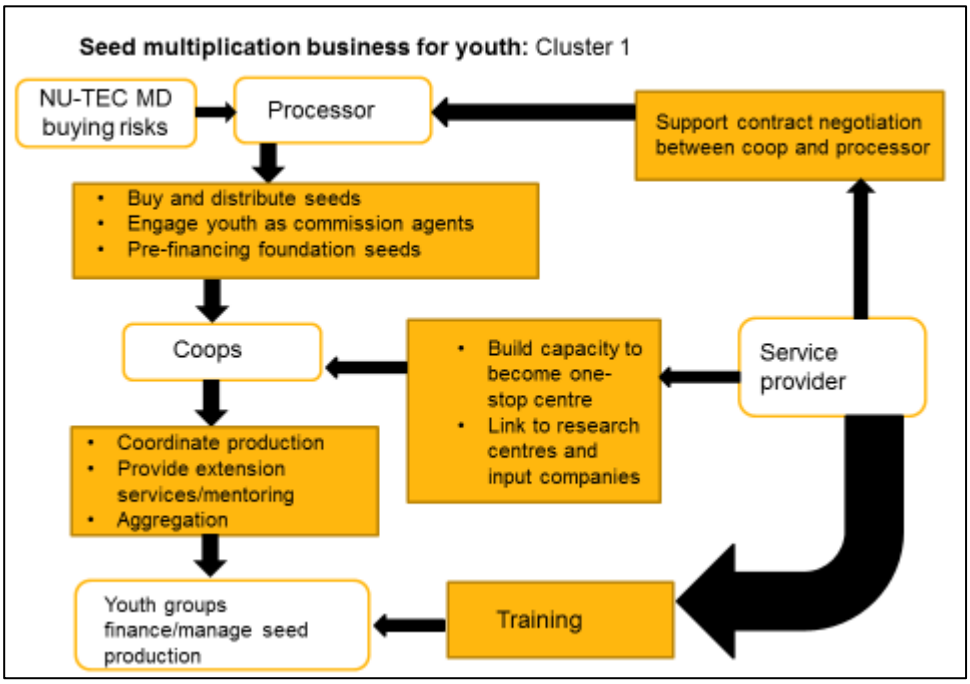
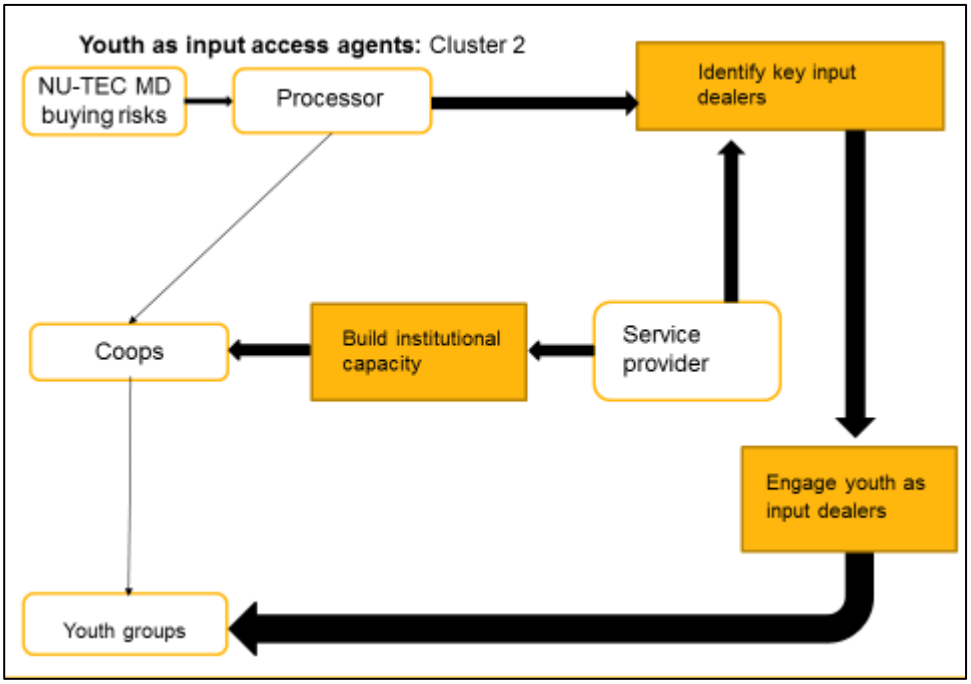


Figure 11b: Youth engaged as inputs agents (Cluster 2)



Source: Authors' elaborations

Box 5: Opportunity to interest the private sector to engage youth – leveraging the Ngetta TH model into seed production

The private sector by nature is interested in final products and will invest in activities considered core to its business model. Development workers on the other hand have struggled with understanding what business considers a core activity and a non-core activity, which only increases its cost structure and risk profile. In the sunflower and soybean value chain and market activities, the private sector company's activities can be classified as follows:

Core business activities	Non-core business activities
• Procurement of grain for crushing • Quality inspection • Crushing, extracting and refining vegetable oil	• Extension services • Input distribution • Warehousing and transportation • Training and supply chain development

This activity categorisation demonstrates that the private agribusiness companies operate on a 'buying' orientation as opposed to a 'supply chain' orientation. Strategic engagements between youth and agribusiness companies in the sunflower, soybean and other commodity markets requires a strategic intervention from development programs like NU-TEC MD to support or finance the non-core component of business activities and create the conditions for a shift from buying to procurement orientation which has a long-term benefit. This can be illustrated by leveraging the goodwill in the Ngetta TH Model to pilot robust inclusion of youth into the seed and input business through a partnership with the miller.

NATURE OF PARTNERSHIP	SUNFLOWER HYBRID AND SOYBEAN SEED MUTIPLICATION BUSINESS
KEY ACTORS AND PARTNERS	1. NGETTA TH 2. YOUTH GROUPS IN A COOPERATIVE SETTING 3. THE COOPERATIVE ORGANISATION

