

ECONOMICS OF FLORICULTURE IN PAKISTAN: A CASE STUDY OF LAHORE MARKET

RIZWAN MANZOOR, SHAUKAT ALI SHAHID
and MAZHAR-UL-HAQ BALUCH*

Abstract. Man has always taken support of flowers as a token of expression of kind sentiments on various occasions. Like developed countries, demand of flowers is now even discernable in developing countries, where the cultivation of different types of flowers hold a promise of increasing economic return. Economic return covers various aspects of floriculture such as flower growing pattern, cost of production, marketing channel and distribution of consumer's rupee among various intermediaries/functionaries involved in the marketing of flowers. The return per rupee spent was ranged from Rs. 1.47 to Rs. 2.36 for different types of flowers grown by the producers, whereas the return per rupee spent was Rs. 1.18 on the average in case of retailers. The share of producers in consumer rupee was 56.6 percent, while such share for retailers was to the extent of 43.4 percent. However, floral business is in progress on a limited scale and it needs expansion, which requires attention of policy makers to introduce some institutional reforms. Moreover, an effective extension service is needed to motivate the farmers towards adoption of this enterprise.

I. INTRODUCTION

Colourful flowers with pleasant fragrance have been a source of attraction to mankind. Flowers provide pleasure through enlightening colours and spreading fragrance. Therefore, man has always taken support of flowers as a token of expression of kind sentiments on number of occasions and

*The authors are, respectively, Research Officer, Directorate of Crop Production and Water Management, University of Agriculture, Faisalabad (Pakistan); Data Management Specialist and Agricultural Economist, Punjab Private Sector Groundwater Development Project, A Consultant Consortium: ARCADIS Euroconsult, NESPAK, NDC and Halcrow, 89/A-I, Township, Lahore (Pakistan); and Senior Research Economist, Punjab Economic Research Institute (PERI), P&D Department, Government of Punjab, 184-M, Gulberg III, Lahore (Pakistan).

consequently, ever increasing demand of flowers has made the floriculture of paramount importance for conducting economic evaluation and marketing investigation.

In Pakistan, there was not any in depth study regarding the economics and marketing of floriculture. However, some researchers have conducted economics and marketing studies of floriculture including Valdellon and Lizarando (1983), Subrahmanyam (1988), Mitra *et al.* (1989) and Koelemeijer (1991).

The Netherlands, with its geographic location and development of capital intensive production, has become the world's main exporter of floricultural products. Schnieder (1991) compared the production structure and marketing system of floriculture industry in the Netherlands and recommended rationalizing marketing in which the profitable segments of the channels should be maintained and the unnecessary steps eliminated for future growth. The countries like Canada, USA, France, Britain and Italy have well-established flower industry. Demand for flowers is now even discernible in developing countries, where cultivation of flowers of various types holds a promise of increasing economic returns under the efficient and reliable marketing system.

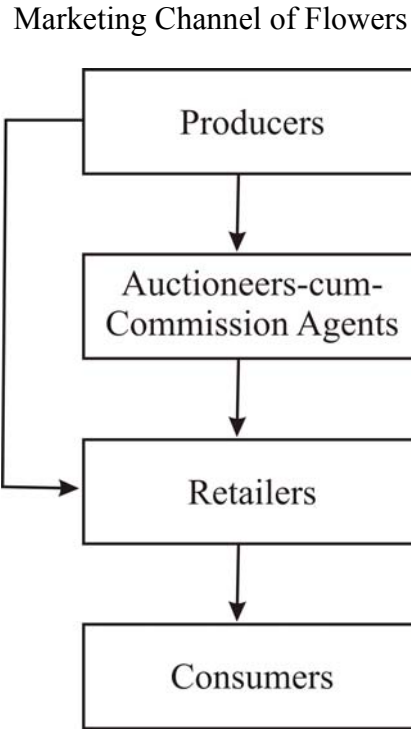
In Pakistan, the flower business is mainly concentrated around the big cities like Karachi, Lahore, Islamabad, etc. and is also turning towards a booming business. Therefore, with increasing demand of flowers for number of utilities, flower business is likely to gain expansion.

