

Full Length Research Paper

Irregular migration and smallholder farmers' crop production: A case of Kasulu District, Tanzania

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Despite the fact that irregular migrants (IRMs) have often been facing a lot of challenges in sustaining their livelihood in Kasulu District, in recent years, there has been an increase of IRMs from within and outside Kasulu District in search of casual labour in the local communities. The study therefore was undertaken in four villages in Kasulu, Kitanga, Kagera-Nkanda, Mvugwe and Nyachenda to determine the contribution of IRMs to the growth and prosperity of smallholder farmers. Specifically, the study aimed to; compare agricultural productivity among farming households employing IRMs and those not, identify smallholder farmers' reasons for employing or not employing IRMs and identify problems/issues in relation to smallholder farmers and IRMs interaction. A cross-sectional research design was adopted for the study in which simple random sampling, purposive and snowball sampling techniques were employed to select a sample size of 120 respondents. Data were collected using a variety of methods, that is, a questionnaire, key informant interviews, focus group discussions and direct observations. Quantitative data were analysed using statistical package for social science (SPSS) whereby descriptive statistics were determined. In addition, gross margin analysis was done to determine farmers' maize and beans production profitability. Qualitative data were analysed using content analysis. Generally, results show that households employing IRMs recorded a higher productivity both for maize and beans: The households also recorded significantly higher gross margins for both crops. Nonetheless, the results also show existence of a general negative attitude to IRMs by farmers in the study area. It can therefore be concluded that employment of IRMs is benefiting the households involved. However, based on the negative attitude by most of the surveyed households, there is need for the relevant authorities to ensure the well-being of both the recipient communities and that the IRMs are maintained. In addition, there is a general need for education for both the recipient communities and the IRMs with regard to the right procedures to be followed by migrants under the international law.

Key words: Irregular migration, agricultural production, smallholder farmers.

INTRODUCTION

Irregular migration is common all over the world. Available literature on irregular migrants (IRMs) describes irregular migration as a common and necessary feature

of modern life which is universally acknowledged and has extensively contributed to the development of different societies worldwide in the form of farm cheap labour

(Mattsson, 2008). However, studies on irregular migration are constrained by inaccurate data (Mouaatamid, 2010). According to literature (UN DESA, 2013) as cited by UNHCR (2015) there are an estimated 232 million international migrants in the world. However, due to difficulties of accurately estimating the number of Irregular migrants (IRMs) (IOM, 2015) the most recent global estimate of irregular migration suggests that in 2010 there were at least 50 million irregular migrants worldwide most of whom were a result of smuggling services.

According to the UNHCR (2016) as cited by UNHCR (2017) at the end of 2015 the world was hosting 21.3 million refugees, 16.1 million of whom were under UNHCR's mandate and 5.2 Palestinian refugees under the United Nations Relief and Works Agency (UNRWA). Generally, literature on IRMs shows that strict barriers on legal entry of irregular migration have been placed by many states worldwide. Despite the above, a large number of irregular migrants in different countries are used as cheap labourers (Aggarwal et al., Undated). According to Triandafyllidou and Maroukis (2012: 8), the research and international organization expert circles when talking of "irregular migration" prefer to denote a form of migration that is "not regular", "unlawful" or not according to the rules (without necessarily being "illegal", "illicit" or "criminal" in the legal sense). Therefore an "irregular migrant" is a migrant who, at some point in his migration, has contravened the rules of entry or residence.

Tanzania has a long porous border with eight surrounding states. All of these neighbouring states have at one point or the other experienced conflicts which have produced refugees. As a consequence of the aforementioned conflicts many IRMs fled and decided to reside in Tanzania. Generally, the easy entrance in to Tanzania by the IRMs has mainly been due to as mentioned earlier the porous nature of the country's border and the high degree of cultural affinity within 'The Great Lakes Region'. All the above have made irregular migration within the region an easy prospect (URT, 2010). Due to the above and Tanzania economic conditions it has been extremely difficult for the country to effectively control activities happening outside the formal entry points. As a consequence, the country is extremely vulnerable to irregular migration from the neighbouring countries of Burundi, Rwanda and the Democratic Republic of Congo (IOM, 2010; Mouaatamid, 2010).

Since 1972, following the civil war in Burundi about 300,000 Burundians were estimated to have spontaneously settled in Tanzanian villages along the border between Tanzania and Burundi. These are the

refugees who either lived/live in the local villages or get out of the refugee camps irregularly for several years, very often without formalising their stay, working and movement status (Jennifer, 2007; Johnson, 2008). Existing literature (URT, 2010) explicitly shows that, irregular migration in Tanzania is not simply a concern for only those who come into the country, but also those who exit from the refugee camps and for those who refuse to leave the country. It has also been stated that, some of these IRMs have established their own homes, are owning or renting land and are involved in farming as casual labourers, livestock keepers, rendering human labour to farmers in the rural areas, and others are married to Tanzanians without legal documents that allow them to engage in the mentioned activities (URT, 2010). Furthermore, discussions on irregular migration in Tanzania have become fundamentally tied to the management and control of IRMs, as the country's migration laws do not allow these IRMs to engage in paid or unpaid employment or staying in the country without legal documents from the relevant authorities (Johnson, 2008).

From the economic perspective literature shows that, irregular migration is actually quite useful in many states of destination as liberalisation of economies does in one way or another lead to demand of various forms of skilled and semi-skilled labourers, from which irregular migration becomes a potential source (Ruark, 2010; Wheaton et al., 2010). However, IRMs have often faced a lot of challenges in their livelihood activities in Kasulu District; these include provision of hard labour in agricultural related activities, being subjected to deportation, harsh treatment and receiving poor remuneration in return (Mouaatamid, 2010; URT, 2010).

