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# UNLOCKING INSTITUTIONAL CONSTRAINTS TO INCREASING COFFEE PRODUCTION IN TANZANIA

**By**

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# ABSTRACT

The agricultural policies advocated by the Tanzanian government for the cooperative societies and the coffee sector have not been stable. Frequent changes in policy have affected the sector, hindering the effectiveness of the institutions that deal with the coffee sector. Most of these policy changes have failed to foster growth of coffee production. Despite the market potential of Tanzanian coffee, policies and institutional constraints have resulted in the stagnation of annual coffee production at 50,000 tons per year for over four decades. Currently, the Tanzanian coffee sector is challenged by lack of political will to develop and increase the productivity of coffee. Thus, institutional constraints have led to a failure to support research and extension activities, limited production and distribution of hybrid seedlings, and failed to support data collection on production, number of coffee farmers and farm size. Weak cooperative organizations and failure to take private sector aboard are further consequences of institutional constraints. This paper discusses the institutional constraints facing the coffee sector and capitalizing on available opportunities for increasing coffee production in Tanzania. Since coffee production in Tanzania has the potential to reach its optimum production level, it is therefore recommended that the government address the identified constraints, commit itself to development of the crop and reinvest part of the revenue collected from the coffee sector in research and development. Public Private Partnership could be forged to revive the coffee industry by bringing onboard the private sector to invest and assist in the provision of extension services, which are important for enhancing production growth through improvement of the recommended agricultural practices, marketing efficiency and technological change.

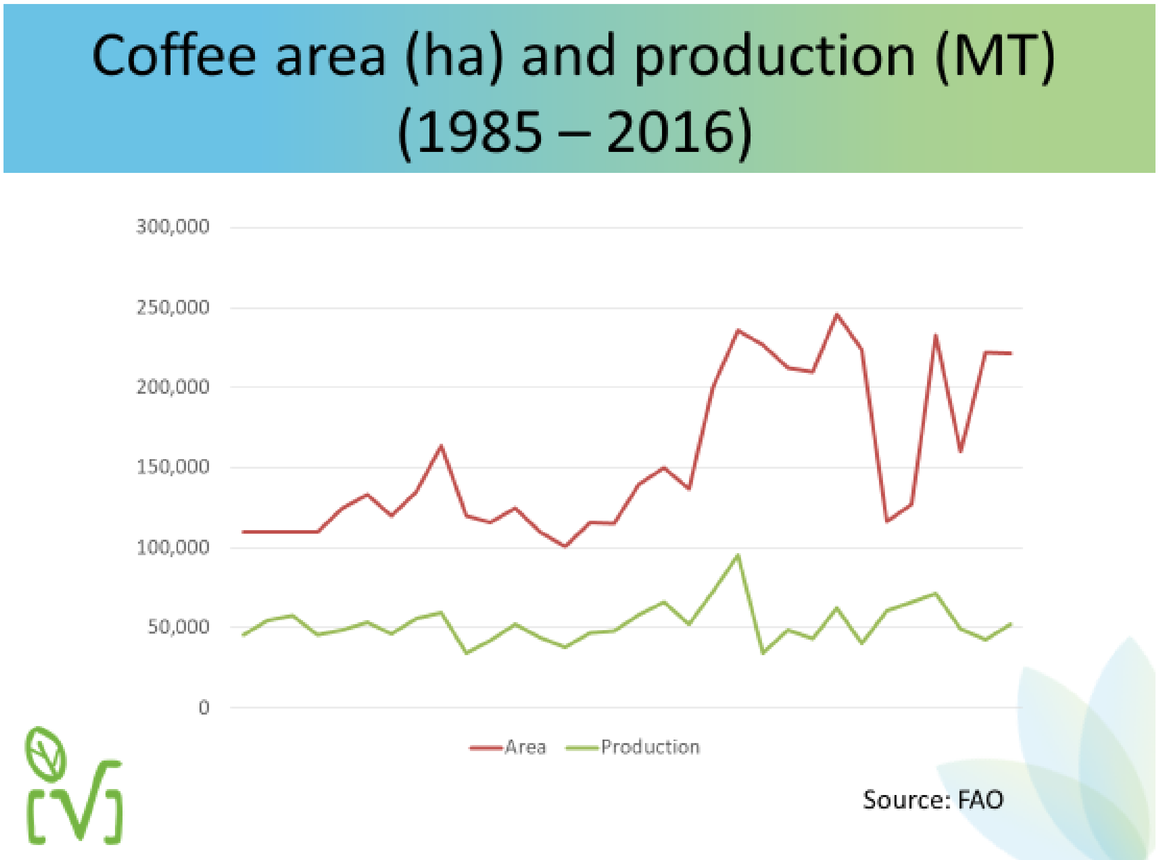
**Key words:** Institution constraints, coffee production, PPP

# 1.0 BACKGROUND INFORMATION

## 1.1 Importance of Coffee in Tanzania

Coffee was introduced in Tanzania by German missionaries in 1886 and has been one of the main export crops, representing about 5% of total exports, 24% of traditional cash crops, and generating export earnings averaging 100 million USD per annum over the last 30 years (about 145 million USD in 2011) (TCB, 2017). Smallholder farmers produce 90% of Tanzanian coffee, while large estates produce the remaining 10%. Furthermore, 450,000 smallholder households with 0.5-1 hectare are estimated to labor in coffee production, while the large estates are 110 in number (TCB, 2017). It is estimated that the coffee industry provides direct income to more than 400,000 families and benefits, indirectly, the livelihoods of 2.4 million Tanzanians (TCB, 2017). While the estimates show that 275,000 hectares of land in Tanzania are under coffee cultivation, large coffee estates reach yields up to 2,500 kg/ha (with irrigation and fertilizers), and smallholders reach an average of 250-300 kg/ha (Ruben et al., 2018).

**Figure 1:** Areas under Coffee cultivation and trend on production




Source: TCB, 2017

However, since the mid-1990s, the country 's coffee industry has been in a state of stagnation and decline; the share of coffee in total exports has gradually declined from 7% in 2001 to 3.5% in 2016 (ITC, 2018). Researchers have reported that the annual coffee production in Tanzania has remained stagnant at 50,000 metric tons for over 30 years (Ponte, 2000; Mhando, 2007; Baffee, 2011; Mhando et al., 2011). Although coffee production can be attributed by both institutional and non-institutional factors, this paper will focus on institutional factors that have hindered increasing coffee production in Tanzania. It is assumed that institutional factors are key to unlocking coffee production in Tanzania, and thus, if solved, other factors can be dealt with easily.

