

Perceptions and determinants of floriculture industry expansion on local communities in peri-urban area of Bishoftu Town, Ethiopia

Перцепција и детерминанти на експанзијата на цвеќарската индустрија на локалните заедници во предградијата на градот Бишофту, Етиопија

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Abstract



Floriculture sector began in Ethiopia in recent times. Although it has magnified economic benefit to the country, the social and environmental implication of the sector was not given due attention. The main objective of this study was to explore the perceptions and determinants of floriculture expansion in peri-urban areas of Bishoftu town. Data were collected from 80 employees working in two sample floriculture farm (Dugda and Spirit) and 120 household from two surrounding kebele administrations. Analysis is done using descriptive statistics and binary logistics model. The result of binary logistic regression revealed age of the respondents; educational status, marital status and family size of the respondents' were significant factors ($p < 0.05$) affecting perception of wage level in floriculture, while the remaining independent variables were found to be statistically insignificant to perception of wage level for the floriculture investment workers.

Key words: Bishoftu; Ethiopia; Floriculture industry; local communities; Peri-urban areas

Апстракт

Секторот цвеќарство во Етиопија се развива од неодамна. Иако ги зголеми економските придобивки за земјата, неговите социјални и економски импликации не го добиле должното внимание. Главната цел на оваа студија е да се испита перцепцијата и детерминантите на експанзијата на цвеќарството во предградијата на градот Бишофту. Податоците беа собрани од 80 вработени во две цвеќарски фарми (Дугда и Спирит) и 120 домаќинства од две околни кебеле администрации. Анализите се направени со користење на дескриптивна статистика и бинарен логистички модел. Резултатот од бинарната логистичка регресија ги откри возраста на испитаникот, образовниот статус, брачниот статус и големината на семејството како значајни фактори ($p < 0,05$) кои влијаат на перцепцијата на висината на платата во цвеќарството, а преостанатите независни променливи не беа статистички значајни за перцепцијата на висината на платите за работниците во цвеќарството.

Клучни зборови: Бишофту; Етиопија; цвеќарска индустрија; локални заедници; предградија

Submitted: 21.06.2021

Accepted: 12.08.2021

Introduction

Floriculture industry is a thriving and dynamic part of agriculture not only in developed countries (such as the United States) but also in developing countries (Gudeta 2012; Schumacher & Marsh, 2003). The Ethiopian Horticultural Strategy (2007) indicates Netherlands is the largest floriculture producer of the world with highly mechanized and specialized industry. At global level, floriculture industry is mainly concentrated in developed countries and has an annual growth rate of 8-10%; however, floriculture industry became growing in the developing world since 1970s. Consumption of floriculture is an indicator of civilization and economic success of a country. Padmini & Kodagoda (2017) pointed out that it is considered as a high income generating agri-business and it can potentially be harnessed as a means of socio-economic development. Wei et al. (2013) highlighted that floriculture industry can be used to empower women in the global floriculture market.

Floriculture industry can achieve rapid and sustainable economic growth by implementing economic development activities (Stebek, 2012). Ethiopia chooses this strategy because it is too poor to afford economic development activities that require heavy capital investment, but has vast areas of land and a huge work force that depends on this sector for a living (MoFED, 2006).

The floriculture strategy promotes the use of less capital, but mostly labour-intensive technologies and inexpensive inputs, to boost agricultural productivity. It emphasizes focusing on export oriented context (Stebek, 2012). Since the introduction of this strategy, Ethiopia has made some strides and remarkable achievements in developing its agricultural sector (MoFED, 2006). One of the achievements was the rapid growth of the flower sector over the last few years.

Many Sub-Saharan African counties look at floriculture as a viable alternative to boost their foreign earnings through export of cut flowers. The beginning of floriculture industry in Ethiopia was in mid-1980s with the export of flowers to Europe (Gobie, 2019; Tizazu & Workie, 2018). Until 2003, the numbers of flower firms were only four with export capacity not more than \$4 million. In 2004 the number doubled and in 2008 it increased to 81 and created an employment opportunity for 50,000 people of whom 70% are women (Abate, 2020; Gobie, 2019). There are many factors which contribute for rapid growth of floriculture in Ethiopia. Previous researches (Getu, 2009; Tizazu & Workie, 2018) pointed out among the most common factors include suitable climatic and natural resources, high level of support by the government, favorable investment laws and incentives, proximity to the global market, efficiency of the transport system and availability of abundant and cheap labor.

