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Participatory Rapid Horticulture Appraisal Report



Multan Project Region
August 2012

The Agribusiness Project



Abbreviations

| | |
|----------------|--|
| ASF | Agribusiness Support Fund |
| FGD | Focused Group Discussion |
| MPR | Multan Project Region |
| MINFA | Ministry of Food and Agriculture |
| PRHA/LA | Participatory Rapid Horticulture Appraisal/Livestock Appraisal |
| USAID | United States Agency for International Development |

Disclaimer: This Participatory Rapid Horticulture Appraisal report of Multan Project Region is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of The Agribusiness Project and do not reflect the views of USAID or the United States Government.



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Executive Summary

The Agribusiness Project is an initiative funded by United States Agency for International Development (USAID) and is being implemented by Agribusiness Support Fund (ASF) in collaboration with international and national organization. The overall goal of the Project is to support improved conditions for broad-based economic growth, create employment opportunities and contribute to poverty alleviation through increase in competitiveness of horticulture and livestock value chains in partnership with all stakeholders. During the first year of this five-year (2011-16) project, a preparatory program was undertaken to gauge the potential of the sub-sector and to prioritize value chains in the context of various project regions including the project region of Multan. Findings from Participatory Rapid Horticulture Appraisal (PRHA) will enable the project to identify and prioritize; horticulture and livestock value chains, opportunities, constraints; and state of the business development services to provide required basis for focusing project interventions. Multan region comprises of 11 districts of Punjab province.

Within the framework of the cluster and value chain approach, a two-prong approach was adopted, first preparation for PRHA exercise in the field and second to collect secondary data and develop appropriate tools for quantification of factors so that it can be measured on a scale for ranking/prioritization. This report pertains to work completed based on both secondary data and primary appraisals of horticulture sub-sector.

The PRHA methodology provides for probing, analysis, and validation of information as they unfold during the field work. Seven factors were applied in the prioritization of value chain. These include; (i) extent of employment generation; (ii) commercial worth; (iii) percentage of small farmers associated, (iv) women involvement; (v) households associated with the value chains; (vi) understanding growth potential; and, (vii) vulnerability of the concerned value chains. Covering 50% of the districts, the exercise was undertaken in the randomly selected settlement/villages within each cluster/region. Each focus group consisted of 10-15 stakeholders, a representative sample of sub-sector. In each district, 2-3 FGDs were carried out. The analysis of secondary data is based on the district-wise data on area and production for last ten years which was collected and tabulated as time series data.

Based on the analysis of both secondary and primary information, it can be concluded that dates, pomegranate, onion and chilies are the priority value chains in the region of Multan. Date is the top most priority crop grown in the region with 96% of its produce being commercialized. It provides employment to 40% small farmers. Pomegranate is another high priority fruit of the region with 95% of its fruit being commercialized and providing employment to 99% small farmers. A number of opportunities exist, in the region, which can catalyze the development of the sub-sector. Of them the most important are:

- Fruit pack-house
- Pulping unit in private sector
- Common facility centre for pulping of fruit
- Linkages with exporters
- Access to local market
- Increasing demand
- Availability of cold store
- Availability of packaging material
- Technical support of agriculture department

These opportunities can be further reinforced through the project interventions leveraged by primary-sector investments provided that a holistic and integrated approach is applied. Some of the constraints hampering the development of fruit sub-sector are:

- Limited linkages with global markets
- High prices of agriculture inputs
- Limited linkages with stakeholders
- Use of poor packaging and standardization of size
- Few pack houses and cold stores
- Non availability true-to-type planting material
- Limited information regarding horticulture business
- Limited services for different technologies

¹ Multan, Khanewal, Lodhran, Vehari, Bahawalpur, Muzafar garah, DG Khan, Layyah, Rajanpur, Bahawal Nager, Rahim Yar Khan

- High cost of transportation
- Limited collection points and common facility centres
- Limited value addition facilities as common facility centre
- Hardly any food safety standard

Most constraints are cross-cutting and generic in nature which provide information on the overall sub-sector and some of the constraints can be considered as opportunities for investment by the project provided that willingness in the private sector for investment exists.

In general all variety of vegetables including tunnel vegetables is grown in almost all districts of the region. Amongst them onion is the highest prioritised vegetable of the region with 75% of its produce being commercialised and providing employment to 55% small farmers. About 89% of the women are involved in this sub-sector. Chillies is the second important vegetable that offers great potential with 10% growth rate and providing livelihood to 53% small farmers. About 29% HHs are dependent on this value chain for their income.

Major priority opportunities are represented by:

- Private pulping unit
- Common facility centre for pulping of vegetables
- Linkages with exporters
- Availability of vegetables tunnel production technology
- Increasing demand of vegetables
- Availability of cold store for vegetables
- Availability of packaging material
- Global GAP certification
- Technical support of agriculture department

These opportunities are cross-cutting and investment in these will generate employment and income generation opportunities. Some major constraints faced by the vegetable sub-sector are:

- Limited collection points
- Poor linkages with global markets
- High cost of inputs
- No proper storage facilities
- No proper packing sheds
- Poor packaging
- Limited availability of quality seeds
- Poor linkages with national markets
- Non availability of standard packing material
- High cost of transportation
- Improper capacity building program for stakeholders

The high ranking constraints provide opportunities for investment which will not only generate income and employment but also act as drivers for the wider development of the sub-sector. However the key consideration for intervention in addressing the constraint should be private sector investors willing to partner with the project

The availability and quality of business development services is important for the overall development of any sub-sector. The situation with regarding to services provision for both fruit and vegetables was appraised together with focus groups. In most cases the linkages between service providers and users were termed as weak to medium. To be effective in enhancing profitability of fruit growers, there is a need to build confidence and develop strong linkages of agribusiness with service providers.

Marketing of fruits and vegetables varies from commodity to commodity; however, generally, most of the produce is channelled to local and country markets. Some of the national markets relevant for the regional producers include Rawalpindi, Islamabad, Lahore, Faisalabad, Gujranwala and Karachi. Demand for fruits and vegetables do exist in the international markets (particularly Gulf countries) but that needs to be tapped after overcoming several constraints related to export.

Absence of enabling policies favouring growers (particularly small farmers), ineffective approaches towards improving and sustaining product quality, and lack of reliable updated market information also impede farmers' ability to take maximum benefits they deserve. Lack of market information system has increased the complexity of the marketing system on one hand and brought less return to the farmers on the other. Exports endeavours need to be supported by a "grow-for-export" strategy

Introduction

The Agribusiness Project is an initiative funded through the financial assistance of the American people implemented by United States Agency for International Development (USAID) in collaboration with Agribusiness Support Fund (ASF). The overall goal of the project is to support improved conditions for broad-based economic growth, create employment opportunities and contribute to poverty alleviation through increase in competitiveness of horticulture and livestock value chains in partnership with all stakeholders. Specific objectives of the project are to: (i) strengthen the capacity in horticulture and livestock value chains to increase sales to domestic and foreign markets; (ii) strengthen the capacity of smallholders and farmer enterprises to operate autonomously and effectively; and, (iii) increase agriculture efficiency and productivity through adoption of new farming techniques and technological innovation among targeted beneficiaries.

