
Review on opportunities and constraints of turmeric production in Ethiopia

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Abstract: *Turmeric (Curcuma longa.) is One of exported spice in Ethiopia, Southwest Ethiopia produce this spice as a cash crop and many lively hoods had been depend on it for a living. Turmeric production in Ethiopia mainly concentrated at southwest part of the country (Sheka, bench-maji and keffa zones) however, recently major ginger producing areas including wolayta zone shifts the land to turmeric production because of ginger bacterial wilt and good demand for turmeric. Even though turmeric production plays an important role in the producer's livelihood, its trend of production, productivity and quality has declined continuously for the last ten years. The market situation is characterized by anti-competitiveness and the producers were forced into the role of price takers. Its production and marketing are highly constrained by high price of fertilizer, seed shortage, pesticide shortage, labor and boiling raw materials like (wood and water) , traditional processing practices, lack of market, low price of the product, large number of intermediaries, absence (weakness) of marketing institutions, Absence of formal and structured marketing information dissemination. Therefore, these constraints require special attention if the production is to be increased.*

Keywords: constraints, opportunities, production, spice, turmeric

INTRODUCTION

Ethiopia was considered as a homeland for many spices and stimulants (Edossa, 1998). Smallholders operating on small plots of land around homesteads and on some private and state farms grow the majority of these spices. The total area covered by spices on private farmers' holdings in Ethiopia is estimated to be over 96, 000 ha (CSA, 2004). Small-scale producers mainly in two regional states, Oromia and SNNP, dominate the production. In Ethiopia, spices have major stake in the production system and in the foreign earnings of the country. Spices have great role in transforming farmers as producers for market instead of producing merely for subsistence (Dessalegn, 2015). In the country, spices have been utilized for different purposes such as to flavor

foods and beverages (to improve flavor, aroma and color), to make medicine and perfumes (International Trade Centre(ITC), 2010 and Tesfaet *et al.*, 2017).

Turmeric is the dried rhizome (*Curcuma Longa*) which is use as a ground spice and in curry powder, mainly as a food-coloring agent as well as a coloring material in the textile industry (Mebratu, 2019). India is the world biggest exporter and producers of turmeric, whereas, Ethiopia is the biggest exporters and producers of turmeric in Africa (Chaudhary *et al.*, 2006).

The increasing demand for natural products as food additives makes turmeric as ideal produce as a food colorant. Before 1972, Ethiopia has been one of turmeric importing countries. In 1972, two varieties of turmeric were introduced from abroad for adaptability study from India and China and Planted at Jima, Metu, Bebek, Teppi, Magi and Bako. At all locations, turmeric performs well (TNSRC, 2016).

Turmeric was the third most important spice crop, next to Ginger and cumin seeds, exported from Ethiopia during the period 2008, 2009 and 2010 both in terms of volume and in terms of value. For example, the volume of turmeric export during the period 2008, 2009 and 2010 were 716, 897 and 2932 metric ton, whereas the value for the same period were 0.39, 0.54 and 2.8 million USD respectively (MOARD, 2010).

Turmeric production in Ethiopia mainly concentrated at southwest part of the country (Sheka, bench-maji and keffa zones) however, recently major ginger producing areas including Wolayta zone shifts the land to turmeric production because of ginger bacterial wilt and good demand for turmeric (Habetewold, *et al.*, 2018). Thus, this paper was aimed to review turmeric production constraints and opportunities in Ethiopia.

An Overview on Production of Turmeric

The production of turmeric was localized in the Southwestern Ethiopia mainly around Teppi (JARC, 1991). Turmeric thrives best in the hot humid agro ecology. It performed very well in different locations of south western Ethiopia being very common and important cash crop for farmers and large-scale producers (Edossa, 1998; Girmaet *al.*, 2008a). According to the second growth and transformation plan (GTPII) of the Ministry of Agriculture and Natural Resource, the production plan of dry turmeric in 2015/16 was 22750 ton and is planned to grow to 31910 ton by 2020 (MoANR, 2016). From results of long period evaluation, average dry rhizome yield of turmeric accessions at Tepi National Spices Research Center was reported to be 4.2 to 5.3 ton per hectare and at farmers field is 3.2 to 4.2 ton per hectare. In addition, significant numbers of farmers in southwestern Ethiopia have been proving the benefit they are getting from this spice is very valuable; change in their livelihood to a relatively higher level has been attained.