SECONDARY ACTORS	1. SERVICE PROVIDER SUPPORTED BY NU-TEC MD 2. NASAARI SERERE (NARO)/MAKERERE/NAMULONGE
POTENTIAL ROLES AND RESPONSIBILITIES FOR KEY ACTORS	1. NGETTA TH • Buy the seed from the producers and distribute to farmers in place of imported seed • Pre-finance some aspects of seed production like foundation seed and core inputs in the short-term 2. YOUTH GROUPS • Provide land for seed multiplication • Attend training activities and apply skills learnt • Finance the seed production business operations • Manage the seed farms to the required standard following GAPs in seed production. 3. THE COOPERATIVES • Coordinate the seed production activities of the youth members and NGETTA TH as a gateway agency • Manage the contractual processes and obligations with NGETTA TH on behalf of the members • Provide extension services, supervisory, field support and monitoring duty to ensure high quality seed is produced through compliance • Aggregate and implement business support initiatives to the youth groups in seed production • Market any seed surplus to other potential farmers outside the Ngetta TH chain • Take over full responsibility of pre-financing seed production and sourcing for foundation seed, linkages with NARO and seed inspectors at MAAIF and district in the long-term
ROLES AND RESPONSIBILITIES OF SECONDARY ACTORS	1. SERVICE PROVIDER SUPPORTED BY NU-TEC MD • Provide a stimulus support to build the capacity of youth to partner with agribusiness firms as seed producers and suppliers • This should focus on: training for skills development (the ISSD approach gives good learning on this, meeting the cost of expert seed production trainers from NASAARI/NARO/ZARDIS, support contract negotiations and between youth, cooperatives and NGETTA TH) • Support and build the capacity of cooperatives to provide extension services to members in seed production. • Support the cooperative to become a one stop input centre producing seed and marketing it to other farmers alongside other vital inputs. 2. NASAARI/NARO/MAKERERE/NAMULONGE • Supply foundation seed for sunflower hybrids and soybeans • Provide trainers to train seed producers and cooperative extension workers • Conduct adaptation studies to guide and develop localised GAPs in seed production.
SCALE UP AND EXIT STRATEGY	NGETTA TH can exit the seed business and leave the youth and the cooperative to run it as a going concern. The cooperative can then take on the activities that are non-core business functions to Ngetta TH such as: • Input production, procurement and distribution

	• Warehousing and transportation • Training and supply chain development • This functions are actually core to the cooperatives and youth business model.

There are risks involved in engaging in seed multiplication, which range from the traditional agricultural risk (weather) and the reputational risk linked to the quality of seed produced. In addition, substantial investment might be required to buy the foundation seeds and to acquire the skills for seed multiplication. There are possibilities to contract agricultural crop-related insurance to insure the seed business.

6.3 Increasing youth engagement in production: building market responsive business models by the cooperatives and youth groups

6.3.1 Existing patterns, challenges and opportunities

The table below summarises the main patterns in the production segment, highlighting the challenges and potential opportunities for increasing youth engagement.

Table 5: Production: existing patterns, challenges and opportunities

Market segments	Existing patterns	Challenges	Opportunities
Production	• Mixed farming practices • Limited CSA skills • Division of labour clear between male and female • Women are acquiring more land	• Climate change • Seed access • Low productivity • Inefficient technologies • Limited value addition	• Some big coops organised and functioning (i.e. ACWEC OMIO): Strong linkages with producers/buyers • High demand by processors

Generally, from the SSIs and FGDs, across the sub-regions there are mixed farming practices, with a high tendency to practise subsistence agriculture, which is coupled with low productivity and the use of inefficient technologies. However, as mentioned in Chapter 4, there is a growing interest and preference for enterprises of commercial value. Youth grow the core commodities (soybean and sunflower) alongside other commodities, such as white sorghum and maize, beans, sesame, rice and livestock, and horticulture.

In most youth groups interviewed, there is an increasing tendency towards joint family enterprise planning. In general, male members still dominate activities such as land opening, pesticide application and transport, while women still spend most of their time in weeding and threshing. The other production activities, such as harvesting, storage, packaging, and sales, were seen as gender-neutral. Overall, woman are the treasurers of VSLAs and, increasingly, female youth are taking up roles in trading the produce. In addition, as emerged from interviews with women's groups, some female youth are beginning to invest and acquire more land, and they are seen by the group as role models.

The challenges, which were most often mentioned by youth producer groups, are related to climate change i.e. crop failure due to the drought in 2016. As highlighted in Chapter 5, the group members had limited CSA skills. The extension officers too (e.g. Mukwano village agents) had limited knowledge on the application of CSA. Other major challenges include: low productivity and inefficient technologies leading to high costs and high post-harvest losses, and difficulty in accessing markets, due to individualised and fragmented productions, leading to low volumes of produce which are not attractive for the buyers.

Although two youth groups mentioned that they were involved in value addition, it is still a limited activity for many youth groups, as often technologies are needed for value addition to take place (which youth can often not afford). Also, the use of ICT for their work, was limited, in particular due to poor connectivity in the regions.

The current practice by the leading oil milling firms is to buy crushing materials from farmers though agents. Mukwano has an extension programme involving an extension co-ordinator, regional coordinators and agents who move around the villages and buy from individual farmer households, then deliver to their principle's factories. This practice comes at a high cost to millers who suffer problems associated with quality of materials, such as re-cleaning cost, waste disposal costs and material rejection, and to producers who receive lower farm gate prices. Conversely, Ngetta TH is embarking on improving the linkages with 13 cooperatives through providing extension services, crop finance and buying produce directly from cooperatives, ultimately leading to more supply to the company and higher incomes for the producers. This model offers a series of advantages: Ngetta TH does not make use of middlemen but uses cooperatives for the bulking of crushing materials and the cooperatives are responsible for quality. In this way, farmers receive market conforming prices and Ngetta TH receives good quality materials in a timely manner. Ngetta TH is able to pre-finance good quality seed and distributes seed and other inputs timely to their outgrowers through the cooperatives. The company provides extension advice and mentoring to the cooperatives' extension workers thereby ensuring that GAPs are used.

Some of the opportunities for youth engagement in production depend on the support coming from well-functioning cooperatives. Cooperatives can facilitate access to markets by supporting youth groups in bulking produce in greater volumes, as well as in transport. The emergence of micro-processors also offers youth with opportunities to engage in marketing and distributing oil.

6.3.2 Proposed strategies and business models

The production segment employs 100 percent of all smallholder and commercial farmers in the region and youth do not hold a major advantage over the elders. However, youth do have greater potential and capacity to cause a transformational change through rapid technology adoption and trainability once proper incentives and support are in place. The comparative advantage for the youth in this segment include:

1. Youth are energetic, quick learners, fast adopters, ambitious and competitive which makes them good candidates for commercial farming.
2. Increasingly educated youth are willing to take on agriculture as a business, others doing trade (both produce and other forms of trade) are diversifying into farming and are emerging as role models.
3. Greater orientation of youth towards business farming than subsistence farming with better appreciation of contract obligations.

An interesting business model, which aims at increasing youth involvement in the production of oilseeds, is the one launched by Ngetta TH in partnership with USAID YLA (see box 6). The incentive for Ngetta TH is to secure more supply by tapping into the potential of youth engaging in commercial oil seed production. The model's objective is therefore to empower youth through their cooperatives to participate in agricultural markets by increasing the economic opportunities for the youth. This model has so far been piloted and proved successful. It can be scaled up or replicated to ensure that more youth are integrated into the cooperative model. If the internal management capabilities of the cooperative are built, it will make a successful transition to a business-oriented institution. Besides production and trading earnings, the labour market in the community will be boosted. Indeed, the supported youth should create employment for other youth as farm labourers or provider of services during harvesting, post-harvest handling and transport of produce. This is a major incentive to attract youth from urban jobs to offer their energies to farm labour. This will boost the farm labour markets that is currently constrained due to lack of youthful labourers.