Although Ethiopia began exporting cut flowers in the 1980s (Zelalem, 2007), rapid development in the

flower sector was observed after the late 1990s, following the introduction of attractive incentive packages by the Ethiopian government. Investors have easy access to cultivable land. Banks have been instructed to lend 70% of the total investment capital at a lower interest rate and cheap labour. This driving force and the suitability of the agro-ecological condition for the production of various horticultural crops, a number of native and foreign investors have launched massive horticultural activities in the Ethiopia (Zelalem, 2007). Floriculture is a competitive industry in Ethiopia. Therefore, the focus of this paper was to explore the perceptions and determinants of floriculture expansion in peri-urban areas of Bishoftu town.

Materials and methods

Study Area

The late 19th and early 20th century is a period in which Ethiopia entered in an important new phase of urban development due to the establishment of military forts and the introduction of motor vehicles (Akalou, 1973). In addition, the construction of Ethio-Djibouti railway took place in the formulation of a number of towns along the line (Bishoftu Town Administration, 2020). Among them Bishoftu is the one that established in 1917 along with the railway and was served as the railway post. The development of Bishoftu continued as railway station and military forts construction until it got the municipality entity in 1943 (Bishoftu Town Administration, 2020). Railway station was the case of the town's foundation and the name Bishoftu (Figure 1) is derived from the watery feature of the area. It was also known with the name Debre Zeit, which was named in 1955 by Emperor Haile Sellasie and the name served until 1994 latter, it started to be called with name Bishoftu (Bishoftu Town Administration, 2020).

The town is located in East Showa zone of Oromia region between Dukem and Modjo towns approximately 47 km southeast of Addis Ababa. It lies in a geographic coordinate of 8°45'52"N- 8°48'45"N and 38°58'53"E - 39°01'00"E with an average altitude of 1920 m above sea level. It is characterized by humid tropical climate and heavy precipitation from June to August having an annual mean rainfall of 800 mm. NMA (2007) cited in Kebede et al. (2012) the mean annual maximum and minimum temperature are 25.5°C and 10.5°C, respectively (NMA, 2007).

According to CSA 1968 and 1977 survey reports, the population of Bishoftu in were about 21,220 and 27,747 respectively. Moreover, in 1984 and 1994 the population has grown to 55,655 and 73,372 respectively. In 2007 national census reported a total population of Bishoftu was 99,928 (CSA, 2007). Based on Bishoftu Town Administration (2020) the population of the city was 171,115 with density of 11 persons/hectare or 1100/km².

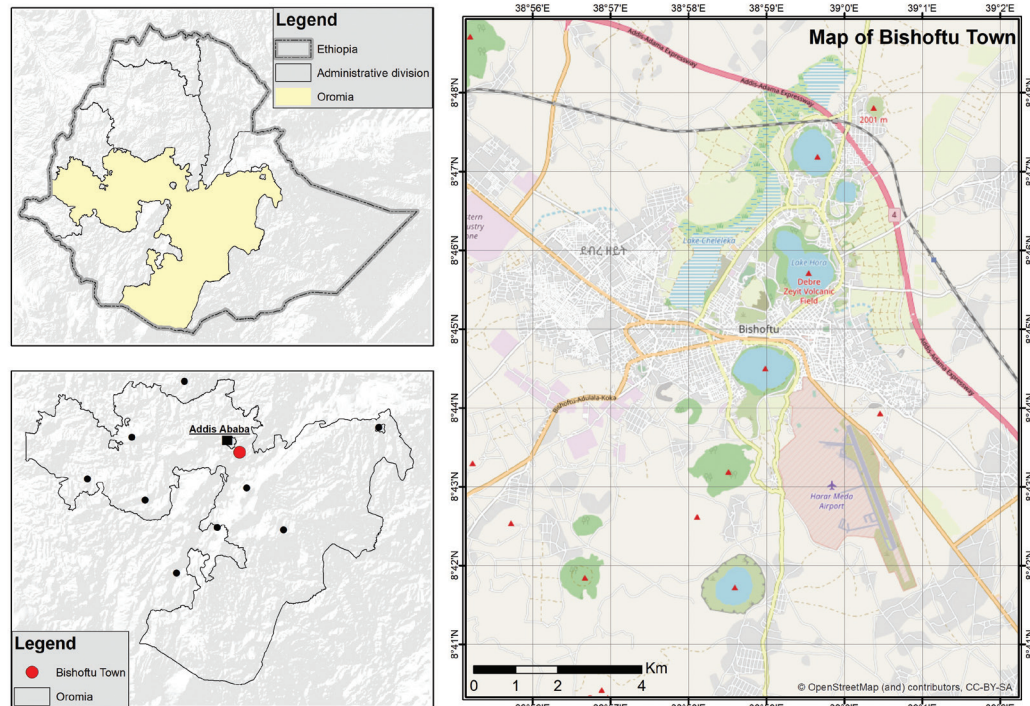


Figure 1. Location Map of the Study Area
(Source: developed using GIS data (2007) using ArcGIS software version 10.3.)

