

**IMPLICATIONS OF LIVELIHOODS' CAPABILITIES ON  
COFFEE FARMING INPUTS AVAILABILITY, ACCESSIBILITY  
AND AFFORDABILITY AMONG SMALL SCALE FARMERS  
IN HAI AND ARUMERU DISTRICTS, TANZANIA**

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**Abstract**

*The implication of livelihood capabilities on small scale coffee farming inputs availability, accessibility and affordability is an under-researched area of the study in the Tanzania's context. The paper investigated the implications of livelihoods' capabilities on coffee farming inputs among small scale farmers in Hai and Arumeru Districts, Tanzania. Specifically, the study determined how livelihoods' capabilities among small scale farmers influence coffee farming inputs availability, accessibility and affordability. A survey using cross-sectional research design was used to collect information from 250 respondents. Data collection tools included questionnaire, focused group discussion guide, key informant guide and observation guide. Wards and villages included in the study were selected using purposive sampling technique while respondents were selected using simple random sampling technique. It was found that livelihoods' capabilities among small scale farmers is among the aspects influencing coffee farming inputs availability, accessibility and affordability by impairing their abilities in getting adequate and quality farming inputs. The findings also revealed that input accessibility and availability among small scale coffee farmers is not a big problem; the critical problem is*

*affordability of these inputs due to the fact that the majority of small scale coffee farmers have low livelihood capabilities hence unable to acquire inputs by themselves. This implies that, the higher the livelihood capabilities, the higher the possibility of small scale coffee farmers to acquire farming inputs of the required quality and quantity. Efforts targeting at improving agriculture such as input subsidization and free input provision among small scale farmers could be reflected in this direction in order to maximize outputs and profits hence improving their livelihoods' capabilities and emancipating them from poverty as well as other socio-economic hurdles. It is further recommended to the government and coffee stakeholders to make deliberate efforts of subsidizing farming inputs to enable small scale farmers to acquire them.*

*Keywords: Inputs, accessibility, availability, affordability, livelihoods' capability*

## **INTRODUCTION**

Farming input is a very important factor for improving production among small scale farmers who are invariably poor and risk averse (Mbowa *et al.*, 2014; Rusike and Chrispen, 2016). As pointed out by Haggblade *et al.*, (2017); Michael and David (2017), livelihoods' capabilities among small scale coffee farmers determine substantially the ability to acquire farming inputs of the required standards. In many Less Developing Countries-LDCs like Tanzania there are several challenges inhibiting small scale farming whereby, un-accessibility unavailability and un-affordability of farming inputs may be one of the factors (Jerven, 2014; Padian *et al.*, 2014; Kato, 2016).

Studies on livelihoods among small scale farmers have become topical in the contemporary time. Livelihood capability has been defined differently by different authors focusing on the ability to acquire different basic needs, to convert income and commodities into valuable achievements and how well people are able to function with the goods and services at their disposal (Sen, and Welch, 2005). In this study, livelihoods' capability is defined by focusing on the ability of small scale coffee farmers to acquire three meals per day, quality of housing, quality of clothes, ability to pay for medical services, any household member being salaried or self employed, ability to pay school fees timely, ability to own livestock, ability to own private transport (bicycle, motor cycle or car), and ability to own a trade or business.

Sum (2017), and MacArther and MacCord (2017) pointed out that livelihoods' capability among small scale farmers determine the quantity and quality of the products to be produced as well as the income and profits to be accrued from a given production activity. Therefore, it is anticipated that there may be a close relationships between livelihoods' capabilities and the

required quality and quantity of coffee farming inputs among small scale farmers in terms of their accessibility, affordability and availability. Limited accessibility, availability and affordability to production inputs, credit facilities, marketing information and extension services among small scale farmers may lead to low production and low income (Andrew and Ephraim, 2011; Chesinga and Poulton, 2014).

Agricultural prosperity among small scale farmers in many developing countries highly depends on availability of affordable, quality and accessible farming inputs though this is not the real practice in many developing countries due to their low livelihoods' capabilities which incapacitates them in different dimensions, (Otte, 2018; Brenda *et al.*, 2018; Monica *et al.*, 2018). As a result, due to inadequate farming inputs production still perpetuating poor among small scale farmers making them unable to obtain their daily livelihoods' requirements through coffee, (Jorge and Richard, 2007; Sianjase, 2015; URT, 2017).