The bulk of the turmeric produced in Ethiopia is consumed domestically. Only a small portion is exported to China, Djibouti, Egypt, Europe, India, Kenya, Morocco, Saudi Arabia, Sudan, Tanzania, USA and Yemen (Girmaet *al.*, 2016). The SNNP region accounted for 76% of Ethiopia's turmeric production, which was increased from 2,000 tons in 2008 to 12,000 tons in 2013 and 2014, respectively (Girmaet *al.*, 2016; Herms, 2015). The production and productivity

of turmeric has not been expanded as anticipated in Ethiopia. The production and productivity of turmeric was about 22.75 thousand tons and 3.50 tons per hectare, respectively, in the cropping year 2014/15. As there are wide suitable areas and possibility of adoption of the improved cultural practices for turmeric cultivation, there is a high opportunity to enhance the productivity from the existing 3.5 tons per hectare to more than 10.0 tons per hectare (Girma *et al.*, 2016). From the year 2014 onwards turmeric production and productivity in Ethiopia has been increasing (Figures 1). This is mainly due to the impact of bacterial wilt disease had on ginger in 2014 and hence, farmers are shifted to the production of turmeric (Titus & Wojtek, 2020).

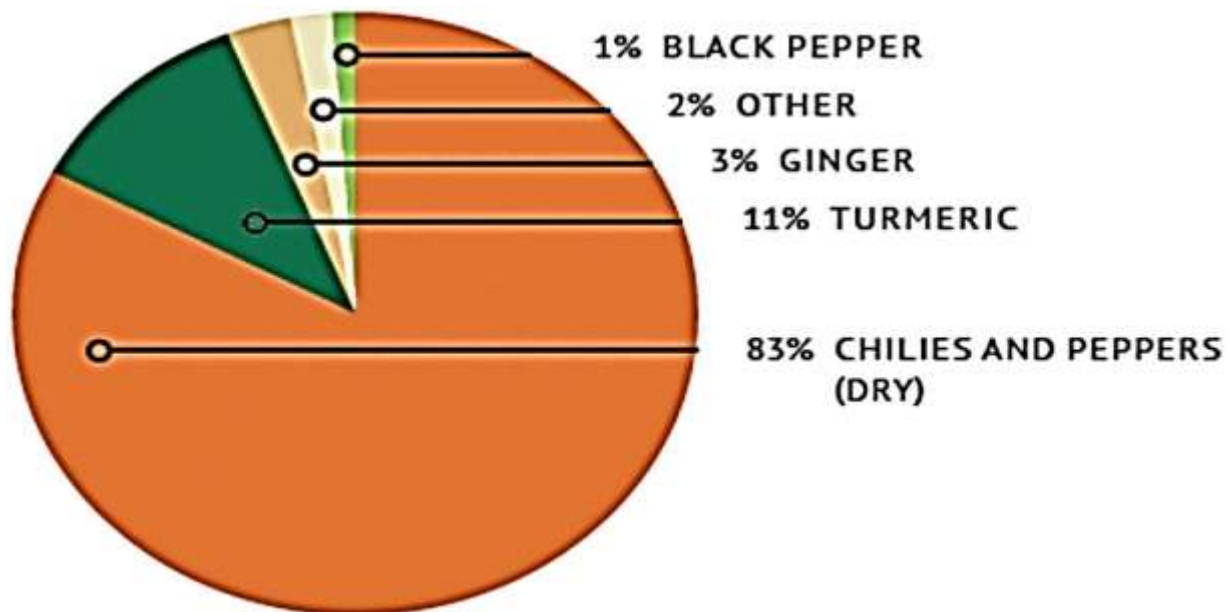


Figure 1. The share of Ethiopian Turmeric production in 2018, Source: (Titus and Wojtek, 2020)

An Overview on Major Constraints of Turmeric Production in Ethiopia

The production of turmeric crop in Ethiopia is, however, low as compared to other major turmeric producing countries. According to Addisu (2014), the national productivity of turmeric in Ethiopia was estimated at 2.4 tons per hectare compared to 4.0 tons per hectare for India. According to Deresse (2009) Even though the productivity potential recorded at the research stations were found comparable to the, world standard(250qt/ha), the productivity of turmeric at household level was very low which implies their technical efficiency is low and need to be utilized. The recommended varieties and accompanied cultural practices were not in use as per the recommendation of the research output. Farmers are producing turmeric based on their experience developed for over years. There are factors that hinder the production of turmeric According to Mebratu (2019) indicated Inputs were not supplied at the right time, place and at fair prices especially fertilizer price is increasing year to year. Seed shortage is one of the main problems of producer's especially farmers who have not produced in the previous years. Farmers produce more when its price become high but at the same time the availability of the seed is difficult. According to Biruktait