Despite the decreasing contribution of coffee to the GDP and its small share of less than 1% in the world market (TCB, 2017), the Tanzanian coffee industry has a solid future because Tanzania produces higher quality Arabica coffee of Colombian origin, which is used as a filler with other coffee types. Thus, regardless of its smaller share, what Tanzania needs is to improve the quality of its coffee in order to compete in the world market, rather than expanding production of poor-quality coffee which fetches low prices. The leading coffee producing countries in the world are Brazil, Vietnam, Colombia, and India while Ethiopia is the largest producer and consumer in Africa. Apart from being endowed with abundant land with appropriate altitude, temperature, rainfall and soil suitable for production of high-quality Arabica and Robusta coffee, the Tanzanian coffee industry has a great chance for development in the future if the existing opportunities, both in Tanzania and in the international coffee markets, are fully exploited. For example, Tanzanian coffee has a potential competitive advantage over Central American competitors on mild Arabica due to Tanzania's capacity to export mild Arabica ahead of the Central American season, when the world market is in short of supply of fresh quality Arabica. Likewise, Tanzania has a unique position in the Japanese, European and American markets where "Kilimanjaro" is a widely recognized and sought-after coffee, and where the label "Kilimanjaro" has strong marketing power. The major coffee importing countries from Tanzania are Japan and Italy (28%), USA and Germany (15%); Belgium (10%) and Finland (3%), TCB, 2017). Tanzania must maintain the quality of its coffee in order to maintain these markets.

Clearly, coffee cultivation has contributed to the economic life of the Tanzanians households, yet its importance transcends beyond its economic contribution; most farming households produce coffee and/or are involved in allied activities, directly or indirectly (Ruben et al., 2018). Though most families have been able to earn income through coffee production, income of these households has declined, which mirrors he decrease in production and overall contribution of coffee to the Tanzanian economy. This paper examines how institutional constraints (budgetary, policies, Acts and regulations) have led to limited support for research and extension activities, limited production and distribution of hybrid seedlings, weakness in data collection, weak cooperative organizations. Although these limitations have hindered the increase in production of the

Tanzanian coffee sector, opportunities remain available to unlock the potential for increasing high quality coffee production in Tanzania. This paper examines how some of these institutional factors could be unlocked in order to coffee increasing production, which has remained at the average of 50,000 metric tons for the last 40 years.

## 1.2 Marketing Cooperatives and Coffee Production

Since 90% of all coffee produced in Tanzania originates from smallholder famers who are, formally or informally, organized in cooperatives or groups, it is imperative to understand the history and roles of cooperatives in Tanzania. The international Cooperative Alliance (ICA) defines a cooperative as an autonomous association of people who are united together voluntarily to meet their common economic, cultural, and social needs and aspirations through jointly owned, democratically controlled enterprises (ICA, 2003). A cooperative is a business, voluntary owned and controlled by its member patrons, that is operated for them and by them on a nonprofit or cost basis (UWCC, 2002). Gertler (2001) defined cooperatives as community-based, rooted in democracy, flexible and having participatory involvement, which makes them well suited for economic development. Marketing cooperatives play very important roles worldwide in poverty reduction, facilitating job creation, economic growth and social development (Gibson, 2005).

Cooperative movements in Africa started in the 20$^{th}$ century and were initiated in Tanzania during the colonial period. In 1933, the colonial government enacted its first Cooperatives Ordinance, which led to Kilimanjaro Natives Planters Association (KNPA), the first registered cooperative in Tanzania. Despite resistance of the settlers to allow farmers to cultivate coffee, the colonial government allowed coffee cultivation and promoted cooperatives in Tanganyika because cooperatives took over the role of supervision of farmers, offered extension services, and supplied input and marketing assistance. This reduced the costs on the side of the colonial government. Since their inception, cooperatives have been members' organizations and have assisted farmers in production and marketing endeavors. Maghimbi (1992) reported that by 1968, Tanganyika had the largest cooperative movement in Africa and the third largest in the world. This is the evidence that cooperative movement in Tanzania grew successfully from its inception. Marketing cooperatives offered extension services to their members, and thus, their production and marketing endeavors depended on the existence of a strong membership base and well-managed cooperatives.

From the 1960s to the mid-1990s marketing cooperatives were under government control in most of the African countries, including Tanzania. In the 1990s, most African countries started to liberalize their economies (Wanyama et al., 2009). This era marked a break away from state control and cooperatives began to enjoy autonomy and operate like business ventures responding to market demands. However, despite being free from state control, cooperatives were not ready to compete on equal footing with private traders (Temu, 1999). As a result, most of the cooperatives such as MBICU in Mbinga District, collapsed and even those that survived remained too weak to compete with the changing marketing environment. Consequently, the collapsed marketing cooperative left the gap, which could not be filled by the private traders were unable to provide essential services to the producers.

## 1.3 Government Policies on Marketing Cooperatives

Following independence in 1961, the Tanzanian government's policies on cooperatives have never been stable. Although the polices have to be adopted and change over time, these changes have not been very positive to the cooperatives. The post-colonial government inherited strong cooperatives like KNCU and Nyanza cooperative unions, which the Tanganyika National Union (TANU) used politically as a platform in the fight for independence. Some of these cooperatives offered scholarships to their members and built secondary schools and colleges (Maghimbi, 1992b). The post-independence polices on marketing cooperatives undermined the effectiveness of the cooperatives to offer services to their members. In 1965, in pursuit of Ujamaa policies, the government reorganized marketing cooperatives from demand-driven cooperatives, whose existence was based on market viability, to newly regional based cooperatives that were not based on market demand (Kimario, 1992; Banturaki, 2000). As such, marketing cooperatives could not perform as expected (Kimario *op. cit*). These newly arranged cooperatives were placed under the ruling party and members could no longer manage them. As a result, the cooperatives were weakened and could not function as expected.

Cooperatives were abolished in 1976 and the crop purchasing function was put under crop authorities. The abolition further weakened these cooperatives which are farmers' institutions and failed to render necessary services, such as agricultural inputs to producers. Similarly, the government abandoned the Crop Price Stabilization Fund, which supported farmers when prices fell (Maghimbi, 1999). Farmers were left on their own to continue with production with minimum support, enduring the fluctuating prices of their produce and the increasing costs of agricultural inputs.

Although the cooperatives were reinstated at the regional level in 1982, they were too weak and could not meet the needs of the producers. Finally, with the Cooperative Societies Act of 1991, the government decided to return cooperatives to their members; this allowed for the democratic, member-based institutions to be managed by members (Maghimbi, 2009). However, the damage done over the years had taken its toll on the members' confidence in the organizations. Farmers began to shy away from joining these cooperatives, and thus, without membership fees, cooperatives failed to build a capital base necessary to function properly. However, crop purchase function was under the monopoly of marketing cooperatives.

