Floriculture and Livelihood Security: A Case Study of Rural –Urban Fringe in North West Delhi, India

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Abstract Livelihood security has been the cardinal point since the foundation of human civilization. But floriculture played a very important role in livelihood security in rural areas. For livelihood security, diversification of agriculture has emerged as a new concept in developing countries and therefore integration of floriculture is no exception especially in India. In India, floriculture has been accorded export oriented industry. Therefore, the perspectives like what is the importance of floriculture and livelihood security? Which elements do join them together? What are the problems to floriculture? How floriculture affects the livelihood, comes into forefront. Sustainability of the floriculture and survivability of human beings both are of prime. This paper offers a look into these emerging questions. A number of core hindrances are identified, focusing on the necessity of floriculture as a mean of livelihood security. This will assist us to understand the livelihood security perspective of floriculture.

Keywords Livelihood Security; Floriculture; North West Delhi; Agriculture; Sustainability

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Introduction

Majority of Indian population i.e. 74.24 million out of 1.221 billion reside in the rural areas, it becomes necessary to raise a point that which livelihood activity plays the important role within all the other agricultural activities or which activity within agriculture has been more reliable to the rural livelihood. With the present study, we will look into some of the aspects with respect to the study area. Nearly eighty per cent of population in rural areas are engaged in the agriculture and development of rural area is mainly based on development of agriculture sector. Diversification in agriculture is required into floriculture horticulture, milk and milk made products, meat, egg, etc. which are capable of generating more per capita income but at the same time, it has to be observed that no food scarcity should be create (Sinha et. al., 2008). National Capital Territory (NCT) of Delhi has a large size of population with its demographic diversity but North West Delhi District is altogether a different district when compared with the number of villages other districts of NCT of Delhi have. Major part of the rural population of Delhi reside in this district, therefore, it is selected for the present study, which is primarily based on an agriculture activity i.e. floriculture. Delhi as a whole produces 5700 Mt of loose flower and 5, 80,000 Mt of cut flower according to the data available for the year 2013-2014. Loose flower production of Delhi is more than the states like Uttarakhand, Rajasthan, Manipur, Jammu and Kashmir of India, and in cut flower production Delhi surpasses the states of Bihar, Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, Sikkim, etc. Delhi stands at nineteenth position in loose flower production and at fourteenth position in cut flower production among 36 States/Union Territory of India. Government of India has identified floriculture as a sunrise industry. It has found that Commercial floriculture has higher potential per unit area than most of the field crops. The commercial activity of production and marketing of floriculture products is also a source of gainful and quality employment to score of people (Dadlan, 1998). The same fact is found in the selected study area too.

Rural Livelihood is vast concept, consisting of the various concepts within itself. A popular definition is that provided by Chambers and Conway (1992:7) wherein a livelihood ‘comprise the capabilities, assets (stores, resources, claims an access) and activities required for a means of living (Chambers, 1992). Livelihood is also defined as adequate stock and flows of food and cash with an individual or a family to meet basic needs and livelihood security encompass secured ownership of or access to resources and income earning activities including reserves and assets to offset risks, ease shocks and meet contingencies (Acharya, 2006). Through a livelihoods framework, a lens will be employed to study floriculture in some of the flower-growing villages of North West Delhi. In India and elsewhere, the cultivation of flowers is a growing industry. There is potential for enhanced employment opportunities and income to benefit the poor. In North West Delhi, very few such studies have been conducted; because of the reason that the total production of flower is comparatively less than other big states of India. It is pertinent area of inquiry because 0.21 million people of the total population in North West Delhi live in rural areas which is over 5.85 per cent of the population. The primary re-
search question is: Contribution of flower cultivation in livelihood security is up to what extent? Other than this, we will find out, identify the problems and changes in livelihood activities of to the floriculture sector. These issues have been addressed in this paper.