Despite the existence of the aforementioned challenges on irregular migration, Kasulu District has been experiencing an increase of IRMs from within and outside the district searching for casual employment in the local communities (URT, 2010; Mouaatamid, 2010). Nonetheless, existing literature on irregular migration in Tanzania has limited information on IRMs, as it does not explicitly provide empirical evidence on the IRMs' contribution of labour to the agricultural production of smallholder farmers. This inadequacy is a prime constraint to a better understanding of IRMs interaction with local smallholder farmers in the study area. Therefore, the study on which the paper is based aimed at determining the contribution of IRMs to agricultural production of smallholder producers in Kasulu District, Kigoma region. Specifically, the study aimed to; compare agricultural productivity among farming households employing IRMs and those not, identify smallholder

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farmers' reasons for employing or not employing IRMs and identify problems/issues in relation to smallholder farmers and IRMs interaction. The main driving questions for the paper are, what benefits if any do smallholder farmers get by using irregular migrants compared to those not using them? And how are irregular migrants and smallholder farmers affected in relation to their interaction? To answer the above questions the paper use maize and beans production as illustrations.

RESEARCH METHODOLOGY

Description of the study area

Kasulu District is one of the four districts of Kigoma Region; it comprises seven divisions with 30 wards divided into 92 villages and covers approximately 9,324 km². The district borders Burundi to the West for about 150 km of porous land border, a large game reserve (Moyowosi) to the East. To the North-East it shares borders with Kibondo District and Kigoma District is to the South. The study was carried out in five wards namely Kitanga, Nyamidaho, Kagerankanda, Nyachenda and Kitagata. Kasulu District was selected because it hosts both irregular migrants (IRMs) who are estimated to be over 15 000 (URT, 2010). In addition, the district has been home to refugees since 1972, most often these refugees have been moving and working from one village to another without legal documents allowing them to travel, stay or work while in Kasulu. The district has also been hosting the 1993 cohort of refugees who are still living in refugee camps and unwilling to repatriate voluntarily to Burundi. These refugees have also been observed moving out of their camps to nearby villages in search of employment as casual labourers despite their status not allowing the same in accordance to the international law governing refugees.

Kasulu District's main economic activity is agriculture (that is, crop and livestock production). These activities are in most cases conducted in typical rural areas where the majority of its inhabitants, the Ha people make their living from small-scale farming. However, they do also engage in hunting, fishing, petty trade, honey gathering and pit lumbering. Although not all households have domestic animals, about 90% of the population is engaged in shifting cultivation. Most households grow maize, cassava, beans, millet, sorghum and sweet potatoes for food; and ground nuts, oil palm and tobacco as cash crops. All these crops are grown in the lowlands along with bananas and coffee in the highlands (KDC, 2010). Kasulu District has an estimated 12,000 km² of land out of which 6,606 km² or 70.8% of the total area is arable. Out of the arable land, only 30% is actually utilised which means there is a wide room for agricultural expansion. In addition, the district has 10,150 ha of irrigated land of which only 5% is currently being utilised. However, adoption of modern farming practices in the District is still low resulting into low agricultural productivity per unit of land area (that is, kg/ha) (KDC, 2010).

According to the 2012 Population and Housing Census (URT, 2013), Kasulu District had a total population of 425 794 (20% of Kigoma region's population). Out of this, 207,794 were males and 218,373 were females. The population growth rate was estimated to be 2.4 annually. The main ethnic group in Kasulu District is the Ha people who are the native in the area. The population is largely influenced by long term IRMs estimated to be over 12,000 (URT, 2010). The rest of the population in the District are the registered and unregistered refugees from the DRC and Burundi. The district has in recent years experienced the scaling down of refugees and refugee camps. Currently, only the Nyarugusu refugee camp is operational out of the three that were there initially, the camp has a total of 60,345 refugees. However, some of these refugees are

returning voluntarily to their countries, nonetheless others have become IRMs offering cheap labour within Kasulu District (URT, 2010).

Research design, sampling and sample size

The study adopted a cross-sectional research design; the design was the most appropriate for the study on which the current paper is based. Generally, the design is less costly and allows one to collect the required data in a relatively short period of time. According to Bryman (2012), the design is useful for descriptive purposes as well as for determination of relationship between and among variables and it allows a researcher to collect data at one point in time. The study's population included all IRMs (non-citizens) employed by smallholder farmers in the studied villages (Kitanga, Nyamidaho, Kagerankanda, Nyachenda and Kitagata), smallholder farmers who employ the IRMs and those who did not.

According to Bryman (2012), the minimum sample or sub sample for a research generally depends on a number of factors such as time and cost and need for precision increasing as one increases the sample size e.g. from 50, 100, 150 and onwards. Based on the above, the study used 120 respondents from four villages. To obtain the above sample, a combination of three different sampling techniques, was adopted, that is, purposive sampling, simple random sampling and snowball sampling. Purposive sampling was used in selecting two divisions out of the available seven, four wards out of thirty and four villages out of ninety, all the above have a high number of IRMs. Key informants and participants to focus group discussions were selected purposively. Simple random sampling was used to get the respondents from the households employing IRMs in agricultural production and those not. Snowball sampling was used to get prominent IRMs who were living and employed by smallholder farmers as cheap labourers but who were hard to find through purposive and simple random sampling as they did not stick with one farmer in one place.