(2017), Considerable efforts have been done to develop and generate improved agricultural technologies to increase the productivity of Turmeric. Among them, the spices improvement program has generated one improved Turmeric variety called, Dame, and various Government and Non-Governmental institution have participated in promoting and disseminating this variety among farmers. However, Development agents and research centers supplied improved seed but the supplied was only few farmers and its price was expensive. More over the result of some improved seed is below the old seed because when it becomes dry its kilogram decreases more than the old seed type. Producers use local seed above the recommended rate and fertilizers below the recommended rate that ultimately affects production and income of producers. Turmeric is labor intensive starting from planting to loading, which was also the other constraint, attributed to low production by decreasing per household productivity and market supply.

Constraints In Processing

Turmeric is highly valued for its deep yellow-orange color, which is attained from timely stepwise application of the major processing steps, i.e. boiling; drying, peeling, and polishing (Purseglove *et al.*, 1981; Pruthi, 1998) However, according to (Girma *et al.*, 2015) turmeric farmers in Southwestern Ethiopia do not follow these important steps strictly. Therefore, in most of the cases they commonly bypass the peeling and/or polishing steps of the process, which are the most basic and key procedure to ensure quality in turmeric. To the contrary, they rather try to coat the dried rhizomes with external coloring materials than working appropriately to develop the inherent color of the rhizomes through peeling and polishing, thus, resulting in the prevailing poor-quality product. According to (Derese 2009) Turmeric, processing is one of the hardest of all operations and is very distinct for turmeric. Processing of turmeric at household level has undergone many changes in terms of the operations and handling. The contributing factors for the changes are cited as decline of turmeric price, increase in volume of production per household and marketing practices. The rate of changes in the way turmeric processed over the last ten years was also aggravated the changes in processing have affected the quality of turmeric delivered to the market. The very challenging part of turmeric production is its quality that could be governed by the cultivar grown and the stage of maturity of the rhizomes at harvest as production and processing of this spice remained very traditional in Ethiopia. As stated above the bottleneck in turmeric production is absence of preparation of quality turmeric that can compete in local and international markets. Fantahun and Teklu (1995) discussed that the traditional processing practices carried out by growers are the main factors for inferior quality spice products in Ethiopia. One of the main contributing factors for this low-quality product has been absence of appropriate harvest stage (months) to get the optimum extraction yields (oleoresin and volatile oil content) and other quality parameters. KAU (2002) reported that in India the time of harvest depends on variety (maturity group) and usually from January to March is ideal period for harvesting. The report classified harvesting stage of varieties in maturity groups, i.e., early varieties 7-8 months, medium varieties 8-9 months and long duration varieties 9-10 months after planting. In our country, such important package recommendation on harvesting stage versus quality for turmeric production has not been studied and recommended. At the same time, three private turmeric processing and packing

industries started the business around the potential producing areas and recommendation on suitable harvesting stages has been very important.

Constraints in Market

According to (Deresse 2009) Marketing of turmeric faced tremendous challenges over years and in recent years as well because of the anticompetitive nature of turmeric marketing practices along all channels. Few traders have dominated the collection and delivery of turmeric to central retail markets. The majority of farmers have faced interruption/ discontinuity of turmeric production because of low market prices. According to (Mebratu et al 2019) the constraints of turmeric marketing inquired from farmers and rapid market appraisal. Lack of market to absorb the production; low price of the product; large number of intermediaries in the marketing system; absence (weakness) of marketing institutions safeguarding farmers' interest and rights over their marketable produces was the major constraints. According to Deresse (2009), Farmers face problem of accessing reliable marketing information in terms of the type they need, trusted sources and preferred method of receiving it. There is no formal and structured marketing information dissemination for farmers in the area. Farmers depend on traders for most of the information related to marketing of turmeric, which makes them vulnerable to unstable prices that they lost confidence on projecting what will be their production decisions. Availability and access for marketing information has influenced the way turmeric is produced, processed and traded by farmers. The new trading system with numerous intermediaries has also contributed in lowering the price that goes to the farmers in the chain even though farmers did not complain their existence as a challenge. Farmers wanted to receive market information, to enable them to monitor market changes and to apply this information to a range of marketing decisions.