**Study Area**

Delhi officially the National Capital Territory of Delhi is the capital territory of India, which lies in the Northern India and it consist of eleven districts. The Yamuna is the only major river flowing through Delhi. The Hindon River separates Ghaziabad from the eastern part of Delhi. The Delhi ridge originates from the Aravalli Range in the south and encircles west, north-east and north-west parts of the city.

![Figure 1 Location of the study area](image)
It has a population of about 16.3 million, making it the second most populous city and second most populous urban agglomeration in India. The National Capital Territory of Delhi covers an area of 1,483 km² of which 783 km² is designated rural. When we look to the demographic characteristics of Delhi, we found the population of Delhi is 16,787,941 according to census of India 2011, the corresponding population density was 11,297 persons per km² with a sex ratio of 866 women per 1000 men, and a literacy rate of 86.34 percent. Majority of the area of NCT of Delhi adjacent to Haryana and Uttar Pradesh is agriculturally dominated and some lying along the Yamuna River.

The Study area lies within NCT of Delhi, encompassing Ochandi Village and three rural-urban fringes i.e. Alipur, Qutubgarh and Bakhtawarpur in the North West Delhi (Figure 1). Ochandi village and rural-urban fringe Qutubgarh of NCT of Delhi lies adjacent to Haryana border and it is NCT of Delhi lies adjacent to Haryana border and it primarily rural in nature. Besides that there are two rural-urban fringes i.e. Alipur and Bakhtawarpur which have all urban character within their small but densely populated area but consist of agricultural land surrounding it which falls within their administrative limits and therefore, we have put them and Qutubgarh for convenience of this research study in the category of rural-urban fringe. Rural-Urban fringe of Alipur and Bakhtawarpur are comparatively closer to the drainage areas of Yamuna River and hence they have newly deposited fertile soil as compared to Ochandi and Qutubgarh. In the area concerned of the study, varieties of flowers like Marigold, Chrysanthemum and Rose are largely cultivated for the livelihood security. Among the three mentioned varieties of flowers, Marigold covers the largest area under cultivation because it is cheap to cultivate and demands less care comparatively with high demand of it in the flower market. It does not perish as early as others do and therefore have an advantage over others. As per Koppen climate classification, the study area is humid subtropical bordering semi-arid type. Temperature is usually between 21.1°C and 45.5°C during March to the end of June. Winters are usually cold and night temperatures often fall to 6.5°C during the period between December and February. The average annual temperature recorded here is 31.5°C based on the records over the period of 70 years maintained by the India Meteorological Department.