The 1994/1995 trade liberalization policy had a strong impact on farmers' cooperatives, which were ill organized and not ready to compete on equal footing with the private traders, who had access to capital from multinational cooperation. Most of these cooperatives such as MBICU in Mbinga District ceased to operate, and farmers were left at the mercy of the private traders. On the other hand, private traders capitalized on failing marketing cooperatives; they convinced leaders of the primary societies to be agents who assisted with collecting coffee from village farmers (Mhando, 2007).

Over the years, failure to attract farmers to join cooperatives has had adverse effects. This is evidenced by falling membership in cooperatives in Tanzania. Magigi (2016) reported that, between 2013 and 2015 the number of members of cooperatives declined from 2.4 million to about 1.4 million. Thus, with limited members, cooperatives in Tanzania have failed to build capital, which could be used in cooperative activities such as crop purchase and processing. Instead, cooperatives depend on loans from commercial banks for crop purchase.

In Tanzania, the government's laws and regulations control coffee production, processing, transportation, marketing and other related activities. The Coffee Industry Act (Act) and Coffee Industry Regulations regulate all processes involved: production, processing, transporting, marketing and even auctioning. The Tanzania Coffee Board (TCB) is empowered to issue rules and guidelines which control the coffee industry. Similarly, TCB regulates the coffee industry and advises the Tanzanian government on all matters related to the growing, processing and marketing of coffee within and outside the country. Likewise, it is responsible for facilitating an enabling business environment for a sustainable coffee sector. The coffee development strategy tasked TCB to be at the center and lead the overall coordination of the strategy implementation and ensure proper dialogues between all actors of the industry (multi-stakeholder's process). Moreover, it ensures that the shared functions are implemented, provides necessary favorable business conditions to all stakeholders, provides advisory services and promotes Tanzanian coffees with existing and new markets. Apart from the Act and Regulations, each coffee-producing district has its own by-laws, which regulate its conduct.

The Acts and Regulations of the Tanzanian coffee industry are meant to assist the actors to cooperate, while the role of the government is to regulate the actions and activities of the actors. Consequently, all activities related to coffee production, processing and marketing in Tanzania involve a chain of actors who must work together to accomplish these processes together. Thus, the coffee value chain is a complete process which involves various actors who must work together and interact to make the chain operate smoothly (Geraffi, 2000). The actors of the value chain are divided into five major categories. The first category is of input suppliers; including inputs dealers, commercial banks, research institutes, and the local government. Secondly, there are production actors, including farmers, estates, commercial banks, coffee traders, NGOs, and the local government. The third category has actors involved in processing, such as private traders, coffee inspectors, and producers. The fourth category has actors in curing and warehouse activities, including curing companies, commercial banks, farmers, estates, and cooperatives. Lastly, is the group of actors who are involved in coffee marketing and exporting, including the Tanzania Coffee Board (TCB), licensed traders, cooperatives, and estates. As noted, for coffee crops to be successful, all these actors must collaborate, each one plays his/her role to make sure that the chain operates smoothly. Interference at any part of the chain will results in a breakdown of communication among the actors, which will affect the smooth operation of the chain.

Thus, for such a complicated chain to run smoothly, it needs strong coordination from the government, with favorable policies from which all the actors may benefit. The Acts and Regulations regulate the coffee chain in Tanzania. Stable and favorable policies (which are need based) and marketing environments give confidence to all actors to make long-term investment on the activities along the chain, including for example, the construction of curing factories, and washing stations and issuing loans to farmer groups. Frequent changes to these policies and rules have adverse effects on the management of the chain, especial on production and marketing.

# 2.0 MATERIALS AND METHODS

The field survey for this research was carried out in the two Arabica coffee growing districts of Mbinga and Mbozi in Ruvuma and Songwe regions respectively. The two districts were selected for the study because they are the leading Arabica coffee producers, producing almost half of all Arabica coffee in Tanzania (TCB, 2017). Furthermore, it was expected that in the leading coffee production areas, the institutional factors will be demonstrated easily. Likewise, the trend of coffee production in Tanzania indicates that Arabica coffee constitutes most of the country production in Tanzania (Parish, 2003). A questionnaire was used to collect data from 200 randomly selected farmers in Mbinga and Mbozi districts. A questionnaire was used to collect data on socio-economic characteristics of households and household heads, land ownership and use, coffee production and production practices, coffee harvesting and processing, coffee marketing, costs of coffee production and handling.

The key informants include extension staff, Private traders which deal with coffee, leaders and committee members of farmer's cooperatives (primary and secondary), farmers groups, agricultural inputs suppliers, private coffee traders and exporters, warehouse operators and transporters. Likewise, data was collected by interviewing key stakeholders of the coffee sectors including officials from local government authorities in sample districts, Tanzanian Coffee Board (TCB) and Tanzania Coffee Research Institute (TaCRI). The stakeholders who are private traders included Tanzania Coffee Association, DAE Ltd, Tutunze Kahawa, Coffee Management Services (CMS) and Mambo coffee Ltd.

# 3.0 RESULTS AND DISCUSSIONS

## 3.1 Unlocking Institutional Constraints for Increasing Coffee Production

This section focuses on how institutional constraints have limited production potentials of coffee and how such institutional constraints could be unlocked for increasing coffee production in Tanzania. These institutional constraints are political will, managing coffee Industry Acts and Regulations, policies on coffee industry, support on coffee production (agricultural inputs and extension services, coffee stabilisation funds), data on coffee, cooperatives institution.

## 3.2 Create a Political Will on Development of the Coffee Industry

Although political will is not an institutional factor but it can enable implementation of institutional factors.

Despite its potential contribution to foreign trade and employment of people who depend on coffee in one way or another, limited political will has been shown to support the coffee industry. Stakeholders of the coffee industry claimed that there is limited national championship or national recognition of the importance of coffee despite of its contribution to the economy. Limited political will has manifested itself into a failure to increase budgets within the agricultural sector in order to support research on coffee, extension services, provision of agricultural inputs and stabilization of funds for rescuing farmers during coffee crisis when the prices are slumping (TCB, 2017).