Data and data sources

This study used mixed research approach which is both qualitative and quantitative (Cresswell, 2014). Quantitative data were using questionnaire survey, while qualitative data were using FGDs, in-depth interview and key informant interview and observation. This approach is a good way of triangulation purpose. It also applied cross sectional research design. Primary and secondary sources of data were used to gather information.

Sample size

This study used multi-stage sampling technique. Firstly, two floriculture farms were selected purposively one from foreign investors and one from domestic investors in terms of ownership and location distance from the town. There are nine floriculture investment farms in Bishoftu of which 3 are foreign and 6 are domestic investors. In line with this, Spirit (east of East Africa) is from foreign floriculture farms located in Qaliti kebele and Dugda from domestic floriculture farms located in Kurkura kebele were selected. Both sample floriculture farms are located within 10 km radius which is Spirit with 8 km radius and 349.5 hectares of land, while Dugda with 5.4 km neighbouring distance and 436 hectares of land.

Secondly, sample respondents from workers were computed. In the above two selected floriculture

farms a sample of 80 workers, 33 (42.3%) male and 45 (57.7%) female, was selected in proportion to their total number of workers by stratification sampling method (permanent and temporary) based on gender and employment status (40 from Dugda and the 40 from Spirit floriculture farms) (Table 1).

Thirdly, 120 household heads, 76 (63.3%) male and 44 (36.7%) females, were drawn from non-displaced and displaced farm household heads in both floriculture farms. Of these 60 are displaced and the other 60 are non-displaced (Table 1).

Table 1: Sample size of employees and household heads

Criteria		Dugda		Spirit	
		N	S	N	S
Employees	Temporary	667	25	612	23
	Permanent	393	15	445	17
	Sub-total	1060	40	1057	40
Household heads	displaced	78	30	86	18
	Non-displaced	224	30	198	42
	Sub-total	302	60	284	60

Note: N-Number, S- Sample

Source: Urban land record and management office

Based on the following formula the sample size of the study was drawn

$$n_i = \frac{N_i}{N} \times n \quad (1)$$

Where n_i is the sample size in each stratum, n is total sample size, N_i is number of respondents in each stratum and N is the total number of respondents.

According to Bishoftu Town Administration (2020) with respect to employment status, the total numbers of the employees were 2118. Of these, 1279 were temporary employees while 839 were permanent. There were 667 and 612 temporary workers employed in Dugda and Sprit floriculture farms respectively, while 839 and 394 permanently employed workers in Dugda and Sprit floriculture farms respectively. There were also 586 household heads identified in the study areas. Of these 224 and 78 were non-displaced and displaced household heads respectively in Qaliti kebele, while 198 and 86 were non-displaced and displaced household heads respectively in Kurkura kebele (Table 1).

Hence using the above stratum equation (1), 25 temporary and 15 permanent workers sample sizes were selected in Dugda floriculture farm and 23 temporary and 17 permanent workers sample sizes were selected in Sprit floriculture farm. Similarly, 15 displaced and 45 non-displaced household heads respectively were selected sample sizes in Dugda floriculture farm and 18 displaced and 42 non-displaced household heads respectively were selected sample sizes in Sprit floriculture farm.

In addition, for qualitative data collection purpose, from workers 4 FGDs (two in each floriculture farm) were done consisting of three to six participants and the

group composition varied according to gender, nature of work, and employment status. 50% of FGD participants were women who were permanent workers and 25% men who are seasonal workers. In depth interview was conducted with management personnel in both floriculture farms. In addition, three key informant interviews were conducted with government officials of Job opportunity and food security, Agricultural office and Investment office of the town.