**Literature Review**

In developing countries, population growth, urbanization, and an increase in income have led to an expansion of fruit and vegetable consumption. Agriculture in its present form face challenges to meet the growing needs of the Indian population and therefore warrants convergence of policies and technologies to handhold the farmer for increased production, productivity and income. Farmers mostly rely on ICTs sources for accessing production-related information (Das, 2014). Therefore, diversification has been dealt as a way out to address the above challenge and to provide a kind of safety-net for the Indian farms and farming communities (Singh, et al., 2015). It is very well known that flowers play a significant role in every occasion of human life and India has a long tradition of floriculture. The
domestic consumption of flower products increased considerably, and so is the
exports of cut flowers, value added products like dry flowers, potted plants, etc.
(Jain, 2015). India experiences 25 percent annual growth in its domestic flower
market. As a result commercial floriculture has emerged as a farm operation with
scientific recommendations as well as hi tech activity taking place under con-
trolled-climatic conditions inside greenhouse (Roy, 2014). Anand et al. (2013)
mentioned out that in order to improve the economic conditions of the landless
workers and other weaker section of the society in the village of Delhi, govern-
ment distributed the surplus land for cultivation. Most of the landless households
belonged to the scheduled and backward castes, indicating their depriva
tion. Caste is an important social factor affecting distribution of assets and skill levels of rural
labor force (Pavithra et al., 2013). This allotment of land broke the dependency on
landlord and they became independent for taking decision for socio-economic
development. It had positive impact on their overall development. Crop diversifica-
tion can be implemented in a variety of forms and at a variety of scales, allowing
farmers to choose a strategy that both increases resilience and provides economic
benefits (Lin, 2011). South Asia is gradually diversifying its crop sector in favor
of high value commodities, especially fruits, vegetables and spices. If carried out
appropriately, diversification can be used as a tool to augment farm income, gen-
erate employment, alleviate poverty and conserve precious soil and water re-
sources (Bhattacharyya, 2008). Fresh and processed fruits and vegetables, fish and
fish products, meat, nuts, spices and floriculture now account for 43 per cent of
developing country agro-food exports (World Bank, 2008). Due to the challenge
of feeding our vast population and the experience e of food shortages in the pre-
independence era (prior to 1947), ‘self-reliance’ in food grains has been the corner-
stone of Indian policies in the last 50 years (Bhattacharyya, 2008). There is a con-
sensus among researchers and policy makers that diversification of agricultural
production by allocating land in favor of high value agriculture (HVA) has the po-
tential to accelerate agricultural growth (Raju and Pandey, 2008; Rao et al., 2006).
A rapid growth in agriculture that leads to increased productivity and income of a
large number cultivators and agricultural laborers therefore becomes an important
vehicle for accelerating growth in the secondary and tertiary sectors of the econ-
omy through forward, backward and consumption linkages (Bhall, 2007). In addi-
tion to rising domestic demand for high value food products, exports to devel-
oped countries are on the rise (Delgado et al., 2001). Food produced per area of
land have increased dramatically scientific and technological achievement is based
largely on intensification of management on land already under agriculture, ac-
complished through the use of high-yielding crop varieties, chemical fertilizers
and pesticides, irrigation, and mechanization. The use of ecologically based man-
agement strategies can increase the sustainability of agricultural production while
reducing off-site consequences (Matson, 1997). In India floriculture is getting the
priority it deserves, though it has a great role to play. It is an intensive type of ag-
riculture and the income per acre is much higher than any other agricultural prod-
uct if it is done in a scientific way. Although there is a good scope for export of
flowers and live plants India does not have even peripheral presence in the global
trade. Poor infrastructure is inadequate for the production if floral crops for export
The importance of the diversification of economic activity in rural Asia has come to be widely recognized (Harriss, 1991). Commercial floriculture can open up great opportunities to our poor farmers. Our country has diverse climatic conditions which offer which offer the scope for growing several kinds of commercial flowers. The cultivators can deploy a part of their land for growing commercial and common flowers such as marigold, China aster, etc. Which do not require much care and generally earn more profit than any other crops (Randhawa, 1986). In the manner literature depicts that there are some constraints at present and some advantages in future in floriculture sector in India. An attempt has been made to see in this study how the fact of literature comes true in the case study of North West Delhi. In this study, floriculture provides the way to discuss the contrasts of the current literature.

**Database and Methodology**

In this study both the primarily and secondary data have been used. On account of various deficiencies of secondary data, primary data have been collected from 75 households from Alipur, Bakhtawarpur, Ochandi and Qutab Garh. Out of 75 households 60 households are taken with 20 households each from Alipur, Bakhtawarpur and Qutab Garh and 15 household from Ochandi Village. All the four zones making the study area were pre-identified with the distance between them playing the very important role and bringing out the real picture of floriculture from them. In the household survey all the stakeholders in the floriculture sector were taken in consideration and for selecting the stakeholders from the particular part of zone of study area, senior farmers/members of the zone were personally contacted. The primary information has been collected with the help of questionnaire survey. A semi structured questionnaire has been used for this purpose. The selection of interviewees has been done through stratified random sampling method. Open-ended information generated from semi-structured interviews as well as from participant observation enabled me to explore participant’s views in more depth and build on the information garnered from the village household questionnaire. The bulk of time in North West Delhi area, five weeks in total, was spent conducting the village questionnaire, observing everyday geographies, pursuing participatory methods, and conducting follow up and more extensive semi-structured interviews. The Secondary data was collected from the following sources: Census of India, 2011; Ministry of Agriculture, Delhi Transport Corporation, Govt. of Delhi; Indian Agriculture and Resource Institute; India Meteorological Department etc. Secondary data was collected to analyze the problems to floriculture and to understand the complexities and the basics of the study area concerned.
Floriculture and Livelihood Security

