



Value Chain Assessment of Turmeric from Myanmar Summary report (July 2019)



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DISCLAIMER

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INTRODUCTION

SNV Netherlands Development Organization (SNV) has been supporting a consortium led by ZOA-CDN, with the implementation of the LIFT-funded project *Improving the Incomes and Nutrition Outcomes of Rural Poor in Northern Kayin State*. To identify opportunities and constraints for improving the incomes of small-scale farmers in the project area, SNV has undertaken three value chain assessments for cardamom, coffee and turmeric. This document presents a summary of the turmeric value chain assessment. The main objective of this study was to assess the overall situation of the turmeric value chain in Myanmar in order to identify the relevant stakeholders involved, determine demand and supply of the product locally, nationally and internationally, identify constraints faced by small holder farmers/producers and agribusinesses in fulfilling the demand, and to gather ideas to build the capacity of farmers to grow and sell their production. A cross sectional exploratory study was conducted with qualitative data collection in Leik Tho and Thandaunggyi (Kayin State), Taungoo (Bago Division), Kyaukse (Mandalay Division), Hin Tha Ta (Ayeyarwaddy Division), Yangon and Mandalay. Data collection took place through desk research, three Participatory Learning and Action (PLA) workshops with farmers from Leik Tho and Thandaunggyi, and in-depth interviews with over 50 farmers, traders, wholesalers and export companies from all different regions. It needs to be acknowledged that the qualitative data has its limitations, as the interviews might not reflect the situation for all stakeholders in the country, and only limited secondary data on turmeric from Myanmar was available¹. Still, we believe that the extensive data collected for this study provides a solid first picture of opportunities and constraints of the turmeric value chain in Myanmar. As the project focuses its activities on Northern Kayin State, findings from data collection in the Leik Tho area will be the central focus in this summary report, but with frequent comparisons to the other regions covered in the study to put the findings into perspective.



THE GLOBAL TURMERIC MARKET

The value of the global turmeric market is predicted to increase from 3,160 million USD in 2016 to slightly more than 5,650 million USD by the end of 2027, expanding at a Compound Annual Growth Rate (CAGR) of 5.5% over the period 2017-2027. The global consumption of turmeric is also expected to rise from 1.05 million metric tons in 2017 to 1.70 million by the end of 2027.

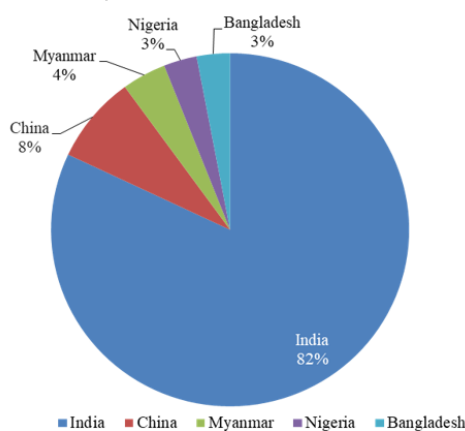


Figure: Share of top 5 producing countries (EU, 2013)

In 2016, North America was the largest market. It is anticipated to grow substantially because of rising demand for curcumin-based nutritional supplements and cosmetic preparations. Similarly, the turmeric market of Western Europe will increase from 800 million USD to 1,300 million USD from 2017-2027 (5.8% CAGR) (FMI, 2018). The Western Europe market is considered as a second largest hub for herbal products, which is mainly due to changing health perceptions and the recent discovery of curcumin as an ingredient that can prevent cancer (FMI, 2018). This rise in demand is promising as Myanmar is one of the top producers and exporters of turmeric in the world. Of the total turmeric production in Myanmar, 53%-66% is exported, with

¹ Especially quantitative data such as yields and production volumes collected through desk research were difficult to verify. In addition, primary and secondary data were not always consistent.

an average export volume of over 10,000 tons. The growing demand for organic turmeric and favorable import conditions of Europe and USA² offers interesting market opportunities for turmeric from Northern Kayin State.

