MARKETING MARGINS FOR ONION IN SWAT

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ABSTRACT
The study was designed to find out the marketing channels adopted by the onion growers and determine the performance of existing marketing system in Swat during September, 2005. Results accomplished indicate that more than half (51%) of the total farm size was devoted to onion crop (1.31 acres) which reflects the importance of onion crop in that area. Majority of the onion growers sold their produce to pre harvest contractor, 24% sold onion produce in Mingora whole sale market. Pre harvest contractors purchased onion produce from the growers and sold it in Mingora, Rawalpindi, Gujran wala and Lahore wholesale markets. Every contractor in the research area invested Rs.100,000 to 300,000 in onion business. Lack of finance to bear marketing cost was the major problem mentioned by the sample respondents (61%) in the research area, while monopolistic behavior of marketing intermediaries and low prices in local markets was the second major problem (30%). Lack of opportunities and guidance regarding export was the third problem.

INTRODUCTION
Onion (*Allium cepa* L.) belongs to family *Liliaceae*. It is an important vegetable crop probably grown as widely as any cultivated crop, although it is consumed in small quantity by the most. It is used almost daily in a wide variety of dishes.

Onion is one of the major crops in many tropical countries placed high with other vegetables. The native place of onion is probably Asia; perhaps India is the place of its origin. It is reasonable source of micro food, nutrient, mineral, salt and vitamins, hence used by all section of life. The use of onion is not limited to any climate or associated with any nationality. Of the vegetable crops listed by the F.A.O (2005), onion ranks second after tomatoes in terms of total annual world production.

Pakistan, the land of more than 140 million people with an area of 796,096 sq. km, is one of the few countries blessed with diversity of agro-ecological conditions and well drained fertile soils which facilitate the production of almost all kinds of horticultural crops. As regarding onion, there has been spectacular increase in the area and production of onion over the last decade. The main factors contributing towards increasing area and production of onion have been heavy domestic consumption and demand on account of increasing population pressure, adoption of improved cultural practices, sufficient inputs and sizeable export demand. However, onion yields in Pakistan are quite low, (10-12 tons per hectare) and is considerably less than the potential yields (22 tons per hectare). The gap between potential and actual yields is very wide, due to poor management practices and post harvest losses. Beside this onion growers of this part of world are not getting justified returns from their produce due to poor marketing system.

Onion Area and Production in NWFP
The soil and climatic conditions of NWFP are congenial for the production of various vegetable crops. The land available for cultivation is in small pieces and scattered in pockets in hilly areas. For the best utilization of scarce land, growing of valuable vegetables crops is the most profitable business. Onion is one of the valuable vegetables. To have an idea of the scale of onion crop in NWFP, Table 1 provides data regarding area production and yield per Hectare.

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* Restructuring of Horticultural Research and Development Project in NWFP, Tarnab, Peshawar - Pakistan  
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The horticultural industry has a bright future in Malakand Division which contributes 40% of the NWFP produce. Moreover, the produce from this area is supplied over a major part of the year on regular basis. For instance, the supply period of apple is six months, that of onion five months, cucumber six months, and tomato nine months. Onion is among the main cash crops produced and supplied by this area. The division accounts for over 60% of the total onion production in NWFP. Onion crop produced in Malakand Division is either marketed immediately after harvest or stored for a period of one or two months before marketing. High temperature and humidity, however, cause high post harvest losses. Estimates suggest that losses are up to 20%. Onion is supplied to various cities of the country by the growers themselves and through Beoparies (middlemen). The onion in Swat and Malakand Agency areas is marketed in Mingora, Peshawar, Rawalpindi, Gujranwala and Lahore. Keeping in view the importance of onion crop the present study was planned with the following objectives.

OBJECTIVES
i. To evaluate the marketing margins of all the agencies involved in onion marketing.
ii. To identify the present marketing channels adopted by the growers and determine the performance of existing marketing system.
iii. To identify the technical and socio economics constraints in marketing system.
iv. To find out the marketing problems faced by the growers.
v. To make recommendations on the basis of the findings of this research.

MATERIALS AND METHODS
Onion is mainly grown in Dir and Swat districts of Malakand Division in NWFP. So the present study was conducted in district Swat. In total seventy five onion growers, fifteen wholesalers and ten retailers belonged to three circles of district Swat were interviewed for collecting primary data (Table II).