Different scholars such as Pretty *et al.*, (2002), Tanesse and Bahiigwa, (2015), Kante, (2016), Sisay *et al.*, (2017) and Scoones *et al.*, (2018) have qualified farming inputs among small scale farmers by focusing on credit facilities, farming facilities, agro-chemicals, extension services, knowledge and skills required in the production process while Peterman *et al.*, (2010) defined farming inputs by considering them as non-land farming inputs which encompasses four components that is technological input resources (fertilizers, seedlings, pesticides and farming facilities), natural input resource, human input resource and social and political capital input resource).

In this study the definition by Peterman *et al.*, (2010) on technological input resource was adopted whereby, farming inputs refers to fertilizers, seedlings, pesticides and farming facilities required in farming activities due to their importance among small scale farmers in the coffee production process. Studies such as Jayne and Rashid, (2013); IFPRI, (2015); Sheahan and Christopher, (2017) have shown that different developing countries have undertaken deliberate efforts to ensure inputs availability, accessibility and affordability through policies such as inputs subsidization and free input provision so as to improve farming and livelihoods' capabilities among small scale farmers but neither of the above policies became successful.

It has been noted that from 1985, coffee production in Tanzania has been fluctuating, for example, in the period 2012/2013 about 351 million kg were harvested while in 2016/2017 a total of 5 million kg were obtained, (TCB, 2017). Due to the fluctuations in coffee production, majority of small scale farmers' livelihood capabilities particularly in acquiring basic needs such as education, health services and decent housing were affected, (Evenson, (2011); Ngulube and Msofe, (2014); Kumar *et al.*, (2015) and Uzuegbu, (2016). Despite the government's efforts in improving coffee production through programmes such as Agricultural Sector Development

Programme of 2003, establishment of the Tanzania Coffee Research Institute in 2000, Tanzania Agricultural Policy of 1997 and Co-operative Development Policy of 2002, the implications of livelihoods' capabilities on coffee farming inputs' accessibility, availability and affordability among small scale farmers is still an issue to be resolved.

The coffee stakeholders are complaining for decline in coffee production and annual fluctuations by focusing on secondary factors such as market failure, small scale farmers' attitudes and agricultural policies without taking into consideration the most important factor- livelihoods' capabilities of small scale farmers in acquiring coffee farming inputs. Several studies such as the effects of agricultural policies, coffee farmers coping strategies, agricultural marketing reforms, analysis of agricultural marketing, coffee sector and coffee industry, have been conducted in coffee industry in Tanzania, but still there is a knowledge gap on the implications of livelihoods' capabilities on coffee farming inputs among small scale farmers of which this study intended to address, (ICO, 2005; Mmari, 2012; Maghimbi, 2012; Mhando, 2013).

The aim of this research was to examine the implications of livelihoods' capabilities on coffee farming inputs among small scale farmers focusing on availability, accessibility and affordability of farming inputs. The findings from this study are useful to the academicians and researchers as a source of literature review on the same or related subject matter by adding to the stock of existing knowledge base on the implications of livelihoods' capabilities on coffee farming inputs among small scale farmers. The findings are also useful to the agricultural policy makers in addressing different challenges facing small scale farmers such as farming inputs inadequacy in the process of embarking into coffee production and maintaining their livelihood capabilities as recommended by Hamunyela *et al.*, (2017), Kidane *et al.*, (2017) and ANSAF (2017). Furthermore, the findings are useful to small scale coffee farmers by making them aware of the obstacles impinging smooth farming, profit maximization and livelihoods' improvement.

## **THEORETICAL REVIEW**

This study was guided by High Pay-off Input Theory (Tagar, 2012 and Levit, 2012) in explaining the implications of livelihood capabilities on coffee farming inputs among small scale farmers. The theory focuses on two aspects i.e. how to create and provide farmers with the new high-pay-off technology embodied in capital equipments and other inputs and how to increase labour productivity among the farmers. The high pay-off input theory assumes that economic growth from the agricultural sector of a poor country depends predominantly upon the availability and price of modern high pay-off inputs.