Similarly, demand from Asia Pacific is expected to grow, driven by demand from several cosmetics and skin care manufactures (GVR, 2018). Significant growing markets are Japan and South Korea. There is also significant demand from China, although existing trade from Myanmar is often carried out illegally because of strict import requirements imposed by the Chinese government. This lowers the price and profits for Myanmar exporters. However, turmeric has recently been included in the list of General Administration of Quality Supervision of China's General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ). Obtaining an AQSIQ certificate provides recipients the opportunity to sell goods in the Chinese market legally, which can increase the value of products and stabilize the price in the long run (AQSIQ, 2018).

OPPORTUNITIES AND CONSTRAINTS FOR TURMERIC PRODUCTION

The study found that there is scope for organic turmeric production as many farmers do not apply chemical fertilizers, insecticides or weed control. In Leik Tho, none of the farmers applied any, while in the other studied areas like Southern Shan about one third of the farmers grow turmeric without chemicals. Instead of using chemicals, farmers apply practices such as collecting dead weed to make organic compost or cover soil beds with hay to prevent growth of weeds. In addition, rhizomes are planted at a prescribed interval of 12 inches to 18 inches, which provides adequate nutrients to the plants. These practices without any chemical involvement can be used as an opportunity to work towards organic certification which provides access to markets such as the EU and the USA.



Figure: Improved planting of turmeric

At the same time, the reason for not using fertilizers or pesticides is rather because of a lack of knowledge and resources, rather than that it is a deliberate choice. In general, turmeric farmers from Northern Kayin have little access to information and extension services. However, such services seem necessary as the study found that there is scope for improving current techniques applied by farmers:

- Currently, mostly ash is used as a fertilizer which encourages slash and burn practices. Slash and burn is sometimes also used as part of rotational cultivation methods to avoid deterioration of soil fertility. Farmers sometimes open up vast areas of forested slopes for turmeric cultivation, which increases the risks of landslide occurrence. In Leik Tho specifically, turmeric cultivation is still mostly done on small plots which does not lead to this risk, but it might become a risk in future if farmers are not well informed.
- Despite facing significant losses because of fungal infections and rats, farmers from Leik Tho do not apply (collective) control measures. The absence of appropriate Integrated Pest and Disease Management contributes to considerable losses in turmeric farming. As of April 2019, the project (of which this study is part) supports farmers with rat control measures.
- A majority of the farmers undertake weed control twice per cropping season at the interval of two to four months, which is not enough. Costs of labor for this process (nearly 10 per cent of the total production cost) may prevent farmers from carrying out weed control sufficiently.

² Myanmar has enjoyed the "All But Arms" program as part of the General Scheme of Preferences (GSP) from the European Union (EU) since July 19, 2013 and the GSP from the United States of America (USA) since November 13, 2016 (USTR, 2018).

- Farmers from Leik Tho do not produce quality planting stocks, but use rhizomes of the previous season for planting for the following season. However, half of the turmeric is usually rotten by this time. Many farmers keep rhizomes in plastic bags, which contributes to rotting as well as a poor germination rate and slow growth of rhizomes. Although farmers know that mature turmeric could produce three times higher yields, the majority of farmers use young turmeric rhizomes because this costs less and often there is not enough mature turmeric from the previous cropping season. Proper rhizomes storage training and management could benefit farmers’ practices.
- Often, mature and immature rhizomes are not distinguished and all plants are harvested at the same time. Mixing immature with good quality, mature turmeric results in a lower selling price. It appears that labor cost is a barrier for implementing proper and selective harvesting processes.
- Farmers do not use drying facilities to dry the fresh turmeric, but dry it under direct sunlight which leads to poor quality. To dry turmeric, farmers boil the turmeric first. Their current boiling method uses firewood which contributes to deforestation. A promising practice found is to use pressured boilers, which can boil 16 times the volume, requires less firewood and leads to better quality.
- All farmers use rainwater for turmeric farms and do not use any water management practices, such as constructing drainage to prevent waterlogging. This practice can cause turmeric to rot rapidly due to excessive rainwater that accumulates at the plant beds.