Data Collection
The data were collected through face-to-face interview using a comprehensive interview schedule, designed in the light of the objectives of the study. During the interview, efforts were made to explain the questions and their purposes to the respondents, so that correct and reliable information could be gathered. Before data collection, interview schedule was pre tested and modified in light of the feedback from the respondents. All the respondents (i.e. producers, wholesalers and retailers) were interviewed according to their convenience and ease.

Analytical Work Frame
There are many paradigms to determine the marketing efficiency such as productivity measure, market margin analysis, welfare analysis and structure-conduct-performance (SCP). Due to time and financial constraints the analysis was confined only to market margin analysis.

Market Margin Analysis
Marketing margins are the differences between prices at two market levels. Marketing margins will be estimated on the basis of data obtained on prices at different stages of the marketing chain. Beside this, marketing margins were calculated through computing the absolute margin or price spread, which is essentially the same as the difference between the prices, paid and received by each specific marketing agency. The following formula was used to compute percentage-marketing margins as earned by each market intermediary involved in the marketing of farm products.

\[ Mm = \frac{(Ps \times 100)}{Sp} \]
Where ‘Mm’ indicates the marketing margins earned by a specific agency, ‘Ps’ stands for price spread availed by that agency and ‘Sp’ represents sale price of the same agency for the same commodity.

Marketing Costs
Marketing costs are the expenditure incurred by various market intermediaries from the time when commodity leaves the farm until it reaches the consumers. Such costs are necessarily incurred to create form, time, place, and possession utilities in the products to make them marketable. To determine whether the marketing margins (amount received by the different marketing agencies for providing their services) were reasonable, it was essential to calculate the ‘costs’ of these agencies. The costs incurred by the fruit producers and other marketing intermediaries have impact on prices as well as on the margins of the market intermediaries.

The major components of marketing cost include grading, loading, unloading, transportation, commission charges and market taxes. These costs were computed on a per kg basis. Each marketing agency was inquired about the amount it spent per crate and the costs of each agency will be calculated, using the following formula.

\[ MC = \frac{As}{q_h} \]

Where 'M' stands for marketing cost of a specific unit quantity, 'As'; for actual amount spent and 'q_h' represents quantity handled. All marketing costs were calculated by estimating the above formula except for commission charges. To calculate commission charges, the following formula was used.

\[ Cc = (Sp \times R_c) \times q_m \]

Where Cc' stands for commission charges, 'Sp' denotes sale proceeds of onion marketed, 'R' represents rate of commission and 'q_m' quantity marketed.

Net Margin
The net margins of a specific agency are the net earnings, which it earns after paying all marketing costs. Net earnings of various market agencies involved in the marketing of onion was computed with the following formula.

\[ Nm = Ps - Mc \]

Where, ‘Nm’ stands for net margins, ‘Ps’ indicates the price spread availed by the specific agency and 'Mc' represents marketing costs incurred by the same agency.

The replies of the respondents were codified and the data was entered in the computer, using SPSS package. Keeping in view the specific objectives of the study data was analyzed using relevant techniques of data analyses, in Statistical Package for Social Sciences (SPSS) software package.

RESULTS AND DISCUSSION
Operational Land Holdings and Area Under Onion
Operational land holdings play a significant role in adoption of new technology. Farmers with higher holdings can spare more area than those with small holdings to grow and cultivate new crops (Mureithi et al. 1992, Kapronczai and Tomka, 1991 and Thakur et al. 1990).

It was investigated that the land holdings of the sampled farmers ranged between 0.4 to 10 acres with an average of 2.58 acres. It is interesting that more than half (51%) of the total cropped area is devoted to onion crop (1.31 acres) which shows its importance in the area. On the remaining (49%) land they grew cereal and fodder crops mainly for their own use. The farmers clearly indicated during discussion that they intend to convert
the maximum area under onion crop. It was noted that there was no significant variation in the yield per unit area in district Swat as indicated in Table III.