Data collection

Data were collected using a pre-structured questionnaire with open and close ended questions. Generally, before the actual household survey a pilot study to pre-test the questionnaire was undertaken in three villages after getting the required clearance from Sokoine University of Agriculture, the District Commissioner's Office and from the Village governments'. The pilot aimed at testing the reliability and validity of the data collections tools in terms of precision, objectivity and relevancy. Based on the findings, some revisions were made to remove ambiguous questions and add new ones which were relevant for the study. In addition, the questionnaire and key informant interview checklist were translated from English into Kiswahili to allow easy communication. Generally, the research adhered to ethical considerations whereby participation was on a voluntary basis and respondents were assured of their anonymity in relation to the information shared. In addition to the above, data collected through the questionnaire were complemented by information collected through direct observations, in-depth interviews with key informants and the focus group discussions (FGDs). All these aimed at allowing triangulation of the study findings. Overall, five FGDs were conducted; these normally involved eight participants each and 16 in-depth interviews were conducted, four for each village. The key informants for the in-depth interviews included village leaders, extension officers, teachers, land officers, forest officers, immigration officers, refugees' officers, auxiliary police, militia personnel, and IRMs.

Data collected were used to determine descriptive statistics, determination of gross margins in relation to maize and beans production and to test for differences between smallholder farmers

employing IRMs and those not. In addition, data collected through the questionnaire were complemented with information collected through direct observations, in-depth interviews with key informants and FGDs. All the facts were linked to smallholder farmers maize and bean production, IRMs and their interactions with the host communities.

Data analysis

The study's unit of analysis was the household. Descriptive and gross margin analysis was employed to analyse quantitative data. Generally, quantitative data from the questionnaire were collected, edited, summarised, coded and thereafter analysed by using the statistical package for social science (SPSS). SPSS was used to determine descriptive statistics, that is, frequencies, percentages, standard deviation and means, minimum, maximum, cross tabulation. In addition, the Likert scale was used to determine the smallholder farmers' attitude towards IRMs. A t-test was employed for specific objective number one to determine whether there was a significant difference between the means for cost of production, yield (kg/ha), gross revenue (GR) and gross margin (GM) between smallholder farmers employing IRMs and those not.

The gross margin analysis

Gross margin (GM) analysis as a tool for quantitative data analysis was used to address objective number one. The GM analysis aimed at determining differences in the profitability of smallholder farmers using irregular migrants and those who were not using them.

$$GM = \sum Tri - \sum TVC$$

Where: GM = Gross Margin (gross profit) of crop production in Tsh/kg; $\sum Tri$ = Sum total revenue from sale of crop production in Tsh/kg; $\sum TVCi$ = Sum total variable cost spent on crop production in Tsh/kg.

Analysis of qualitative data

The qualitative data were analysed using content analysis the qualitative information collected through the key informant interviews and FGDs was into meaningful themes. Generally, the qualitative information has been used in this paper to complement what was collected through the questionnaire.

RESULTS

Socio-economic and demographic characteristics of the respondents

Demographic characteristics of respondents are essential for the interpretation of findings and understanding of the results of this study. This sub-section provides socio-economic and demographic characteristics of the respondents contacted as shown in Table 1. These include respondents' sex, age distribution, marital status and household size, household heads main occupation and education level. Results in Table 1 show that the majority of all the three groups, that is, households employing IRMs, those not using IRMs and IRMs were

headed by males the remaining proportion were headed by females. Results in Table 1 further show that less than a quarter, and over a third of the smallholder farmers who employed IRM, those not hiring IRM, and the IRMs respectively were living as singles: The majority of those employing IRMs were married. Results in Table 1 further show that the majority of households employing IRMs had a household size of four members and above.

Profitability of maize and bean production between smallholder farmers

To compare profitability among farming households employing IRMs and those not gross margin (GM) analysis for maize and beans production was done. The purpose of the gross margin analysis was to determine the value in relation to cost incurred. Generally, the margin on sales represents a key factor behind many of the most fundamental business consideration, including budgets and forecasts. Table 2 shows that smallholder farmers employing IRMs got a relatively higher GM for both maize and beans. For maize, the GM was 926 925 Tsh (Tanzanian shillings) and 289 200 Tsh for smallholder farmers employing and those not employing IRMs respectively. As regards beans production, the GM was 924 375 and 223 170 Tsh for the two groups respectively. Table 2 also shows smallholder households employing IRMs also recorded higher total revenues than those not.

In order to test whether a statistically significant difference existed in relation to the productivity (kg/ha) and profitability (gross margins) for maize and beans between farming households employing and those not employing IRMs a t-test was run. The t-test results Table 3 show that both productivity (that is, for maize and beans) and gross profit margin significantly ($p = 0.000$) differed between farming households employing IRMs in their farming operations and those not.

Reasons for employing irregular migrants

Smallholder farming households provided a variety of reasons for employing IRMs as shown in Table 4. The major reasons as reported by 20% and above were IRMs are easily found, IRMs are diligent workers and they are cheap to hire compared to local labourers. The above is further supported by what was pointed out during the FGDs and key informant interviews that; the majority of IRMs are paid cheaply compared to local labourers who were reluctant to take low pay hence demanding higher wages.

Reasons for not employing irregular migrants

Smallholder farmers not employing IRMs had several

Table 1. Respondents demographic characteristics (n=120).

Characteristic		Smallholder farmers employing IRMs (n _E = 40)	Smallholder farmers not employing IRMs (n _{NE} = 40)	Irregular migrants (n _{IRM} = 40)
Respondent's sex	Male	35 (87.5)	31 (77.5)	34 (85.0)
	Female	5 (12.5)	9 (22.5)	6 (15.0)
Age categories	15- 25	3 (7.5)	1 (2.5)	5 (12.5)
	26 -36	10 (25.0)	9 (22.5)	17 (42.5)
	37- 47	16 (40.0)	17 (42.5)	11 (27.5)
	>47	11 (27.5)	13 (32.5)	7 (17.5)
	Not married	9 (22.5)	28 (70.0)	28 (70.0)
Marital status	Married	29 (72.5)	11 (27.5)	11 (27.5)
	Divorced	2 (5.0)	1 (2.5)	1 (2.5)
Household size	1-3	5 (12.5)	10 (25.0)	25 (62.5)
	4- 7	17 (42.5)	14 (35.0)	10 (25.0)
	8 and above	18 (45.0)	16 (40.0)	5 (12.5)
	Minimum	2	2	1
	Maximum	13	12	8
	Average	7.15	6.65	3.25
	Main economic activity	Farming	31 (87.5)	34 (85)
Charcoal making		1 (2.5)	1 (2.5)	2 (5)
Logging		4 (2.5)	1 (2.5)	5 (12.5)
Farming		31 (87.5)	34 (85)	32 (80)
Charcoal making		1 (2.5)	1 (2.5)	2 (5)
Education level	No formal education	8 (20)	7 (17.5)	33 (82.5)
	Primary education	26 (65)	28 (70)	6 (15)
	Secondary education	6 (15)	5 (12.5)	1 (2.5)