But unluckily in agrarian economy of the country, the floriculture remained a quite neglected segment of agriculture. Thus, this study has been conducted to examine the economic returns associated with the flower production and marketing margins of various functionaries involved in marketing channel of flowers in Lahore market. The main objective of this paper is to determine the economics and marketing of selected flowers right from producers, retailers, intermediaries/auctioneers to the final consumers, to identify the constraints in flower business mainly at farm and retail level and to provide recommendations in enhancing the flower business in Pakistan.

II. SAMPLING FRAMEWORK AND METHODOLOGY

The study is based on primary data collected from Lahore Flower Market during 1994. During the preliminary survey it was observed that various types of flowers except rose were being channelized from producers to retailers and from retailers to consumers. However, roses were being sold

directly from producers to retailers and through auctioneers-cum-commission agents in the auction markets. The marketing channel of flower business was as follows:



Thus, keeping in view the involvement of various intermediaries/functionaries in flower business, producers, auctioneers, retailers and consumers were taken into account to examine the share of different functionaries in the flower business.

Since different types of flowers are supplied from the nearby and adjacent areas, 34 producers from the main flower growing areas were selected randomly for study purpose. Two auction markets being managed by two auctioneers were found to channelize rose flower from producers to retailers. Both of these auctioneers were included in the sampling framework of the study. The flower shops were classified into the following two categories on the basis of flower dealt with on these shops:

Category I Rose, Rosestem, Tuberoses, Gladiolus, Marigold, Narcissus (located at posh areas).

Category II Rose and Marigold (mainly located at shrines and graveyards).

A total of 43 floral shops, *i.e.* 13 shops of Category I (all the floral shops in the study area) and 30 randomly selected shops of Category II were included for the study.

METHODOLOGY

Generally averages and percentages were used for cross tabulation, however, certain definitions needed clarification are as under:

Return per rupee spent was estimated by using the following formulae:

$$Rp_i = \frac{AGR_i}{ATC_i}$$

Where

Rp_i = Return per rupee spent on *i*th type of flower.

AGR_i = Aggregate gross receipts earned by the procedures from selling of *i*th type of flower.

ATC = Average total cost (cash cost + imputed costs) incurred by the *j*th agent for *i*th type of flower.

$$ER_i = AGR_i - ATC_i$$

Where

ER_i = Economic return or net income from *i*th flower.

$AGR_i = Q_i * P_i$

Q_i = Product unit, *i.e.* quantity (kgs) or stem of *i*th flower.

P_i = Price of product unit of *i*th flower.

$$ATC = \sum_{i=1}^n X_{ki} + \sum_{j=1}^n O_{kj}$$

For Producer:

X = Cash cost of input used to produce *k*th flower.

$i \dots n$ = Required inputs for flower production such as seed/seedling/bulbs/fertilizer, pesticides etc.

O = Imputed or opportunity cost of input for *k*th flower.

$j \dots n$ = Non-purchased required inputs such as rent of land, use of family labour etc.

For Retailer:

- X = Cash cost to purchase flower to maintain business.
- $i \dots n$ = Items of cost such as rent of hired shop, electricity, packing material, garland processing etc. including purchase of flowers.
- O = Imputed or opportunity cost of input.
- $j \dots n$ = Non-purchased items like family labour, depreciation and interest on investment, rent of owned shop etc.

III. RESULTS AND DISCUSSION

The results of the study are presented in four sections. In section one flower production has been examined, whereas in second section the economic return of various intermediaries/functionaries involved in flower production or marketing, *i.e.* producers, auctioneers and retailers is examined, while in third section, problems encountered by the producers as well as market intermediaries are presented. The last section deals with conclusions and recommendations.

PRODUCTION OF FLOWER

The supply of each flower in the market is not uniform throughout the year. Some flowers are available throughout the year, while some flowers are available during summer and some in winter. Month-wise fluctuations in production of various types of flowers are presented in Table 1. The graphic illustration of month-wise fluctuations in production of various types of flowers is shown in Figures 1 and 2.