In the absence of a strong political will, Tanzania is unlikely to increase coffee production from the current average 50,000 metric tons to 100,000 or more as stipulated by the Tanzania Coffee Industry Development Strategy 2011-2021 (TCB, 2017). Important lessons may be taken from the Ugandan coffee industry, where the President has a special fund for coffee development and has made it a priority crop. The Ugandan government collects taxes and foreign currency and invests back in coffee production. Uganda has an ambitious strategy and a substantial fund to implement it; the coffee production in 2017 was 4,000,000 metric tons and they aim to produce 20,000,000 tons in 2020. This may be possible because of the capital injected in seedling production (15,000,000 seedlings) and distribution to farmers. While it is the role of a government all over the World to support research activities, in Tanzania, the government commitment in supporting research is still minimal, leaving other stakeholders to take a leading role. For example, for the last 5 years, the government support to coffee research was 4,000,000 USD, while the private sector has contributed 20,000,000 USD; Bill and Melinda Gates contributed US$ 10,000,000 (TCB, 2017).

Despite its contribution to foreign currency, the government has little priority on cash crops, which bring revenue to the country and income security, but rather on food crops for food security (TCB, 2017). The current donor funding focus has been on food crops to achieve food security, while giving limited attention on income security. However, much as it is important to have food security in the country, it is important as well to achieve income security. To unlock the coffee sector, the Government should come up with national coffee policy which will address issues relevant to the sector, taking on board strategies which will be used to improve the sector, welfare of the farmers (producers) and even promoting coffee both internally and externally.

### 3.2.1 Support on Agricultural Sector Development

The agriculture sector employs about 75% of the work force in Tanzania. About 68% of the population lived and earned their livelihoods in rural areas in 2016 (URT, 2017). However, the 2017/18 government development budget on agriculture sector was only 3% of the total government budget. The government and donor focus are on food crops, which ensure food security. The limited government budget in the agricultural sector has had various effects, such as the inability to provide much needed extension services to farmers and provision of agricultural inputs. The following sub-sections explore these issues.

i) ***Improvement of Extension Services***

Agricultural extension is vital for farmers to be able to equip them with knowledge and skills to improve their coffee production process, mainly because it allows for the application of scientific research and new knowledge of agricultural practices through farmer education. Agricultural extension services include the provision of farmers with knowledge, information, experiences and technologies needed to increase and sustain productivity, in order to improved wellbeing and livelihoods (URT, 2013). Delivery of quality agricultural extension services in Tanzania has been a center of attention for a long time (Daniel, 2013). Agricultural extension services in Tanzania have been entrusted in the local government authorities to ensure effective participation of beneficiaries and motivation of private sector involvement in service delivery (Kimario et al., 2010). During the FGDs in Kindimba and Kitanda villages in Mbinga, coffee producers claimed that there has been a failure of the local government to provide much needed extension services to the farmers. This has resulted in farmers relying on conventional methods of coffee cultivation in a dynamic coffee market. In coffee farming, the gap left by the government extension services has been utilized well by multinational companies who have penetrated their influence as far as the farm gates (TCB, 2017). Thus, with the lack of information on coffee marketing and trends in the global coffee industry, farmers have become the victims. URT (2013) reported that there were 7,974 extension workers against the requirement of 15,082 extension workers at village and ward levels, with only 42% of farmers receiving extension services. Less than 50% of the coffee farmers were visited by extension officer. It was reported that 48.4% of the sample households have been visited at least twice a year. Those who were rarely visited account for 28.5% of the sample households (Table 2).

**Table 1:** Frequency of extension visit

| | | | Frequency of visits | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | At least twice a year | Once a year | Once in two years | Rarely | Frequency | |
| District | Mbinga | Count | 30 | 15 | 3 | 7 | 0 | 55 |
| | | Percentage | 12.2 | 6.1 | 1.2 | 2.8 | 0.0 | 22.4 |
| | Mbozi | Count | 28 | 13 | 0 | 15 | 7 | 63 |
| | | Percentage | 11.4 | 5.3 | 0.0 | 6.1 | 2.8 | 25.6 |
| | Tarime | Count | 37 | 7 | 0 | 11 | 4 | 59 |
| | | Percentage | 15.0 | 2.8 | 0 | 4.5 | 1.6 | 24 |
| | Karagwe | Count | 6 | 1 | 0 | 30 | 1 | 38 |
| | | Percentage | 2.4 | 0.4 | 0 | 12.2 | 0.4 | 15.4 |
| | Kyelwa | Count | 18 | 4 | 0 | 7 | 2 | 31 |
| | | Percentage | 7.3 | 1.6 | 0.0 | 2.8 | 0.8 | 12.6 |
| Total | | Count | 119 | 40 | 3 | 70 | 14 | 246 |
| | | Percentage | 48.4 | 16.3 | 1.2 | 28.5 | 5.7 | 100 |

**Source**: Field survey data

Farmers have continued with coffee cultivation using the old methods inherited from their parents, while the changing and dynamic coffee markets demand farmers who know the advantageous techniques of the current market. In the end, Tanzania farmers are left behind, failing to capitalize on the market opportunities. Consequently, inadequate government extension services to coffee farmers is one of causes of low use of good agricultural practices in coffee production. To unlock this challenge, the government should collaborate with the private traders who are currently supporting farmers in coffee production areas (TUTUNZE, DAE and CMS) to complement the government extension services.

ii) ***Coffee Research and Seedlings Production***

Since 2001, the Tanzania Coffee Research Institute (TaCRI) has strived to provide a crucial public service to stakeholders in the country's coffee industry. It equips coffee producers with relevant and practical technological innovations and advice to improve productivity and quality. Likewise, it aims at enhancing profitability and livelihoods for coffee producers through increased competitiveness of Tanzanian coffee on the world market. Coffee research in Tanzania has been funded by the EU, with contribution from the stakeholders; for example, farmers' incomes from each kilogram of coffee sold is deducted to fund the research and, in the end, this reduces the income of the farmers.

Apart from conducting research activities on hybrid coffee clones, TaCRI has been producing, multiplying and distributing seedlings. Seedlings production has fluctuated: in 2005/06, the ability to produced seedlings was 3,000,000, which increased to 10,000,000 in 2010/11 (TaCRI, 2017), before decreasing to less than 3,000,000 in 2015/16. There have been calls for other stakeholders' support in production. The 2012 Coffee Industry Act provides for other stakeholders to engage in shared functions, seedlings production being one of them. In 2005/16, seedlings production by various stakeholders are as shown on Table No. 2.

**Table 2:** Seedlings Produced by Stakeholders In 2015/2016

| SN | Stakeholders | Seedlings Produced |
|---|---|---|
| 1 | TaCRI | 2,568,000 |
| 2 | Coffee growing Districts | 716,250 |
| 3 | Farmers groups/traders | 2,773,840 |
| 4 | Cooperatives (primary societies and unions | 151,500 |
| 5 | Estates | 253, 600 |
| 6 | Individuals | 160,000 |
| | **Total** | **6,623,190** |

Source: TaCRI, 2017

The estimated annual demand for coffee seedlings is 20,000,000 seedlings and thus, current production is far less than demand. This means the current trend does not give a bright future for increasing coffee production, bearing in mind the current challenges whereby most of the producers use conventional coffee seedlings, which are susceptible to disease and pests, thereby increasing the overall costs of production.