Opportunities of Turmeric Production

Ethiopia has suitable agro-ecologies, for spice crop production which encouraging government policy environment (Hordofaet *al.*, 2020). In Ethiopia turmeric productivity is 24 qt/ha and it is the main candidate spices for improving the Ethiopian spice production and productivity in spice development strategies (Ethiopian export promotion Agency, 2013). Turmeric production in Ethiopia mainly concentrated at southwest part of the country (Sheka, benchmaji and keffa zones) however, recently major ginger producing areas including Wolayta zone shifts the land to turmeric production because of ginger bacterial wilt and good demand for turmeric(Habetewold, *et al.* 2018).Ethiopian turmeric has the potential for a smallholder driven investment model, as smallholder farmers have cultivation experience and there is a strong internal market for lower-grade products. Furthermore, soil and climate conditions in SNNPR are excellent, and transport from the turmeric belt to the seaport of Djibouti is relatively efficient. In addition, Ethiopian exporters have experience of exporting to India, the Middle East and other African countries. In 2018, total European imports of turmeric reached 24,000 MT. From 2017 to 2018, imports increased by 13% in volume and by 5% in value, reaching a total value of around US\$55 million. In 2018, 80% of total European imports were sourced directly from emerging economies. Despite the European preference for the lighter Madras type, as noted above; interest in the Ethiopian turmeric variety is emerging and expected to develop further. Turmeric is often imported in bulk

in Europe through German and Dutch importers and processors. As mentioned above, the slicing method has important advantages over the boiling method. However, this requires a substantial investment and a transformation of the traditional farming practices of smallholder farmers. The uptake of the slicing method is therefore still slow (Titus and Wojtek, 2020).

CONCLUSION AND RECOMMENDATIONS

Turmeric is the major spice crop widely grown in southwestern part of Ethiopia. The government of Ethiopia (GoE) also considered as the prime candidates for the diversification of our sole export commodities coffee and sesame to augment the foreign currency earnings of the country and for improving the livelihood of poor, land-constrained smallholder farmers and women. The recent devastation of ginger production from most part of Ethiopia lead farmers shift to turmeric. Even though turmeric production plays an important role in the producer's livelihood, its trend of production, productivity and quality has declined continuously for the last ten years. The market situation is characterized by anti-competitiveness and the producers were forced into the role of price takers. Its production and marketing are highly constrained by high price of fertilizer, seed shortage, pesticide shortage, labor and boiling raw materials like (wood and water) ,traditional processing practices, lack of market, low price of the product, large number of intermediaries, absence (weakness) of marketing institutions, Absence of formal and structured marketing information dissemination. Therefore, these constraints require special attention In order to stimulate sufficient and sustainable production of turmeric as cash crop; agro processing industries should be expanded in rural areas so that farmers do not rely on sale for limited market demand. Such arrangements would induce farmers to produce competitive and high quality turmeric.

REFERENCES

- [1] Addisu A., 2014. Spice Sector Development in Ethiopia: Scenario and Competitiveness. In: Report of the Third Spices, Aromatic and Herbal Plants Subsector Stakeholders Platform Workshop held in Addis Ababa.pp. -572
- [2] Biruktait T., 2017. Adoption of improved turmeric variety by smallholder farmers. The case of yeki district, sheka zone, southern Ethiopia [Unpublished data]. A Thesis submitted to the School of Graduate Studies of Haramaya University for the requirement of degree in Master of Science (MSc) in Agricultural Economics.
- [3] Borget, M., 1993. Spice Plants. The Tropical Agriculturalist CTA, Macmillan, London.
- [4] Chaudhary A.S., Sachan S.K, and Singh R.L, 2006.Studies on varietal performance of Turmeric (*Curcuma longa* L.), Indian Journal of Crop Science 1 (2006) 189-190.
- [5] CSA., 2004. Agricultural sample survey, Report on land utilization, 2003/2004, Volume IV
- [6] Derese TM., 2009. Practices and constraints of turmeric (*Curcuma domestic* Val) Production and marketing by smallholder farmers: The case of Yeki Woreda, Shaka zone in southwestern Ethiopia [Unpublished data]. A Thesis submitted to the School of Graduate Studies of Addis Ababa University for the requirement of degree in Master of Art (MA) in Development Studies