As is evident from Table 1 as well as in graphic illustration, Rose and Rosestem give production throughout the year, while Tuberose remains absent for one month in a year, *i.e.* during April. Among other flowers, Gladiolus gives production during winter, *i.e.* from November to the end of March, whereas three crops of tagetes are cultivated within the year which ensure continuous production throughout the year.

The data shown in Table 2 reveals that average production of Rose was estimated as 1,606 kg per kanal per year, while average production of cut flowers, *i.e.* Rosestem, Tuberose and Gladiolus on per kanal basis was calculated as 28,282 stems, 30,899 stems and 4,034 stems, respectively. The average production of tagetes was estimated to be 441 kg per kanal per year. Such production on per day per kanal basis was 4.4 kg and 1.2 kg for Rose

TABLE 1
 Month-Wise Fluctuations in Production of Different Types of Flowers
 as Reported by the Sample Producers

Type of Flower	Unit	Total Prod.	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rose	Kg	1,606	41	37	309	413	126	74	104	215	117	77	50	43
Rosestem	Stem	28,282	1,532	667	3,654	5,233	2,602	1,862	1,431	2,547	2,822	2,252	2,000	1,680
Tuberose	Stem	30,899	1,522	187	62	-	908	5865	5,111	5,195	4,000	3,380	2,811	1,858
Gladiolus	Stem	4,034	1,362	1,177	211	-	-	-	-	-	-	-	130	1,154
Tagetes	Kg	441	42	25	35	45	42	25	35	45	42	25	35	45

(Production/Kanal)

FIGURE 1

Month-Wise Fluctuations in Production of Rose and Tagetes

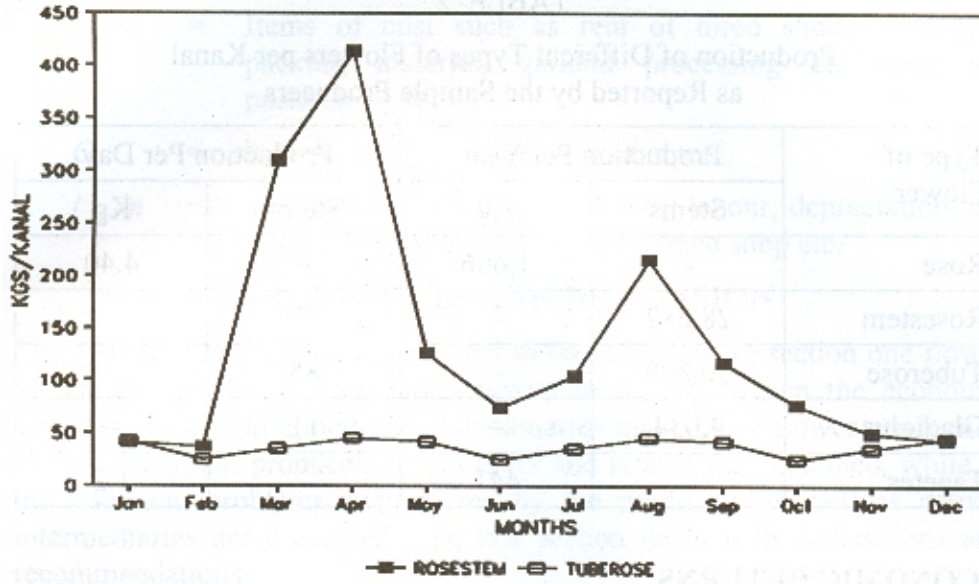
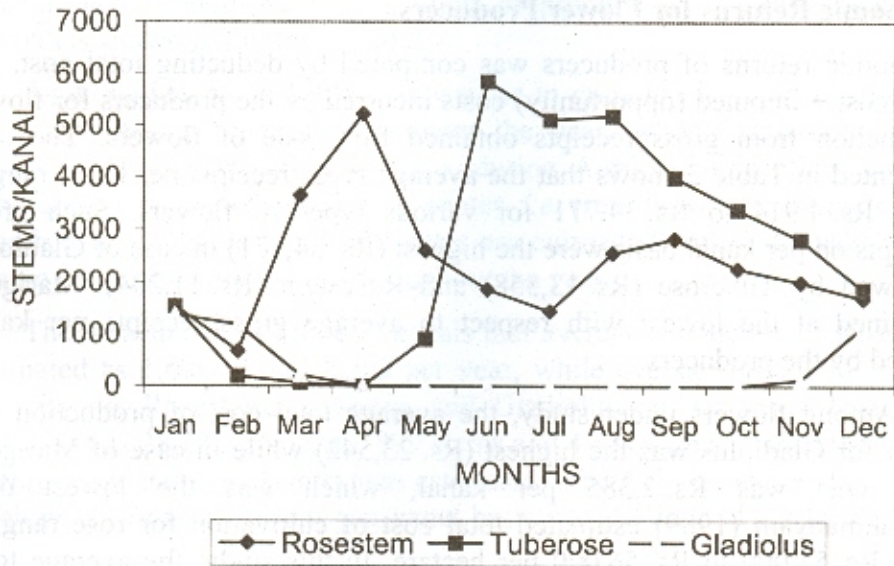