During the first year of this five-year project, a preparatory program has been launched to gauge the potential of the sub-sector and to prioritize value chains in the context of various project regions. The project planned and conducted Participatory Rapid Horticulture Appraisal/Livestock Appraisal (PRHA/LA) in all the project regions throughout Pakistan. Findings from PRHA/LA will enable the project to identify and prioritize; horticulture and livestock value chains, opportunities, constraint; and state of the business development services to provide required basis for focusing project interventions.

The reports articulate for each region separately to enable better targeting and focusing project interventions. This report covers the project region of Multan. Within the framework of the cluster and value chain approach, a two-prong approach was adopted, first preparation for PRHA exercise in the field and second to collect secondary data and develop appropriate tools for quantification of factors so that it can be measured on a scale for ranking/prioritization. This report pertains to work completed based on both secondary data and primary appraisals.



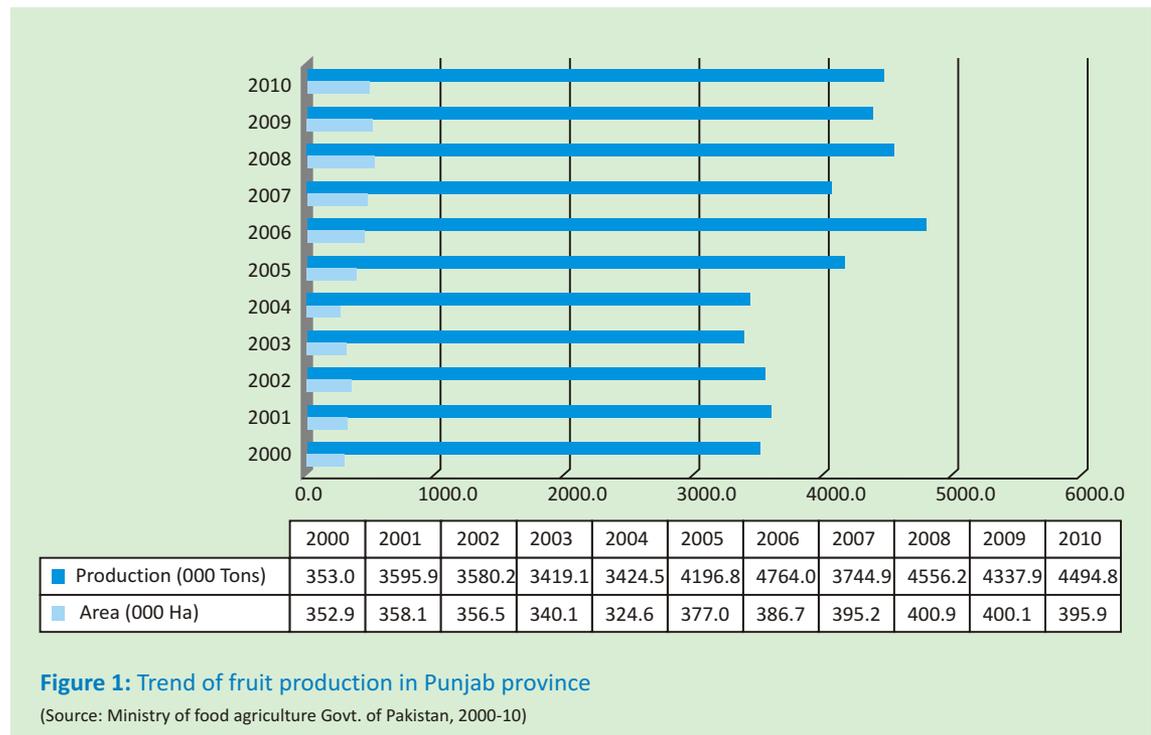
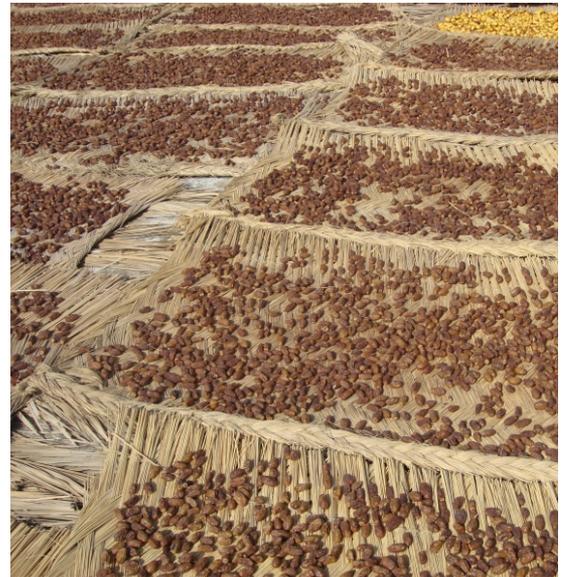
The Region

Historically fruits and vegetables have had significant potential in the province of Punjab where this sub-sector represent, along with hydro-power and fertile land, a major potential for economic growth and development. Multan Project Region (MPR) under the project consists of 11¹ districts.

Horticulture Sector in Pakistan

Agriculture continues to be one of the major sectors of the economy in Pakistan. Majority of the country's population is, either directly or indirectly dependent on this sector. Agriculture contributes 21 percent towards the Gross Domestic Product (GDP), accounts for about more than half of employed labor force and is a major source of foreign exchange earnings.

Figure 1 depicts the overall trend of fruit production volume in Punjab province. The graph is clearly showing the fast growing trends of the fruit production in Punjab province from 2000 to 2010. If



we go into the details of growth, in 2006, 2008 and 2010 have been showing the fast production growth. Keeping in mind the devastating floods in 2010 damaged the agricultural in the region. These floods affected the major fruits and vegetables growing areas in the province.

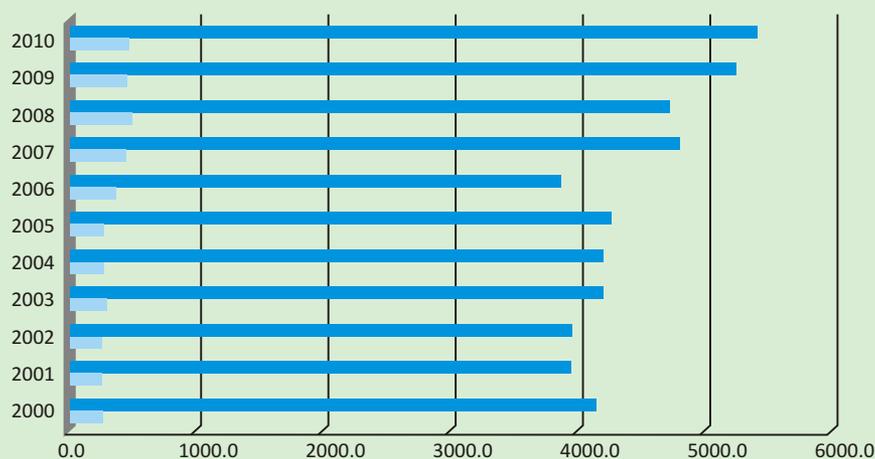
A brief overview and profile of horticulture in Punjab reveals that, during the year 2010, total area under fruits was 395.9 hectares with annual production estimated at 4494.8 metric tons with reference to MINFA and provincial government. The overall trend

In the region has increased both in terms of cultivated area and production.