Box 6: A youth-centred supply chain for sunflower crushing material: empower youth through their cooperatives

Ngetta TH located in Lira is a new entrant into the oil milling sector and has installed a new oil milling plant (daily capacity of 25 MT). Unlike the current leading firms like Mukwano, Mt. Meru millers and Nile Agro millers, Ngetta TH plans to build a dedicated youth-centred supply chain for sunflower crushing material as a strategy to sustainably secure a steady and smooth supply. YLA and Ngetta TH are therefore partnering with a view to: building the capacity of Ngetta TH to establish a robust technical team to provide GAP to cooperative-based extension workers; train cooperative extension workers in GAP and extension delivery and to set-up demo gardens for members to learn and practice GAP in sunflower; provide young farmers with agro input and a secured output market; support youth to access technical and business development services including financial service through Ngetta TH own services or linkages with relevant market players. The partnership targets 6,000 youth (4,000 young women). Up to 13 cooperatives have been selected which, in turn, have identified youth extension leaders, and finance assistants for training and mentorship. The technical team of the company is in charge of training the extension workers in sunflower GAPs and extension service provisions skills (who are part of the cooperatives technical staff) and provide them with long-term mentorship and technical backstopping. The model also foresees mentorship and incubation of youth, which are part of the cooperative management support staff. Ngetta TH finance officers/accountants provide on the job training to the cooperatives' finance officers. To promote technology transfer and diffusion, the company supports the establishment of learning centres in each district in form of demonstration sites. The youth will access good quality inputs and technologies facilitated by Ngetta TH on agreed but youth-friendly terms and conditions. YLA facilitates the discussions and negotiations on the terms leading to the review and signing of an MOU between the cooperatives and Ngetta TH. The company is committed to financing youth production activities through direct input credits, pre-marketing cash advances and where necessary guarantee to financial institutions for commercial credit. The cooperatives collects and bulk the produce from their members, do quality inspection for cleanliness and wholesomeness of the grain and package them in 100 kg bags labelled with the name of the youth and cooperative. The company then buys the grain through a lump sum payment (minus pre-paid agro inputs by Ngetta TH) to the cooperative against quantities delivered either at the factory or picked up by Ngetta TH at the cooperative premises.

Source: Ariko Okelai (2017)

Production is a core function in the value chain and it is also the phase with the highest risk. Focusing on commercially valuable crops is a good entry point to engage youth and take advantage of their ambition and quest for immediate returns. The different clusters identified have cooperatives and youth groups at different levels of development and this dictates the approaches for short-term engagement and strategies for long-term engagement.

NU-TEC MD in each of these clusters can promote youth engagement by supporting initiatives to address key production constraints. This will require NUTEC-MD to use a multi-level entry strategy tailored to each cluster as highlighted below.

Cluster 1 strategies: As a market facilitator, NU-TEC MD should promote cooperatives as the primary intervention point to reach and link the youth with agribusiness firms. The bigger proportion of youth engaged in farming as a business operate within the cooperative structures in Lira and Oyam districts. It would be counterproductive to form new youth groups or isolate them from the cooperatives to promote these linkages. The cooperatives are also beginning to be looked at by buyers and oil millers as viable entities, which provide social capital collateral giving more credibility to the youth and a pre-requisite for contract and forward contract farming models. At this point, NU-TEC MD intervention could be to facilitate support of the cooperatives with a large percentage of youth groups in order to develop a market responsive business model, able to respond to

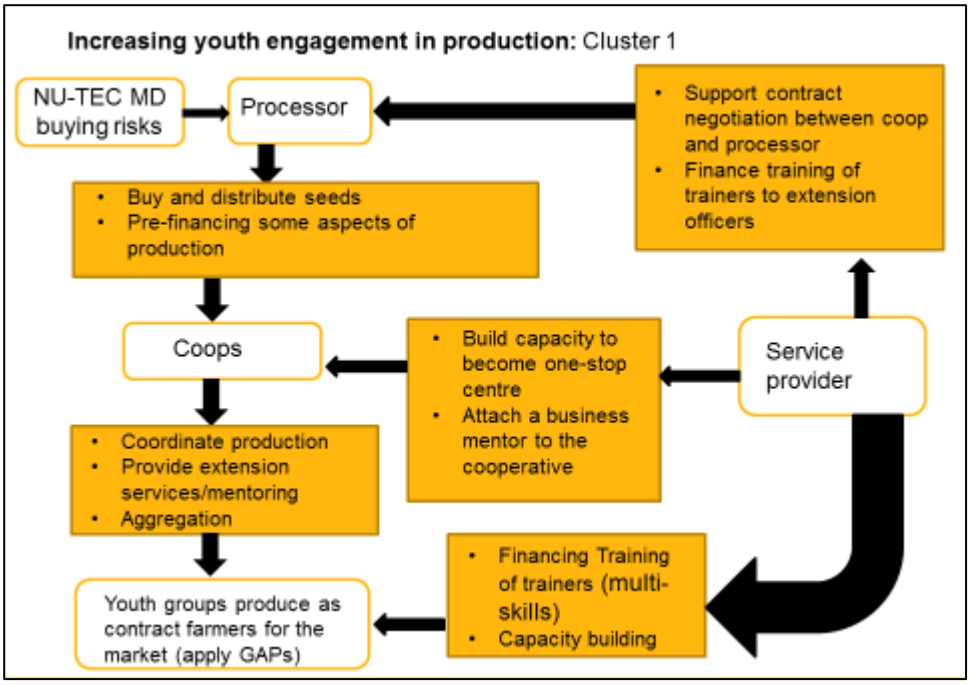
market opportunities. As mentioned earlier, the cooperative should become a one-stop-shop, providing skills, agro-inputs, primary mechanisation and saving mobilisation. Strengthening the institutional capabilities of cooperatives requires building internal management capabilities of the cooperatives to transition them into business-oriented institutions. This can be done by training and mentoring youth cooperative staff (e.g. in management, production, sales and financial records). At the level of youth producer groups, emphasis should be given on reinforcing extension services focused on CSA and in building post-harvest handling skills. The cooperative should support youth groups by managing the extension structure (with extension officers trained in multiple skills). NU-TEC MD support can focus on financing the training of trainers in the cooperatives. Financial support could be channelled to strengthen the cooperatives' business know-how and structures. At the same time, NU-TEC MD can enhance the level of engagement of processors' extension services. The training of trainers could also be provided to the extension officers of big processors. For processors that engage directly with cooperatives (e.g. Ngetta TH), NU-TEC MD could provide tailored support in dealing with business cooperatives (this may be a designated business mentor to the executive management).