Thus, the theory was useful in the study towards analyzing the distribution of inputs such as fertilizers, seedlings and pesticides in improving coffee farming and smallholders' livelihoods. Despite its usefulness, the theory has been criticized to have failed to explain where small scale farmers shall obtain money or resources for acquiring high pay-off farming inputs. But generally, the theory appears to be suitable in examining the implications of livelihood capabilities on coffee farming inputs among small scale coffee farmers in this respect.

## METHODOLOGY

The study was conducted in Hai District in Kilimanjaro Region and Arumeru District in Arusha Region. The selection of the two districts considered their geographical location, culture, climatic conditions and their long involvement in coffee farming whereby, more than 50% of the population depends on coffee for their survival and other socio-economic development. The decline in coffee farming inputs provision among small scale farmers in the recent years leading to low coffee outputs and income is one of the reasons which necessitated this study (Maghimbi, 2012). Further, Hai and Arumeru Districts are among the districts in Tanzania which were adversely affected by abolition of free farming inputs provision. As a result, this has drastically lowered coffee production among small scale farmers in the area (Jayne and Rashid, 2013).

A cross-sectional research design was used in the study on which this paper is based. This research design enabled data collection from different groups of respondents at a time. The method gave room to make comparisons among different groups of respondents to see how the dependent variable relates to independent variables. It further, ensures a high degree of precision, reliability and validity on the data to be collected, and at the same time, the method saved time and other resources required to accomplish the study.

The study used both primary and secondary data to examine the implications of livelihoods' capabilities on coffee production inputs among small scale coffee farmers. Therefore, data were mainly collected from small scale coffee farmers and various institutions dealing with coffee such as Tanzania Coffee Board (TCB) and Tanzania Coffee Research Institute (TACRI). The study population comprised small scale coffee farmers in Arumeru and Hai Districts and the households was the unit of analysis. According to URT (2013), Arumeru District had 37,667 small scale coffee farmers while Hai District had 29,058 small scale coffee farmers. Therefore, the total population in the two districts was estimated to be 66,725 small scale coffee farmers.

A total of 250 small scale coffee farmers were sampled using Saunders *et al.*, (2009) formula. Two wards in each district and three villages in each ward were purposively selected.

After determination of the sample size, simple random sampling technique was used to obtain the respondents for the study on which this paper is based. The data collection methods included survey, documentary review, focus group discussions, direct observation on coffee farms, quality of their houses, business ownership and livestock owned, and documentary review on coffee production and input related information. Data collection tools included questionnaire, focused group discussion guide, key informant guide and observation guide.

In order to determine the livelihood capability levels, Principal Component Analysis (PCA) was used whereby factors were assessed to establish the livelihood capability levels. This technique was found appropriate for reducing many factors into fewer or smaller number which is more meaningful for further analysis as recommended by Field (2009). As for the livelihood capability levels, nine indicators were reduced into four levels extracted that is no capability, low capability, moderate capability and high capability level as summarized in Table 1.

Table 1: Livelihood Capability Levels

Levels	Frequency (n)	Percent (%)	Capability Index
No Capability	23	9.2	0.78
Low Capability	98	39.2	4.436
Moderate Capability	46	18.4	5.0
High Capability	83	33.2	5.1-9.0
Total	250	100.0	

The livelihood capability was determined by considering nine indicators namely ability to eat three meals per day, quality of housing, ability to have quality clothes, ability to pay for medical services, any household member being salaried or self employed, ability to pay for school fees timely, ability to own livestock, ability to own private transport (bicycle, motor cycle or car), and ability to own a trade or business. The mean score on the livelihood capability index among small scale coffee farmers were found to be 4.436 which was at a low level. This implies majority of small scale coffee farmers in Hai and Arumeru Districts had low livelihood capability level (39.2% of the respondents).

The results from livelihood capability index show that a small number of respondents were incapable (9.2%) in acquiring coffee farming inputs and scored less than 1. At the same time, about one- fifth (18.4%) of the respondents had moderate livelihood capabilities (scored 5

in the livelihood capability index) and 33.2% were categorized as having high livelihood capabilities (scored 5.1 to 9 on the livelihood capability index).