Trends for area and production of vegetables are presented in Figure 2. There has been increase in both area and production starting from year 2005, with minor level of low production in 2006. The share of Punjab in national vegetable production has defiantly increased, over the years.

According to source of provincial government the total production of the Multan Project Region of

1. Multan, Khanewal, Lodhran, Vehari, Bahawalpur, Muzafar garah, DG Khan, Layyah, Rajanpur, BahawalNager, Rahim Yar Khan



| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| ■ Production (000 Tons) | 4106.6 | 3910.5 | 3924.7 | 4173.4 | 4171.3 | 4249.4 | 3846.4 | 4864.3 | 4767.7 | 5210.4 | 5366.1 |
| ■ Area (000 Ha) | 268.3 | 261.8 | 264.9 | 277.9 | 272.6 | 272.8 | 285.5 | 3.402 | 327.3 | 316.8 | 311.8 |

Figure 2: Trend of vegetables production in Punjab province

(Source: Ministry of food agriculture Govt. of Pakistan, 2000-10)

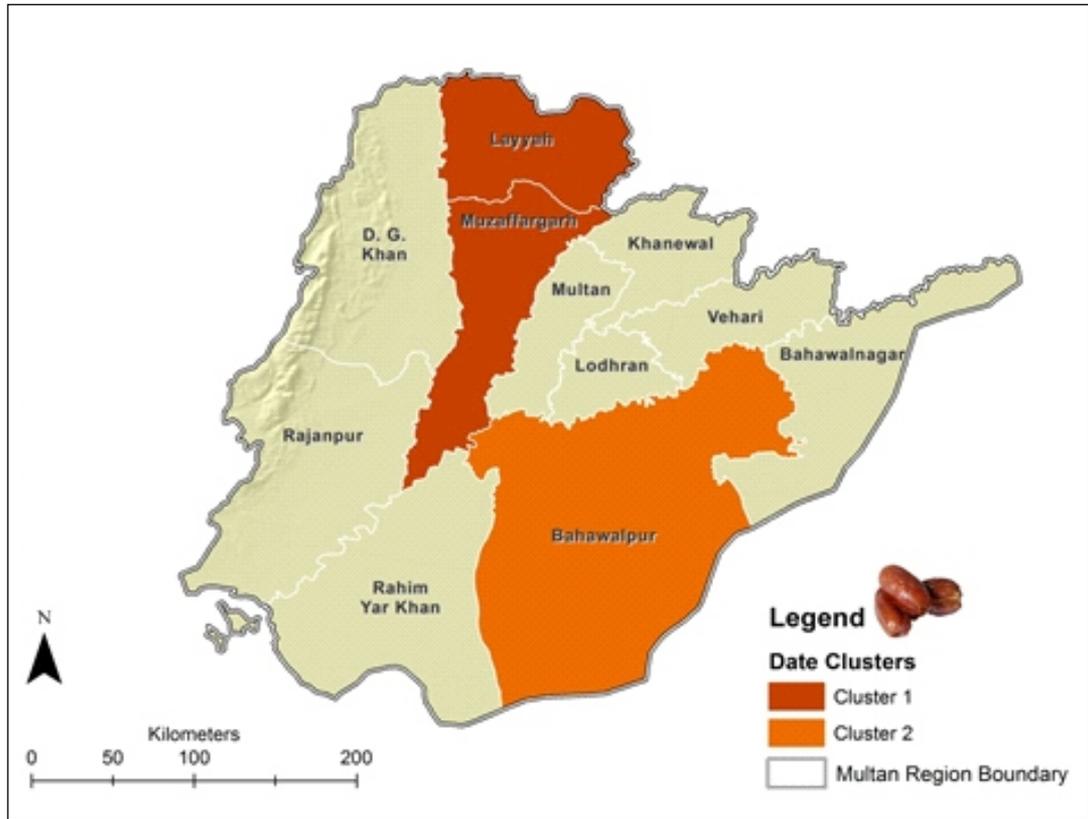
Punjab in terms of production volume of fruit and vegetables is 3,841,818 tons and 2691,865 tons respectively during the year 2009. The total area of the MPR in terms of Area under cultivation fruit and vegetables is 811,008 acres and 454,170 acres respectively.

Dates, mango, pomegranate, onion and chillies are the five major value chains of the region. Total production of each of these long with their cluster districts is given in Table 1.