However, apart from production of seedlings and distribution to farmers, there is no official data on the survival rate, which would help inform the demand for seedlings and the actual situation on the field (TCB, 2017). Despite all these challenges, TaCRI has continue to perform all activities related to research, multiplications and distribution of hybrid coffee seedlings, with limited resources. As for other crops such as maize, private companies do multiplication and distribution. The coffee industry would benefit more by outsourcing some of these functions to other stakeholders, especially among the private sector where there is a willingness to multiply and distribute coffee seedlings to farmers in Tanzania.

Engagement of other stakeholders in seedling production is a positive move. However, as for farmers' groups, most of these have been supported by private traders such as TUTUNZE Kahawa and DAE in Mbinga districts, CMS in Mbeya and Songwe Districts. However, since 2016, when funding from the EU ended, the government has not shown interest in taking over this role. Without support from the EU, limited support from government and dependence on taxes from coffee auctions, its capacity to do so is questionable. With decreasing resources from the EU, the ability of TaCRI to serve the industry has decreased, leaving this important role at stake. By 2017, TaCRI needed 4.7 billion TZS to function properly, but its ability to collect revenue from all sources was 1.8 Billion TZS (38.2%), and thus, a deficit of 2.9 billion TZS remained (TaCRI, 2017). The government could fill up this gap and increase their commitment in supporting increasing coffee production, improving income of the coffee producers and foreign currency. It is noted that, TaCRI has been conducting research on new coffee varieties, production and distribution of seedlings all over the country. With low capacity to perform all these functions, there is a slow pace in the distribution of seedlings. It is high time for TaCRI to invest the merger resources in research activities and leave seedling multiplication and distribution to LGAs and the private sector.

Although other stakeholders have supported research on coffee sector, the role of the government remain very vital in supporting research activities not only for coffee, but all other cash crops which employ millions of Tanzanians and bring foreign currency to the country. Currently, coffee research is funded by the stakeholders of the coffee industry, including farmers. Since research is a public good which is a long-term investment and all over the World, it is the responsibility of the government to fund research activities. Thus, the Tanzanian Government should seriously consider provision of adequate funds for coffee research. Farmers should be excluded from funding research to enable them to use their income to purchase coffee inputs such as fertilizers, pesticides and herbicides. One way of excluding farmers is for the government to encourage district councils which collect cess from coffee sales to re-invest in multiplication of coffee seedlings, feeder roads and irrigation infrastructure. It is envisaged that if 20% of the cess will be reinvested in coffee production in each district, it will increase production and improve the quality of coffee.

### iii) ***Support in Provision of Agricultural Inputs***

Liberalization of the economy went hand in hand with removal of the government subsidies on agricultural inputs. The cooperatives that had assisted farmers in accessing agricultural inputs on a loan basis, could no longer support farmers, and thus, farmers had to purchase agricultural inputs from private stockists (Cooksey, 2011). Farmers reacted differently; while the Chagga abandoned coffee cultivated and opted for fast crops, (Ponte, 2000), the Matengo of Mbinga devised other ways of supporting coffee cultivation (Mhando, 2010). Recognizing the importance of agricultural inputs in coffee production, coffee industry stakeholders initiated a coffee development input fund to take care of the provision of agricultural inputs to farmers. The fund was initiated in order to fill the gap in provision of agricultural inputs to producers, which was left by the government and cooperatives. The fund was financed by deduction, which was done after selling coffee at the auction, and it was expected to build enough capital to enable it to function properly, and achieve its intended objectives (TCB, 2017). The proposed credit scheme under Tanzania Coffee Development Trust Fund (TCDTF) failed to start because TCDTF has not been able to collect enough capital, partly because the coffee that was expected to be used as collateral for farmers to get agricultural inputs and support seedlings distribution has been hijacked by black market (locally termed as *Magoma* and *Kata Kichwa* in Mbinga and Mbozi districts respectively). Similarly, decreasing coffee production affects both coffee exports, and revenue collected for the development fund (TCB, 2017).

Despite these efforts of coffee industry stakeholders, the government has not done enough to assist farmers to access agricultural inputs, which are crucial for increasing production. Despite its good intention of assisting farmers to obtain seedlings and agricultural inputs on credit, since its inception in 2013, TCDTF grew slowly and failed to build up capital. The government promised to contribute 2 billion toward running of the fund, but no fund has been released so far. TCDTF has sustained itself through meager contributions from coffee sale taxes, which are not enough to run the Trust as expected (TCB, 2017). However, In February 2018, the government abolished TCDTF, claiming that it had no government mandate and place all her activities under the TCB. Based on the fact that TCB has very few officials based in coffee production zones and depends on the local government to assist it in coffee inspection, it has yet to be seen if it will be able to perform and assist farmers to increase production of coffee.

One of the side effects of failing to sustain the coffee development Fund is the situation where farmers are subjected to fake inputs. Coffee farmers have complained that some of the inputs stockists sell fake agricultural inputs, which increase costs of production and discourage farmers in their production endeavor. These cases have been reported during FGDs in Mbinga, Nyasa and Mbozi districts. Selling of fake agricultural inputs could be one of the challenges, which not only demoralise farmers to continue using the inputs, but also hinders the increase of coffee production in Tanzania. Consequently, from the ongoing discussions, it is obvious that agriculture inputs are very important for production of not only coffee, but other crops as well. To be able to unlock this challenge in order to increase production and productivity of coffee, the government should subsidize prices of coffee inputs as it is the case of other crops such as maize and cashew nuts. Reduction of input prices should go hand in hand with the inspection of fake agricultural inputs distributed to farmers by unfaithful traders/officers. Likewise, the government needs to address this matter seriously by having agricultural inputs funds for development and eventually increasing the coffee production in Tanzania.