After the determination of livelihood capability levels, Cross-tabulation was done for establishing the relationships among variables. This technique was found appropriate for showing the implications between variables that is livelihood capability levels against coffee farming inputs among small scale coffee farmers (Field, 2009). In this study, coffee farming input was measured by considering access, availability and affordability. Access refers to the opportunity or right to use. Availability refers to the ability to be obtained or used while affordability means ability to manage getting something at a convenient price (Hornsby, 2012). Accessibility was measured by developing an index with four indicators namely seedlings accessibility, pesticides accessibility, fertilizers accessibility and farming facilities accessibility which were assigned Yes=1 for accessibility and No=0 for inaccessibility. Then average score was calculated to establish access among small scale coffee farmers.

Affordability was measured by focusing on 2 key inputs i.e. money spent to buy fertilizers and money spent to buy pesticides as recommended by Machimu and Kayunze, (2016). Small scale coffee farmers were asked to provide estimates of the money spent on pesticides and fertilizers and thereafter a total estimated cost for 2 items was calculated and finally an average cost was computed on each small scale coffee farmer. The availability was measured by asking the small scale coffee farmers if they were able to find inputs such as fertilizers and pesticides nearby their residences during the farming seasons. Farmers were to respond Yes=1 for availability and No=0 for unavailability.

In order to ensure the validity of the data collected, the pre-testing of questionnaire was done on 30 respondents (15 from each district) a month before actual data collection. In this respect, Construct Validity was calculated essentially in order to test generalization and assess whether the variables which were tested addressed clearly by the experiment. Construct validity enabled the researcher to determine how the operational definition of the variable actually reflected the true theoretical measurement of a concept.

Reliability of the data collected was determined by calculating the Cronbach's Alpha which is a measure of internal consistence that is how closely related a set of items are as a group. Cronbach's Alpha is considered to be a measure of scale reliability. In this case, the reliability coefficient was  $0.7241=72.41\%$ . The optimum value for the reliability ranges from 0.65 to 0.8 and the calculated results are 0.7241 which is within the acceptable ranges hence making the data collected reliable.

## RESULTS AND DISCUSSION

### Availability, accessibility and affordability of coffee farming inputs among small scale farmers

In examining the implications of livelihoods capabilities on coffee farming inputs among small scale farmers, three major issues were considered that is availability, accessibility and affordability of farming inputs as depicted hereunder.

### *Livelihoods' capability levels against coffee farming inputs availability among small scale farmers*

The relationship between inputs availability and livelihoods' capability levels among small scale coffee farmers is presented as summarized in Table 2.

Table 2: Livelihoods' capability levels against coffee farming inputs availability

Availability	Livelihoods' capability levels				Total
	No Capability	Low Capability	Moderate Capability	High Capability	
Not available	02 9.5%	08 38.1%	08 38.2%	03 14.3%	21 100%
Available	21 9.2%	90 39.3%	43 18.8%	75 32.8%	229 100%

*Chi -square (0.368; p=0.943) likelihood ratio (0.395; p=0.941)*

The results in Table 2 show that availability of coffee production inputs (fertilizers, pesticides, seedlings and farming facilities) were measured by considering whether they were available or not. There were two categories whereby one category admits coffee farming inputs were available and the other category pointed out that coffee farming inputs were not available. With regard to livelihoods capability levels; four levels were examined that is no capability, low capability, moderate capability and high capability level respectfully. The results revealed that community members who pointed out that farming input are not available; 38.2% had moderate livelihoods capability level.

Of those who said coffee farming inputs are available; 39.3% were having low livelihoods' capability levels. Despite having low livelihoods' capability level, coffee farming inputs are within their reach though they cannot afford getting them mainly due to their low livelihoods' conditions. The Chi-square results were (0.368; p= 0.941). This implies that there is no association between inputs availability and livelihood capabilities that's why the results are



not statistically significant. The relationship between availability of farming inputs and livelihoods' capability level was stated by one respondent in Modio village that;

*"...In our village, distance is not a big determinant of availability.....what matters is the relationship with the one selling coffee farming inputs.....one may go as far as five kilometers away from his or her home provided there is a good relationship with the one selling inputs and if the money for purchasing inputs is available..."* (Respondent, Modio Village, 20/04/2016).

This implies, given adequate income (livelihoods' capabilities), a small scale coffee farmer may go in other villages or wards or districts looking for coffee farming inputs. But because their income is limited due to their low livelihoods' capabilities, they are compelled by the circumstances to produce without adequate and quality coffee farming inputs. As a result, it exacerbates the magnitudes of poverty and continues pressing them down into low livelihoods' capabilities.