FIGURE 2

Month-Wise Fluctuations in Production of Rosestem, Tuberose and Gladiolus



and Tagetes, whereas the average production per kanal per day of Rosestem, Tuberose and Gladiolus was 77, 85 and 11 stems, respectively.

TABLE 2
Production of Different Types of Flowers per Kanal
as Reported by the Sample Producers

Type of Flower	Production Per Year		Production Per Day	
	Stems	Kg	Stems	Kg
Rose	-	1,606	-	4.40
Rosestem	28,282	-	77	-
Tuberose	30,899	-	85	-
Gladiolus	4,034	-	11	-
Tagetes	-	441	-	1.2

ECONOMIC RETURNS

Economic returns lead to determine potential status of an enterprise on the basis of existing production technology and marketing system. Since the past experience proves a powerful tool to visualize the future, the amelioration possibilities of flower business could be linked with economic returns of various intermediaries involved in floriculture.

Economic Returns for Flower Producers

Economic returns of producers was computed by deducting total cost, *i.e.* cash cost + imputed (opportunity) costs incurred by the producers for flower production from gross receipts obtained from sale of flowers. The data presented in Table 3 shows that the average gross receipts per kanal ranged from Rs. 4,914 to Rs. 34,771 for various types of flowers. Such gross receipts on per kanal basis were the highest (Rs. 34,771) in case of Gladiolus followed by Tuberose (Rs. 13,558) and Rosestem (Rs. 11,204). Marigold remained at the lowest with respect to average gross receipts per kanal earned by the producers.

Among flowers under study, the average total cost of production per kanal for Gladiolus was the highest (Rs. 23,542) while in case of Marigold such cost was Rs. 2,385 per kanal, which was the lowest one. Subrahmanyam (1989) estimated total cost of cultivation for rose ranging from Rs. 53,000 to Rs. 56,000 per hectare. In this study, the average total

cost of rose production was estimated to be Rs. 112,342 per hectare. This indicates that there is potential to develop flower cultivation technology to reduce the cost of production. Moreover, the share of cash costs in total cost ranged from 33.2 percent for rose to 98.0 percent in case of gladiolus.

TABLE 3
Net Income and Return per Rupee Spent of Producers
for Different Types of Flowers

(Rs./kanal/year)

Type of Flowers	Total Cost	Gross Receipts	Net Cash Income	Net Income	Return per Rupee Spent
Rose	5,683 (33.2)	11,190	9,306	5,507 (108,862)*	1.97
Rosestem	4,746 (82.2)	11,204	7,302	6,458 (127,661)*	2.36
Tuberose	6,549 (89.8)	13,558	7,678	7,009 (138,554)*	2.07
Gladiolus	23,542 (98.0)	34,771	11,693	11,229 (221,975)*	1.47
Marigold	2,385 (48.7)	4,914	3,752	2,529 (49,994)*	2.06

Note: Figures in parentheses indicate proportionate share of cash costs in total cost.