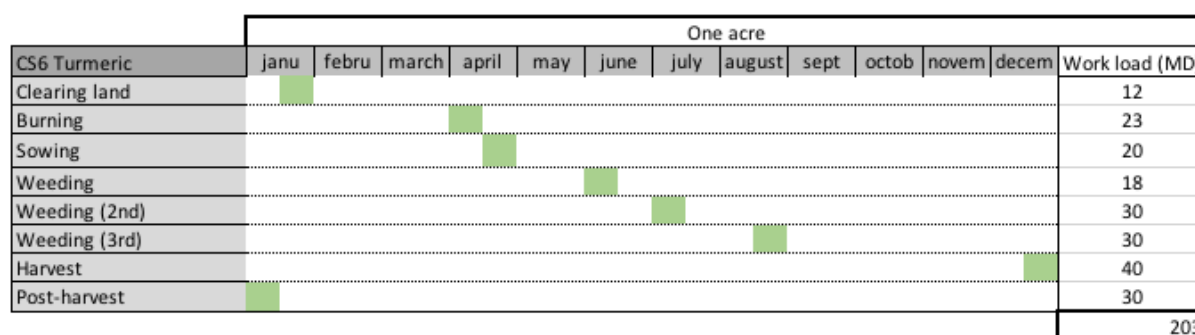


Figure: Turmeric cropping calendar (source: The Evolution of Farming Systems in Northern Kayin State, ZOA-CDN, November 2018)

OPPORTUNITIES AND CONSTRAINTS FOR TURMERIC TRADE

In Leik Tho and surrounding areas, the Kyi Chay variety is produced which is considered the highest quality turmeric of Myanmar and generally receives a higher price than turmeric from other regions. This variety can be stored up to three years without being infected by pest and contains a high percentage of curcumin.

At the same time, the study identified some important barriers that impede access to stable markets for turmeric farmers and traders from Northern Kayin. Village, township and Taungoo traders generally examine the size, presence of fungus and moisture content when they buy turmeric from farmers. These criteria are examined based on experience without use of specific equipment. Also, no pre-set quality criteria or standards are used; they rather use the criteria that Chinese buyers impose on them during a specific period. Many trading centers apply Aluminum Phosphide to prevent damage by fungus, even though the use is officially restricted due to its toxic value. The practice of mixing turmeric powder with other substance in the domestic trading centers has also been observed.

Farmers from Leik Tho do not have GAP or organic certification, although their turmeric could be classified as organic. Some trading centres from Taungoo label the turmeric bags before they sell it to Chinese buyers as a form of traceability, but generally farmers and local traders do not have certification nor use brand names to sell their products. The study identified that

further setting up formal standards (such as GAP) and a quality assurance mechanism, including a traceability system, along the value chain would contribute to improving the quality and trade opportunities for turmeric from this region. Traceability will also enhance the accountability of actors along the chain.

China has emerged as a new market that provides opportunities for turmeric export from the Leik Tho area. In 2017 and 2018 approximately 50% of turmeric production was exported to China. Because of Chinese import restrictions, illegal trade takes place which leads to a vulnerable market position. The price of turmeric in the past 4 years highly fluctuated and in 2018 there was a sharp price decline. The resulting losses of income emphasized the vulnerability of the farmers in project area. Within Myanmar, there are quite a number of layers in the value chain, consisting of local brokers, village traders, township traders, Taungoo traders, regional traders, etc. which increases the price of turmeric for each step in the chain. As a result, market competitiveness declines, profit share of each layer is reduced, and end users have to pay a higher price for goods.