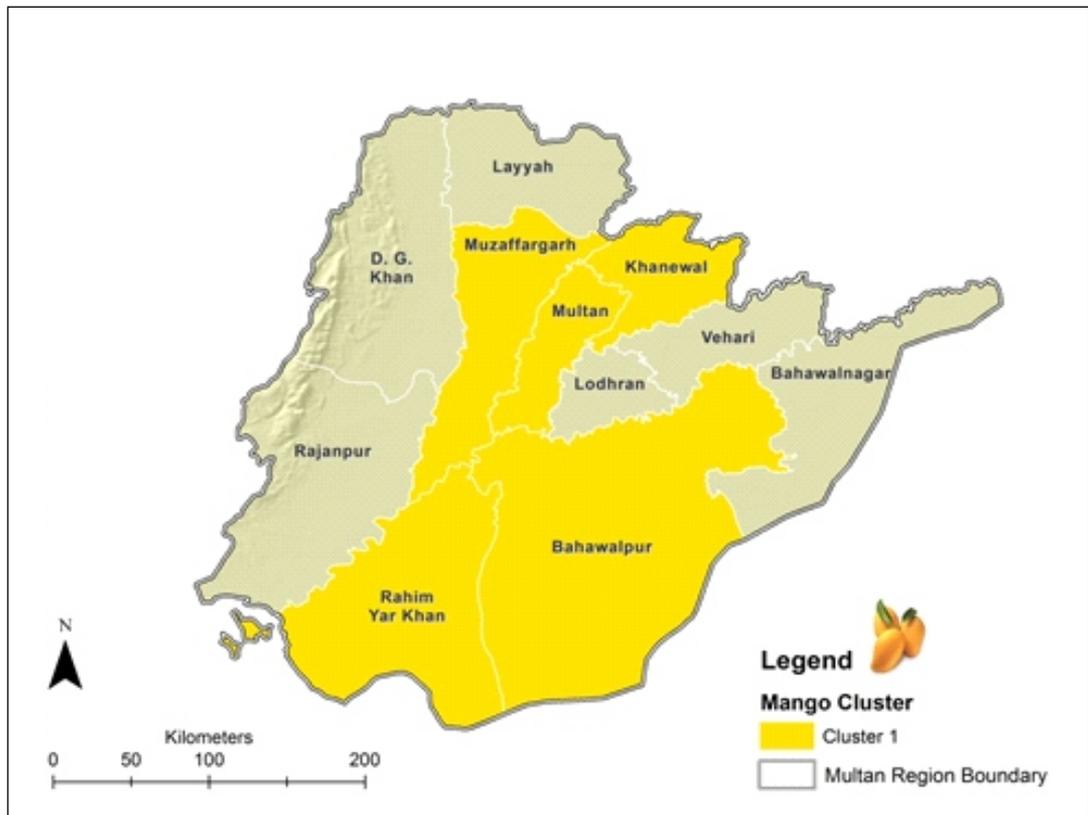
Table 1: Priority value chains

| S. # | Priority Value Chains (Fruit & Vegetables) | Clusters (Mention Districts) | Total Production (Tons) | % share of the Province | % share of the Country |
|------|--|--|-------------------------|-------------------------|------------------------|
| 1 | Dates | Muzafar Garh, Layyah, Bahawalpur | 31,129 | 70 | 5 |
| 2 | Mango | Multan, RahimYar Khan, Muzafar ghar Khanewal, Bahawalpur | 1,159,993 | 87.5 | 67 |
| 3 | Pomegranate | Muzafar Garh, Multan, Rahim Yar Khan | 9,143 | 58 | 15 |
| 4 | Onion | Lodhran, Bahawalpur, Multan, Vehari | 94,400 | 31 | 6 |
| 5 | Chillies | Multan, Khanewal, Vehari, Lodhran | 2,780 | 32 | 2 |