n_E: Number of smallholder farmers employing IRMs, n_{NE}: number of smallholder farmers not employing IRMs; n_{IRM} = number of IRMs and numbers in brackets indicate percentage.

Table 2. Profitability of household's crop production based on employment or non-employment of IRMs (n=80).

Crop		Smallholder farmers employing IRMs (n _E = 40)		Smallholder farmers not employing IRMs (n _{NE} = 40)	
		Mean	Range	Mean	Range
Maize	Yield (Kg/ha)	3,238.50	1,000 - 5500	1,266.75	600-2,100
	Total cost (Tsh)	383,975	30,000 - 700,000	217,000	120,000 - 350,000
	Total revenue (Tsh)	1,310,900	400,000 - 2,200,000	506,200	240,000 - 840,000
	Gross margin (Tsh)	926,925	166,000 - 157,5000	289,200	40,000 - 610,000
Beans	Yield (Kg/ha)	1,937.5	600 - 4,000	636.75	100 - 1,200
	Total cost (Tsh)	238,125	100,000 - 520,000	158,700	20,000 - 290,000
	Total revenue (Tsh)	1,162,500	360,000 - 2,400,000	381,870	60,000 -720,000
	Gross margin (Tsh)	924,375	240,000 - 2,010,000	223,170	20,000 -500,000

reasons, the major ones (that is, those pointed out by 20% and above) included, fear of being arrested and detained for employing IRMs, scarce and limited resources at household level (that is, lack of cash), and the criminal acts committed by IRMs other details are as presented in Table 5. In support of the above, FGD

participants argued that there was a lack of concrete evidence of the effect of irregular migration on agricultural production among the smallholder farmers employing them. In addition, others claimed that life hardship among smallholder farmers' specifically scarce and limited resources at household level for example money for their

Table 3. t-Test results for productivity (kg/ha) and profitability (gross margins) for maize and beans between farming households employing and those not employing IRMs.

Variable		Average	t-test value (df = 78)	P value
Maize productivity (kg/ha)	Farming households employing IRMs	3,238.5	11.833	0.000
	Farming households not employing IRMs	1,266.75		
Bean productivity (kg/ha)	Farming households employing IRMs	1,937.5	4.387	0.000
	Farming households not employing IRMs	636.75		
Gross margin profit (Tsh) for maize	Farming households employing IRMs	926,925	6.54	0.000
	Farming households not employing IRMs	289,200		
Gross margin profit (Tsh) for beans	Farming households employing IRMs	924,375	9.942	0.000

Table 4. Reasons for employing irregular migrants (n=40).

Influence for employing IRMs (n _E = 40)	Frequency	Percentage
Irregular migrants are cheaper (lowly paid)	10	25
Reluctance of locals' labourers to take low paid jobs	4	10
Irregular migrants are easily found	8	20
Irregular migrants are diligent workers	10	25
Irregular migrants are ready to reside anywhere	7	17.5
Missing value	1	2.5

Table 5. Factors for not using irregular migrants (n=40).

Reason for not using IRMs (n _{NE} = 40)	Frequency	Percentage
There is no sustainability on agricultural productions	4	10
Scarce and limited resources at household level	11	27.5
Criminal conducts done by irregular migrants	10	25
Avoid arrest and detention.	8	20
No production difference noticed for farmers employing IRMs	7	17.5

wages funds and food to feed them. In addition, some argued that they did not have the necessary capital for extension of their farming land hence; there was no justification for employment of IRMs. Further to the above-mentioned, during the FGDs it was also revealed that the natural resource destruction and the rise of criminal acts such as theft, banditry, carjacking, poaching and rape restrained smallholder farmers from employing IRMs. FGD participants also claimed that, their hesitation to employ IRMs was to avoiding pressure and disturbances that had been experienced in the past in relation to engagement with IRMs.

Kind of irregular migrants employed by smallholder farmers in Kasulu District

Study results (Figure 1) show that farming households in Kasulu district employed both long and temporary IRMs

with the majority (62.5%) of those employed working on a temporary basis.

Time spent in Kasulu for employed irregular migrants

The findings in Figure 2 show that more than three quarters of the IRMs interviewed and who were employed as cheap labourers had stayed in Kasulu for not more than five years while a fifth had spent six to ten years working as cheap labourers and a negligible proportion of the respondents were those termed as long term IRMs.