- [7] Dessalegn G., 2015. Analysis of Factors Determining the Supply of Ethiopian Cardamom Spice (Aframomum corrorima): A Case from Bench Maji Zone of SNNPR, Ethiopia. *European Journal of Business and Management*, 7 (1): 56-63.
- [8] Edossa E., 1998. Spices: Research Achievements and Experience, Research report No.33, Institute of agricultural research, Addis Ababa
- [9] Ethiopian Export Promotion Agency, 2013. Survey of the three major spice producing Regions Addis Ababa, Ethiopia. Mebratu Alemu Legesse. 2019. "Determinant of turmeric market supply in yeki district of Sheka zone of south west part of Ethiopia", *International Journal of Development Research*, 09, (10), 30486-30490.
- [10] Fantahun L. and Teklu N., 1995. Spices crops processing: Constraints and Possibilities; Workshop on Coffee and Associated Crops, Feb. 27 - March 1/1995. Addis Ababa, Ethiopia, pp.1-10.
- [11] Girma H., Digafie T., Edossa E., Belay Y. and Weyessa G., 2008a. Spices research achievements, revised edition, Ethiopian Institute of Agricultural Research, Addis Ababa Ethiopia, pp. 34-42.
- [12] Herms S., 2015. Business Opportunities Report Spices in the series written for the "Ethiopian Netherlands business event 5-6 November 2015, Rijswijk, The Netherlands" [Internet]. 2015, [cited: 2018 Jul 3]. Available from: https://www.rvo.nl/sites/default/files/2015/11/Rapport_Spices_Ethiopië.pdf
- [13] Hordofa, T.S., Tolossa, T.T. and Yildiz, F., 2020. Cultivation and postharvest handling practices affecting yield and quality of major spices crops in Ethiopia: A review. *Cogent Food and Agriculture*. 6(1): 1788896. <https://doi.org/10.1080/23311932.2020.1788896>.
- [14] J.W.; Brown, E.G.; Green, C.L. and S.R.J. Robins., 1981. "The Federal Democratic Republic of Ethiopia: Selected Issues Series", *International Monetary Fund Country Report No. 08/259*, pp. 5, 26 (accessed 4 February 2009) *Purse glove, Spices: Volumes 1 and 2*. Longman G
- [15] JARC., 1991. Summary of survey on spices production practices in Teppi and Bonga areas, socioeconomics department of Jirjima research center (unpublished).
- [16] Habetewold K., 2018. Result of Turmeric Variety Trial in Ethiopia *International Journal of Research Studies in Agricultural Sciences (IJRSAS)*, 4(9), pp.34-38, <http://dx.doi.org/10.20431/2454-6224.0409005>.
- [17] Kerala Agricultural University, 2002. Package of practices recommendations: Crops. 12th Edition (eds. A. I. Jose et al.). Kerala Agricultural University, Trichur.
- [18] Maseresha Y. Market profile on the spices of Ethiopia [Internet], 2010. [cited 2019 Sep 21]. Available from: http://www.intracen.org/uploadedFiles/intracenorg/Content/Exporters/Sectoral_Information/Agricultural_Products/Spices/Market%20Profile%20on%20Spices-%20Ethiopia.pdf
- [19] Mebratu Alemu Legesse. 2019. "Determinant of turmeric market supply in yeki district of sheka zone of south west part of Ethiopia", *International Journal of Development Research*, 09, (10), 30486-30490.
- Mebratu Alemu Legesse. 2019.

“Determinant of turmeric market supply in yeki district of sheka zone of south west part of ethiopia”,

International Journal of Development Research, 09, (10), 30486-30490.

Mebratu Alemu Legesse. 2019.

“Determinant of turmeric market supply in yeki district of sheka zone of south west part of ethiopia”,

International Journal of Development Research, 09, (10), 30486-30490.

Mebratu Alemu Legesse. 2019.

“Determinant of turmeric market supply in yeki district of sheka zone of south west part of ethiopia”,

International Journal of Development Research, 09, (10), 30486-30490.

Mebratu Alemu Legesse. 2019.

“Determinant of turmeric market supply in yeki district of sheka zone of south west part of ethiopia”,

International Journal of Development Research, 09, (10), 30486-30490.

[20] MebratuA. and Belete M., 2019. “Determinant of turmeric producers market outlet choice in sheka and majang zones of south west of Ethiopia”, International Journal of Development Research.

[21] Ministry of Agriculture and Natural Resource (MoANR), 2016. Coffee, Tea & Spices Growth and Transformation Plan (GTPII) for the period 2015-2020, pp. 7-9. roup Limited, London.

[22] Titus, S. and Wojtek, D., 2020. Advance consulting prepared a business opportunity report spices sector in Ethiopia. Ethiopia-Netherlands Trade for Agricultural Growth (pp. 1-32).

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