Importance of floriculture has been on rise due to promotion of large quantity of export in the international market. Commercial floriculture in India has taken a trajectory towards high peak. Flower production at commercial scale is prevalent in the area under study but production of floriculture has many constraints though attraction to quick and reliable return from flower production has been a good option of livelihood security to the locale. But having taken all these benefits in forefront, it has been found that there is no need for exaggeration of floriculture as a beneficial livelihood activity. Floriculture has influenced the farmers and other stakeholders by way of transforming the options of livelihood available to farmer in agriculture in the past few decades. Opinion of the stakeholders interviewed was more inclined towards their dependence on floriculture or adoption of floriculture as a choice with high probability. Figure 2 indicated that the people with high and moderate degree of satisfaction makes a total of 83.33 per cent. Percentage of stakeholders those who were not satisfied includes only 16.67 per cent but this cannot be taken for granted as the root of the major problem may be lying into it. Flower production at large scale and liberalization policy of Government of India has transformed the way farmers practiced agriculture. Policies unveiled by the government to promote the floriculture and other food grain crops has received appreciation by the farmers’ community as it gives quick and high return. The development policies should emphasize on intensification as well as diversification of small farms, which dominate the Indian agriculture, and make immense contributions (Birthal, 2014). In the study area, land use change taking place at different scale in different areas of the district, though the floriculture activity among farmers is becoming more attractive as found in the area under study. Livelihood options other than flower production available among the farmers’ community are also good though floriculture has been a reliable livelihood option surpassing the advantage in others.

Generally in the study area also people other than farmers, those who are engaged in tertiary activities or secondary activities consider floriculture as an option for side income as it does not demand for extra ordinary care as types of flower largely produced are i.e. Marigold and Chrysanthemum. Therefore, impact of floriculture on other livelihood options available in the study area can’t be neglected. Sometimes, farmer take floriculture as a good option over horticulture crops and give priority to floriculture rather than farming vegetables in the field. Vegetables are grown only as a subsistence agriculture by majority of the farmers and therefore floriculture has an edge over it also. When an expected output or return from the horticulture sector is not provided on time, farmer do decide to adopt floriculture in next season. Under the mixed farming culture in the study area, vegetables and flowers of marigold are cultivated at large as compared to other prevailing types of flower cultivated in the study area (i.e. Chrysanthemum, Rose etc.). At the commercial level some cases are found where sapling of different varieties of flowers are grown in the nursery and later on sold to the farmer. In this case some new stakeholders are entering in the traditional practice of floriculture in the area.
and these are gardener in the nursery and others related to it. Thus, it becomes clear from this picture of the study area that the Floriculture is affecting other livelihood in three forms:

i) By cancelling other livelihood activities with its attraction and growing pace

ii) By multiplying itself, floriculture sector is making connection with other professions and sectors which are technology based and assists floriculture to flourish, ultimately leading the way to inclusion of new stakeholders in it.

iii) Low risk in the floriculture is attracting the labor in other sectors to get themselves engages in flower production by taking some fields on rent/lease. Most of these people are immigrated people and natives with low income group.

![Figure 2 Degree of Satisfaction of Stakeholders towards the Floriculture as their Livelihood Option](image)

**Result and Discussion**

The area under floriculture is rapidly decreasing in North West Delhi due to various reasons such as acquirement of agricultural land in Narela sub-division (land use change), revelation of poor infrastructure facilities in the field level data hamper the prospects of flowers growers. Other problems revealed by the primary data collection are related to storage problems, expensive transportation, market related problems and diseases. Connectivity of roads from agricultural area to the market always plays very important role in the development of agricultural sector but it is not an issue in the North West Delhi because it is very well connected with the road network. Transportation plays the very important role in the flourishing of any industry and floriculture though primary activity is not an exception
as the production need to get sold in the market at the earliest before it get perished.