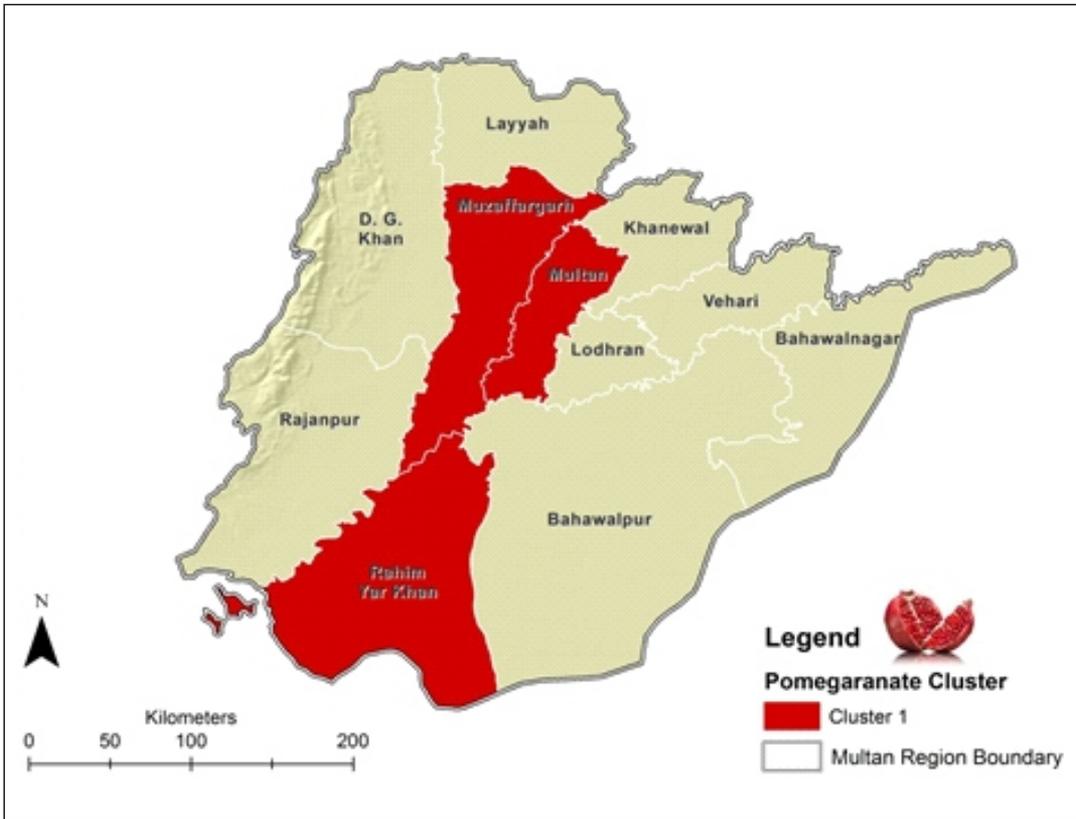
Date Clusters



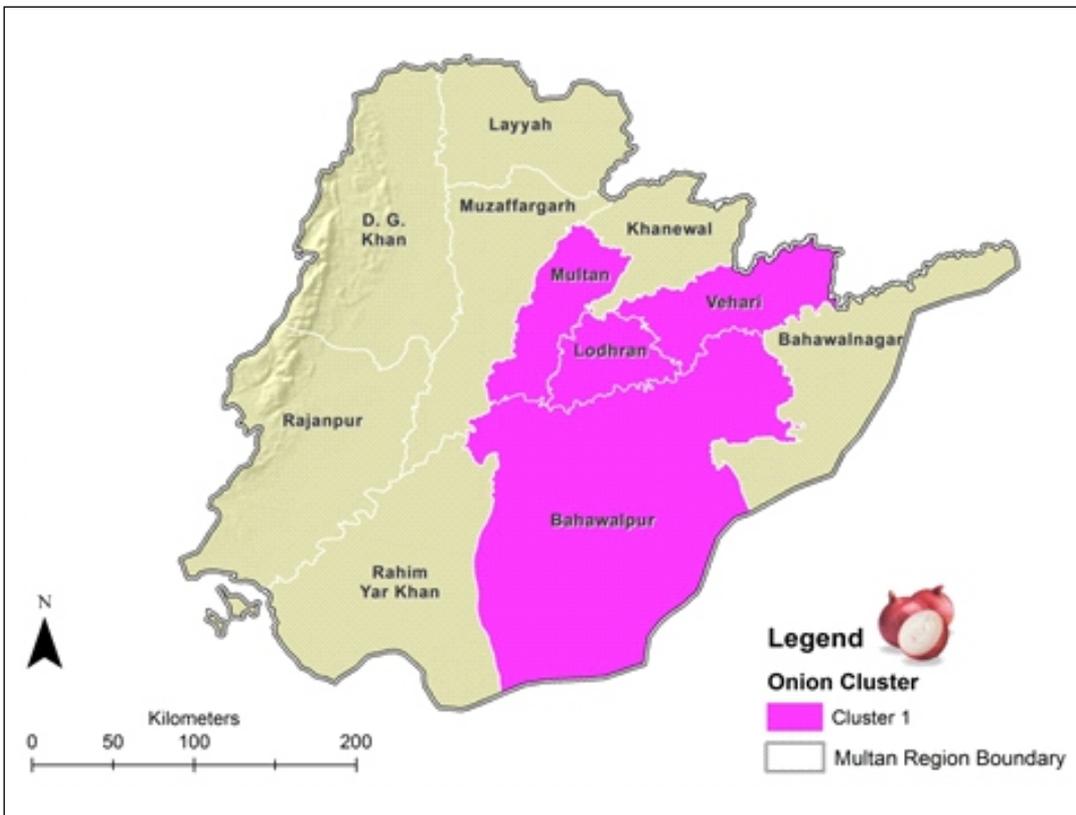
Mango Clusters



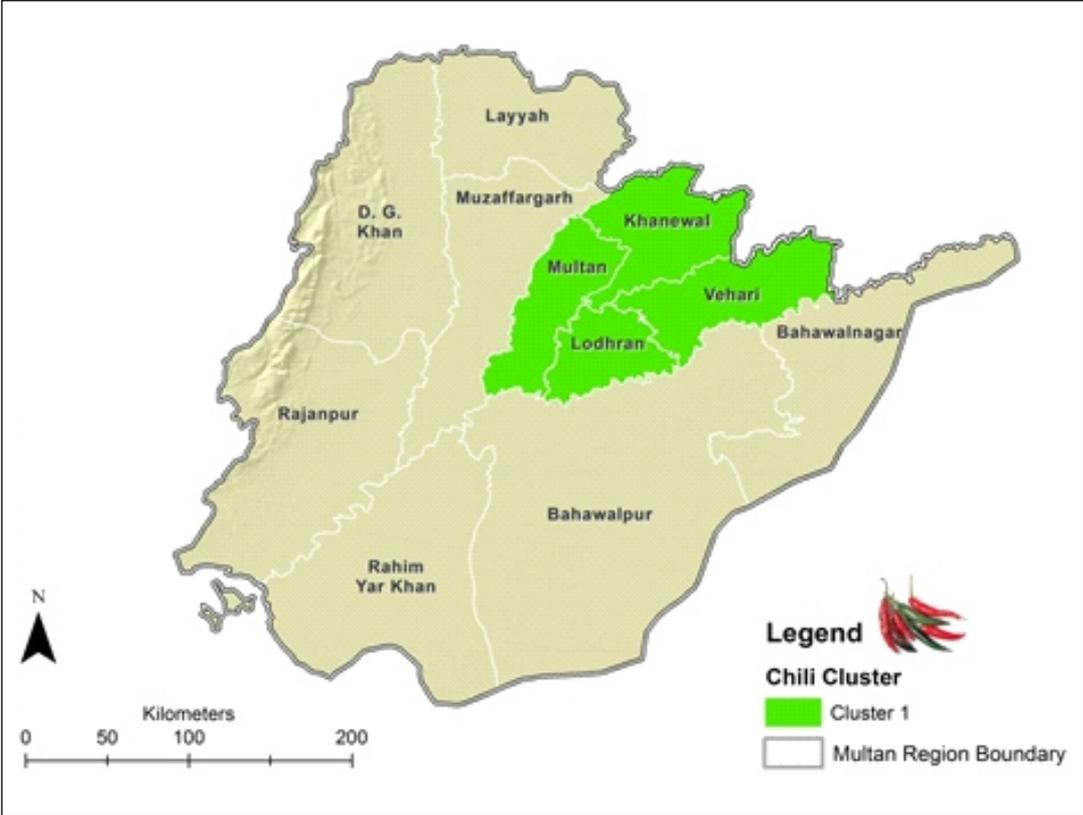
Pomegranate Clusters



Onion Clusters



Chilli Clusters



Methodology and Approach

The Participatory Rapid Horticultural Appraisal (PRHA) is one of the effective methodologies for exploring and gathering topical and focused information about a sub-sector system. Its advantages are to gather and analyse market information in a relatively short period of time employing less resource. The methodology provides for probing, analysis, and validation of information as they unfold during the field work.

The PRHA exercise allowed for a quick assessment of the sub-sector, including prioritization of value chains, identifying and prioritizing opportunities and relevant constraints impeding the realization of the opportunities as well as an assessment of the current state of the services provided by various facilitators to agribusinesses in the region. Further, linkages of the sub-sectors with local and national markets were also explored. The appraisal was conducted with a view to prepare the stage for focusing project intervention as well as for the project baseline and value chains benchmarking studies. The PRHA results will enable the to prioritize value chains (validating the cluster approach), set benchmarks, and support establishment of a database to generate primary data on key indicators to be maintained and updated during the course of project implementation and afterwards supporting the planning, monitoring, evaluation and communication functions of the project.

The analysis of secondary data is based on the district-wise data on area and production for last ten years which was collected and tabulated as time series data. From secondary data, subset for Multan Region was extracted which covers six districts of Multan region include Vehari, Khanewal, Bahawalpur, Lodhran, Multan, Muzafargrah. The selection of crop was based on groundwork done in the past by USAID/FIRM project to identify crops based on cluster approach as indicative list of potential sub-sectors / value Chains and priority value chain documented in the work plan. The district-wise secondary data on area, production for fruit and vegetables were taken from the statistics of Government of Punjab. The major factors considered as important aspect for prioritization included; (i) the growth % rates share of commodity in world production Multan Project Region share in national production; (ii) Multan Project Region share in Punjab; (iii) productivity gap; (iv) employment intensity; and, (v) export potential based on incentive structure.

The primary appraisals were based on quantification of factors so that it can be measured on a scale for ranking/prioritization. Seven factors were applied in the appraisal included; (i) extent of employment generation; (ii) commercial worth; (iii) percentage of small farmers associated, (iv) women involvement; (v) households associated with the value chains; (vi)

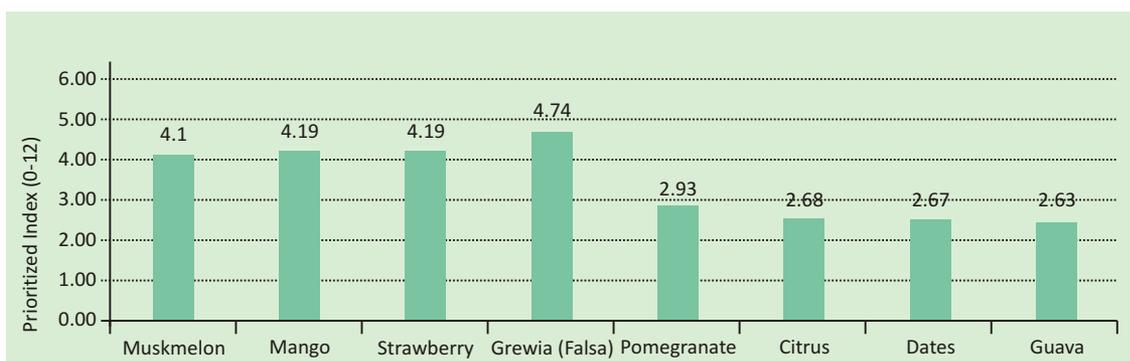


Figure 3: Priority ranking of fruit value chains

(Source: PRHA activity, June 2012)

understanding growth potential; and, (vii) vulnerability of the concerned value chains.