## 3.3 Managing Coffee Industry Acts and Regulations

As noted earlier, activities related to the Tanzanian coffee industry are regulated by the Coffee Industry Acts and Coffee Industry Regulations, which are passed by the Parliament and Ministry of Agriculture and Cooperatives respectively. Consequently, all activities to be undertaken by all the actors of coffee industries are stipulated in these two government documents. While some of these Acts and Regulations could negatively affect the performance of the industry, some of them are benefiting the actors and industry in general. For example, both the 2002 and 2013 Coffee Industry Acts prohibit ownership of more than one license among the coffee actors. Private traders are required to choose one license: purchasing parchment, processing, warehouse or export. However, private traders have discovered that they can maximize profit by owning more than one license and some are operating throughout the coffee chain by registering different companies to purchase cherry and parchment, curing, auction and export coffee. TCB, which is supposed to oversee these companies, has failed to come up with a solution for exporting companies having 'sister' companies, which operate along the coffee value chain. Consequently, the companies with several subsidiary companies purchase their own coffee at the auction, killing the intended competition. For example, in 2018/2019 coffee auction, five exporting companies purchased 87% of the coffee sold (Taylor Winch 23%; Ibero Ltd 21%; Dorman Tanzania, 19%; Cotaaf 14% and Engelhart 10%), while other exporting companies purchased only 13% (TCB, 2017). The monopoly of 5 big exporting companies reduces the number of buyers, competition and efficiency at the auction. Consequently, the lack of competition results in both low prices at auction, and low income for producers. In a market where there is adequate competition, efficiency is achieved because competition among buyers forces them to pay their maximum demand price and competition among sellers forces them to charge their minimum supply price for the given quantity exchanged.

Similarly, the 2013 Coffee Industry Act prohibits unlicensed people to trade on coffee at any level (URT, 2003). However, middlemen in the villages take advantage of the farmers' problems and collect coffee from farmers at low prices. After harvesting, the agents take advantage of various challenges facing farmers (for example, paying for school fees, sickness in the family, etc.) to illegally collect coffee from farmers at low prices. Despite regulations that prohibit coffee trading without license, key informant interviews and FGDs at the surveyed villages revealed that both LGAs and TCB have failed to control these middlemen. Practices made by the middlemen constrain the motivation of the farmers to continue with production of high-quality coffee because they buy coffee without insisting on quality.

To unlock this challenge, there is a need of re-examining the current policy which has a loophole that enable the exporters to use their sister companies to purchase coffee from the farmers should be re-examined using lessons learned from other coffee producing countries where exporters are not allowed to go to the farmers. Limiting direct export done under the disguise of farmers groups will increase the number of participants at the auction and stimulate price.

## 3.4 Promotion of Need-Based Policies in the Tanzanian Coffee Industry

Noting the weaknesses inherent in the previous Coffee Industry Acts, the 2012 Coffee Industry Act and regulations allow for shared functions in coffee industry in production and marketing. The 2012 mandates recognised that the coffee sector needs both public and private sector for improvement of the sector. All the stakeholders should collaborate in all functions to make it operates smoothly. Likewise, the importance of stakeholders in the coffee sector have been realised; the public sector has experience in dealing with producers as well as needed expertise (extension services), while the private sector has capital, expertise in coffee related issues (production and marketing). The 2012 changes opened the door for the private sectors to take on active roles as partners in coffee production in all production zones. The main assumption was to encourage Public Private Partnership (PPP) whereby the public sector with wide experience, expertise and knowledge of the farmers environment should team up with the private sector which has resources, skills and expertise in production and marketing and thus, create a win-win situation.

As a result, private sector/traders invested in production areas (nurseries and seedling production, extension services, sponsoring farmers groups, processing and curing facilities) in Mbinga and Mbozi districts in 2018/19 coffee seasons. However, the 2018 government directives, which changed the coffee marketing arrangement by preventing Private Coffee Buyers (PCbs) from purchasing coffee from the farmers (instead making them purchase coffee from the TCB auction in Moshi) took away the motive for inviting private sectors to partner in coffee production and marketing. As a result, private sector actors like TUTUNZE Kahawa and Coffee Management Services (CMS), have closed some of their operations in the coffee production zones. It should be noted that these frequently changes of policies are detrimental to the industry. Stakeholders of the coffee industry have complained about frequent and rapid change on some of the rules and regulations which govern the coffee industry without consultations. These frequent and rapid changes of the rules and regulations affect investments already made and create uncertainty to potential investors in the coffee industry (TCB, 2017). Stakeholders should be consulted well in advance before changing the rules and regulations governing the coffee sector. The role of the government should be to facilitate and regulate the coffee sector, and it should therefore consult the actors before changing policies in order to avoid negative outcomes to all the actors.

## 3.5 Initiation of a Coffee industry Stabilization Fund

Prior to liberalization of the economy, the government had a stabilization fund, which was used to support farmers when prices slumped on the world market. The funds helped farmers to continue with production, by paying them above average prices, and thus ensuring that farmers continue with production (Maghimbi, 1999). After liberalization, the coffee stabilization fund was abolished, the government and its institutions have stopped to play their crucial role as a last resort buyer who rescues the farmers when the price falls below the level to sustain them. The coffee stabilization fund was intended to rescue the farmers in such situation. It is always the case that farmers invest in coffee when the price increases and remain static when the price falls. In these scenarios, the government is supposed to intervene by subsidizing them in order to allow them to continue with production.

Limited efforts made to subsidize agricultural inputs while most of the Tanzanian farmers still cultivate conventional coffee (which is highly susceptible to coffee leaf rust and coffee berry diseases) hinders the efforts to increase coffee production. Inability to subsidize prices of agricultural inputs has motivated some unfaithful traders/middlemen to provide agricultural inputs to farmers during planting time with payment being in terms of coffee at agreed price of 2,800 TZS per one kilogram of coffee (TCB, 2017). This arrangement is exploitative to farmers because they pay back by selling coffee at such a low price that it does not enable them to re-invest in coffee production. This problem was reported in Mbinga and Mbozi districts by coffee producers, members of the farmers groups and leaders of cooperatives.

As noted, TaCRI has released coffee varieties which can resist disease. However, some of the farmers are not ready to buy and plant new varieties not only because of lack of knowledge on their performance at the farm but also because they are not sure of coffee prices that will prevail in the market due to their experience in fluctuation of coffee prices. The government should initiate the establishment of the coffee price stabilization fund to assist the producers to cope with coffee price fluctuations. This could be achieved by deducting a certain amount of money from each kilogram of coffee sold at the auction.

## 3.6 Create a reliable data on the coffee industry

One of the weaknesses that face the coffee industry in Tanzania is availability of reliable data. Some of these data presented are not reliable and have been static for many years. For example, how can we get reliable data on the number of coffee producers in Tanzania and the number of coffee plants, if the village government and producers themselves do not have reliable data on the same? The following section explores these challenges.