Cluster 2 strategies: Youth in this cluster do not have primary interest in the production of sunflower and soybean. Preference for alternative enterprises is a result of two factors: (i) the learning curve effects since these crops are not widely grown in the region; and (ii) the lack of reliable markets leading to reduced profitability and sometimes losses due to high market transaction costs. The intervention unit and strategic entry point for this cluster should be the youth producer groups. At the level of producer groups, enterprise selection should be done to identify the priority enterprises preferred by youth that can be grown alongside or alternately with sunflower and soybean. The action should focus on improving training in GAPs and in CSA (e.g. there is a large government subsidy programme on renewable energy and it would be easier to promote irrigated agriculture adopting affordable solar irrigation technology. Indeed the district farmers association are provided with 40 percent subsidy plus a credit line from Solar Now). It is also crucial for this cluster to build institutional capacity of the cooperative and strengthen its capacity to provide extension services to youth producer groups.

Cluster 3 strategies: This cluster is at a much lower level of development in terms of producer group development and conceptualisation of market-driven farming. Role models play a major inspirational part in tapping the youth potential in production. NU-TEC MD, through service providers, can focus on building the capacity of role models to offer peer learning support and apprenticeship learning for youth to engage in farming as a business. Role models need to be identified and trained to become the point of contact with youth groups. The role model should provide training to the group which will have its own plot. This cluster will require support from a number of partners to provide a wide range of services to develop the farm business skills of the farmers and build capacity of the producer groups. Potential partners for this strategy can be agri-business development services (BDS) firms, for example, the Agency for Sustainable Rural Transformation (AFSRT). In terms of the off-take market, NU-TEC MD could work with micro-processors to engage youth groups in their supply chains without competing directly with the major processors but also creating a clear market opportunity for the youth.

In general, the potential risks lie in failure of the cooperative to make the transition to a viable and market-driven cooperative. Another potential risk is related to the disincentive of big processors to engage given the alternative offered by importing palm oil rather than engaging more in supporting sunflower and soybean production. It is important to note that, while processors are said to operate at 35-45 percent crushing capacity, this only relates to sunflower and soybean. The processors are actually operating at higher plant capacities than that through palm oil imports from Malaysia.

Figure 12: Increasing youth engagement in production: contract farming built on commitment-based forward contract arrangements with oilseeds buyers/processors of oilseeds.



Source: Authors' elaborations

Box 7: Possible opportunity to interest the private sector to engage with youth in production

The youth provide an opportunity to move from the buying orientation of agribusiness companies to a supply chain development orientation. This can be achieved by engaging youth in contract farming, exerting peer influence to ensure conformance with contractual obligation and tapping into their energies and ambition to expand acreage towards commercial production.

NATURE OF PARTNERSHIP	SUNFLOWER HYBRID AND SOYBEAN PRODUCTION BUSINESS
KEY ACTORS AND PARTNERS	1. VEGETABLE OIL MILLERS 2. YOUTH GROUPS 3. THE COOPERATIVE ORGANISATION
SECONDARY ACTORS	4. SERVICE PROVIDER SUPPORTED BY NU-TEC MD
POTENTIAL ROLES AND RESPONSIBILITIES FOR KEY ACTORS	1. OIL MILLERS • Buy and provide farmers with the seed • Pre-finance some aspects of production as primary commitment to buy 2. YOUTH GROUPS • Provide land and produce for the market • Attend training activities and apply skills learnt • Finance the production business operations • Apply GAPs in production. • Sell to the contract buyer 3. THE COOPERATIVES

	• Coordinate the production activities of the youth members and supervisory the contract compliance as a gateway agency • Manage the contracting processes and obligations with the millers on behalf of the members • Provide extension services, supervisory, field support and monitoring duty to ensure high quality grain is produced through compliance • Aggregate and implement business support initiatives to the youth groups in seed production • Take over full responsibility of pre-financing seed production and sourcing for inputs in the long-term
ROLES AND RESPONSIBILITIES OF SECONDARY ACTORS	4. SERVICE PROVIDER • Build the capacity of youth to partner with agribusiness firms as contract farmers, by training on practical skills development • Support and build the capacity of cooperatives to provide extension services to members to adopt GAPs in production • Support the cooperative to become a one stop input centre producing seed and marketing to other farmers alongside other vital inputs
SCALE UP AND EXIT STRATEGY	THE SERVICE PROVIDER AND OIL MILLER can exit the support and leave the youth and the cooperative to occupy its possible roles as a business

6.4. Increasing youth engagement in storage and aggregation markets: youth groups as primary aggregation centres

6.4.1 Existing patterns, challenges and opportunities

The table below summarises the main patterns in the aggregation segment, highlighting the challenges and potential opportunities for increasing youth engagement. Aggregation activities are still very limited in the youth groups interviewed. This is partly due to the fact that there is a lack of storage spaces and bulking facilities, which results in people keeping produce in their houses, although a few members stated that they rent storage facilities. Cooperatives like ACWEC OMIO may provide a storage facility but this cooperative was one of the few which provided such a service. Very often, cooperatives still do not have a clear marketing strategy. Trinity Warehouse, located in Dokolo, also provided youth and women groups with rental space for produce storage. The limited use of forward contracting also hampers planning of production and aggregation.

Table 6: Storage and aggregation: existing patterns, challenges and opportunities

Market segments	Existing patterns	Challenges	Opportunities
Storage and aggregation	• Lack of storage space/bulking facilities	• Cooperative does not operate with a clear marketing strategy	• VSLA used to get inputs and to aggregate • Huge potential to develop savings and investment skills • Lira Resort, pool of agents working on commission and pre-financed (strong relationship)

6.4.2 Proposed strategies and business models

Youth often function as buying agents or delivery agents in cases of input trading systems. Successful agency engagement can be illustrated by the Lira Resort model. In this model, a pool of 200 agents (of which 60 per cent youth) work as commission agents. The company engages youth as buying agents and facilitates them by pre-financing. Prior to engagement, the company trains and attaches the youth to a mentor to master the art of buying and managing commodity stocks. The strength of this model lies in the strong relationship with the youth involved and a strong link with the communities to which the youth belong, and the fair accrual of trading benefits (i.e. profits). While other buyers have used the agency model, they have had difficult experiences in terms of high costs and youth absconding with cash. The risk associated with this model has been a negative factor to the buyer and the youth because buyers sometimes fail to honour their commitment.

In terms of the Cluster 1 strategy, youth producer groups can be supported with the provision of small bulking houses, and youth groups can act as primary aggregation centres. Youth can be engaged also to provide transportation services from farms to the aggregation centres using the *boda boda* and bicycles. Critical skills at primary aggregation centres include record keeping and quality inspection. These are segments in which youth skills can be developed or deployed either on a commission basis or wage basis. A the level of the cooperative, the main task would be timely collection from primary aggregation centres, conduct quality assurance and build group capacity to manage the primary aggregation centre. The cooperative could also provide bridging finance (e.g. in case of emergency, the cooperative can pay 50 percent of the produce in advance in order to discourage side selling).