The appraisal was carried out by the Multan Project Region with the assistance of the project Monitoring, Evaluation and Communication (ME&C) unit and consultants retained to guide the team throughout the implementation of the appraisals. Covering 50% of the districts, the exercise was undertaken in the

randomly selected settlement/villages within each cluster/region. Each focus group consisted of 10-15 stakeholders, a representative sample of sub-sector. In each district, 2-3 FGDs were carried out. The analysis of the information was consolidated at the project region level to draw conclusion and inferences. As a result of PRHA activity, following fruit value chains have been prioritized which can be seen in Figure 3.



Appraisal of Fruit Sub-Sectors

Prioritization of value chains

The comparative appraisal is based on the composite index calculated based on the seven factors used in the grid analysis. The analysis of fruit includes muskmelon as the priority followed by mango, falsa, strawberry, pomegranate, citrus and guava in the region.

Muskmelon is grown in Lodhran and some other areas of Multan as well. The FGDs conducted show that growth rate of muskmelon over the past five years is highest among the value chains; its growth is rising in Lodhran district. Muskmelon offers 80% women

involvement however small farmers are not involved in its production. Losses in muskmelon have been observed to be 20%, which can be minimized using improved management practices. It has high potential to be marketed at the national and international levels.

Grewia asiatica (Phalsa or Falsa in Urdu) is grown in Multan and Vehari districts. The FGDs conducted show that its overall growth rate is 4%, small farmer's involvement and women involvement is 90% and 70% respectively. Losses of produce are 10%. However livelihood of only 4% households is dependent on it.

As compared to other fruits, **strawberry** is a relatively new crop in region and is mostly grown in Multan and Lodhran districts of the region for commercialization.



Focus Group Discussion

10% increase in growth has been recorded in strawberry during the past five years. Strawberry is mostly grown by large farmers; as recorded during FGDs, 1% of the small farmers are associated with strawberry production low ratio shows that small farmers have lack of knowledge about strawberry production technology and its cost of production. Strawberry culture is quite profitable for small land owners. The strawberry fruit is soft and perishable and its quality is affected when it touches the soil. Due to its short shelf life, careless picking, and improper packaging and transportation it has recorded 20% losses. The fruit is commercially consumed both in

fresh form and processed to make jam, jellies and squashes that can be used in off-seasons.

Mango has a growth rate of 7.17%. It is grown by small and commercial farmers in the region with 41.5 % involvement. In mango fruit involvement of women and households is 1.17 and 37.5 % respectively. During FGDs losses of mango were reported to be 15%. Table 2 below shows the priority value chains on the basis of secondary analysis whereas, Table 3 shows the possible cluster of fruit value chains.

Table 2: Priority value chains in fruit sub-sector based on secondary analysis

| Fruits | Scores | Ranking |
|--------|--------|---------|
| Mango | 43% | 1 |
| Guava | 23% | 2 |

(Source: MINFA, 2009-10)

Table 3: Possible production clusters of fruit value chains

| Priority Value Chain | Clusters/Districts | Total Production of the Cluster (Tons) | Percent Share in the Province | Percent Share in the Country |
|----------------------|--|--|-------------------------------|------------------------------|
| Dates | Muzafargarh, Layyah, Bahawalpur | 31,129 | 70 | 5.5 |
| Mango | Multan, RahimYar Khan, Muzafarghar, Khanewal, Bahawalpur | 1,159,993 | 87.5 | 67 |
| Pomegranate | Muzafarghar, Multan | 8,890 | 57 | 0.15 |
| Grewia (falsa) | Multan, Vehari, Lodhran, Bahawalpur | 1,102 | 43 | N/A |
| Citrus | Multan, Lodhran, Khanewal, Vehari, Muzaffargarh, Layyah D.G.Khan, Rajanpur Bahawalpur, Rahim Yar Khan | 393,688 | 19 | 18 |
| Guava | Multan, Khanewal, Bahawalpur, Vehari, Bahawal Nager | 39,946 | 19 | 7.80 |
| Jujub (Ber) | Multan, Bahawalpur, Lodharn Rahim Yar Khan | 6,009 | 59 | N/A |
| Melons | Multan, Lodhran, Khanewal, Vehari, Muzaffargarh, Layyah, D.G.Khan, Rajanpur, Bahawalpur, Rahim Yar Khan, | 222,179 | 60 | N/A |

(Source: computed from statistics of MINFA and Punjab Govt. (2009-10))

Prioritized Opportunities

For prioritization of opportunities, paired ranking tool was used. Table-4 below provides self-explanatory list of opportunities as prioritized/ranked by the participants during the FGDs.

This study highlights a number of opportunities in the region that can catalyse the development of the sub-

Table 4: Priority opportunities

| Priority Opportunities in Fruit Area | Rank |
|---|------|
| Fruit pack-house | 1 |
| Pulping unit in private sector | 2 |
| Common facility centre for pulping of fruit | 3 |
| Linkages with exporters | 4 |
| Access to local market | 5 |
| Increasing demand | 6 |
| Availability of cold store | 7 |
| Availability of packaging material | 8 |
| Technical support of agriculture department | 9 |

(Source: PRHA activity, June 2012)

Prioritized Constraints

Constraints to fruit value chains were also identified and prioritized by participants during the FGDs on the basis of their potential as high, medium or low. Here is a list, which is self-explanatory. The key constraints hampering the development of fruit sub-sector are listed in Table 5 below. Of significance are those that are categorized as high in terms of its intensity. Some of the constraints mentioned can be in contradiction with the opportunities listed which indicate that the production of fruit and its marketing is in transition as a component of the farming system which has traditionally been subsistence oriented. Most constraints are cross-cutting and generic in nature which provides information on the overall sub-sector and some of the constraint can be considered as opportunities for investment by the project provided that willingness in the private sector for investment exists. These may include limited linkages with global markets, poor packaging and standardization and hardly any food safety standard.

Table 5: Priority constraints

| Priority Constraints | Intensity |
|---|-----------|
| Limited linkages with global markets | High |
| High prices of agriculture inputs | High |
| Limited linkages with stakeholders | High |
| Use of poor packaging and standardization of size | High |
| Few pack houses and cold stores | High |
| Non availability true-to-type planting material | High |
| Limited information regarding horticulture business | Medium |
| Limited services for different technologies | Medium |
| High cost of transportation | Medium |
| Limited collection points and common facility centres | Low |
| Limited value addition facilities as common facility centre | Low |
| Hardly any food safety standard | Low |

(Source: PRHA activity, June 2012)

