

EXECUTIVE SUMMARY

Tomatoes are one of the important mainly irrigated and to some extent rainfed crop in Four of the Eight AgroBIG project woredas, namely North Mecha, Dera, Fogera and Bahir Dar Zuria. It is produced mainly as cash crop and to some extent for fresh use by farmers.

This tomato value chain analysis report is prepared based on the study conducted in July 2018 in the aforementioned woredas using individual household (HH) surveys, Focus Group Discussions (FGDs), physical observations and key informant surveys. The study found that the main actors of the value chain in the region are small scale farmers, brokers, traders and consumers. Although tomato is one of the export crops in Ethiopia, which generated about 9.2 million USD in 2015 (ERCA, 2015), the value chain was found to be short without value addition activity where by fresh tomatoes are supplied to the local market for fresh consumption only.

According to the marketing analysis results, tomatoes produced in the project woredas are collected either directly from farmers by traders (through brokers) or from local markers and supplied to Bahirdar, Gondar, Dessie and Wollo areas in general, Humera and Dansha (now stopped for reasons explained below in the document), Jigjiga and Debremarkos and the surroundings.

Many farmers and AgroBIG itself believe that the value chain analysis assignment should focus on ways of creating market linkages and thought that the market problem that the farmers have been facing is due to external factor other than the production factors. The study revealed that the way tomato is produced and the productivity have created the market problem. The productivity (production of tomato per unit area) is very low in all the project woredas. The biological potential of the crop is about 100,000 kg/ha (100 tons/ha) although there is a huge variation depending on the varieties and production practices. Hybrid varieties give even more than 100 tons/ha, whereas open pollinated varieties (OPVs) give lesser yield than hybrid ones. The maximum average yield of OPVs reported by Asfaw and Eshetu (2015) was about 470 tons/ha. However, farmers in the project woredas are getting on average 175 quintals/hectare (qt/ha). When the production or productivity is low then the farmers demand high price per kg of tomato. This factor (a) could not let the farmers to have long term contract with big buyers such as Etfruit, (b) could not let the traders to sell the product to the country's biggest market place, Addis Ababa, and (c) limits the supply regions to a few areas.

Unless and otherwise serious measures are taken on improving production and productivity as per the interest of the different buyer types, the same reason will continue creating problem in the relationship between farmers and the traders and upcoming processors. Usually processors may specify the kind of varieties that suit to the products they manufacture. Under this situation processors may supply seeds or seedlings to be produced and supplied to them on contractual basis. If farmers do not strictly follow the production standard and be able to produce near to the optimum yield, the envisaged relationship between producers and processors that the regional government and the project want to have will not be sustainable. The reason being the

processor will lose much more than the farmers because of the high cost of hybrid processing tomato varieties which is between 0.2 to 2.0 United States Dollar (USD) per seed.

According to information obtained from the Amhara Investment Commission (AIC) and the Consultant's own source, there are 22 processors in the region in different stages. Of these, one of them, Africa PLC, is said operational in Shewa Robit area in AIC's report (but at the moment it only has Mango plantation and the manufacturing part is not yet started), 4 are under implementation and the rest 17 are in pre-implementation stages. In addition, there are small scale tomato processing establishments for Small and Micro Enterprises (SMEs) like the ones visited in Debretabor and Woretta. If all the processing investments become functional, it would be very good opportunity for tomato producers in the project woredas as well as in the region as whole. The nearly completed and the biggest of all tomato processing plants is the one established by Nur Belay PLC's at Kombolcha. The plant will receive 150,000 tons of tomato per a day and it can also process onions.

The current marketing system with traders has been done in unorganized way without contract and regulation to govern it. The buyers and sellers are connected through brokers, and the farmers complain about the price fixation by the middlemen. Traders do not want to have contractual agreement with farmers due to high uncertainty of the market, but farmers do. Farmers' cooperatives, even specialized ones for marketing, have not yet started collecting tomato from fellow members for trading. For these reasons, the farmers have no alternatives other than traders which are sourcing the products through brokers.

Six major marketing channels have been identified in the study. These include:

- Project woredas to Bahirdar and Debretabor
- Project woredas to Gondar
- Project woredas to Dessie and Wollo areas in general
- Project woredas to Markos, Dilamo, Kosober, and Chagni areas
- Project woredas to Jigjiga
- Project woredas to Humera, Dansha and rarely to Shire

In the simplified gross margin (SGM) analysis summarized in Table 8, producers earn the highest margin even with the current production level. This however discourage wholesalers from buying their product and this has created loss of income to farmers as it happened last year. Higher SGM to farmers does not mean farmers are benefiting more than the traders; in fact, they are the least beneficiaries amongst all since they are producing little and their supply volume is very low. Instead, it shows that farmers could maximize their income if they can enhance tomato production and productivity per unit area. Among the marketing channels, the Dessie and Wollo area route is most profitable one followed by Jigjiga and Gondar routes. The least profitable one is the supply to Bahir Dar city.