Issues of concern on smallholder farmers' interaction with IRMs

The third objective of the study was to identify both smallholder farmers and IRMs concerns due to their

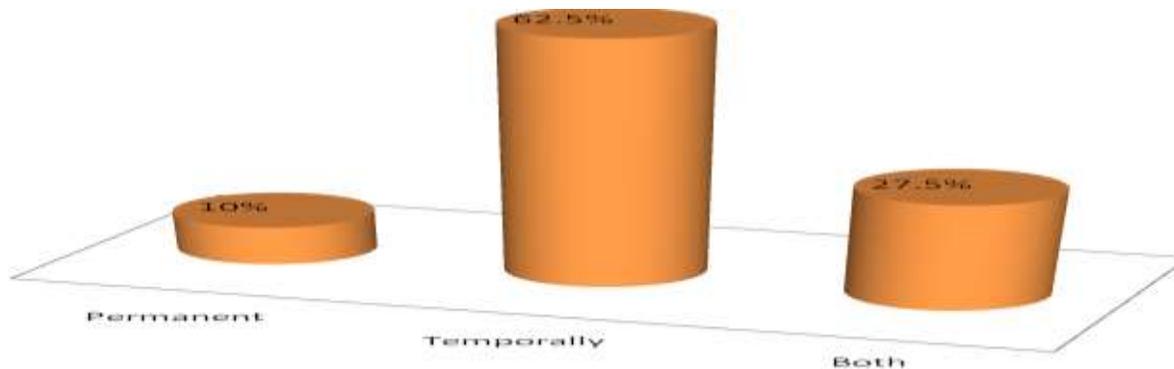


Figure 1. Category of irregular migrants' employed by smallholder farmers.

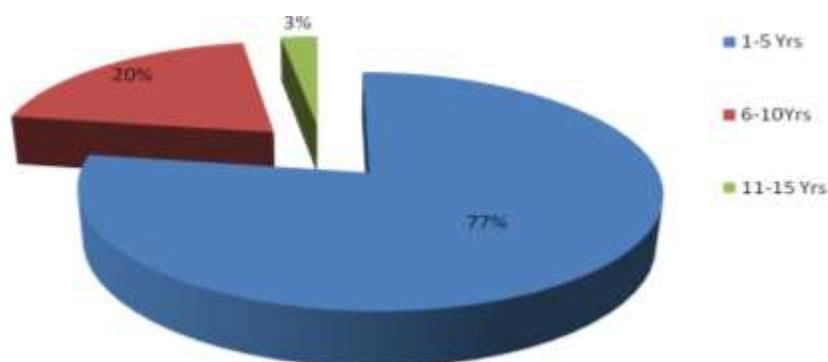


Figure 2. Time spent by irregular migrants in Tanzania.

Table 6. Issues around Kasulu smallholder farmers interaction with IRMs (n= 40).

Issue around IRMs and smallholder farmers interaction	Frequency	Percentage
Lack of technical assistance.	26	65.0
lack of permanent residence for irregular migrants	28	70.0
Theft and robbery	31	77.5
Conflict on land ownership	18	45.0
Arrested and detained in prison	14	35.0
Reduce labour market	18	45.0
Farmers become lazier	29	72.5
Lack of grants	28	70.0

interaction. Various issues of concern in relation to the smallholder farmers' interaction are presented in Table 6. Generally, about two thirds of the respondents said that they have no access to various programs related to agriculture specifically, on technical assistance. The results also show that most of the respondents reported lack of permanent residence for IRMs as another setback in their agricultural activities. The lack of permanent residence was also a major concern of the FGD participants who argued that this makes it hard for them

to trace the IRMs especially when they do not accomplish the task agreed upon.

In addition to the above, more than three quarters of the surveyed respondents argued that theft and robbery committed by IRMs was among the problems constraining their interaction with IRMs. According to the results, conflict on land ownership between smallholder farmers and IRMs was another concern reported to affect IRMs' interaction with smallholder farmers in Kasulu District, this was pointed out by under a half of the

respondents. Other reasons include fear of being arrested for breaking the law hence possibility of imprisonment, reduced labour market for the locals, and smallholder farmers have becoming lazier (Table 6). The above-mentioned concerns conform to what the FGD participants pointed out therefore suggesting a commonality of issues around smallholder farmers' interaction with IRMs.

DISCUSSION

Socio-economic and demographic characteristics of the respondents

Household headship

In Tanzania, currently female household-s account for 24.5 (MoHCDGEC et al., 2016). According to the results presented in Table 1, most of the respondents were in the productive age category thus suggesting they were economically active in pursuit of their households well-being. According to URT (2014) those aged 15 to 64 years are seen as economically active: an individual's age influences his/her productivity and the same can explain the level of production and efficiency. Generally, children and the old tend to be less active in economic activities than those in the middle ages who are more active, aggressive and motivated by the needs of their families.

Marital status

The observation that most of the surveyed households were married (Table 1) is in line with what has been reported by URT (2014) that 53% of Tanzania's rural population are in marriage union. However, when the number of individuals living together (co-habiting) is added then the above rises to 60%. Generally, through marriage households are able to get children: at times such households live with relatives from both sides who may either be requiring or offering assistance and this could lead to having a large household. As a consequence of the above, such households may need to employ cheap labour in form of IRMs so as to increase production for the increased requirements in terms of food and other necessities.

Household size

The observation that the majority of households employing IRMs had a household size of four members and above is not surprising. According to NBS (2013), Tanzania mainland's average household size is 5. Nonetheless, the fact that 45% of this group had a

household size of 8 and above may explain why such households needed the IRMs. Generally, with more mouths to feed one needs to increase production and more so if a household relies on own food production. In addition, households will need to raise their overall production to allow for their own consumption and surplus to be marketed to raise income to cover other household needs. According to URT (2013), the size of the household can be a burden particularly when it is composed of many dependants compared to working individuals. This sometimes leads to need for more funds to meet the household's needs with regard to purchasing of food, and other basic social needs thus, the need for more cheap IRM labour. Overall, average household sizes for households employing IRMs and those not were higher than that of the IRMs.

Households' main occupation

Agriculture was the main economic activity of the surveyed respondents: This was the main livelihood strategy for more than four fifths (Table 1). Apart from farming activities, both categories of smallholder farmers were engaged in non farm activities as an additional income source. The study's observation is consistent with the KDC (2010) profile which estimates that about 90% of the local communities are engaged in agricultural activities for their livelihood. Further to the above, farming activities were also a major livelihood strategy for the majority of IRMs; these were engaged mostly as casual labourers. Generally, the IRMs situation could be due to the fact that they neither have capital nor other alternatives to legally earn a living with their current status. This observation is in line with Finnwatch (2016) who pointed out that the majority of IRM workers rely on their employers for their continuing stay in an alien country.