### *3.6.1 Accurate Data on Coffee Production*

The data on coffee production in Tanzania is highly questionable. Data on the amount of coffee produced by the coffee estates has remained static (10%) for many years. However, there is massive investment on coffee production from various estates; for example, there is the Kilimanjaro Plantation in Moshi, Kilimanjaro and AVIV estates in Songea, Ruvuma region, just to mention a few. On the other hand, during the survey, it was reported that some of the estates in Arusha, especially those close to town area (Burka and Mringa estates), have reduced the size of their farms and coffee production. Burka Estate, which was once the largest estate in the country producing about 1,000 tons, is now reportedly producing less than 500 tons. However, these figures are not indicated, while the data on estate production has remained static for many years.
n the other hand, in Kagera Region, illegal coffee trading with Uganda is frequently reported in the media. One of the reasons why farmers prefer to sell coffee to Uganda is the price incentive because traders purchase coffee in cash, at a higher price than offered in Tanzania. For example, in 2016/17 coffee season, while the average price of one kilogram of Robusta in Kagera was 1,400 TZS, traders who sold Robusta illegally in Uganda were paid above 2000 TZS. Exact data on the amount of coffee smuggled into Uganda is not known. On the other hand, producers do not sell of the coffee they produce, but consume part of it in their households. Similar, coffee consumed locally in the bus stands and in coffee joints along the streets other areas all over Tanzania is not recorded. To unlock this constraint, there is argent need of establishment a mechanism of recording coffee produced in Tanzania. One way of doing is for TCB to collect data on coffee processed in all processing mills, private traders and other stakeholders. Care should be taken to capture data on amount of coffee produced in the estates and exported directly.

### *3.6.2 Establishing the Number of Coffee Producers*

The Coffee Industry Development Strategy 2011-2021 aims to increase production from the current 50,000 metric tons to 100,000. Since smallholders produce almost 90%, any strategy to increase coffee production must focus on smallholder farmers who are the main producers. TCB embarked on a farmer registration exercise, but to date, it has not completed the exercise. Failure to complete farmers' registrations jeopardizes the efforts to increase production, making it a blind without a focus and a deep understanding of the production capacity of the farmers who are targeted to increase production. Currently there is lack of information on number of coffee farmers, farm sizes and number of existing coffee trees in different coffee growing areas that can be used to establish inputs requirements, demand for extension services and demand for seedlings for expansion and/or gap filling and projection of coffee production.

The study in all the villages visited shows that some of the coffee farmers do not know neither the number of their coffee trees nor their areas under coffee cultivation. Likewise, the village government is not aware of the number of the coffee farmers in the village, nor the number of coffee trees and acreage under coffee farming (TCB, 2017). Available data is based on village extension officers' estimates, not the actual data. Thus, without establishing the exact number of coffee producers, it is difficult for the stakeholders to establish the exact amount of agricultural inputs needed for production, estimate of coffee to be produced and the actual demand of seedlings among the producers.

The government and stakeholders should make Efforts to carry out coffee census and document the number of coffee farmers, coffee farm sizes and number of coffee trees. With farmers registered and the number of their coffee trees established, the industry will be able to make realistic estimation of the number of farmers and establish their input requirements, capacity for extension services and project the production. Likewise, it would establish the size of their farms, the number of coffee trees in their farms and consequently demand for seedlings for gap filling.

## 3.7 Promoting Domestic Consumption and Reducing Dependence on External Market for the Tanzanian Coffee

Over 95% of all coffee produced in Tanzania is exported (TCB, 2017). The TCB auction in Moshi is highly dependent on coffee prices in New York and London and thus price volatility in these markets affect prices in Moshi. When the price increases, farmers invest in coffee cultivation but when the price decreases, farmers are discouraged from investing and taking care of their coffee plots. This is one of the major reasons for the decline in coffee production among the producers and Tanzania in general. Too much dependence on external market is a result of low domestic consumption of coffee. Basically, Tanzania is a tea-drinking nation with low rate of coffee consumption (4.8%) of the production in 2015/2016 (TCB, 2017).

Currently, coffee consumption in Tanzania is only 4.8% of the coffee produced in Tanzania, suggesting that that Tanzania will continue to depend on external markets and directly affected by the world market price. Although it will take time to change Tanzanian's preference to tea, dependence on external demand could be reduced by stimulating internal consumption of coffee using different strategies including the general coffee day which has already been initiated, introducing coffee drinking days in secondary schools and higher learning institutions in the country. This could be achieved through different intervention like dedicating a day to coffee (instead of tea) to be consumed by all students.

Tanzanian coffee is not consumed as of single origin in the world market and thus, if we strive to make our coffee consumed as of single origin; the price of our coffee will depend on its quality and not on the prices at the New York and London markets. Thus, exporting as single origin will require quality coffee, which will reward farmers who work hard to produce it, and it is likely that the challenges of low prices will be solved. An example was cited from estates which sell their coffee as single origin and obtain 15 USD per pound of coffee, while farmers who sell their coffee through KNCU at the New York and/or London markets obtain 2,500 TZS per kg (less than 1 USD per pound). Currently, Tanzanian coffee is sold as a filler in the world market and has failed to create its unique identity. TCB must create an identity of Tanzanian coffee as opposed to the current situation where it is used as a blend for other coffee. TCB/the government should take a leading role. Strategic marketing could be one of the options to get a Tanzanian coffee to the market and make it stay there. One would wonder that despite cultivating coffee in Tanzania for many years, why is this not happening? MOCA from Jamaica is sold in the Japanese market as a single origin coffee and thus, has a commanding power in the market. Kilimanjaro coffee has a good reputation in Japan as most of the coffee from Tanzania is exported to Japan. Based on private and public partnership, some of the licensed coffee traders have engaged themselves in the production of coffee through supporting farmers' groups with agreements that they will buy their coffee. With inadequate market information among the farmers, it has been reported that, private traders dictate the price they pay to farmers.

## 3.8 Reviving the Farmers Marketing Cooperatives

Cooperatives are rural based institutions with deep roots to the rural areas and farmers. Historically, cooperatives played a crucial role in supporting smallholder farmers in coffee production and marketing. With the recent reforms, cooperatives are not equipped to compete on equal footing with private traders and at the end, farmers are not benefiting as it is used to be. Corruption has been mentioned as one of the reasons which make farmers shy away from cooperatives (Banturaki, 2000). There is need to revive the cooperatives as institutions of the people. Emphasis should be on cooperatives governance, citing and learning from successful stories from Kenya. Also, there is a need of increasing their capacity in collective bargaining and marketing skills in order to make them more competitive.