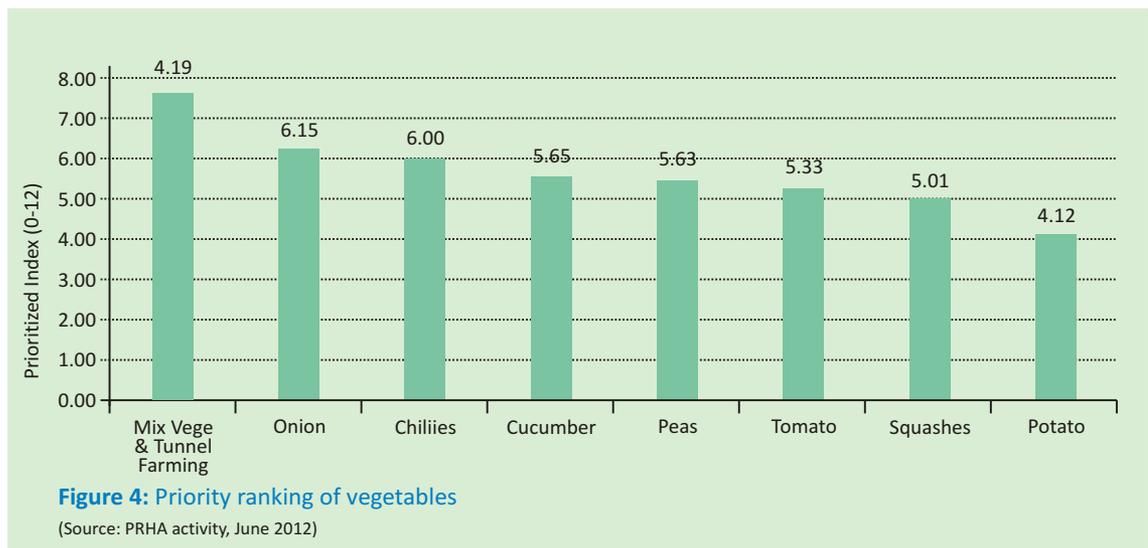
sectors. Of them the most important are the infrastructure (storage and marketing), processing technologies and increasing demand. These opportunities can be further reinforced through the project interventions leveraged by primary-sector investments provided that a holistic and integrated approach is applied.

Appraisal of Vegetables Sub-Sectors

Prioritization of value chains

On the priority scale, mix vegetables and tunnel vegetables crops (cucumber, bitter gourd, capsicum, tomato and chillies) are the leading commodities followed by onion, chillies, cucumber, peas, tomato, squashes and potato. The priority ranking of

In vegetables production tomato, onion and chillies lead in providing more employment opportunities, onion recorded considerably household involvement as compared to other top ranking vegetables. Chillies are grown in Multan and Lodhran district which has good potential to develop value added product in the shape of dry and powder form.



vegetables based on the rapid appraisal is shown in Figure 4 above.

In general all varieties of vegetables are grown in almost all districts of Multan Project Region. Vegetables are mostly grown for commercial purposes as well as domestic utilization by producers. Mix vegetables and vegetables tunnel farming is mostly done in Vehari and Lodhran districts of Multan Project Region. Mix vegetables includes all vegetables grown but in small quantity and tunnel vegetables includes cucumber, chillies, capsicum, bitter gourd under the tunnel as off season vegetables



Focus Group Discussion

Prioritization of Value Chains Based on Secondary Data

The secondary data reveals that the share of onion tomato and chillies in national and provincial production is quite high. It indicates the significance of these vegetables and highlights the need to provide support to improve their competitiveness.

The data confirms that in Multan Project Region major

cauliflower, spinach, radish and cabbage as the priority vegetable crops in Multan Project Region having the productive potential and scale/size of economies as well potential for enhancing productivity and profitability. The percentage share of mentioned vegetables crops is between 21-56% of the total of province which indicates the importance of Multan region to develop vegetables sub-sector. Other crops may also have the potential such as off-season seasonal vegetables production which is cultivated at large, medium and low scale in Multan Project Region but are important for higher income potential these entail due to higher prices in the market during off-season. Major production clusters

Table 6: Prioritization of value chains based on secondary data

| Vegetables | Scores | Ranking |
|------------|--------|---------|
| Tomato | 40% | 1 |
| Onion | 31% | 2 |

(Source: MINFA, 2009-10)

production of tomato is in District Muzafargarh. The analysis of secondary data as shown in Table 7 places tomato, onions, chillies, okra, bitter gourd, tinda,

for open field grown vegetables in the region are given in Table 7 below.

Table 7: Possible production clusters of vegetables value chains

| Priority Value Chains | Clusters/Districts | Total Production of the Cluster (Tons) | Percent Share in the Province | Percent Share in the Country |
|-----------------------|--|--|-------------------------------|------------------------------|
| Onion | Lodhran, Multan, Vehari, Muzafargarh | 94,400 | 31 | 5.5 |
| Chillies | Multan, Lodhran, Bahawalpur | 2,496 | 29 | 1.3 |
| Tomato | Muzafargarh, Rahim Yar Khan, Bahawalpur, Bahawalnager | 20287 | 28 | 4 |
| Lady Finger (Okra) | Multan, Rahim Yar Khan, Khanewal, Bahawal Nagar, Vehari | 14843 | 27 | N/A |
| Tinda | Khanewal, Rahim Yar Khan, Bahawal Nagar, Layyah, Bahawalpur | 38264 | 56 | N/A |
| Bitter Gourd | Khanewal, Rahim Yar Khan, Bahawal Nagar, Vehari, Bahawalpur | 15746 | 37 | N/A |
| Cauliflower | Multan, Rahim Yar Khan, Khanewal, Bahawal Nagar, Vehari | 43176 | 28 | N/A |
| Spinach | Muzafargarh, Rahim Yar Khan, Bahawalpur, Bahawal Nagar | 15150 | 35 | N/A |
| Radish | Multan, Lodhran, Khanewal, Vehari, Muzaffar Garh, Bahawalpur | 24304 | 21 | N/A |
| Cabbage | Khanewal, Multan, Rahim Yar Khan, D.G Khan, Vehari, Bahawalpur | 12411 | 29 | N/A |

Source: computed from Statistics of MINFA and Punjab Govt. (2009-10)

Prioritized Opportunities

Opportunities for vegetables related value chains were scored and ranked during the exercise.

The appraisal reveals that major priority opportunities are represented by the availability of processing, linkages with exporters and vegetable tunnel production. These opportunities are cross-cutting and investment in these will generate employment and income generation opportunities. Ranking of priority opportunities concerning vegetables is given in Table 8 below.

Prioritized Constraints

The key constraints hampering the development of fruit sub-sector are listed in Table 9 below. Most constraints are cross-cutting and generic in nature relevant to the sub-sector in general. The high ranking constraints provide opportunities for investment which will not only generate income and employment but also act as drivers for the wider development of the sub-sector. However the key consideration for intervention in addressing the constraint should be private sector investors willing to partner with the project.