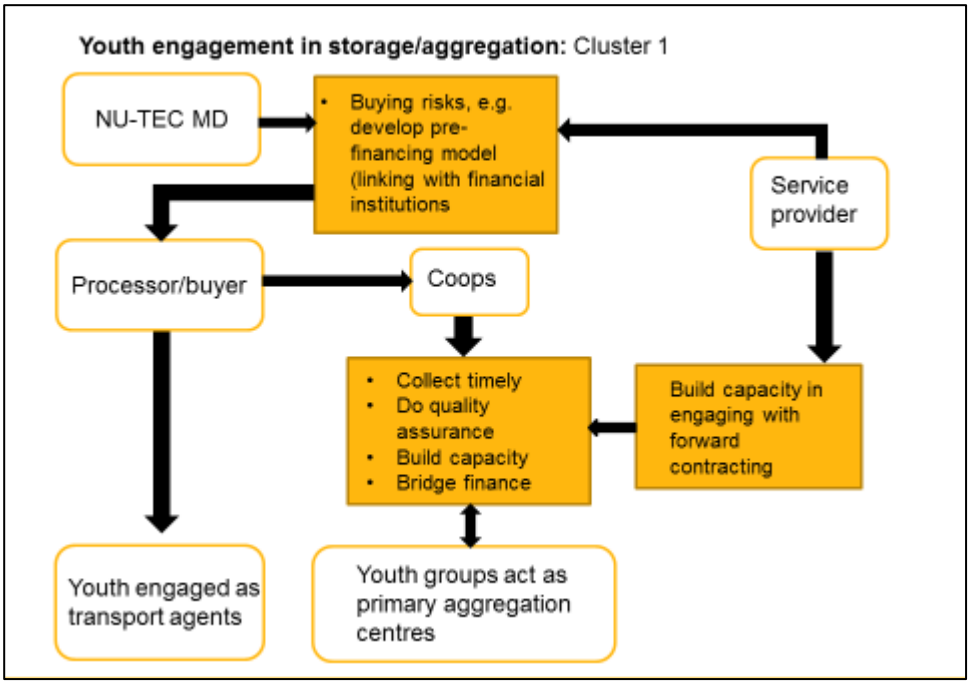
NU-TEC MD can support the capacity of the cooperative in engaging in forward contracts (e.g. in designing the contract), and facilitating the negotiation with the buyer. In addition, NU-TEC MD could work with the buyer/processor to develop a pre-financing model, linking them with a financial institution. Ngetta TH, for instance in the model illustrated in Box 7, is committed to financing youth production activities through direct input credits, pre-marketing cash advances and, where necessary, guarantees to financial institutions for commercial credit.

For Cluster 2, NU-TEC MD has to identify a service provider when the cooperative is not there. At the group, it is important to equip groups with skills in collective marketing and promoting their federation at parish level to set up collective marketing committees. In terms of planning, the first year should focus on increasing the skills at group level, the second year on federating groups at parish level, and the third year on establishing a cooperative.

For cluster 3, a strategy should focus on building the capacity of youth producer groups to bulk, making the parish a key intervention unit for aggregation.

The potential partners include: large soybean buyers, sunflower micro-processors, large sesame exporters, and horticulture market vendors (indeed the majority of market vendors are youth, they can be linked up to aggregation centres).

Figure 13: Increasing youth engagement in storage and aggregation markets



Source: Authors' elaborations

7. Opportunities and strategies of youth engagement in other commodities

The three-cluster characterisation demonstrates the richness of opportunities offered by agriculture to youth. Especially in cluster 2 and 3, there is a high youth engagement in other commodities other than sunflower and soybean, including sesame, beans, maize, horticulture, and small livestock such as piggery and poultry. In our discussions with the youth, as summarised in the table below, there are strengths and weaknesses associated with each commodity as well as emerging opportunities. For this reason, it would be prudent for NU-TEC MD to undertake a feasibility analysis of these commodities to promote increased youth engagement. This chapter also highlights successful business models in terms of value addition in sesame (sesame juice) and horticulture outgrower training which can be considered by NU-TEC MD.

Table 7: Strengths, opportunities and challenges of sesame, maize and horticulture

Commodity	Sesame	Maize	Horticulture
	Cluster1+ Cluster2+ Cluster3	Cluster2+ Kitgum	Cluster2+ West Nile
Strengths	• Strong buyer engagement • Food security • Income security • Local knowledge • Strong appeal for youth not complicated to produce • Good storability properties • Very resilient to climate • Good local market • Open pollinated seeds (re-usable)	• Strong buyer engagement • Capacity for value addition • Strong secondary market (household, produce of the mill goes to the producers: for animal feed) • Plenty of local knowledge • Climate resilient varieties • Opportunities for local seed product	• Quick returns (as soon as three/four weeks) • Strong demand • Does not require much land • Can tap into leisure time (very good as second enterprises) • Conducive for climate smart practices (dry planting/use bottles for irrigation)
Weaknesses	• Labour intensive • Expandability is limited (pod shattering)	• High price fluctuations • Seeds are quite expensive • Weak export market • High input requirements • Susceptible to many pests and diseases • Need larger acreage to make return • Limited female youth engagement	• Susceptible to many pests and diseases • Highly perishable • Needs skills for exotic vegetables
Opportunities	• High potential for value addition (sesame paste/snack/juice) • Opportunities for local seed multiplication • Export (demand from Asia and Europe) • Ready buyers available • Strong female youth engagement, because of the reduced land size needed	• Opportunities for value addition (maize flour, animal feed) • Strong linkages with complementary enterprises: poultry	• High local demand • Growing demand from the hospitality sector • Using the waste of pig as a compost • Strong female youth engagement
NU-TEC MD strategy	Focus on the priority enterprises preferred by youth	Focus on the priority enterprises preferred by youth that can be	Focus on the priority enterprises preferred by

	that can be grown alongside or alternately with sunflower and soybean	grown alongside or alternately with sunflower and soybean	youth that can be grown alongside or alternately with sunflower and soybean

7.1 Sesame juice as a strategy for value addition

Opportunities lie in adding value to agricultural outputs and therefore creating a more sophisticated range of secondary agricultural products on the national and international markets. An example of value addition process for sesame currently practised by farming in Kitgum is the production of sesame juice. The juice is a unique and highly nutritious beverage that is not readily available in the market but is commonly consumed in the rural market. Sesame juice is a partially fermented non-alcoholic extract of sesame with high health nutritional qualities and a sweet taste. In terms of the production process, the dried sesame seed is cleaned and ground into powder using a grinding machine or stone. The powder is then soaked in clean water to form a mash and left to soak for some minutes. The mash is squeezed using a cheese cloth or any suitable cloth to get a liquid milky extract. Sugar is added to the extract and then treated with bakers' yeast and allowed to ferment for at least 12 hours, after which it is ready to be served. This product is potentially a more profitable venture compared to other products. Usually, 1 kg of sesame is used to produce 10 litres of sesame juice.