Cooperatives have been noted to lack of marketing analysis skills among the cooperatives which would enable them to compete with private buyers and perform their business profitable (TCB, 2017). Lack of market analysis, as opposed to private exporters who have the expertise in coffee market coupled with miss management of assets, corruption, bureaucratic nature of cooperatives and other governance issues, have made the cooperative fail to compete in coffee marketing. The bureaucratic cooperative structure does not understand the coffee business model which is very crucial. Although cooperatives are not supposed to buy coffee like PCBs, they are supposed to collect, sell coffee and distribute the profit. However, they are not flexible in changing prices paid to famers as opposed to PCBs. At the beginning of the season, the prices are higher because traders have many orders from the multinationals, and they compete to purchase coffee to fulfil their orders. At the middle of the season, the prices shrink. However, cooperatives pay their members uniform prices regardless of the time they sold their coffee. To unlock this challenge in order to motivate farmers to increase production, cooperative societies should pay their members prices fetched at the auction, and not paying them blanket prices.

KNCU was cite as an example that despite its long experience in coffee exports and its vast assets, it has failed to compete with private exporters. In 2017 coffee season, KNCU could not obtain loans from commercial banks and thus cannot smoothly purchase coffee from its members. A rigid cooperative business model which is not flexible to allow leaders to change prices basing on the market forces is one of the challenges facing the present cooperatives (Mhando, 2014). To unlock these constraints, there is a need of examine the governance of the farmer's cooperatives to determine where the Cooperatives Act provide loopholes for leaders to cheat the members and benefit themselves. The Kenyan case can be opted, where 80% of all sales must be paid to farmers and the rest used to cover operational costs of the cooperatives (TCB, 2017). It should be noted that costs of investment diminish over time and running costs decrease. Taking this scenario, one would wonder why KNCU, without additional cost of investment at the moment, has failed to make profit.

Decline of coffee production directly affects farmers' incomes. This is because, as coffee prices increase, coffee farmers are motivated to plant new coffee trees, which take about three years to enter the market. This causes an oversupply and fall in prices. Price decline discourages farmers to invest in coffee and subsequently, production decrease and the price rises again (Tucker, ). This phenomenon, called as coffee circle is so common in coffee sector. Farmers could meet these challenges by producing high quality coffee whose prices are above average. On the other hand, cooperatives could forge alliance with private sector in a win-win situation and sell the coffee as single origin. Examples are cooperatives in Rwanda who have united with private traders. This could be possible if cooperatives could be empowered and build their marketing analysis capacity to deal with the global coffee market.

## 3.9 Promotion of Public Private Partnership in Coffee Industry

Realizing that the government itself cannot develop the coffee industry without collaborating with the private sector, the 2013 Coffee Industry Acts gives room for shared function in the coffee industry. Thereafter, the stakeholders of coffee industry have collaborated in production of seedlings, assisting farmers to get loans, training and extension services and collaboration between farmers groups and PCBs in direct export. Despite the Government efforts to promote the use of public private partnerships (PPP) arrangement in the implementation of projects, there has been limited success in the agriculture sector. Although there are no large-scale projects implemented through the PPP mode in the coffee sub-sector, the private sector plays a significant role in the sub-sector. Private coffee traders/buyers have taken advantage of their ability to access capital from multinationals, and thus, have managed to support coffee farmers in production and marketing. Moreover, they are flexible and can adapt to any situation as opposed to cooperative unions which have bureaucratic procures. Several private companies and NGOs working with farmers in different coffee production and marketing activities that can be up-scaled to become effective PPP arrangements that can bring impact in the coffee subsector; TUTUNZE Kahawa and DAE Ltd in Mbinga, CMS and Starbucks in Mbeya and Songwe Regions and Café Africa in Kilimanjaro and Rukwa regions. Some of the activities which could be done jointly include;

- Production of seedlings using different technologies, multiplication and distribution of the seedlings can comprise of TaCRI as a public institution involved in coffee technology generation, LGAs as public institutions involved in seedling multiplication and distribution and private companies/NGOs currently supporting seedling multiplication and distribution. TaCRI has started to team up with private sector (GLOBAL BIO science solution) in the production of seedlings through use of tissue culture technology, which is a good starting point towards establishment of an effective PPP. The private companies/NGOs currently supporting seedling multiplication that can be part of the PPP.

- Training of farmers in various aspects of coffee production comprise of TaCRI and LGAs as public institutions and private companies currently supporting or involved in actual training of farmers. Private companies/NGOs currently supporting or involved in training farmers on coffee production aspects that can be part of the PPP include HNRS and KADERES PEASANTS DEVELOPMENT Plc with experience in production of training materials and training of famers on coffee production.
- Training farmer organizations, cooperative societies and private coffee buyers on how to utilize resources and improve efficiency. This PPP arrangement can comprise of TCB as a public organization and CRDB Plc and NMB as private sector organizations currently offering seminars and training on how stakeholders can access and efficiently utilize loans for purchasing coffee and handling associated risks. Furthermore, there is a possibility of PPP in providing market information to coffee farmers. This PPP arrangement can involve TCB as a public institution and private mobile companies operating in Tanzania such as VODACOM, AIRTEL and TIGO.

While the internal coffee consumption has decreased from 7% to 4.8 percent in 2015/16, as opposed to Ethiopia which stands at 50%, there is a great need to increase internal consumption and reducing dependence from external markets. Based on the shared function, PPP could be adopted in promoting domestic coffee consumption. TCB as a public organization should spearhead it and private sector organizations currently involved in coffee roasting including Amir Hamza, DAE Ltd in Mbinga and farmers organization such as KNCU in Kilimanjaro.

# 4.0 CONCLUSION

Coffee production in Tanzania has considerable potential to grow and contribute to the overall economic growth and livelihood of the rural population. The paper has identified and discusses Several institutions constraints can be unlocked for increasing coffee production in Tanzania; creation of a political will on development of coffee sector, support of agricultural sector development (improvement of extension services and easy access to agricultural inputs), coffee research and seedlings production. Likewise, Coffee industry Acts and regulation should be managed, promotion of need based policies in the Tanzanian coffee industry, initiation of coffee industry stabilisation fund. Furthermore, it is noted that data on coffee industry have been static for decades; coffee production, number of coffee producers and size of their farms). With higher dependence on external market, Tanzania coffee industry could benefit more if there will be promotion on domestic consumption and reducing dependence on external markets. While cooperatives are deep rooted in the rural areas, reviving of these farmers organisation are very crucial for the industry. Lastly, the government cannot improve the coffee industry itself without involvement of other stakeholders, public and private. Thus, utilising the public and private partnership, farmers could access improved extension services to unlock greater potential in coffee production in the study areas. If the policy was to strengthen area-led growth, then the priority should be to increase PPP so that the private sector could be utilised in water management and irrigation aimed at increasing productivity on the existing coffee production. Therefore, PPPs offer alternatives in coffee growing areas, which are not reached by farmers' organizations. Their practices, however, should be monitored closely.

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