Analysis Methods

In this study, the dependent variable is community's perception on the determinants of wage levels which was presented in the form of '0' and '1' indicating if a respondent has positive perception ("1") to wage level or not ("0"). However, the independent variables are socio-demographic factors (age, gender, educational level, marital status and family size), exogenous variables (expenditure value, stay or experience of employees, family home and working hours) and sufficiency of monthly wage. Binary logistic regression model was applied as it is the relevant statistical model when the dependent variable is dummy in nature. The variables included in the model were selected based on the study assumptions and previous literature mainly from Ethiopia and other developing countries. Thus, the definition and hypothesis of the potential determinants of the employees' decisions to respond were presented as follows in Table 2.

Table 2. Potential determinants of the employees' wage level (EDI: Expected degree of Influence)

Variables specified in the model	Variable's definition	EDI (±)
PWL_ (perception to wage level)	PWL was assigned a value of '1', if a respondent has positive perception to wage level and '0' if not.	
GEN_ (Gender of respondent)	GEN was assigned a value of "1" if a respondent is male and "0" otherwise	-
AR_ (Age of respondent)	AR was assigned with a value of '0' if ≤ 30 years old and '1' if > 30 years old	+
MRS_ Marital status of respondent)	MRS was assigned a value of '1' if he/she is married or "0" if not	-
FS_ (Family Size)	FS was assigned a value of '1' if > 4 and '0' if it is ≤ 4	±
EDL_ (Education level)	EDL was assigned a value of '1' if a respondent is at least able to read and write, and '0' if a respondent can't read and write	+
FH_ (Family home)	FH was assigned a value of '1' if born in the study area and "0" if not	+
EXP_ (Expenditure)	EXP was coded as '1' if the respondent has a balanced expenditure with his/her income and '0' if it is larger than wage level	-
WHD_ (Working hour per day)	WHD was assigned as a value of '1' if respondent is working hours per day is 8 and '0' for > 8 hours a day.	+
WEF_ (Working experience in floriculture years)	WEF was assigned a value of '1' if a respondent responded 4-6 years, and '0' if a respondent responded < 4 years.	+

The wage level equation model is:

$$PWL = (\beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8)$$

Where:

PWL: perception of wage level; $X_1 - X_8$ are independent variables and $\beta_1 X_1 - \beta_8 X_8$ are set of coefficients to be interpreted. The model was basically employed to examine the determinants of employee's wage sufficiency paid in floriculture sector.

Results

Socio-economic background of respondents

The survey result depicts that from the total of 80 sample employees all questionnaire responses were collected with the response rate of 100%, while out of 120 local household head samples 102 questionnaire responses were collected back with response rate of 85%. It also shows 39% and 72% were males and 61% and 28% were females in employees and local household head samples in that respective order (Table 3). It is indicated that majority (69%) of sampled household age group in employees' sample is between 14 and 32 years, while majority (75%) of age group in local household heads sample is between 31-50 years. In line with this, Gashu & Muchie (2018) in their study state these cohort are in an economically active age group assumed to

have good income and livelihood diversity. Majority of the sample household heads in both samples are married but there are more singles in employees sample than local household samples. Most of the samples (50%) in employees have 5 years work experience and 56% and 44% of household head samples are non-displaced and displaced respectively. All of the respondents in both samples were either illiterate or completed elementary school or high school (Table 3)

Level of employment opportunity created

The major motive of Ethiopian government to floriculture investment particular is to bring much needed technology and capital with other expectations including foreign exchange earnings, employment creation (Lavers 2011; Alemu, 2011). In the study by Alemu (2011) about 1165 permanent and 3068 temporary workers in floriculture farms and 1014 permanent and 2671 temporary workers in floriculture farm were expected to get job opportunity. However, only 394 permanents and 667 temporary workers in floriculture farm and 445 permanent 612 temporary job opportunity in floriculture farm were created. Compared to the expectation of government towards employment creation capacity (Alemu, 2011) of the floricultural investment, the implementation of job opportunity was found to be very low compared.