One flower grower expressed his opinion,” I had to pay charges for transportation, to labors engaged in my fields and expenses to take care of flowers while growing, which sometimes become unaffordable to me”. Transport related problems and among them high transport charges with lack of vehicles were indicated as major problems (Table 1). When looking towards problem related to the storage facilities, no any infrastructure for cold storage is available in the area to protect flowers from getting perished in the long run. On the other hand market related problems also can’t be underestimated as these are the problems which affect the farmers directly and lessen the influence of reinforcement if any gained by the farmer. Farmers found many issues in the market but middlemen’s commission is the major problem. Farmers also revealed that consent of the farmer is sometimes not taken by the agent to sell the flowers at a particular price. Other problem in the market are related to unawareness of the farmers related to the demand and prices in the market and this sometimes make farmer feel robbed. Minimum selling price for flower market is not fixed by the government and therefore rule of demand and supply makes uninformed farmers vulnerable to it. Some farmer get the information about prevailing price and demand by the fellow farmer who visited the market beforehand. Root cause for this problem is no fixation of prices of flowers by the government of India or State concerned. Prices of flower doesn’t have any system like MSP (Minimum Support Price) and therefore there exist a large gap and instability in the price of flowers. Other problems found in the area are unawareness of the farmer to new techniques of flower cultivation and shift of flower market from Fatehpuri (Old Delhi) to Gazipur in Delhi led to one major hindrance. Proximity to flower market for the zones considered in the study area must play a great role and we found the same. Some flower growers have left floriculture as the then flower market at Fatehpuri in Old Delhi was directly connected to the zones under study either by road or rail transport, but shifting the market to the faraway places has again vanished the effect of reinforcement provided the farmers if any.

Table 1 Problems Faced by the Growers Regarding Transportation in North West Delhi District

<table>
<thead>
<tr>
<th>Responses</th>
<th>Total (in percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of vehicle</td>
<td>27</td>
</tr>
<tr>
<td>Lack of cold storage (Cold Storage or Refrigerated vehicle)</td>
<td>6</td>
</tr>
<tr>
<td>High transport cost</td>
<td>52</td>
</tr>
<tr>
<td>Lack of vehicle &amp; high transport charges</td>
<td>7</td>
</tr>
<tr>
<td>Lack of vehicle, lack of refrigerated vehicle &amp; high transport charges</td>
<td>7</td>
</tr>
<tr>
<td>No problem</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Primary Survey
This led to the decrease in flower growers in the area and other who continues to grow flower tries to sell there acreage in the nearby local market at lower prices e.g. flowers from Ochandi and Qutab Garh are sold in Bawana, which doesn’t have a permanent place like flower market(Phool Mandi). Therefore, seller and buyers do gather at a particular place early in the morning for dealing and this dealing is not at large scale as the seller and buyer are in smaller number as compared to well established flower market at Gazipur on the outskirts of the city. Gradually the livelihood activities of the people in the area has shifted to secondary sector in the last one decade. Major change in livelihood is found in Alipur and Qutab Garh area. About 56 percent farmers in the area have managed to engage in other part time livelihood activities such as property dealing, running general stores, renting out the rooms or vacant land. Native farmers who are shifting to other livelihood activities (part time or full time) creates a temporary vacant place but later on occupied by the immigrated people from Eastern and Central Uttar Pradesh, Bihar. Some locales belonging to lower caste and lower economic order have also entered in the floriculture sector by producing, selling and transporting flowers. People with low socio – economic conditions do not own the agricultural land but they take land on rent for flower production. They occupy the land for production temporarily and on the other hand labor work for flower production like ploughing fields, plucking flowers, transportation work etc. is also handled by them, which assists them to lessen the total expenses on their pocket and reinforcing them to adopt it as their full term livelihood activity. This is a new trend in the floriculture sector of the study area because it was not in prevalent in some of the previous years.