### ***Livelihoods' capabilities against coffee farming inputs accessibility among small scale farmers***

In examining the implication of livelihoods' capabilities levels on coffee farming inputs' accessibility among small scale farmers, the following were noticed, (Table 3).

Table 3: Livelihoods' capabilities against coffee farming inputs accessibility

Accessibility Index	Livelihoods' capability levels				Total
	No Capability	Low Capability	Moderate Capability	High Capability	
Low Accessibility	07 10.4%	24 35.8%	14 20.9%	22 32.8%	<b>67</b> <b>100%</b>
High Accessibility	16 8.7%	74 40.4%	32 17.5%	61 33.3%	<b>183</b> <b>100%</b>

*Chi- square (0.735; p=0.865) likelihood ratio (0.728; p=0.867)*

According to the results, accessibility levels had two categories namely low accessibility and high accessibility while livelihoods' capability had four levels which were no capability, low capability, moderate capability and high capability level. Of those who responded that there is low coffee farming input accessibility, 35.8% had low capability. With regard to those who pointed out that they had high coffee farming input accessibility, 40.4% had low livelihoods' capability level. The Chi-square results were (0.735; p= 0.865).

This implies that there is no association between inputs accessibility and livelihood capabilities and that's why the results are not statistically significant. The above results show that accessibility of coffee farming inputs is not limited to few or some individuals; it is open (accessible) to everyone provided he or she has adequate resources mainly in terms of money to acquire the required farming inputs. The same observation was revealed during focus group discussion in Akyeri village that;

*“Many of us are struggling due to not having money to buy coffee farming inputs.....under normal circumstances one may strongly speak out that neither availability nor accessibility is a big problem to us.....the critical problem which we are encountering is low economic capacity (low livelihood capability levels) which goes hand in hand with low purchasing power among ourselves”* (Discussant, Akyeri Village, 20<sup>th</sup> April, 2016).

### ***Livelihoods’ capabilities against coffee farming inputs affordability among small scale farmers***

Furthermore, the relationship between inputs affordability and livelihoods’ capability levels among small scale coffee farmers is presented as summarized in Table 4.

Table 4: Livelihoods’ capabilities against coffee farming inputs affordability

Affordability	Livelihood capability levels				Total
	No Capability	Low Capability	Moderate Capability	High Capability	
Not afforded	68 32.7%	81 38.9%	42 20.2%	17 8.2%	<b>208</b> <b>100%</b>
Afforded	06 14.3%	04 9.5%	15 35.7%	17 40.5%	<b>42</b> <b>100%</b>

*Chi -square (3.689; p=0.0296) likelihood ratio (3.911; p=0.0271)*

According to the results in Table 4, there were two categories of affordability namely not afforded and afforded while livelihoods’ capabilities were categorized into four levels that is no capability, low capability, moderate capability and high livelihoods’ capability. Of those who responded that coffee farming inputs are not affordable, 38.9% had low livelihoods’ capability levels. This implies, the higher the livelihoods’ capabilities, the higher the ability to afford acquiring coffee farming inputs among small scale coffee farmers and vice versa. Of those who said coffee production inputs were affordable, 40.5% had high livelihoods’ capability level. The Chi-square results were (3.689; p=0.0296).

This implies that there is an association between inputs affordability and livelihoods' capability levels and the results are statistically significant at 0.05 or 5% level. As it can be depicted from Table 4 results, there is a very close associations between the ability of small scale coffee farmers to afford getting inputs and their livelihoods' capabilities in such a way that the higher the livelihoods' capabilities the higher the degree of affording acquiring coffee farming inputs among small scale farmers and vice versa. These results adds to what TCB (2017) found with regard to the factors limiting coffee production among small scale farmers that, un-affordability of coffee farming inputs has contributed to a large extent to the fluctuations in coffee farming in Tanzania. This study therefore, has come out with a very interesting aspect of livelihoods' capability as a major determinant factor for coffee farming inputs acquisition in Tanzania and elsewhere.