The temporary job creation opportunity is 60% more than the number of job opportunity created for permanent workers (40%) of the floriculture farms. As

Table 3. Socio-demographic characteristics of respondents (HHs: Household Heads)

Employee samples		Local HHs samples	
Attributes	N (%)	Attributes	N (%)
Gender		Gender (%)	
Male	31	Male	73
Female	49	Female	29
Age(in years)		Age(in years)	
14 – 20	36	Less than 30	11
21 – 32	19	31 – 40	31
33 – 44	25	41 – 50	45
		51 – 60	15
Marital status		Marital status	
Single	31	Single	11
Married	31	Married	63
Divorced	18	Divorced	1
Education		Widowed	27
Illiterate	25	Education	
Grade 1-8	59	Illiterate	32
Grade 9-12	11	Grade 1-8	40
Family size		Grade 9-12	24
1-3	54	Certificate/diploma	6
4-6	23	Family size	
6+	3	1-3	38
Work experience		4-6	53
< 1year	19	6+	11
1-5 years	21		
>5 years	40	HH characteristics	
Family home of the Employees		Displaced	45
Residents of Bishoftu	29	Not displaced	57
Outside Bishoftu	51		

Dheressa (2013) reported, this is due to the perception of the use of low-skilled workers on repeated short-term contracts with minimal benefits to a more stable workforce on permanent and temporary contracts and shows the dependency of floriculture investment on temporarily dominant workers. As stated above, Dugda and Sprit floriculture farms have 436 and 349.5 hectares' of land respectively (Bushoftu Town land administration, 2020). In order to cover this area, both floriculture farms assigned about 9 workers per hectare. As we have seen from the data survey (Table 3) the majority (71.25%) of the respondents claimed that the job opportunity created for them was not accessible. One of the interviewee discuss about the employment accessibility in the following way:

“..... flower farm with all job classification is only covered by eight or nine workersa tiresome day work ... the number of workers assigned never fit the size of a farm;forcefully accomplish it working overtime without any additional payment except monthly wage”.

This is not in line with PANUPS (2002), that discuss the flower industry is creating many jobs due to the labour intensive production pattern of the sector. It accommodates 10-25 or even 30 workers per hectare, more than any other agro-industry offers (PANUPS, 2002). Because the job opportunity of 25 workers per a hectare is currently found by only nine workers are covering the job opportunity of 23 workers per hectare.

Determinants of wage levels model specification in floriculture industry expansion

As it has been presented in Table 2, dependent variable and independent variable are described clearly. For the dependent variable, those respondents who perceived more positively were considered as positively benefited from the expansion of floriculture while those who do not perceived positively were considered as negatively impacted to it.

Working experience in floriculture and Wage level: As the discussed by Mincer (1974) experience are considered as investments that increase wage earning potential. Furthermore, Temesgen (2005) reported 6 to 7.8% wage raise for each year of experience. The binary logistic result on experience of the employees revealed not statistically significant ($p < 0.092$) variable as per the expectation (Table 4). This implies no one of the employees' wage was increased in sample study areas floriculture as per to their experience. Even three interviewed respondents similarly claim their experience was void in the farm stated as the following:

“.....employed since 2004, 2006, and 2008, howeverinsufficient salary to subsidize our household..... there is no difference in wage except with lower level of experience”.

Education level and wage level: According to Reardon et al. (2007), employees with higher levels of education are believed to be associated with more diversified livelihoods, higher productivity and better access to information. The result of this study is not in line with this, where the majority (55%) of employees in the investment have completed elementary school or are dropouts, while (31.25%) were illiterate employees (Table 3) with low wage level. The binary logistic regression result is not statistically significant ($P > 0.05$) (Table 4). Other study also discussed less educated households rely on low paying farm wage employment and low paying nonfarm or service sector jobs (Corral & Reardon, 2001).

Gender and wage level: It was expected that there is no significant gender based inequality of wage between the employees of floriculture industry in the study area. However, the result of binary logistic regression also revealed that gender of the employees has insignificant ($p > 0.05$) power in determining sufficient wage payment situation in study area (Table 4). However, this finding is in contrary with Tebeje (2004) who argued that women assume lower status than men due to a consequence of social approval boys become more independent and more reliant upon internal standards of excellence in achievement situation, while girls do not expect to achieve and underestimate their academic abilities. In his research Tebeje (2004) pointed out that girls are more dependent and vulnerable to socialize interpersonal rejection than boys.

Moreover, Appleton et al. (1999) cited by Gezmu (2013) reported that male wages exceed female wages by approximately one quarter. This wage difference between male and female employees follows a global trend and is largely attributed to gender inequality. In this respect a female employee interviewee has raised the following idea:

“.....due to lack of education and literacy, the chance for females' employment compared to males in other sectors is low; the employer hired more females than males with low wage. Even, after recruitment, we never take rest, never play with our colleagues, if the coach assumes such issues; he may even apply punishment (Interviewee).