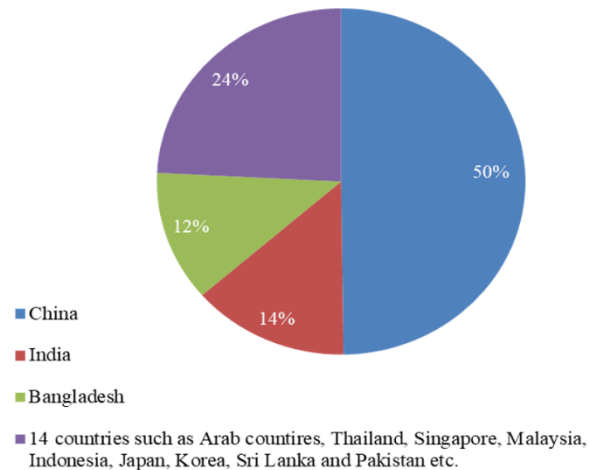


Figure: Percentage of turmeric export from Myanmar to individual countries 2017

Farmers work with cash advance payments from local traders in order to meet their household needs throughout the year. The lack of land titles prevents farmers from accessing loans from official institutions such as the Myanmar Agriculture Development Bank (MADB). Sometimes, the practice of cash advance payments also takes place between different layers of traders as traders also have limited access to official loans due to high interest rates. The parties involved in advance payments do not work with written agreements, which requires a high degree of trust. Operations of the trading system are undermined when promises are broken, while the absence of formal trade agreements increases vulnerabilities of actors.

In general, there is no overall coordination yet between farmers and the different layers of traders along the turmeric value chain that could contribute to the quality of the turmeric products and upgrading of the trading system. This lack of a collective body of value chain actors is observed to be one of the barriers for further development of the turmeric value chain.

OPPORTUNITIES AND CONSTRAINTS FOR VALUE ADDITION

The study found examples where improved processing technology can add value to turmeric products, addressing a consumer segment willing to pay a higher price for high quality products. In Myanmar, turmeric powder is used as a spice for cooking. Domestic consumption for food preparation is estimated at 3,970 metric tons per year (MOMP, 2014). The exported volume of turmeric powder is estimated to be 2.6 times higher (approximately 10,245 metric tons per year) than domestic consumption for cooking purposes. However, as mentioned, 50% of the exported volume currently goes to China, of which part is illegal trade that has led to sharp price fluctuations in the past four years. This poses risks for turmeric business. Still, both the domestic and export market provide opportunities for value added turmeric products.

The study found that two Myanmar companies produce and sell high-quality turmeric powder and organic turmeric powder to high-end domestic markets, for example through City Mart. Both companies work with processing plants and laboratories that follow international standards such as the Hazard Analysis and Critical Control Points (HACCP), Good Manufacturing Practices (GMP), International Organization for Standardization (ISO) and organic certificates and which reduce Aflatoxin and moisture content. As a result, the turmeric powder (24,000 MMK per viss)

and the organic turmeric powder (40,000 MMK per viss) of one of these companies is sold for approximately 2-4 times higher than the turmeric powder sold by retailers in Taungoo and Northern Kayin. Only one company contacted for the study sells products with international certifications to international markets.

The proportion of profit derived by processors and retailers engaged in value-addition that trickles down to lower level value chain actors such as village-based traders and farmers is small or even negligible. The study found only one exception where a company shares profit with farmers through a contract farming scheme, which helps farmers to benefit from shared profits and a stabilized market price. Generally, it seems to make sense for farmers to start own value adding activities. Quick analysis of profit and loss to produce dried turmeric of the Kyi Chay variety shows a potential profit of 1,231 Kyats per viss, which is almost 55% of the total investment for farmers. Farmers from Leik Tho enjoy this profit margin because they dry turmeric before selling. In addition, the production of turmeric powder by farmers results in a 14.7% return on investment. Sales of fresh turmeric however leads to an average of 663 MMK loss per viss (55% of the total investment). This is an important finding, as some farmers from Leik Tho still sell fresh turmeric to traders.

Producers, wholesalers and retailers from Taungoo do not use a brand name or any promotional tools to sell turmeric powder. Sometimes, turmeric powder is colored with edible dye or mixed with rice flour. In addition, the presence of Aflatoxin, impurities or nutritional value is not tested. The lack of marketing and promotional strategies undermine the growth of turmeric powder business in Taungoo. The study found that the same applies for most other regions where turmeric is grown. In general, it seems that using testing and promotional tools for turmeric products is not common practice in Myanmar.