Education level

Literacy level is very useful for smallholder farmers and IRMs. Those with better education may easily be able to grasp and implement whatever skills that are provided to them such as using modern technology in agriculture and employment in general. Contrary to the study's prior expectation that illiteracy rate was very high in rural areas study results (Table 1) show that most of the respondents were literate both those employing and those not employing IRMs. Nonetheless, those with secondary school education were relatively fewer. As regards the IRMs, the majority lacked formal education which suggests a general lack of employable skills which could enable them to be absorbed in the formal job market; only one had secondary school education. Smallholder Farmers' Agricultural Production based on employment

or non-employment of IRMs.

Profitability of maize and beans production between smallholder farmers

Based on study findings (Table 2), it can be said that in addition to the IRMs contribution to Tanzania's economy farm households employing them are also enjoying relatively higher gross margins in both their maize and beans production. A similar observation has been reported in literature (Ruark, 2010; Wheaton et al., 2010) that due to the need for firms and employers to maximize profits there has been a tendency to rely on immigrants as the source of the least expensive labour. Generally, in Kasulu smallholder farmers' use of cheap IRMs labour enables them to reduce production costs allowing them to expand their farms, create food surpluses, increased incomes from crop sales, hence general improvement of their households living conditions. In addition, during the FGDs, participants pointed out that employment of IRMs in their area has increased both production in addition to creating new local markets and trade links between smallholder farmers and IRMs. As a result of the above facilitates and motivates more labour mobility to Kasulu. According to Whitaker (2002) increase in production and the size of the local common markets does boost business and trade activities conducted by both hosts and IRMs in the areas used to host refugees.

Reasons for employing irregular migrants

Smallholder farming households had a variant of reasons for employing IRMs as shown in Table 4. Of major interest is IRMs are cheap to hire compared to local labourers. The above finding is in line with Ruark (2011) who argues that under normal market economy conditions most producers will not go for labourers demanding higher wages when cheap ones are available. Generally, based on their legal status IRMs have very limited choice hence their proneness to exploitation making them part of the millions of vulnerable workers employed in the informal economy worldwide. The above is further supported by what was pointed out during the FGDs and key informant interviews that; the majority of IRMs are paid cheaply compared to local labourers who were reluctant to take low pay demanding higher wages. Moreover, most disliked being employed in boring and tedious jobs such as farming compared to the IRMs therefore, providing room for IRMs to secure jobs easily. Additionally, IRMs are regarded as diligent workers who accomplish their assigned task on time. Furthermore, IRMs are generally ready and willing to live alone, in a family or with fellow IRMs within or near the farms regardless of distance from where their employer lives. The above is particularly important as smallholder

farmers in Kasulu still practice shifting cultivation and at times the farms are located far from the main villages.

During the FGDs, it was also observed that, employment of IRMs was being done by most villagers and that, some of those who do not employ IRMs were jealous over the success made by those employing IRMs; hence, indirectly being forced to employ IRMs. In addition, IRMs take the kind of jobs that native-born citizens could not. According to the FGDs it was revealed that the kind of verbal contracts (normally verbal) entered between smallholder farmers and IRMs encouraged the former to employ the latter. Generally, two kinds of oral contract were identified. First, was the short term contracts whereby IRMs have to participate in preparing part of the farm, for example bush clearing, planting and weeding, after which they were paid and off they went. The second, was that which required the IRMs to prepare the farm from the beginning of the season until harvesting and sale of crops; after this, they were paid and departed or could decide to renew the contract for another season. According to the study's observation, the latter has been the preference of many smallholder farmers since it does not need a lot of capital. Generally, payment was not based on acreage rather IRMs were required to remain on the farm the whole season. In addition, no limit of farming land was given but a fixed payment ranging between 250,000 and 450,000 Tsh per season. Smallholder farmers were only required to have enough land for cultivation, food to feed them and a stipend to last up to the harvest season and not necessarily housing; most of the IRMs lived in grass thatched houses/huts built near the farms.

Through the FGDs and face to face interviews, it was observed that the study area had long term IRMs who fled to Kasulu for various reasons since the 1970s. And because of this and their continued connection with their kinship and social networks ties in Burundi more IRMs have been attracted from Burundi to Kasulu in search of employment. It was also reported by FGD participants that the employment acquired by IRMs as cheap labourers has contributed to the economy of their households both within Kasulu and for their fellow Burundians outside Kasulu District. The money earned from working as cheap agricultural labourers has further encouraged new IRMs to cross the border in search of casual work. In connection to the above, during the field study a maize milling machine bought by an IRM was observed suggesting that some IRMs may be doing quite fine income wise despite the low wages they get. Ownership of such property by IRMs attracts other IRMs from Burundi in search of similar jobs and success. It was also highlighted during key informant interviews that lack of comprehensive farmer support services by the government and NGOs working in the district, such as, effective extension services, use of modern farming technologies such as tractors, inappropriate and often inefficient planning were also identified as reasons for

employing IRMs hoping that by employing IRMs smallholder farmers can expand both the size of the farms therefore more production and hence, profit.

Reasons for not employing irregular migrants

Smallholder farmers not employing IRMs had several reasons as shown in Table 5 are generally in line with what has been reported elsewhere. For example, Sunpuwan and Niyomsilpa (2015) have reported that in Thailand, refugees and migrants from neighbouring Myanmar have been negatively perceived and blamed for deforestation due to being hired as loggers and also due to competition for collective resources such as bamboo shoots, mushrooms and firewood. In support to the concerns raised in Table 5 FGD participants argued that there was a lack of concrete evidence of the effect of irregular migration on agricultural production among the smallholder farmers employing IRMs. In addition, others claimed that life hardships among smallholder farmers' specifically scarce and limited resources at the household level for example money for their wages and food to feed them were the main reasons for not employing IRMs. In addition, some argued that they did not have the necessary capital for extension of their farming land hence, no justification for employment of IRMs.