*Annual net income per hectare.

The average net income obtained by the producers in case of Rosestem, Tuberose and Gladiolus (cut flowers) was Rs. 6,458, Rs. 7,009 and Rs. 11,229 per kanal per year, respectively. Such incomes of Rose and Marigold were Rs. 5,507 and Rs. 2,529 per kanal per year, respectively. On per hectare basis, the net income estimated was Rs. 127,661, Rs. 138,554, Rs. 221,975, Rs. 108,862 and Rs. 49,993 in case of Rosestem, Tuberose, Gladiolus, Rose and Marigold, respectively, which is significantly higher than any other traditional crops. This needs introduction of this sub-sector with crop diversification and production oriented marketing system. Subrahmanyam (1989) reported that Rose yielded a net income of Rs. 36,000 to 75,000 per hectare per year.

The average net cash income per kanal earned by the producers was the highest, *i.e.* Rs. 11,693 in case of Gladiolus. One notable factor is that Rose

yielded higher such net cash income (Rs. 9,306) relative to Rosestem (Rs. 7,302) and Tuberose (Rs. 7,678). The average net cash income earned by the producers was the lowest in case of Marigold. Rosestem yielded higher return Rs. (2.36) per rupee spent than any other flower. The return per rupee spent for producers was Rs. 1.97, Rs. 2.07, Rs. 1.47 and Rs. 2.06 in case of Rose, Tuberose, Gladiolus and Marigold, respectively.

Economic Returns for Auctioneer-cum-Commission Agent

There exist well-established auction markets only for Rose. Other types of flowers are mainly channeled to retailers either directly from producers or through suppliers. Auctioneer at the time of bidding of each bale of flower picks up a handful of flowers which constitutes his commission against each bale of flowers. As every bale of flowers vary in weight, therefore, it is quite impossible to give any weightage to the commission of auctioneer on per day basis. However, the value of commission was computed to be Rs. 276 as reported by the sample auctioneers at the time of data collection. It is recommended that flower marketing cooperatives be formed, to conduct auction of the production, as that would reduce the commission.

Economic Returns for Retailers

Gross receipts and investment pattern witness the volume of floral at retail level, since the gross receipts are determined by the value of flower sale multiplied by price of the respective type of flower, whereas investment pattern comprises fixed and variable cost plus purchased value of flowers. Thus, the net income or economic return of a retailer was estimated by deducting total cost from total receipts. The data summarized in Table 4 reveals that the huge volume of floral business at retail level on shops of Category I was envisaged by their average gross receipts (Rs. 80,942) and total investment (Rs. 68,396) per month. The Rosestem remained well preferred cut flower for business purpose with highest share of average gross receipts (Rs. 27,690) against the total investment of Rs. 22,686 per month. The next following types of flowers with respect to business preference were Tuberose and Gladiolus on the basis of receipts obtained from their sale and investment made on these types of flowers.

On the other hand, at shops of Category II, the retailers made higher investment on Rose as Rs. 5,549 and received Rs. 7,141 as gross receipts per month relative to that of Marigold. In case of Marigold the average gross receipts was Rs. 2,442, while the investment made was Rs. 1,767 per month. At shops of Category II, Rose occupied the place of main flower. In general,

the Rose and Marigold were found on every sample shop but consumers preferred Rose than tie Marigold.

Furthermore, the extent of flower wastage was also assessed in this paper. At shops of Category I, wastage of Narcissus was observed the highest (11 percent) among all other types of flowers (ranging from 3.4 percent for gladiolus to 8.3 percent in case of marigold). This indicates that the Narcissus and Marigold have short storage life than other flowers. On the other hand, Gladiolus has long storage life as compared to other flowers (Table 4).