Family size and wage level: family size is significant ($P < 0.05$) determinant variable (Table 4). Accordingly, larger family size is more exposed to wage insufficiency than small family size. All other things being equal, an increase in family members of the household on dependent age group would negatively affect the income of the household 24.8 times more than their income. This can be justified by the number of dependent family size increase the consumption or expenditure probability of the family also increased. Dheressa (2013) argues this fact larger family size where many members are dependent on one or two individuals has a number of negative effects; such as on household food security,

Table 4: Binary logistic regression result on determinants of wage level (pooled data). * denotes P<0.05

Variables	B	S.E.	Wald	Df	Sig.	Exp(B)
GEN	2.232	1.256	3.155	1	0.076	9.315
AR	-1.180	.480	6.058	1	0.014*	0.307
MRS	3.456	1.105	9.786	1	0.002*	31.690
EDL	1.722	.820	4.414	1	0.076*	5.597
WEY	-0.255	.461	.307	1	0.579	0.775
WH	-0.409	.828	.244	1	0.621	0.664
FH	-1.624	1.056	2.366	1	0.124	0.197
EXP	2.232	1.256	3.155	1	0.076	9.315
FS	-1.180	.480	6.058	1	0.014*	0.307
PWL	3.456	1.105	9.786	1	0.002*	31.690

school budget coverage, health insurance incapability and so on.

Working hour and wage level: Working hour is not statistically significant ($P>0.05$) (Table 4). This implies that employees perform their duty for long hour of a day; however the payment they get is not sufficient. More female workers were forced in overtime work but the payment paid is unfair (1.75 ETB/hour). This can have serious implications to their responsibility in their home such as childcare and domestic tasks (Dolan et al. 2003). Previous studies (Langan, 2011; UWEA, 2006) revealed that in Uganda a day's work is always much longer than the usual working day in other places of work. One has to leave work only after accomplishing the task assigned to him/her. Sometimes it is difficult for the worker to know whether one is working overtime or not because all the hours and days of work have been made compulsory. The same story is true in this study; workers work until they finish a certain number of assigned tasks to them. Even, if they asked the overtime payment the manager forced them to do and it is their obligation, and if any one refused, dismissal from the employment will follow.

This indicates there is labour abuse in workers. In line with this, there is a complaint by FGDs participants overtime is not voluntary and opportunity to refuse is not allowed in accordance with codes. Dolan et al. (2002) also indicate that there is no awareness of how many hours per week are allowable for the workers. Therefore, there is no clear communication between management and workers and workers right is violated.

Family home and wage level: Family home of the employees is believed to be one of the determinant of wage level in this study with the expectation of local employees who born around the area of the investment have more advantage to be employed and save their income than those who are migrants and exposure to expenditure for basic needs. However, the binary logistic regression model analysis reveals family home is statistically insignificant factor ($P>0.05$, Table 4). Hence, this study indicates local employees are not advantageous than those of migrant employees who travels long distance and their likelihoods of sufficient

wage is inversely associated. A study by Woldehanna (2001) pointed out as distance decreases; people get access to waged labour employment.

Considerably the survey data in revealed the majority (61.25%) of sampled workers are migrants (where 21.25% of all men and 40% of women respectively) from other areas of the country to the study area to engage in employment in floriculture while the remaining 17.5% and 21.25 % of all male and female sample size respectively were workers engaged in industry from local born unemployment force. This shows that family home of the most employees is found out of the study area. Accordingly, majority (90.4%) of the respondents either strongly disagree or disagree followed by those (9.6%) who responded the floriculture farms have any type of benefit schemes (such as bonus, soaps, soft, masks, etc.). This shows that majority of the workers do not get any sort of benefit schemes.

Expenditure and wage level: The binary logistic regression reveals expenditure value is insignificant ($p>0.05$) variable. The study indicates as a unit of wage increases, expenditure value of the employees in floriculture industries increased by five times. The survey data obtained from the respondents' shows that the employees' bulk expenditure (73.8%) goes for house rent. Housing providing shelter, safety and providing a place to rest (Henilane, 2016). Therefore, need for housing around the study area among the workers was the first maximum share with their monthly maximum average wage of 875 ETB.