Contribution of flower cultivation in livelihood security is up to what extent? This question was investigated delicately and it is found that farmers relied on flower cultivation, expecting no stupendous earning but yes expecting good and continuous earning over the year which sometimes transform automatically into stupendous earning. It is found that floriculture contributes 15-20 per cent on an average in the livelihood of farmers those who grow flowers. Share of earning from floriculture is higher in the areas i.e. Bakhtwarpur and Alipur in comparison to Qutab Garh and Ochandi. One farmer in Bakhtawarpur opined, “Flower cultivation do provide reliable income and I am producing it in every season because if I have to play a gamble with production on my agriculture land, it will be easy for me to play it with my most of field covered with flowers”. Thus, Floriculture is found to be the traditional livelihood activity in the agriculture production and it doesn’t contribute to be major source of earning as the other grain crops do but its reliability has made it popular which becomes aromatic for the pocket of famer in case other crops fail.
Sustainability and Survivability

A livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long term (Chambers & Conway, 1991). It has the ability to cope with and recover from stress and shocks in case of failure of grain crops e.g. rice, wheat etc. Sustainability of floriculture cannot be questioned in any case because it fulfills the prerequisite decided in the definition by Chambers & Conway, 1991. In the study area also we found that floriculture do also provide other livelihoods at the local level in the short and long term. Reliability of output from floriculture is very high and economic dependence of the farmer in every coming season proves its sustainability. With the technological advancement and globalization demand of flower is growing locally and globally, which led to the increase in production of flower and generation of livelihood opportunities. Sustainability of floriculture can also not be questioned as it is compatible for mixed farming (flower with crop of vegetables) and commercial farming. A framework for sustainable livelihood has been released by Ian Scoones, 1998 which emphasized the economic attributes of livelihoods as mediated by social-institutional processes. This framework with checklist provided has been elaborated below taking floriculture in the center of livelihood security and its sustainability.

a) Contexts, conditions and trends- Various contexts and conditions (political, historical, climatological etc.) have been taken in view with the policies prevalent. In our study floriculture is to be inquires with all these points mentioned.

b) Livelihood resources- Resources available be it human, economic, natural, social etc. are considered to be of high importance. Without these resources any livelihood activity cannot be characterized as sustainable because resources make up the foundation for start of the livelihood activity.

c) Institutional process and organization structure- Analyses of the influence of institutional/organizational structure is necessary because it provides the access to livelihood resources and only thereby utilization of livelihood resources can become a reality.

d) Livelihood Strategies- It is influence by personal inclination of the farmer and on the other hand formal schemes has the equal impact on the design of livelihood strategies be it migration, agricultural intensification/extensification and agricultural diversification. Decisions of the stakeholders are personal but external influence cannot be denied.
e) Sustainable livelihood outcomes- This is the most important point in the checklist because it represents the final outcome obtained with all the prior preconditions fulfilled. The particular livelihood activity is said to be sustainable when it fulfills the criteria mentioned for an activity to be livelihood + sustainability.

Along with sustainability offered by floriculture it has a lot of potential characterizing its survivability also. The term survivability has a long usage in the military literature; meaning the ability of a system to fulfill its mission in a hostile environment. More recently, the term has been liberated from this purely military context and pressed into service as an attribute of systems in general and critical infrastructures in particular. In this broader context, we need to take account of accidental failures as well as deliberate attack and subversion. Informally, this more general notion of survivability has been defined along the following lines: the ability of a system to continue to deliver certain essential services or fulfill a mission in the face of failures and intrusions (Ellison, 1997).