Marketing Channels
An efficient marketing system is essential for sustainable agricultural development. It is not only affects producers’ income through prices received by them for their products, but the consumers welfare in the shape of consumer price for agricultural commodities. The market efficiency does not depend only on farm production cost and yield but as the products move from the producer to the ultimate consumer or final destination. There are several factors, which influence the efficiency of fruit and vegetables marketing include, perishable nature, quality, prices and location of product (Kohls and Uhl, 1985). Private organizations and individuals carry out the onion marketing viz; producers, contractors, commission agents, wholesaler and retailers are the principle market agencies in the onion marketing system. The existing marketing channels are presented in Fig.1 and describe in brief here as under.

Onion Producers
Onion producers functionary involved in crop production on his own land or obtained a piece of land on rent or share basis. Majority of the onion producers (71%) sold their produce to pre harvest contractor, 24% sold onion produce in the whole sale market as shown in table V.

Pre Harvest Contractor
Pre harvest contractors play a significant role in onion marketing in the research area. Post harvest contractor (Beapari or middle man) is a local man who also belong to the farming community and posses enough knowledge regarding marketing conditions. Post harvest contractors estimate farm yield and marketing cost including supervision, labour, post harvest losses and transportation cost etc. Contractors in the research area had close contact with the commission agents in the whole sale markets. They purchased onion produce from the growers and sold it in the whole sale markets of Rawal pindi (75% of the total purchased), Lahore (10%), Gujranw-ala and Mingora (5% each). Every contractor in the research area invested Rs.100, 000 to 300,000 in onion business during a season.

Wholesale Market
In the study area Mingora had fruit and vegetable whole sale market, where commission agents were playing a key role between sellers and buyers. Commission agents hold official permission from the government for their business and had sufficient space in the whole sale market for auction and storage of the produce. They were simply selling the produce brought by the producers and contractors and charged 7% on the total sale of each individual. In the research area, majority of the onion growers complained that the commission agent auctioned their produced on lower price as compared to the produce brought by the contractors.

Retailers
At the end of all marketing activities, there were retailers who buy and sell small quantity of the produce to the consumers at their local area. There were two types of retailers, some had small vegetables shops in the consumption areas and others were hawkers selling onion in the streets by moving from one place to another. About half of the retailers (49%) had close contact with the commission agents in the whole sale market and purchased the produce on credit basis and return the same after selling the product.

Reasons for Sale to Pre-harvest Contractors
It is evident from table IV that majority of the onion producers sold their produce to pre-harvest contractors in the research area. There were two main reasons behind the sale
to pre harvest contractors. The most important reason mentioned by sixty one percent of the sampled respondents was the lack of finance for marketing cost (such as for the purchase of packing materials (sacks), rent of curing places (store), labour charges for watching the store during curing, loading & unloading and transportation etc). Another reason indicated by the remaining respondents (39%) is that they were growing other crops soon after onion harvesting. Completing the sowing of maize crop or other kharif crops were the main activities. Therefore, they did not have enough time to manage all those activities and prefer to sell the onion produce to a pre- harvest contractor as indicated in Table V.

**Labour Hiring for Onion Marketing**

Sixty one percent of the total onion producers did not hire any labour for onion marketing because they sold the crop to pre harvest contractors. The remaining 31% of the growers hired one or two labourers. In addition to family labour, for packing, curing, watching the store during curing, loading and unloading etc. The growers paid Rs. 3600 - 4000 per head for a period of one and a half month.

**Price Spread and Marketing Margin**

Marketing margins are the differences between prices at two market levels and are commonly used to examine the differences between producer and consumer prices for a commodity. Marketing margins represent the price charged by market agencies for their services including buying, packing, transportation, storage and processing. Under competitive market conditions the market margins are the result of demand for marketing services and equal to the minimum cost of services provided plus normal profit (Scarborough and Kydd, 1992).

Data with respect to onion marketing show that average purchase price of onion produced of pre harvest contractors was Rs. 500/100 kg and sale price was Rs.750/100 kg, whereas at the wholesale level the average purchase price per 100 kg was recorded as Rs.760 and sale price was Rs. 850 as shown in Table VI.

**Marketing costs**

Marketing costs are composed of the total costs incurred on marketing of produce by each agency. One way of defining costs is as all the expenses incurred in organizing and carrying out the marketing process. Another definition is as the charges which are paid for any marketing activity such as, assembling, transportation, storage, grading processing, wholesaling and retailing. The most important factors, which influence marketing costs, are distance between production and consumption markets, conditions of the roads, seasonality, perish ability, packaging, storage and processing (Smith, 1992). For this study marketing cost of onion was analyzed at each stage.