RECOMMENDATIONS: SHORT AND LONG-TERM INTERVENTIONS

The main objective of this study was to assess opportunities and constraints for the turmeric value chain in Myanmar, with a particular focus on turmeric producers and traders from Northern Kayin State. A number of challenges were identified with regard to production, trade and value addition that hamper further development of the value chain. Based on the findings, the following interventions are proposed for Northern Kayin State to address the challenges found through this assessment.

Short term interventions

1. Formation of a Multi-Stakeholder Platform (MSP) for turmeric

As a first step, the formation of a farmers' association is encouraged to channel capacity building support to improve production techniques, enable collective marketing and strengthen farmers' position in the value chain. This association can potentially built upon the structure of Crop Producer Groups which have been set up in nearly 100 villages in Thandaunggyi Township (under this project). Secondly, setting up a Multi-Stakeholder Platform (MSP) for turmeric consisting of producer representatives, processors, traders, exporters and other stakeholders from Northern Kayin and Taungoo could be supported. Building a platform with different value chain stakeholders facilitates mutual understanding, better coordination and collective action to address the key bottlenecks in the value chain that were found in this study. During monthly meetings, updates on current market dynamics and prices can be shared, but also long-term constraints and opportunities could be identified and concrete action plans formulated. Besides better local coordination, the MSP can also be key in setting up relationships with relevant external institutions such as the government and the UMFCCI and advocate for better policies with regard to taxes and addressing the lack of land titles.

A short-term capacity building plan to strengthen the MSP as an independent platform should be designed, implemented and evaluated. This plan should embed business plan development and setting up financial and organizational management systems. Such activities support the

sustainability of the MSP as an independent platform beyond the project. Furthermore, regular thematic trainings are advised for further improvements in turmeric production and trade. There is the potential for integrating this platform with the current MSP for cardamom (Myanmar Chin Paung Hpalar) since there are important synergies.

2. Investments in quality improvement including establishing a pilot model of appropriate drying technology

The study identified a number of production practices by farmers that lead to low quality produce. Investment in building the capacity of farmers to apply better production techniques leads to improved quality and a better market position of turmeric from Northern Kayin. This capacity building should be done in close collaboration with extension officers from the Department of Agriculture who can provide follow-up after the project. A government demonstration farm could also support in the promotion of better production techniques. In addition, at least one appropriate drying technology pilot could be started. This first pilot model can best be funded by the project – once it has proven its benefits, farmers (and traders) might be willing to start investing in such facilities themselves. The drying technology should lead to better quality of turmeric production. From the pilot, lessons should be derived on its profitability to scale up this technology to produce improved dried turmeric at an economic scale.



Figure: Pilot of dried turmeric by an improved multi-crop dryer facility in Thandaunggyi

3. Set up a certification system using a Participatory Guarantee System towards improved marketing

Dried turmeric produced with the improved technology can be sold to traders using the Participatory Guarantee System (PGS). Such a system is meant to build more trust within the value chain and would include participatory action plan development, strengthening of a management system and setting up and monitoring of the PGS system. While the project can support setting up the PGS system, it should be managed in future by the MSP. It is expected that such a system will lead to a better position to negotiate with buyers as it leads to improved quality and traceability. This measure will help all stakeholders to see tangible results within a relatively short period, which will also stimulate scaling up this practice to a larger group of stakeholders in the long run.

4. Set up and operate model production farms

Farmers with an entrepreneurial attitude could be identified for setting up and operating at least three model farms. These farmers could be supported in applying appropriate organic cultivation methods and quality rhizome production. While the project can set this up, it will be key that extension services from MoALI will also be involved for follow-up support after the project. These model farms can serve as an example to other farmers and hopefully will lead to diffusion of good practices once the benefits become tangible. Rhizomes from these model farms can be sold to other farmers to increase availability and access to quality planting stocks for an affordable price.