Further to the aforementioned, during the FGDs it was also revealed that the natural resource destruction and the rise of criminal acts such as theft, banditry, carjacking, poaching and rape restrained smallholder farmers from employing IRMs. FGD participants also claimed that, their hesitation to employ IRMs was to avoid pressure and disturbances that had been experienced in the past in relation to engagement with IRMs. The study's findings are in conformity with Sunpuwan and Niyomsilpa (2015) who have reported that Thai citizens have pointed out that migrants or refugees posed a threat to their physical and economic well-being, life and property, and human safety. In particular non-registered migrants were seen as the biggest threat.

Kind of irregular migrants employed by smallholder farmers in Kasulu District

The study's findings (Figure 1) generally show that most smallholder farmers employed IRMs on a temporary basis; however a few were employed on a more permanent basis. The above was mainly due to the fact that long term IRMs residing in particular villages dislike being employed as cheap labourers hence, the employment of temporary IRMs. In addition, an exercise for closing refugee camps (mass deportation of irregular migrants which took place under "Operation Kimbunga" in 2013 (IOM, Undated) and ongoing repatriation of Burundians refugees made those refugees who did not

want to be repatriated to Burundi to flee the camps and integrate into the local communities. According to Gambagambi (2015) the long and porous nature of Tanzania's border makes it very challenging to manage mixed migration hence, large flows of persons, including irregular and "mixed flows," moving across regions and national borders. The above makes it easy for smallholder farmers to hire more IRMs to fill the gap left by permanent IRMs. Further, FGD participants had mixed opinions whereby they argued that though they were employing temporary IRMs, permanent/long term IRMs were better as they were more trustworthy and could easily be traced. The above suggests that after being in contact with IRMs for a long period some social bonding normally takes place making it easy for a win-win situation for both the employer and the IRM.

Time spent in Kasulu by employed irregular migrants

The findings presented in previously show that more than three quarters of the employed IRMs had stayed in Kasulu for not more than five years and a few had been in the area for six to all working as cheap labourers. From the study's findings it is easy for one to conclude that most of those who are employed as cheap labourers in Kasulu are temporary IRMs who come on irregular basis either directly from Burundi or from the refugee camps. Responding on how they managed to reach Kasulu, IRM FGD participants pointed out that some of them were quite familiar with Kasulu and that this was based on their initial experience as refugees in the designated camps making it easy for them to enter the communities. Others, especially those coming directly from Burundi said they normally get assistance from some Tanzanians who go to their areas of origin in search of cheap labourers; their hosts then teach them on how to evade security checks along the borders due to their lack of valid international travel documents. Further to the above, the FGD participants also pointed out that some IRMs are brought by their fellow Burundians who are familiar with Kasulu.

Issues of concern on smallholder farmers' interaction with IRMs

Generally, the observation that theft and robbery committed by IRMs was among the problems constraining their interaction with IRMs is in conformity to claims made elsewhere as per literature. For example, issues of competition for resources (in particular land) have been cited as one of the things concerning host communities when it comes to migrants (Crush and Ramachandran, 2010). Other reasons include fear of being arrested for breaking the law hence possibility of imprisonment, reduced labour market for the locals, and

smallholder farmers becoming lazy (Table 7). The aforementioned concerns conform to what the FGD participants pointed out; therefore, suggesting a commonality of issues around smallholder farmers' interaction with IRMs. In addition to the above concerns, FGD participants thought there was need for the government or NGOs to provide education to the communities around immigration laws to enable them understand the requisite procedures thus, enabling them to abide to the same and avoid unnecessary encounters with law enforcement organs or even imprisonment. Discussants further claimed that, they need agricultural training on proper use technologies as this may enable them to increase productivity without necessarily expanding their farm land. Moreover, the knowledge gained could equip smallholder farmers with a better understanding of their surroundings and how to raise productivity without having to depend on IRMs.

Generally, the in-depth interviews with key informants revealed that smallholder farmers lack of title deeds for their land was a major problem and this has created a loophole for IRMs to own land illegally: IRMs ownership of land and other valuable assets was another cause for some of the bad feelings held by local communities towards this group perhaps just due to sheer jealousy. The above was supported by the FGD participants who pointed out that IRMs acquire land either for free or sometimes they buy it from their hosts and due to a lack of official contracts during these transactions, such land has at times been repossessed forcefully leading to hostility between the IRMs and local communities. In addition, ownership of cattle by the IRMs was also reported to be a cause of conflicts; some of the IRMs migrated with their cattle herds to Kasulu and at times these feed on smallholder farmers' crops thus leading to conflicts. Other factors fuelling the hostility were; presumed wealth accumulation through illegal means such as logging, and charcoal making. Berry (2008) reported that some villagers have experienced IRMs coming to their villages and once employed in their farms; they steal their crops or get involved in unlawful activities such as logging and poaching purposes hence affecting the environment and ecosystem in general.

According to literature (Crush and Ramachandran, 2010), hostility between migrants and their host communities can arise due to a number of reasons. These include depriving citizens of scarce resource (Crush and Ramachandran, 2010), exaggeration of migrant numbers hence making host communities feel like their national territory is under siege from the outside (Crush and Ramachandran, 2010). Other reasons include xenophobic discourses which portray migrants as a threat to the economic, social and cultural rights and entitlements of citizens. Based on the above, migrants get bad labels as 'people who 'flood' and 'swamp' local communities and job markets. In addition, they are stereotyped as bringers of disease, crime and a variety of

other social ills, and as people who steal jobs and compete unfairly with citizens for resources, shelter and public services (Crush and Ramachandran, 2010:216). Based on the above, both legal and illegal migrants in South Africa were targeted by some locals whereby innocent lives were lost and property destroyed due to xenophobia (Everatt, 2011; Associated Press in Johannesburg, 2015; Brand South Africa, 2015; Patel, 2016; SAHO, 2016; Huffingtonpost, 2017; Quartz Africa, 2017; Thisday 2017).