Table 8: Priority opportunities

| Priority Opportunities | Ranks |
|---|-------|
| Private pulping unit | 6 |
| Common facility centre for pulping of vegetables | 5 |
| Linkages with exporters | 5 |
| Availability of vegetables tunnel production technology | 5 |
| Increasing demand of vegetables | 4 |
| Availability of cold store for vegetables | 3 |
| Availability of packaging material | 2 |
| Global GAP certification | 2 |
| Technical support of agriculture department | 1 |

(Source: PRHA activity, June 2012)

Table 9: Priority constraints

| Priority Constraints | Intensity |
|--|-----------|
| Limited collection points | High |
| Poor linkages with global markets | High |
| High cost of inputs | High |
| No proper storage facilities | High |
| No proper packing sheds | High |
| Under-utilization of agrochemicals | High |
| Poor packaging | High |
| Limited availability of quality seeds | High |
| Very little investment | High |
| Poor linkages with national markets | Medium |
| Non availability of standard packing material | Medium |
| High cost of transportation | Medium |
| No proper capacity building program for stakeholders | Low |

(Source: PRHA activity, June 2012)



State of the Services Provision

The availability and quality of business development services is important for the overall development of any sub-sector. The situation with regarding to services provision for both fruit and vegetables was appraised together with focus groups. The result of the focus group discussion regarding the state of the

service provision can be seen in Table 10 below. In most cases the linkages between service providers and users were termed as weak to medium. To be effective in enhancing profitability of fruit growers, there is a need to build confidence and develop strong linkages of agribusiness with service providers.

Table 10: State of the service provision

| Service Providers | Linkages | Paid/Free | Services Provided |
|---|------------------|------------------|---|
| Pulping unit for fruits and vegetables (F&V) | Weak | Cash | Common facility centre for value addition of fruits and vegetables |
| Exporters/Processors | Weak | Cash | Provide service for processing of mango, kinnow\ on cash base |
| Commercial Banks | Weak | Paid | Finance, training and information |
| Banks (ZTBL) | Medium | | |
| Exporters | Medium | | Collect the produce from the farm for local market (mandi) |
| Farm Service Centre | Medium | Free | Training and information on improved farm practices |
| Agriculture Department (Research, Extension, Water Management etc.) | Medium | Free | Awareness, guidance and information regarding seeds and improved agriculture practices. |
| Market Agents | Medium to Strong | Cash & Credit | Marketing and fixing of prices and supply of inputs |
| | Strong | Credit | Financial support in purchase of inputs like fertilizers, pesticide etc. |
| NGOs | Week | Free & cash both | Trainings and information, consultancy and timely\ supply of inputs on subsidized cash payment |
| Private seed, agro-chemical, Packaging and fertilizer companies | Medium to Strong | Cash & Credit | Provide inputs, timely supply of inputs on cash & credit bases, awareness of the farmers |
| Producers Association | Week | Free | Consultancy to improve product quality and sharing of information regarding crop management and marketing management for local and global markets |

(Source: PRHA activity, June 2012)



State of Market Linkages

Marketing of fruits and vegetables varies from commodity to commodity; however, generally, most of the produce is channelled to local and country markets. Some of the national markets relevant for the regional producers include Rawalpindi, Islamabad, Lahore, Faisalabad, Gujranwala and Karachi. Demand for fruits and vegetables do exist in the international markets (particularly Gulf countries) but that needs to be tapped after overcoming several constraints related to export.

Marketing of fruits and vegetables is characterized by the presence of numerous intermediaries performing at various distribution stages, thus adding to marketing costs and directly affecting the price received by the farmer and paid by the consumer. The domestic market players include farmers, commission agents, contractors, wholesalers, inter-market traders and many other retailers. In general, intermediaries dominate the system and there is little direct market participation of the farmers, particularly small farmers.

The existing marketing operations are performed by traditional way such as, rough harvesting and handling methods, rudimentary grading, and poor quality packing, which reduce its marketability, leading to lower prices in the market. The non-availability of cool chain system includes pack houses, cold stores, testing laboratories, refer containers for transportation of

vegetables and fruits from farm gate to distant markets increases the spoilage rate and reduces the bargaining position of the sellers. The absence of cool chain system in horticulture sector is one of the major reasons to capture global markets.

Absence of enabling policies favouring growers (particularly small farmers), ineffective approaches towards improving and sustaining product quality, and lack of reliable updated market information also impede farmers' ability to take maximum benefits they deserve. Lack of market information system has increased the complexity of the marketing system on one hand and brought less return to the farmers on the other. Strengthening market information system can play vital role in increasing returns to the growers of fruits and vegetables, which can ultimately improve the living standard of the rural population and bring prosperity in the country. Exports are considered as a means of surplus disposal mainly channelled from the wholesale markets. Exports endeavours need to be supported by a "grow-for-export" strategy. Again, a well-established market information system can play vital role in this connection.

Conclusion

The region represents a special case for opportunity and constraints to expand horticulture exports. The key constraints which are hampering the abilities of the sector include are the poor quality of the produce often failing to meet export standards; perishability of produce that requires efficient handling, low level of value addition and processing and marketing, resultantly poor performance of the sub-sectors as a whole. On the other hand MPR offers fertile soil along with diversify product in the horticulture and, lower production cost due to cheap labour and availability of water provide good opportunities to grow a variety of products year round and to capture larger share of niche markets.

Based on the PRHA, the following summary conclusions can be drawn:

- Among the fruits dates, mango and pomegranate value chains represent potential in terms of volumes, value and diversity while other products can be promoted as niche market opportunities.
- Among the vegetables, priority is associated with onion and chillies. Various other vegetables can be produced in the off-season, which has good demand in the market.
- For fruit and vegetables, to develop in the region, it has to realize growth in volumes, however competition at domestic and world market would, in addition, need to invest in quality improvement.
- The productivity of fruits and vegetable as well as post-harvest losses specially need to be addressed.
- There is Lack of post-harvest infrastructure (cool chain system, pack houses, poor packaging etc.) and logistics for maintaining the quality of the highly perishable fruit and vegetables.



References

The secondary data in this report has been taken from and estimated based upon data given with the following sources:

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3. FAO Database

4. **The Growth % rates**
 - 4.1 Crops area and production (by districts) 2004-2005 to 2008-2009, Government of Pakistan, Ministry of Food, Agriculture and Llivestock (MINFAL)
5. **Share of commodity in world production**
 - 5.1 Crops area and production (by districts) 2004-2005 to 2008-2009, Government of Pakistan, Ministry of Food, Agriculture and Livestock (MINFAL)
 - 5.2 Agriculture Statistics of Pakistan, 2009-10 and previous publications
 - 5.3 FAO Database 2012 accessed through internet
6. **Region Share in National Production**
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 - 6.2 Agriculture Statistics of Pakistan, 2009-10 and previous publications
7. **Region Share in the Province**
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8. **Productivity Gap**
 - 8.1 Crops area and production (by districts) 2004-2005 to 2008-2009, Government of Pakistan, Ministry of Food, Agriculture and Livestock, (MINFAL)
 - 8.2 FAO Database 2012 accessed through internet
9. **Employment Intensity**

Potential for labor per acre calculated as percentage of labor days of wheat (ADB) plus index derived by PRHA results at field survey in the region and information gathered from various reports.
10. **Export Potential as Measured by Incentive Structure**

FAO Database: The difference between export value of Pakistani produce and world export value (five years average).

(Annexure are available at The Agribusiness Project Office Islamabad, and can be provided upon request for reference)



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