Table 8: The e economics of sesame juice

Item	Cost per kg
Sesame	2,700
Water	250
Grinding	800
Sugar	3,000
Packaging bottles	50
Yeast	500
Sub-total	**8,800**
Price per liter	**1,000**
Total revenue from 10 litres	**10,000**
Profit	**2,700**

7.2 Outgrower training model in horticulture

There is a very successful business model which has been piloted by a private sector player, Agri-Query Solutions and YLA. The business model aims at linking 200 youth (120 women) as vegetable outgrowers to Agri-Query Solutions which provides crop finance, extension services and a guaranteed market. The key activities undertaken by the pilot include: youth training and skills development in offseason production of cabbage, marketing of cabbage, as well as access to farm inputs and technologies and access to credit seed financing through the Agri-Query Solutions Ltd input shop (see Box 8).

Box 8: Outgrower training model run by the youth-led enterprises like Agri-Query Solutions

Agri-Query Solutions is a micro enterprise dealing in input supplies and production and marketing of horticultural produce. In 2015/16, the enterprise worked with a group of 30 youth in the production and marketing of horticultural products. Mark Fat, the 20 year old business owner, offers youth access to inputs, acts as a market facilitator by buying from the youth to guarantee a ready market, and finances production through a line of input credit and provision of

capacity building through skills facilitation to youth outgrowers working with Agri-Query solutions. Mark Fat is an influential agripreneur in the community. In the last three years he has built a successful input business and has gone further to establish a viable horticultural production and marketing business, as well as a piggery production business. Agri-Query Solutions integrated business model is designed to provide enterprise complementarity and broaden income opportunities. The input business provides the farm inputs and the piggery provides waste which is used as organic manure in the vegetable fields. The prunings from the vegetables are not put to waste but used as a rich source of feed for the pigs thus reducing on feed cost, ensuring a high level of efficiency in resource and material utilization.

The 30 youth which have been trained as outgrowers were given parcels of land in the Agri-Query Solutions farm each one quarter of an acre as a demonstration field. The inputs and training were provided by Agri-Query Solutions over two seasons and each outgrower provided labour and their will to learn. In the end, the crop harvest was shared with 30% of the harvest taken by Agri-Query Solutions in compensation for the inputs and training and 70% was retained by the trainee youth and sold to Agri-Query Solutions at the appropriate market price. The 30 youth have since established their own farms as outgrowers having successfully sold their first independent harvest to Agri-Query Solutions in the second season of 2016. Agri-Query Solutions plans to scale this initiative up with support from YLA to the sub-counties of Anaka and Longulu targeting 200 youth (120 young women and 80 young men). In order to satisfy the growing consumer market in Northern Uganda there is a need to expand the outgrower scheme. By doing so, customers received a continuous supply and supply gaps are avoided. Besides this, a generation of youth who are skilled agripreneurs will also be created.

The partnership between YLA and Agri-Query Solutions therefore aims to build capacity of youth to produce horticultural products for the Northern Uganda and West Nile market. The youth are interested in quick returns and can easily be integrated into the production of high value, short gestation period crops like horticultural crops, which offer more sustainable, high paying and quick cash returns. Scaling up the Agri-Query Solutions initiative can create big wins in recruiting more youth into their outgrower programme. Agri-Query Solutions Ltd. has gained significant experience in input supply youth training and marketing of horticultural products. This pilot began at the end of 2016 and will last 12 months. YLA is expected to fund the mobilisation activities as well as the training and part of the remuneration for Agri-Query Solutions' extension staff. The activity is expected to yield the following results in contribution to YLA objectives:

1. Train and transform 200 youth into successful horticultural farmers for offseason cabbage production.
2. The youth will be able to build a sustainable and profitable horticultural business and earn profits from one acre of horticultural products and each youth shall be able to reach three young women and one young man. A total of 600 youth shall be reached by the end of 2018;
3. A total of an around 600 jobs will be created through labour and other farm and marketing activities, an average of three jobs created by each youth;
4. Guaranteed access to quality inputs and off-take market for the youth.

The activity will also deliver some tangible benefits to Agri-Query Solutions, these results are:

1. A total of 600 trained and skilled outgrowers will be added to Agri-Query Solutions supply chain of horticultural products.
2. Increase the sales of inputs from the input shop through supplies to the outgrower members
3. Achieve large volumes of horticultural production needed to expand their market reach and maintain the current client base.

Source: YLA concept note and interview with Mark Fat

Picture 4: Agri-Query solutions
Photo credits: Lucia Wegner

The Agri-Query pilot model is sustainable and scalable given that it is hinged on the economic benefits accruing to both parties in the commercial relationship, which ensures personal commitment from both the mentored youth and Mark Fat, the agripreneur. The model has a spillover effect in terms of employment opportunities and transfer of skills to farm employees. Thanks to the emerging role models and their multiplier effect, the model provides a strong foundation for a wider and lasting impact. The fact that each party in this activity has both a financial and non-financial commitment motivates them enough to recoup and sustainably maintain the value obtained from farming as a business. Horticulture does not require much land, and land in both the short-term and long-term will not be a constraining factor. There is sufficient land available for hire, but also expansion when needed.

8. Concluding remarks

The findings of the field research and the strategies proposed suggest that the interventions to facilitate private sector engagement with youth should not target youth in isolation but as part of a group. This is a condition to ensure also the sustainability of the facilitation strategy when youth transition towards adulthood. Indeed, the reality of youth is heterogeneous, their active age in agriculture is between 15 and 35 years old, they are deeply embedded in family, social and business network (e.g. producer groups and cooperatives) and they are engaged in agriculture at different levels.

NU-TEC MD's role will be to broker the relationship between the private sector and youth producer groups and cooperatives. The research work has revealed the limitations of the private sector in terms of competencies to deliver some interventions related to institutional capacity development of the cooperatives and youth producer groups. This is due to the fact that these activities are not considered core to the private sector's business model, which calls for the private sector to be facilitated to engage or hire capacity building experts or service provider organisations to support them in this aspect of interventions. This approach, besides strengthening the private sector supply chain, will also build a sustainable relationship between the private sector and service providers, thereby enhancing continuous business engagement beyond the NU-TEC MD intervention.

There is no one-size-fits all for the whole of northern Uganda but there are different clusters, exhibiting different patterns, challenges and opportunities for youth engagement in market driven activities in agriculture. The ability and potential of for robust inclusion of the youth depends on the overall performance of the cluster.