The average marketing costs paid by producers and pre harvest contractor was estimated as Rs. 100 per bag (100 kg) . Wholesalers had costs of Rs. 17/ bag (transportation of produce from the auction floor to shop, rent and license fees). Retailers had costs of Rs.15/ bag such as transportation of produce from market to sale area and rent of shop or barrow etc. The commission charged Rs. 7% of the total sale by the commission agents in the whole sale market at Mingora.

**Market Margins Analysis**

Marketing margins were calculated through computing the absolute margin or price spread, which is essentially the same as the difference between the prices, paid and received by each specific marketing agency. The following formula was used to compute percentage-marketing margins as earned by each market intermediary involved in the onion marketing.
Mm = (Ps x 100)/Sp

Where ‘Mm’ indicates the marketing margins earned by a specific agency, ‘Ps’ stands for price spread availed by that agency and ‘Sp’ represents sale price of the same agency for the onion.

Marketing Margin (Mm) for pre harvest contractors = 33.34
Marketing Margin (Mm) for Whole seller = 10.60
Marketing Margin (Mm) for Retailers = 15.00

The above estimates reveal that the contractors get nearly thirty percent margins in the one step promotion of onion produce, which seems to be very high (see appendix I for detail calculation).

Net Margins
Net Margins calculated for different marketing intermediaries involved in onion marketing in district Swat are as below;

Net Margin (Mm) for pre harvest contractors = 150
Net Margin (Mm) for Whole seller = 73
Net Margin (Mm) for Retailers = 135

The above estimates reveals that the net marketing margin for the contractors and retailers is high as compare whole sellers.

Problems Faced by the Respondents
Lack of finance to bear marketing cost was the major problem mentioned by the sample respondents (61%) in the research area, while monopolistic behavior of marketing intermediaries and low prices in local markets was the second major problem as indicated by the onion producers (30%). No opportunity and guidance regarding export was the third problem mentioned by the rest of the growers (Table VII).

CONCLUSION AND RECOMMENDATIONS
Swat valley enjoys the central position in NWFP in supplying onion of high quality and grade. Onion is one of the major cash crops and income’s source of the growers in the research area. The overall farm size of the selected growers ranged between 0.4 to 10 acres with an average of 2.58 acres. It is remarkable that more than half (51%) of the total farm size was devoted to onion crop which showed its importance in the study area. There are poor marketing facilities including communication network, far away markets, non availability of institutional credit and lower prices. In the current environment, it is imperative that government should make investment on infrastructure development particularly establishment of assemble markets communication net work and institutional credit system to reduce post harvest loses and to enhance the bargaining power of the growers in the market. Majority of the producers sold their produce to pre harvest contractors and not availed the benefit of price variations. Due to financial constraints and absence of cold chain and limited cold storage facilities, the farmers are often forced to sell their produce soon after harvesting.

i. To improve the onion marketing, all the agencies involved should be trained and educated in modern packaging, grading and product presentation techniques, meeting the international standards in order to make them able to fetch better prices.

ii. To improve the present infrastructure facilities particularly, cold storages which may help to regulate onion supply in the market hence, to facilitate price stabilization in the country.
iii. It is highly recommended that ZTBL and other commercial banks launch a special loaning scheme to reduce marketing loses and pre-harvest sale of crops.

![Diagram of Onion Marketing Channels in Swat]

**Table-I**  
*Area and production of onion crop during 2000-03 in NWFP*

<table>
<thead>
<tr>
<th>Year</th>
<th>Area '000' hectares</th>
<th>Production '000' tons</th>
<th>Yield per hectare in tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-01</td>
<td>10.6</td>
<td>201.5</td>
<td>19.0</td>
</tr>
<tr>
<td>2001-02</td>
<td>9.6</td>
<td>183.2</td>
<td>19.1</td>
</tr>
<tr>
<td>2002-03</td>
<td>10.0</td>
<td>193.6</td>
<td>19.3</td>
</tr>
</tbody>
</table>

*Source: Agric. Statistics of Pakistan 2002-03*
Table II: **Distribution of sample for onion marketing survey, 2005**