According to TCB (2017) report on coffee farming in Kilimanjaro and Arusha Regions, there have been fluctuations in production from one season to another. It was revealed that in 2008/2009 agricultural season a total of 1874000 kg were harvested while in 2016/2017 agricultural season 172000 kg of coffee were harvested. The same scenario has been happening national-wide in such a way that in 2012/2013 agricultural season 351133000 kg of coffee were harvested while in 2016/2017 a total of 5090000 kg were harvested. Due to lack of subsidized farm inputs and extension services as it was also revealed by Jayne and Rashid, (2013), buying inputs by using individual small scale coffee farmers' income jeopardizes their ability to meet other livelihoods' requirements such as education, modern housing and nutritional food. As a result, small scale coffee farmers are compelled to rely on poor farming inputs which ends up giving them poor harvests hence placing them into poor livelihoods' capability levels.

Generally, when small scale coffee farmers were asked on whether they had obtained any form of coffee farming input credit in the near past (1990-2015), the majority (93.2%) said that for more than three decades they had not received anything while 6.8% mainly, from Akyeri village, pointed out that they were getting some coffee production inputs from NGOs and a private company dealing with buying and selling of coffee under a special arrangement that when they harvest they would sell their coffee to them. For the small scale coffee farmers who were under this arrangement the outputs from their farms were higher than for those who were not covered by this scheme. These findings adds to what Machimu and Kayunze, (2016) found with regard to contract farming and livelihoods outcomes in Kilombero-Tanzania among the small scale sugarcane producers whereby, small scale farmers become very active and produce more once they get farming inputs support.

The same findings were supported by a discussant at Modio village during focus group discussion as follow:

*“.....Due to inadequate coffee farming inputs, our ability to produce and improve our economic condition is limited.....most of us are with low level economic status (low livelihoods’ capability levels) and hence to produce better we really need to be supported by either the government, non-governmental organizations or well wishers who are economically capable”* Discussant, (Modio Village, 22 June, 2017).

Furthermore, results adds to the High Pay-off Input Theory by Tagar (2012) and Levit (2012) which states that output and profits maximization depends on the quantity, quality and cost of input used in the farming process which again is determined by the livelihoods’ capability levels among small scale farmers to acquire them. At the same time, production among small scale coffee farmers depend on the farming inputs availability, accessibility and affordability.

From the historical perspective, in the past, (1961 to the mid 1980s) when coffee used to do well and farming inputs were available for free use all the time; small scale coffee farmers used part of the income obtained from coffee for other livelihoods’ activities such as opening a small business, buying a means of transport or buying livestock (Jayne and Rashid, 2013). But currently, all of these initiatives are inevitable as it was reported by one respondent from Mbweera village that:

*“I managed to open up this shop before 1980s by using the money obtained from selling of coffee..... but after the removal of subsidies (after the mid 1980s) and be compelled to buy inputs by myself production is small as a result, I am no longer capable to acquire different household’s livelihoods’ requirements solely using money generated from coffee”*(Respondent, Mbweera Village, 27 April, 2016).

### **Theoretical Implication of the Findings**

The findings on farming inputs’ accessibility, availability and affordability among small scale coffee farmers confirms the assumptions of High Pay-off Input Theory by Tagar (2012) and Levit (2012) which stipulate that production among small scale farmers is affected by farming inputs un-availability, un-accessibility and un-affordability mainly due to their low capital, low skills, inadequate knowledge, low assets and lack of formal protection which as a result impair their ability to invest. Therefore, the findings have confirmed the theory to be quite true and applicable on the implications of livelihood capabilities on coffee farming inputs among small scale farmers in Hai and Arumeru district, Tanzania.

Furthermore, results have shown that livelihood capability levels determine substantially the affordability of coffee farming inputs and amount of coffee to be produced by small scale

farmers in the study area. Low livelihoods' capability level due to low production incapacitate small scale coffee farmers to acquire different basic requirements such as medication, education, decent housing, business, means of transport and clothes. At the same time, selection of type, quality and quantity of coffee farming inputs is determined by livelihoods' capability levels among small scale coffee farmers. Therefore, High pay-off input theory is partly inapplicable among low livelihoods' capabilities levels (small scale coffee farmers) because of having inadequate resources hence inadequate choices.

The findings obtained from this study are of its own uniqueness by addressing two critical issues which affect small scale coffee farmers' livelihood capabilities and coffee farming inputs. There are several studies done in coffee industry on small scale farmers but no study so far has been done to address the two aspects (livelihood capabilities and coffee farming inputs among the small scale farmers) mentioned above. Coffee stakeholders have been complaining for fluctuations in coffee production and downfall of the small scale coffee farmers' livelihoods' capabilities; this is the study which has filled this gap by showing the interdependence and interrelationship between the two. In this respect, these findings have contributed to High pay-off input theory by adding to the existing body of knowledge the component of livelihood capabilities when making choice on the right farming inputs to use.