Given that the three clusters are at different levels of agribusiness development, the primary entry point in terms of the producers' organisation structure will vary.

In Cluster 1, the cooperative structure is fairly well developed and actively engaged with members and the processors, therefore the entry point for the private sector engagement and service provider support should be the cooperative. The objective will be to strengthen the capacity of the cooperative to deliver on its mandate to members and obligations to the private sector. Strengthening the institutional capabilities of cooperatives requires building cooperatives' internal management capabilities to transition them into business-oriented institutions. The cooperative should become a one-stop-shop, providing skills, agro-inputs, primary mechanisation and saving mobilisation. In Cluster 2, youth producer groups are weaker, less organised than in Cluster 1 with a weak affiliation to cooperatives. In this cluster, the entry point will be at the level of youth producer group, and the service provider and the private sector will work together to build the producer groups' capacity to produce and federate into a cooperative. Youth producer groups will need to be supported to identify and build market linkages with credible markets or buyers for sustainable farming as a business. Important efforts should be devoted to increase youth groups' skills in CSA. In turn, the cooperative will then become the institutional structure that will then engage with the private sector. In Cluster 3, where the few youth producer groups operate in isolation and there are very few and weak cooperatives, the service provider and the private sector will support the formation of youth groups, in terms of building capacity of group dynamics and promote group cohesion. In order to achieve youth engagement, it is crucial to have a youth support package which includes, in addition to production and marketing skills, social elements (e.g. soft/life skills such as leadership and communication skills, financial literacy skills and savings for investment).

Where youth are engaged in alternative commodities (beans, maize, horticulture, sesame) other than sunflower and soybean, it is critical to support youth inclusion by prioritising these commodities (which have a food security added advantage), alongside sunflower and soybean. It is important to conduct an assessment of the market

feasibility and potential for these alternative commodities for youth inclusion. NU-TEC MD should also explore apprenticeship models for youth inclusion in agriculture, as illustrated by Agri-Query Solutions (see Chapter 7).

At the level of the market segments analysed, the cross cutting need is investment capital. It is therefore crucial to build financing capacity across all market segments.

NU-TEC MD can leverage its position to facilitate financing opportunities in a way that enables youth producer groups or cooperatives to invest in cost-cutting technologies and marketing infrastructure. Opportunities exist to invest in mechanisation as a service, primary aggregation centres and seed production. NU-TEC MD can facilitate access to trade and investment finance (e.g. provide collateral guarantees to financial institutions as well as trade finance). This will enable youth groups to access the capital to procure equipment (e.g. ox traction kits, tractors, threshers), to set up primary aggregation centres owned by producer groups through their cooperative, to acquire transport systems to move produce (e.g. tricycles), as well as seed handling infrastructure for seed multipliers.

References

Action Aid Uganda, Development Research and Training and Uganda National Non-Governmental Organizations Forum. (2012). Action Aid Uganda, Development Research and Training and Uganda National NGO Forum. Lost Opportunity? Gaps in Youth Policy and Programming in Uganda, Kampala.http://www.actionaid.org/sites/files/actionaid/youthrepot-final_0.pdf.

AGRI-PROFOCUS UGANDA (2014) SITUATION ANALYSIS OF YOUTH IN AGRIBUSINESS IN UGANDA, Zake, J and Ambrose, B. August 2014.

Ahaibwe, G and Mbowa, S. (2013) Youth Unemployment Challenge in Uganda and the Role of Employment Policies in Jobs Creation. Retrieved from: https://www.brookings.edu/blog/africa-in-focus/2014/08/26/youth-unemployment-challenge-in-uganda-and-the-role-of-employment-policies-in-jobs-creation/

Alinyo, F., and Leahy, T. (2012). Designing Food Security Projects: Kapchorwa and Bukwo, Uganda. Development in Practice, 22(3), 334–346. http://dx.doi.org/doi:10.1080/09614524.2012.664620

APMEI (2016) Exploring the High Youth Uptake of Agriculture Employment in West Nile region, Uganda An Action Research Report. Conducted For: Netherlands Development Organization (SNV), Agency For Accelerated Regional Development (AFARD) and Center for Governance and Economic Development (CEGED), September 2016.

Ariko Okelai, J. (2014) 'Unlocking the Potentials of Uganda's Youthful Population for Socio-Economic Transformation' in the state of Uganda Population report 2014.

Ariko Okelai, J., Agaba A., Okello , T. (2016) Case Study on: Youth Leadership in Agriculture (YLA) and Equator Seeds Limited

Banks, N., and Sulaiman, M., 2012. *Problem or Promise? Harnessing Youth Potential in Uganda*. BRAC and Mastercard Foundation.

Bennell, P. (2007). Promoting Livelihood Opportunities For Rural Youth, Knowledge and Skills for Development. IFAD, Pp 15.

Bennell, P. (2010). Investing in the future: Creating opportunities for young rural people. IFAD, 24 pp

Butler, E., and Kebba, A., 2014. *Youth and Agriculture in Uganda: An Assessment. Combining Agriculture Improvements and Youth Development Shows Promise for Both*. QED Group, LLC. USAID.

DFID (2014) Northern Economic Recovery Analysis, p. xvi

Economic Policy Research Centre (2013) *Youth Engagement in Agriculture: Challenges and Prospects*, pii

Envision (2016) *Sunflower and Soybean Market System Assessment*, Northern Uganda – Transforming the Economy through Climate Smart Agri-Business, Market Development (NU-TEC MD), (February)

Filmer, D. and Fox, L. (2014). Youth Employment in Sub-Saharan Africa. Africa Development Series. Washington, DC: World Bank.

Hartley, S. (2011) A new Space for a New generation: The rise of cooperatives among young people in Africa, Cooperative College, UK.

Hivos (2014). Applying a youth lens for agricultural development (1.3) in Sustainable coffee as a Family Business, Sustainable Coffee Program powered by IDH, the Sustainable Trade Initiative, Agri-ProFocus, Fair & Sustainable Advisory services. http://agriprofocus.com/downloads-coffee

ILO (2012) A better future for young people What cooperatives can offer: http://www.ilo.org/wcmsp5/groups/public/---ed_emp/---ed_emp_msu/documents/publication/wcms_195535.pdf

Konrad-Adenauer-Stiftung (2015) Enhancing Youth Participation in Agriculture in Uganda: Policy Proposals - A STUDY CONDUCTED BY THE YOUNG LEADERS THINK TANK ON POLICY ALTERNATIVES

Oluwaseum, O. (2014). Fifteen major reasons youth in Africa do not like a career in Agriculture. http://www.nairaland.com/1624644/15-major-reasons-youth-africa

Odokonyero, T. (2012) Informal savings schemes and household welfare in Northern Uganda: a case study of Amuru District, Makerere University paper

Pyburn, R., Audet-Bélanger, G., Dido, S., Quiroga, G., Flink, I. (2015): Unleashing potential: gender and youth inclusive agri-food chains (KIT SNV Working Paper Series 7 – 2015.).