Observations from the in-depth interviews revealed that the kind of contracts entered between smallholder farmers and IRMs were not formal but just verbal and because of this and the illegal status of the IRMs some smallholder farmers declined to pay the IRMs their dues particularly, when harvests are not good due to natural calamities e.g. shortage of rainfall. Therefore, under such circumstances the IRMs had no choice but, either to extend their contract to the following season or terminate the same without payment. Nonetheless, it was observed that extension of the previous contract generally leads to dissatisfaction, anger and denial of rightfully earned payments all of which affect the IRMs well-being. As a consequence, some IRMs ask for bus fare to enable them return home, while others avenge by stealing or destroying the hosts crops and leave unpaid.

During the FGDs it was further revealed that some of the local communities thought that the presence of IRMs has increased unemployment to locals though it has also indirectly led to economic growth among the smallholder farmers employing them. However, it was also noted that smallholder farmers employing IRMs have become lazy; they work less following the arrival of IRMs as their cheap labourers. The observations are consistent with those given by key informants during the in-depth interviews whereby it was reported that with the IRMs working in the farms smallholder farmers and their families stay at home idle or doing light work on their home gardens. In addition, due to having lots of surplus time they frequently visit the local market for local brew or to refresh themselves. FGD participants further claimed that household heads (employers of IRMs) rarely go to inspect their farms. One of the reasons for the above was most of the farming lands are far (sometimes over fifty kilometres) away. One FGD participant said:

"Because of not being actively involved in farming, children of these IRM employers dislike farming, they drop from school, and become social misfits, drug abusers; robbers and some opt for prostitution" (A 49 years old woman, Nyachenda Village)

The study's findings imply that the future generation of the IRM host communities are in danger as economic downturn might be inevitable in case the law and regulations on irregular migration will strictly be upheld by the relevant authorities. It will be difficult in the future for

local communities to realise the national goals in agricultural production under the slogan “Agriculture first” initiative (“*Kilimo Kwanza*” in Swahili). The observation provides a snapshot of the impact of IRMs to Kasulu and this may not only be confined to Kasulu but may in the long run spread to the other regions of Tanzania as irregular migration seems to persist.

Observations from the FGDs also show that most farmland is far away from the main villages hence, both smallholder farmers and IRMs travel long distances in order to reach the same. Respondents claimed that, the exercise costs them a lot, in terms of money, energy and time. This is one of the reasons which forces IRMs to build temporary houses near the farms whereby in the long run they strive to have their own farmland and permanent residence; ultimately they start establishing unauthorized permanent hamlets along the farm areas as it was observed during physical survey. FGD participants further pointed out that suburbs built close to the border are facilitating underground movement of IRMs back and forth from Burundi and sometimes they house all kinds of IRMs including criminals. On the other hand, most of the key informants interviewed said that, currently, land is not a problem for local people in Kasulu and that is why they even dare to practice shifting cultivation as shown in the quote as follows:

“There is abundant uncultivated land in Kasulu District that is why it is easy for IRMs to access land undisturbed” (A 48 years old man, Mvugwe Village).

The findings from the study further show that, smallholder farmers were at other points in time the cause of conflict during their interaction with IRMs. This mainly occurred when there was a delay in paying IRMs their wages. According to the respondents, this oversight was rooted partially due to various reasons including natural calamities such as drought and floods. Another reason was lack of agricultural skills such as the use of fertilizers for their crops as a result smallholder farmers fail to meet their targeted harvests hence less income consequently leading to their failure to pay the IRMs as agreed. The above oftentimes creates conflicts between IRMs and smallholder farmers, whereby the latter deliberately decide to report the former to either the police or immigration officers leading to their arrest, prosecution, and later deportation. According to Leerkes et al. (2012) IRMs may find themselves in situations where they cannot decide or control what happens. Some may be involved in crimes, such as theft, property crimes, burglary or violence and drug dealing in response to their marginal social position or to meet various social standards that they could not.

The study further observed that there was no special program about civic education to both smallholder farmers and IRMs on national laws governing immigration law and those of natural resources management which,

among other things, include security matters, land and forest management. However, the study observed that victims of irregular migration according to immigration laws were both smallholder farmers and IRMs. Therefore, understanding the laws which govern entry and residence could make them comply with the laid down laws and of their country of origin and that of the host country. The study’s finding somehow conforms to the argument by (Craig, 2015) that since some migrants including the irregular ones (IRMs) may not be interested in permits and or integration into host communities as some are just there for economic reasons. Further to the above, another possibility is that IRMs may be afraid that if their application for residence or asylum is not granted then they may be subjected to deportation hence, opting to simply continue their stay as illegal migrants.

CONCLUSION AND RECOMMENDATIONS

A number of conclusions are hereby drawn from the major findings of this study: While results presented show a general negative attitude towards IRMs those employing them generally record higher gross margins for both maize and bean production. Nonetheless, due to the negative attitude by most of the surveyed households, there is need for the relevant authorities to ensure the well-being of both the recipient communities and of the IRMs. It can also be concluded that most of IRMs employed as cheap labourers in Kasulu are the temporary ones, that is, those coming on an irregular basis either directly from Burundi or from the refugee camps. It is therefore recommended that Tanzania needs to fortify her border control in order to address not only the human tragedy and the sufferings to which the IRMs exposed to but also the threat they may pose to the recipient communities.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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