<table>
<thead>
<tr>
<th>Type of Respondents</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onion growers</td>
<td>75</td>
</tr>
<tr>
<td>Whole sellers</td>
<td>15</td>
</tr>
<tr>
<td>Retailers</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table III: **Farm size and area under onion by various circles of district Swat**

<table>
<thead>
<tr>
<th>Circles</th>
<th>Operational area (acres)</th>
<th>Area under onion (acres)</th>
<th>Area under onion (%)</th>
<th>Onion yield / acre (tones)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barikot</td>
<td>2.73</td>
<td>1.53</td>
<td>56</td>
<td>11.5</td>
</tr>
<tr>
<td>Kabal</td>
<td>2.48</td>
<td>1.37</td>
<td>55</td>
<td>11.25</td>
</tr>
<tr>
<td>Khawaza khela</td>
<td>2.53</td>
<td>1.0</td>
<td>40</td>
<td>10.75</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2.58</strong></td>
<td><strong>1.31</strong></td>
<td><strong>51</strong></td>
<td><strong>11.15</strong></td>
</tr>
</tbody>
</table>

Table IV: **Marketing channels of onion produce by various circles of district Swat**

<table>
<thead>
<tr>
<th>Marketing Channels</th>
<th>Circles (% of respondents)</th>
<th>Barikot</th>
<th>Kabal</th>
<th>Khawaza khela</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre harvest contractor</td>
<td></td>
<td>76</td>
<td>68</td>
<td>68</td>
<td>71</td>
</tr>
<tr>
<td>Wholesale market</td>
<td></td>
<td>20</td>
<td>20</td>
<td>32</td>
<td>24</td>
</tr>
<tr>
<td>Pre harvest cont. /Whole sale market</td>
<td></td>
<td>4</td>
<td>12</td>
<td>0</td>
<td>5</td>
</tr>
</tbody>
</table>

Table V: **Reasons for sale to pre harvest contractors by various circles of district Swat.**

<table>
<thead>
<tr>
<th>Problems</th>
<th>Circles (% of respondents)</th>
<th>Barikot</th>
<th>Kabal</th>
<th>Khawaza khela</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of finance</td>
<td></td>
<td>39</td>
<td>71</td>
<td>82</td>
<td>61</td>
</tr>
<tr>
<td>Lack of time</td>
<td></td>
<td>61</td>
<td>29</td>
<td>18</td>
<td>39</td>
</tr>
</tbody>
</table>

Table VI: **Price spread for various marketing intermediaries in District Swat**

<table>
<thead>
<tr>
<th>Marketing intermediaries</th>
<th>Buying Price (Rs)</th>
<th>Selling price (Rs)</th>
<th>Price Spread (Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre harvest contractors</td>
<td>500</td>
<td>750</td>
<td>250</td>
</tr>
<tr>
<td>Whole sellers</td>
<td>760</td>
<td>850</td>
<td>90</td>
</tr>
<tr>
<td>Retailers</td>
<td>850</td>
<td>1000</td>
<td>150</td>
</tr>
</tbody>
</table>
Table VII.  Problems faced by the respondents (%) by various circles of district Swat

<table>
<thead>
<tr>
<th>Variables</th>
<th>Barikot</th>
<th>Kabal</th>
<th>Khawaza khela</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of finance</td>
<td>72</td>
<td>56</td>
<td>52</td>
<td>61</td>
</tr>
<tr>
<td>Monopolistic behavior and low prices</td>
<td>17</td>
<td>22</td>
<td>48</td>
<td>30</td>
</tr>
<tr>
<td>No export opportunity</td>
<td>11</td>
<td>18</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>

Appendix I:  Marketing Margins of different Market intermediaries in District Swat

( Rs/100kg)

<table>
<thead>
<tr>
<th>Marketing intermediaries</th>
<th>Sale price (Rs)</th>
<th>Price Spread (Rs)</th>
<th>Marketing margins</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre harvest contractors</td>
<td>750</td>
<td>250</td>
<td>33.34</td>
</tr>
<tr>
<td>Whole sellers</td>
<td>850</td>
<td>90</td>
<td>10.60</td>
</tr>
<tr>
<td>Retailers</td>
<td>1000</td>
<td>150</td>
<td>15.00</td>
</tr>
</tbody>
</table>

REFERENCES
Agric. Statistics of Pakistan. 2002-03. Govt. of Pakistan Ministry of Food, Agric. and Livestock.