TABLE 4
Net Income and Return per Rupee Spent of Sample Retailers
of Category I and II by Various Types of Flowers

(Rs./Month)

Types of Flower	Gross Receipts	Total Investment	Purchased Value of Flowers	Total Cost (Fixed+ Variable)	Net Income	Return per Rupee Spent	Wastage (%)
Category I							
Rose	10,835	9,452	7,885	1,567	1,383	1.14	6.6
Rosestem	27,690	22,686	19,881	2,805	5,004	1.22	7.1
Tuberose	20,900	17,697	15,509	2,188	3,203	1.18	7.8
Gladiolus	13,557	11,831	10,369	1,462	1,726	1.14	3.4
Marigold	4,141	3,636	2,697	939	505	1.13	8.3
Narcissus	3,819	3,094	2,781	313	725	1.23	11.1
All Flowers	80,942	68,396	59,122	9,274	12,546	1.18	–
Category II							
Rose	7,141	5,549	4,972	577	1,592	1.28	3.8
Marigold	2,442	1,767	1,390	377	675	1.38	7.0
All Flowers	9,583	7,316	6,362	954	2,267	1.31	–

At shops of Category II, wastage of Marigold was higher, *i.e.* 7.0% than Rose. Wastage of Rose was estimated to be 3.8%. It was also observed that wastage of Rose and Marigold was more at shops of Category I than at shops of Category II.

The average net income of Retailer was Rs. 12,546 per month for the shops of Category I, whereas the average net income for Category II shops was Rs. 2,267 per month. In Category I shops, Rosestem yielded the highest (Rs. 5,004) net income on the average followed by Tuberose (Rs. 3,203) earned by the retailers per month. On shops of Category II, the average net income earned by Retailers was the highest (Rs. 1,592) earned from business of Rose.

Average return per rupee spent by the Retailers of Category I was computed to be Rs. 1.18, while the Retailers of Category II, return per rupee spent comes to be Rs. 1.31. At shops of Category I, the retailers received higher return per rupee spent through the sale of Narcissus, *i.e.* Rs. 1.23. The return per rupee spent was to the extent of Rs. 1.13 for marigold to Rs. 1.23 in case of narcissus.

CONSUMERS OF FLOWERS

Consumers constitute the last and important segment of the marketing channel. Sample consumers mostly use different types of flowers for wedding ceremonies, birthday parties, home decoration, good wishes at Eid or other such religious occasions, for congratulations to relatives and friends, to the relatives and friends coming from abroad, to sick persons and for fathe at shrines and graves etc. Actually the price paid by the ultimate consumer is the price of a product determined after adjustment of production cost and profit of all the intermediaries involved in marketing channel of the product. The data given in Table 5 shows that the average price paid by the consumers was Rs. 45.50 per kg for Rose, Rs. 1.85 per stem for Rosestem, Rs. 2.20 per stem for Tuberose, Rs. 12.50 per stem for Gladiolus, Rs. 23.60 per kg for Marigold and Rs. 0.57 per stem for Narcissus.

TABLE 5
Average Price Paid for Different Types of Flowers
by Consumers at Sample Retail Shops

<i>Types of Flower</i>	<i>Unit</i>	<i>Price Paid per Unit (Rs.)</i>
Rose	Kg	45.50
Rosestem	Stem	1.85
Tuberose	Stem	2.20
Gladiolus	Stem	12.50
Marigold (Tagetes)	Kg	23.60
Narcissus	Stem	0.57

Marketing channel of flower business generally involves producers, retailers and consumers for Rose, for which a minimum role is paid by auctioneers to channelize this type of flowers from producers to retailer. Since the payment to auctioneers is made only in kind, the role of this type of intermediary has been ignored in sharing profit margin. The distribution of profit margin among market intermediaries including producers provides indication for the policy decision to determine directions of the business to make it incentive oriented at each stage of production and marketing.

The data summarized in Table 6 reveals that the share of producers in consumer's rupee was higher (56.6%) relative to that of retailers (43.4%). Producer's share in consumer's rupee was higher and it ranged from 53.6 percent to 68.8 percent for various types of flowers except Tagetes for which the retailer's share in consumer's rupee was relatively higher (54.6%) compared to producers (45.4%).