Uganda Bureau of Statistics (2013): The National Labour Force and Child Activities Survey 2011/12: Youth Employment Report, retrieved from: http://www.ubos.org/onlinefiles/uploads/ubos/pdf%20documents/NCLS%20Report%202011_12.pdf

Annex 1: Sampling plan

Table 1.1 Summary of sampling plan

RESPONDENTS	TOTAL
LOCAL GOVERNMENT	6
DEVELOPMENT PARTNERS	11
PROCESSORS	9
STORAGE/AGGREGATION	8
SEED PRODUCERS	7
LAND OPENING/PRODUCTION	34
BUYERS/WAREHOUSES	5
SKILLS DEVELOPMENT/BTVET	1
TOTAL	**81**

Table 1.2 Detailed clustering of identified respondents

RESPONDENTS	Land opening/ Production	Seed production	Storage/Aggregation
LOCAL GOVERNMENT			
1. District Local Government (DLG) Lira	X	X	X
2. DLG Dokolo	X	X	X
3. DLG Oyam	X	X	X
4. DLG Gulu	X	X	X
5. DLG Kitgum	X	X	X
6. DLG Nebbi	X	X	X
DEVELOPMENT ORGANISATION/SERVICE PROVIDER			
7. Agency for Sustainable Rural Transformation	X	X	X
8. Vegetable Oil Development Project, VODP	X	X	X
9. Real Agribusiness Development Agency, RADA	X	X	X
10. USAID Feed The Future (Youth Leadership in Agriculture)	X	X	X
11. Acholi Private sector	X	X	X

12. West Nile Private sector	X	X	X
13. Palm Consult	X	X	X
14. Nile Pro Trust	X	X	X
15. Koboko District Farmers Association	X	X	X
16. Tukalere Farmers Cooperative	X	X	X
17. African Youth Initiative Network	X	X	X
SKILLS DEVELOPMENT/BTVET			
18. International Institute of Rural Reconstruction	X	X	X
PROCESSORS			
19. Mukwano	X	X	X
20. Ngetta Tropical Holding	X	X	X
21. Mt. Meru Millers	X	X	X
22. West Nile Holdings	X	X	X
23. St. Francis Oil Press	X	X	X
24. Kitgum District Farmers Association	X	X	X
25. St. Joseph Sunflower Millers	X	X	X
26. Natures Harvest	X	X	X
27. New processor	X	X	X
STORAGE/AGGREGATION			
28. Nyeko Rach Cooperative			X
29. Lira Resort Enterprise			X
30. Acwec Omio Cooperative			X
31. Note En Teko Cooperative Society			X
32. Dokolo West Coop Society Ltd			X
33. Trinity Warehouse			X
34. Dokolo Area Farmers Cooperative			X
35. West Nile Holdings			X
SEED PRODUCERS			

36. Kanyocan Youth		X	
37. Oryemcan Widows		X	
38. Acwec Omio Cooperative		X	
39. Note En Teko Cooperative Society		X	
40. St. Joseph Sunflower Millers		X	
41. KDFA (Kitgum District Farmer Association)		X	
42. Koturo Youth Group		X	
LAND OPENING/PRODUCTION			
43. Dokolo West Coop Society Ltd	X		
44. West Nile Holdings	X		
45. Koboko District farmers Association	X		
46. Lagot Wire	X		
47. Kicaber group	X		
48. Lalogi Pekoyo	X		
49. Wolokokwo	X		
50. Purber group	X		
51. Amilolobo Youth Group	X		
52. Kicaber Womens Group	X		
53. Nen Anym	X		
54. Kicaber Womens Group	X		
55. Cam Kwoki	X		
56. Kica Ber	X		
57. Ni ye kitic	X		
58. Lonyo tie ikano lim	X		
59. Cac Pe Weka	X		
60. KDFA	X		
61. Katiyi Women	X		
62. Ambaru Women	X		

63. Nyanza Farmers	X		
64. Madali Young Fg	X		
65. Nyanybu Youth	X		
66. Ewadri Youth Ass	X		
67. Payoda Youth	X		
68. Opia Youth Farmers Ltd	X		
69. Ayiko Youth	X		
70. Lia Youth Star	X		
71. Katiyi Women	X		
72. Koboko District Farmers Association	X		
73. West Nile holdings	X		
74. Kuluba Coop Society	X		
75. Ludara/Lima Womens Group	X		
76. Agri-Query Solutions (Mark Fat)	X		
BUYERS/WAREHOUSES			
77. Trinity Warehouse			X
78. Dokolo Area Farmers Cooperative			X
79. Gulu Agricultural Dev't Ltd			X
80. KDFA			X
81. Agri-Query Solution (Mark Fat)			X

Annex 2: List of participants at validation workshop

	Name	***From***	***Organisation***
1.	*Ronald Byakika*	*Lira*	*Dynamic*
2.	*Tommy*	*Lamwo*	*St. Francis Oil Press*
3.	*Paul Omara*	*Lira*	*Ngetta Tropical Holding*
4.	*Milton Okello*	*Lira*	*Lira Resort Enterprises*
5.	*Eddy Okello*	*Oyam*	*ACWEC OMIO COOP*
6.	*Benson Olama*	*Nebbi*	*Real Agribusiness Development Agency, RADA*
7.	*Nick Obot*	*Lira*	*Agency for Sustainable Rural Transformation, AFSRT*
8.	*Emma Ogwang*	*Arua*	*Vegetable Oil Development Project, VODP2*
9.	*Mark Fat*	*Anaka*	*Consult Agri-Query Solution*
10.	*Robert Bakyalire*	*Nebbi*	*Agency for Accelerated regional development, AFARD*
11.	*David Wozemba*	*Kampala*	*NU - TEC*
12.	*Margaret Masbayi*	*Kampala*	*NU - TEC*
13.	*Hans Muzoora*	*Gulu*	*NU - TEC*
14.	*Michael Adriko*	*Gulu*	*NU - TEC*
15.	*Michael Idha*	*Gulu*	*NU - TEC*
16.	*John Rachkara*	*Gulu*	*NU - TEC*
17.	*Martha Muganyizi*	*Gulu*	*NU - TEC*
18.	*Moses Wanzala*	*Gulu*	*NU – TEC*
19.	*Alfred Lawko*	*Nebbi*	*AFARD*
20.	*John Ariko Okelai*	*Kampala*	*JP Management*
21.	*Ingrid Flink*	*Netherlands*	*Royal Tropical Institute KIT*
22.	*Lucia Wegner*	*Netherlands*	*Royal Tropical Institute KIT*