Long term interventions

1. Product certification

The opportunity to get turmeric from Northern Kayin certified as organic could be explored as this might open up trading opportunities with markets such as the EU, USA, Japan and Korea. In addition, the opportunity for exporters to obtain AQSIQ³ certification to enable legal trade with China should be promoted. Obtaining organic and other certifications requires a step-wise approach which starts from identifying opportunities to improve quality and volumes, to improving processing methods and better organization along the value chain (amongst others to facilitate better traceability and transparency). While the MSP could take the lead, support will be needed from the project to figure out the details of such a process and further financial and technical support. Engaging other stakeholders such as the MoALI is key. If there is no chemical residue in the farm lands, an organic certificate can be issued within 6-12 months by the Control Union. A zonal organic farm approach should be applied to mobilize all farmers from a certain area to adopt the same cultivation practices, to prevent cross-contamination with chemical residues from nearby farms.

2. Detailed feasibility study for various value adding opportunities

A more detailed assessment on value adding opportunities for turmeric in the project area is advised, looking at concrete demand for value added products like turmeric powder, the investments (such as technology and training) it would take and willingness of local traders and farmers to make such an investment. The project could take the lead in such an assessment while a first co-investment in the required technology could be done in collaboration with the MSP. The MSP could take the lead in installing, using and demonstrating the technology to village traders and smallholder farmers, who might become inspired to start producing value added products in future. It is expected that starting value adding activities will not only lead to higher incomes but also provides a better position to explore alternative markets. Processing would also provide opportunities for women to generate income.

3. End market assessment to find alternative markets

To realize improvements like the above in practice, it would help to study in more detail how local production is currently positioned in global markets. A more detailed end market analysis as a follow-up to this study helps to identify which alternative markets are realistically the most viable opportunities for stakeholders of Northern Kayin to invest in. The current situation, where 50% of production is illegally exported to China, means that farmers have a vulnerable market position. Therefore, we see it as essential to find alternative markets to sustainably improve their incomes in the long run. Such a market analysis could support the development of a realistic vision, the identification of suitable target markets and the formulation of a concrete strategy with steps how to get there. This might provide better guidance on which markets to prioritize and set realistic targets and timelines.

4. Turmeric Strategic Development Plan and Policy Support

Turmeric value chain stakeholders across the country would benefit from priority setting and policy decisions by the government on a vision, what to focus on (local or international markets) and the formulation of a concrete program including budget. It is suggested therefore that future (project) activities should be done in collaboration with the government and pressure to formulate a concrete action plan to improve turmeric production in the country. The MSP could directly engage with (national) government policies and strategies. First of all, to get turmeric production and trade more prominently on the policy agenda. Secondly, the MSP could work more directly with the government to provide input regarding specific needs for the project area. The MSP could play a key role in assessing all stakeholders' needs before giving this input to the government.

³ Any manufacturer, exporter or agent can submit an application form to AQSIQ before exporting food products to China.

5. Capacity Development Plan for Turmeric MSP

An appropriate long-term capacity building plan for a turmeric MSP should be developed based on the lessons from a short-term capacity building plan as discussed above. This capacity building plan could further focus on business plan development and implementation, resource mobilization and management, a collective marketing system such as a PGS, business matching and exploring new markets, and improved drying, storage, packaging and cultivation methods. The project could support this MSP to develop a capacity building plan and ask for the support of public sector players such as MOALI, MOTC and Small and Medium Enterprise Development Department (SMEDD) under MOI.

6. Secure Land Tenure for Turmeric Farmers

The project could support the MSP in advocating relevant government departments such as Department of Agricultural Land Management and Statistics (DALMS), the Forest Department under MOALI and the Ministry of Natural Resource and Environmental Conservation (MONREC), respectively, to issue land title number 7 which refers to official farmland tenure. This title will not only give farmers legal entitlement to their land, but it can also be used to apply for a loan from the MADB, which enables investments in quality improvement of production and small-scale processing technology. At the same time it needs to be recognized that large areas of Thandaunggyi Township are recognized as Reserved Forest or Public People Forest, where securing land tenure requires different methods (for example, registration as a Community Forest). Finally, the KNU Land Policy also provides opportunities for farmers to register their land. For this recommendation the learnings of the land tenure study conducted by ZOA-CDN, 2019, can be taken into account.

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