TABLE 6
Share of Producer and Retailer in Consumer's Rupee
for Different Types of Flowers

<i>Types of Flower</i>	<i>Share in Consumer's Rupee (%)</i>	
	<i>Producer</i>	<i>Retailer</i>
Rose	53.6	46.4
Rosestem	56.6	43.4
Tuberose	58.5	41.5
Gladiolus	68.8	31.2
Marigold (Tagetes)	45.4	54.6
Overall	56.6	43.4

MARKETING PROBLEMS IN FLOWER BUSINESS

Problems encountered in floral business were rather qualitative and were classified as under:

- Producer's Problems
- Problems Encountered by Retailers
- Problems Encountered by Consumers

Producer's Problems

A majority of the sample producers growing different types of flowers complained regarding:

- The ignorance of the government for not developing and experiencing any policy implication on this segment of agriculture;
- Running of flower business without any incentive extended by the government;
- Non-existence of export facilities, which have inhibited the expansion of this business; and
- Increase in cost of production because of rising prices of fertilizers and pesticides.

Problems Encountered by Retailers

Problems encountered by the Retailers in floral business were:

- Lack of policy implications and indifferent behaviour of government concerned agencies in floral business;
- Lack of guidance to increase age of this perishable commodity (flower); and
- Disturbance caused by LDA and LMC because of non-permanent status of floral shops.

Problems Encountered by Consumers

The ultimate users of the flowers also complained about:

- The price and quality variations from shop to shop; and
- Limited number of cut flower shops in relatively posh areas of the city.

IV. CONCLUSIONS

Floral business is in progress though on limited scale, but every growing demand of flowers has resulted in need to explore potential for expansion of this enterprise. The study results were highly encouraging with respect to higher economic return of floriculture. The average net income of producers ranged from Rs. 2,529 to Rs. 11,229 per kanal or Rs. 49,971 to Rs. 221,975 per hectare per year for various types of flowers. The return per rupee spent ranged from Rs. 1.47 to 2.36 in case of various types of flowers grown by the producers. Moreover, the share of producers in consumer's rupee was 56.6 percent ranging from 45.4 percent to 68.8 percent.

The average net income of retailers was estimated to be Rs. 12,546 per shop per month with Rs. 1.38 return per rupee spent in case of shops of Category I. In case of shops of Category II, the average net income was

Rs. 2,267 per month. The return per-rupee spent in case of this category of shop was Rs. 1.31. The retailer's share in consumer's rupee was 43.3 percent ranging from 31.2 percent to 54.6 percent. In brief there is a scope to expand this business, which may though result in decrease in relative profit, yet potential exists there to increase absolute income of all the agencies involved in this enterprise of agriculture.

RECOMMENDATIONS

As there has not been any work done on the cultivation of various types of flowers, there are no policy measures, which could enhance the flower business and lead towards an economically attractive segment of agriculture in Pakistan. The following recommendations would be helpful in coping with the problems pertaining to flower business:

- There is a need to establish a research wing in order to develop better methods of cultivation and optimum use of recommended inputs in floriculture. This would be helpful in enhancing the production of various flowers at relatively less cost. This would, in turn, increase the income of growers as well as give surplus produce for export purpose.
- An efficient extension programme is a bridge between research and field application. So there is a need to initiate a well-equipped extension service programme to extend valuable guidelines to the producers of flowers regarding flower's cultivation, maintaining of quality and reducing wastage during harvesting and enhancing the storage life of flowers. Moreover, this service should be capable to motivate the other farmers to participate in such type of crop diversification at farm level.
- As the growing of flowers is a labour intensive job, government has a room to evolve a policy mechanism through which flower business could get an upward momentum from its present status. As a result, surplus labour could also be effectively engaged in different activities of production and marketing of flower business.
- There is a potential for export of flowers in Pakistan. A regular export of cut flowers like Rosestem, Tuberose and Gladiolus in fairly substantial quantities could make a valuable share in foreign exchange earnings. Thus, some necessary institutional reforms need to be introduced to provide export opportunity and facilitate the export of cut flowers through easily adoptive and conductable procedure.

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