## CONCLUSIONS

Generally, changes in livelihood capabilities among small scale coffee farmers in Hai and Arumeru Districts can be reflected in the changes in agricultural systems which are closely associated with the quality, quantity and cost of farming inputs (availability, accessibility and affordability) in relation to livelihoods' capability levels. In view of the implications of livelihoods' capability levels on coffee farming inputs among small scale coffee farmers, it can be concluded that small scale coffee farmers from the mid 1980s to date have been producing coffee under difficult conditions which have impaired their livelihoods capabilities in one way or the other.

It can further be concluded that livelihoods' capabilities among small scale farmers is among the factors influencing the acquisition of decent coffee farming inputs. It can therefore, be pointed out that coffee farming input is among major factors that has led to the fluctuations in coffee production and therefore affecting the livelihoods' capabilities of small scale farmers whose lives depends on coffee. In addition, it can be concluded that coffee farming inputs among small scale farmers is a problem which requires prompt action. Furthermore, small scale coffee farmers explained their great concern that for almost three decades they have not received either free or subsidized farming inputs from the government. As a result, small scale farmers are compelled by the circumstances to acquire inputs through their own initiatives

something which jeopardizes their ability to acquire other livelihoods' requirements such as decent medical services.

## **RECOMMENDATIONS**

Based on the above conclusions, the following recommendations are given in order to improve coffee farming among small scale farmers as well as their livelihoods capabilities: With regard to coffee farming inputs among small scale farmers it is recommended to the government and other coffee stakeholders such as TCB and TACRI to undertake deliberate efforts to ensure coffee farming inputs are subsidized by 50% so as to enable small scale farmers to acquire them in a reasonable price hence being able to participate fully in the farming process. It should be noted that even in developed countries subsidization of agricultural inputs is a common practice and that's why farmers are maximizing production and profits.

Furthermore, there is a need for more budget allocation in research, training and extension services so as to improve coffee farming input availability, accessibility and affordability as well as the livelihoods' capabilities among small scale coffee farmers. According to TCB (2017) report, in every financial year budget there is an allocation for improving and modernizing agriculture, coffee farming included but still doubtful if real these resources usually performs the intended tasks. Therefore, close monitoring of the budget allocated to agricultural sector by the government and coffee stakeholders is unavoidable for prosperity of coffee farming and livelihoods of the small scale coffee farmers.

## **LIMITATIONS OF THE STUDY**

From the initial stage of developing the research proposal and finally the research findings, researcher came across several challenges as stipulated hereunder:

- 1) Failure to get the respondents at the scheduled time. This research work was undertaken during rainy season whereby, majority of the small scale coffee farmers were busy in their farms. It was therefore, impossible to get them during working hours. As a result it compelled the researcher to re-arrange his households' visiting schedule instead of visiting them in the morning they were visited during evening hours after they had done with their farm-related activities. This compelled the researcher to spend more time in order to accomplish the data collection exercise as planned.
- 2) Inadequate funds. Data collection exercise was initially organized to be accomplished within thirty days. But due unavailability of small scale farmers during working hours which compelled the exercise to be scheduled for evening hours it demanded more days to be added. More days for data collection mean more resources to sustain the researcher in

terms of food, accommodation, transport and the like. This made a researcher to re-organize himself by soliciting additional funds to cater for additional days.

- 3) Bad weather condition and poor infrastructural networks. As pointed out earlier, the data collection exercise was done during rainy season and it was in rural environment where infrastructural networks were poor in all dimensions. In order to overcome the problem the researcher had to put on heavy clothes, rainy boots and carrying an umbrella so as to be able to move from one household to another and from one village to another.
- 4) Linguistic related problem. This was encountered in Meru District, Arusha Region whereby, some elderly people of more than 80 years were found to be not conversant with Kiswahili. They were using Meru language which the researcher could not understand. In order to overcome this problem the researcher was compelled to look for an interpreter who could translate from Meru to Kiswahili which is the national language in Tanzania.

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