**Figure 3** (a) Commercial Production of Chrysanthemum in Qutab Garh (b) Mixed Farming in Bakhtawarpur (Marigold & Chrysanthemum along with Vegetables like Spinach and Fenugreek

A livelihood activity in Indian rural areas in which majority of population depend is agriculture without any doubt (Singh and Hietala, 2014). Within agriculture, floriculture plays a role of backup for the farmer. In our study area also floriculture is widely treated as a backup as it is utilized in the form of commercial floriculture and mixed farming (Figure 3), hence proving its role as crop with characters of survivability. It has been reiterated in this paper that floriculture is found to be something on which farmer can rely upon because of its continuous output which is most of the time comes to be above average and therefore fulfilling the livelihood security demand of the farmer even if other major crops do not respond with expectations. In the mean time between Indian independence and present period, various breed of flowers has been launched in the market which have very high production with strong impunity from diseases. Therefore some of these milestones have been achieved by the agricultural scientist in India and abroad, which
is backing farmer to easily rely upon the floriculture as their part or full time livelihood activity. Survivability of a crop can depend upon various factors:

a) Reliable economic output from the crop

b) Impunity of crop against various prevalent diseases

c) Adaptation capability of the crop for unexpected variance of temperature

d) Continuous demand of the crop in market maintaining good earning of the farmer etc.

With the passage of time and scientific development, floriculture has attained the status of a crop which is sustainable as well as survivable. Especially in the study area, we found that only few farmer grow flowers with new scientific techniques rather depends upon the traditional way of cultivation, but the culture is changing as developed means of communication has assisted the farmer to share their experience with their colleagues, to get information from various application software available on their smart phone etc. Commercial floriculture and Mixed farming (Picture 2a and 2b) has been in culture since long time but their resonance has spread in the last few decades due to high demand in the country and global arena. We interacted with a farmer who has very less agricultural land available with him after the acquirement of the major part of his agricultural land by the local authorities, he shared 15 years old event with us, “I used to get 10-15 kgs acreage of Rose flowers from my 1 acre of land but when I met with a farmer from a faraway village, he blabbed out that dig a 3 feet of ditch under the stem of every plant of rose and fill it with rotten dung (manure) and keep this practice doing every six months, I was amazed with the increased production which increased fourfold”. Such are the cases which reveals weak channels of communication and unawareness of the farmer towards the new techniques. But now it is the time when floriculture has proved itself to be the survivable crop which is sustainable in all ways.

**Conclusion**

Based upon the results presented in the previous section, floriculture is the sustainable livelihood security activity. Problems to floriculture has been depicted in results and discussion part and contribution of floriculture in obtaining livelihood security is phenomenal. We found with this study that cultivation of flower in the study area is done with the traditional methods and lack of knowledge consisting technical advancement has led to the occurrence of some of the problems e.g. less production of flower in per acre. Other problems have also been investigated, which may have been prevailing in the area and major problems found are high transportation cost, lack of vehicle, lack of awareness of the farmers related to the demand and prices in the market etc. Farmers relied on flower cultivation, ex-
pecting continuous earning over the year. Livelihood activity of the farmer has shifted towards secondary activities gradually but floriculture remained the part time livelihood option for them. A new trend has been noted in the study area and it is observed that land owner are shifting to secondary activities and other immigrated labor is overtaking the land left vacant. Affect of floriculture on livelihood is prevalent in three forms. Floriculture established its importance by proving itself sustainable and survivable in the study area. Sustainability of the floriculture has been judged with the sustainable livelihood framework given by Ian Scoones, 1998. Survivability emerged as a new concept and therefore it has been tested by taking floriculture in light based on the definition provided by Ellison, 1997. The changes in livelihood activities of the people has been strongly observed and the new trend that is adoption of floriculture as livelihood activity for the immigrated people in the area has been noted. If the problems of floriculture and trend change in transfer of floriculture livelihood activity to the newly established section of society persists, changes in the government policy will be necessary to adapt to the altered livelihood regime in the area. There is need to adopt participatory inclusive approach for sustainable future.

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