Detail information on opportunities, constraints and suggested solutions for each actor have been described in *Section-3.8*. In the summary part of this report, the opportunities, constraints and suggested solutions for producers only have been presented below.

The opportunities in the tomato production by farmers are:

- Availability of water and irrigation schemes in some of the woredas

- Suitable environmental conditions
- Access to land during the so-called off-season time and proximity to infrastructures and markets
- Support from Office of Agriculture, AgroBIG and other NGOs

The major limitations raised by farmers and/or observed by the Consultant are:

- Prevalence of diseases and pests and non-effective pesticides availed by traders
- Shortage of improved tomato varieties affordable to farmers, low yield and mixed/strange plant characters observed in the field
- Water shortage around spring time especially for canal irrigation users at Koga
- High input (fuel, seed, chemicals and fertilizer) cost and adulterated fuel and oil for pumps
- At Fogera where they plant tomato during rainy season, they sometimes face hailstorm problem
- Market problem for fresh tomato, absence of alternative market such as processors, price fixation by brokers, and price fluctuation
- Haphazard pest control strategy among the neighboring farms led to repeated spraying of chemicals (beyond recommended rate and frequency) which makes crop protection costly, unfriendly to the environment, and unsafe to the consumers
- Absence of crop rotation in most of the tomato production field led to development of disease and pests

Suggested solutions for the aforementioned constraints:

- For the chemicals, seed, and improved seeds availability and effectiveness problems, the support institutions such as bureau of agriculture, AgroBIG, and other GOs and NGOs shall have basic research and adaptation trails in order to sustainably solve the problems. AgroBIG may assist in adaptation research trials, which can be completed in one or two years.
- Water shortage arise due to the application of an old and water wasting irrigation technology by the government. Temporarily, this problem can be solved by staggered production by having consensus with farmers. In the long run, incorporation of water saving technology might be good to consider.
- Farmers should be advised to get used to high input cost because it is what they will face time and again based on the international market price. They should learn paying high price for quality, and should not expect subsidy or donation for their own advantage.
- Tomato is not a crop of choice for rainy season due to susceptibility to diseases and pest. Farmers who have well-drained soil produce tomato during rainy season, which sometimes has hailstorm problem. Therefore, the decision that the farmers should make is either not to produce tomato during rainy season or to have rainout shelter or protected agriculture.
- The solution that are suggested to market problem include:
 - (a) to encourage the investors who have plans to establish processing facilities and then to strengthen contractual farming (out-grower scheme) development with processors.
 - (b) to increase bargaining power of the farmers by capacitating marketing cooperatives

- (c) In the absence of the aforementioned alternative solutions, farmers can think of having their own processing plants by organizing themselves into processing cooperatives.
- Farmers need to adopt programmed/staggered planting and pest control in a cluster so that they will have extended harvesting time whereby the market price is relatively higher, reduced cost of production, safe environmental and human health conditions
 - Tomatoes should be grown on the same field once every 2 to 3 years, and related crops such as potatoes and hot pepper should not be used in the years rotation to avoid diseases build ups. The crops to be considered for crop rotation shall not be members of Solanaceae family which are related to tomato. Cereals and pulse crops can be used rotation purposes.

In addition to the suggested solutions for each actor, the major recommendations and interventions are:

- Tomato production packages or research recommendation on husbandry practices should be respected by farmers (please see details in *Section-4.4*) in order to get optimum yield and quality.
- The marketing problem can be solved (a) by increasing the number of buyer types such as processors and exporters, (b) specializing the type of tomato to be produced, and (c) adopting staggered production. For all these options detail strategies have been given in *Section-4.3*.
- Creating a platform to bring as many stakeholders as possible from (research institutions, agriculture bureau, regional government office, trade bureau, finance and economic cooperation bureau, farmers, licensed brokers, traders, consumer associations, and possible processors) to discuss on the opportunities, problems and solutions in tomato value chain.
- Capacity building by providing training to different stakeholders of the value chain. For instance, training on (a) good agricultural practice and basic record keeping to farmers; (b) procurement of reliable agricultural input to suppliers; and (c) crop management skill to development agents are some of the major needs. The platform that is recommended in this report to be established serves to identify further training needs amongst the value chain actors.
- Technology transfer, which are difficult to implement by the government budget.
- Research institutions and bureau/office of agriculture should take the leading role towards improving the production and productivity of the crop.
- The regional government should intervene (a) to strictly support and follow up the progress of investors who are supposed to engage in processing sector; enforcement of the investment regulation should be done, (b) to take actions on the processing plants such as the ones in Woreta and Debretabor, which were established by its own resources, and (c) to support marketing cooperatives to get into the business that they are intended to.
- The long-term strategy that should be implemented by the regional government (at least in areas where it heavily invests in irrigation infrastructure) is to adopt cluster-based production system with state-of-the-art technologies instead of focusing on small-scale farming. This can be done by selecting a model farms and communities first and then expand based on the lessons to be learned from the predecessors.