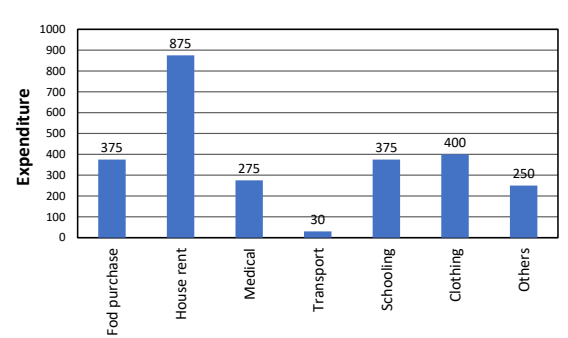


Figure 2: Wage and expenditure relationship

Food purchase was the second most important (72.6%) consumption expenditure of flower farm workers in study area. Dheressa (2013) also confirmed as household food consumption is 9.5 quintals/year and 1.9 quintals/person/year income. However, the majority of the respondent's monthly salary is less than the average of 1860 ETB that was a total monthly wage for all of the respondents (Figure 2). While 36.9%, 38.5%, 18%, 11%, and 6% of the employee's expenditure is going for transport, medical value and, schooling and clothing respectively.

Workers' working time

According to the survey data only 32.5% of respondents stated they worked for eight hours/day, while 67.5% responded they worked for more than eight hours/day on average (Table 5). This indicated that they are obliged to do more time than both national and international work load time.

Table 5. Numbers of hours' workers stay at work every day

Variable	Scale	N	%
Working	8 hours	26	32.5
Hours/day	> 8 hours	54	67.5
Total		80	100

Source: survey result

Participant in an interview stated an extended overtime work has the impact of workers work burden in the flower farms. The interviewee stated it as:

"We lack social life, no time to visit parents and friends, no time to sit together to share ideas and feelings with our neighbours. All the days and the week, we are in floriculture green houses. We have only one-day vacation per 15 days".

In addition, another interviewee stated:

"The job is cumbersome.....done in extremely hot greenhouse which is highly exposed to chemicals. Whereas, the daily wage for majority of us is not more than 23.33 ETB/day which is quite insufficient even for one of the basic human necessities.

Discussion

Perception of local household heads on floriculture investment

When there is an investment flow to a certain locality, it is expected to give employment opportunity, technology transfer, infrastructure development such as schools, clinics, electricity, clean water and roads and foreign direct investment (von Braun and

Meinzen-Dick, 2009; Fan and Rao, 2003). However, the study finds out that the investment has a shortage of participating in agricultural technology transfer to the local communities. It was negatively perceived by the majority 82.4% of the respondents (Table 6), while only 17.6% of the respondents agree on the transferred technology. This was also augmented by house hold interviewee and he replied in the following way:

"..... different kinds of machineries are seen..... However, it didn't transfer knowledge how to use them for agricultural activities to increase productivity" (interview respondent)

In the study areas the contribution of floriculture investment for agricultural technology transfer is also minimal (Table 6). Only 30% of the respondents believe that crop production and supply increased as a result of the large scale investment while the majority 70% of the respondents were claimed as there is no tangible production improvement due to the involvement of this investment. However, previous studies shows private sector participates in building the capacity of local farmers through training, so that they can participate in the business supply chain (Gudeta, 2012).

There is also no significant evidence of infrastructural expansion in the area as the result of floriculture investment (only 10.8% of the respondents claimed that they benefited from infrastructures built by the company). Even though, infrastructures as water pump, electricity supply and roads were promised by the investor to the local people prior to commencement of the investment, the only infrastructure provided by the investor was paved road connecting the main road to the investment and even it was not primarily intended for helping the local communities but for easy access to the farm sites. There is also high drinking water problem in Qaliti kebele of Dugda floriculture farm and Qurqura kebele of Spirit floriculture farm. In contrary to this, a study by Newenham-Kahindi (2011) indicates private investments participated in provision of social services such as schools, clinics, and clean water to the local people.

The chi-square (X^2) result (Table 7) confirmed that there are statistically significant ($P < 0.05$) differences in the awareness of the respondents about the role of local community during the transfer of land to the floriculture investment expansion. Land is an important resource in any sort of investment (Moreda 2017). Hence consultation to local household is necessary before transferring land to investors in any sort of investment activity. The result of this research indicated that local households were not consulted and no information was given to them during the land transfer. Therefore, there was no prior informed consent with the people about the project and they had no involvement previous studies indicate that most agricultural investment projects in Ethiopia are undertaken without consultation with local communities and without their knowledge or consent (Rahmato 2011; Abate 2020). Even, sufficient

Table 6. Perception of HHHs in floriculture investment in their locality (N=102).

Levels of perception	Level of perception			
	positive Number	%	negative Number	%
Technology transfer (agricultural)	31	30.4	71	69.6
Employment opportunity	10	9.8	92	90.2
Infrastructure provision	11	10.8	91	89.2

Source: Survey result

Table 7. Responses of household heads about awareness level of floriculture investment. * indicates P< 0.05, d.f=2

Variables	Responses		X ²
	Yes (N)	No(N)	
The household was consulted during the land deal	23	79	59.39
The land deal was made in transparent way	20	82	49.75
Household received direct compensation	33	69	97.56
Significant role played during land transfer	34	68	43.21

Source: survey result

compensation was not given for evicted farmers (Table 7). According to Federal Negarit Gazeta (2001), land administration and use proclamation obliges investors to provide compensation to the local community in the event of eviction.

The members of FGD discussants of the displaced households stated the situation as:

“We did not know exactly what they compensated us which for what. They simply gave us their estimation without clear procedures. They were not willing to clarify their estimation procedures. They did it by themselves. Even, we have not participated while they measured our lands. They did, as they want without our participation, beside the training about how to use the received amount of compensation no one could tell us the mechanism and ways of sustainably using the compensation” (FGD discussants).

Impacts of floriculture on local communities

Flower production involves the heavy consumption of water, chemicals, and energy resources (Da Silva, 2003). Excessive and uncontrolled use of such inputs disrupts the biophysical environment. The major biophysical impacts associated with floricultural industry are health impacts and conflict over resources (Gezmu, 2013). Since the industry is at its infancy stage in developing countries and the government as well as optimistic society of the country were very pleased at the beginning observing that it will increase the nation’s foreign exchange and give job opportunity of many jobless societies (Figure 3).

However, damages from chemicals are aggravated due to improper handling and application of it in the farms (Saeed et al. 2017). Workers are exposed to these pesticides in variety of ways (Cruz-Torres, 2001). For instance, when workers transplant, prune and pack flowers without protective glove they may absorb

pesticides through their skin. Moreover, dusting, spraying, and other application of chemicals in enclosed spaces workers inhale pesticides (Malefia, 2009).



Figure 3: Partial view of Floriculture sheds. Photo by authors

It is evident that frequent contact of pesticides without protective equipment can lead to chronic health problems (Andersen, 2008; Goldman & Tran, 2002) such as cancers, reproductive disorders, and birth defects. Pesticide residues can also accumulate and pollute nearby rivers and influence aquatic organisms, threatening food chains and human health (Hengsdijk & Jansen, 2006; Getu, 2009).

For example, Wedecha is a river found at the proximity of Dugda floriculture farm and becoming polluted in a serious manner due to chemically charged released water from the farm (Figure 4). The local communities rely to get their daily water household consumption demand e.g. drinking, washing etc from this river. Consequently, the local communities have now forced to travel long distances to fetch water.



Figure 4. Wedecha river surrounding Dugda floriculture farm (A: not polluted and B: polluted). Photo by authors.

Conclusion

The study result shows different determinants have positively affected the wage sufficiency of the employees. There is no employee whose wage was increased in sample case study floriculture study areas based on their experience. Those employees who earned sufficient wage based on their education level are only 15%, while the majority 85% of employees earned low wage. Majorly floriculture industries are characterized by short-term contract employments. This is concluded as the perception of using low-skilled workers on repeated short-term contracts with minimal benefits. This leads insecure job that exposed workers to exploitation, direct repression, worrying and unfair dismissal.

The study finding reveals, females are the most dominant employees (61%) in study areas. However, they are forced to do more than the allotted time recommended by national and international labor laws. Because of this over time working in the farm is the most common and employees are forced to work over time until they finish on what they assigned without any additional payment. In addition, those employees who born in the locality of floriculture farms and get employment opportunity were only 39% as compared to those who came from other places and who get job opportunity. Accordingly, the study result revealed that about 67.5% of the respondents negatively perceived the floriculture investment expansion related to the opportunity of job creation for local people.

However, with the fact that the floriculture industry has created a number of employment opportunities, but employees are still characterised with challenges particularly related to the low wage payment from which couldn't match to rising cost of living. Generally, the finding of this research depicted the accessibility of employment opportunity, which enables young people of the country self-dependent and productive in poverty

alleviation as per the mission given to floriculture investment by the government.

Conflict of interest

The authors declare that there is no conflict of interest

Acknowledgment

We acknowledged University of Gondar for funding to the first author for his MA thesis.

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