PUBLIC POLICY ROLE ON KINNOW MARKETING:

A CASE STUDY OF BALWAL, PUNJAB

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CERTIFICATE

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PUBLIC POLICY ROLE ON KINNOW MARKETING: A CASE STUDY OF BALWAL, PUNJAB.

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Prof. Dr. Usman Mustafa

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Dedication

Dedicated from core of my heart to my beloved parents and my respected teacher Prof. Dr.Usman Mustafa.

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All the praises are for the Allah Almighty; the most beneficent and the most merciful; who granted man with knowledge. All salutations are upon the Prophet (P.B.U.H.) whose teachings enlighten my thought and thrives my ambitions.

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Table of Contents

List of Tables

Table of Figures

List of Abbreviations

Cases

List of Terminology

Terms	Definitions
Agri-glut	A supply of produce that is much greater than can be sold or is needed or wanted. In economics, over production, over supply, excess of supply or glut refers to excess of supply over demand of products being offered to the market. This leads to lower prices and/or unsold goods along with the possibility of unemployment.
Commission Agent (Arthi)	Commission agent is an important market intermediary. He often purchases in bulk either for storage (sale in later at higher prices) or supplies directly to the processing industries, mills, traders and exporters at some margin on prices. There are several types of arthis working in Punjab but largely divided into the kacha arthis (commission agents) and the pukka arthis (wholesalers).
Commission Agent (KachaArthi)	Kacha Arthi deals directly with the farmer and is involved in providing credit in cash or in-kind. He also facilitates the sale of the farmer's produce.
Commission Agent (PukkaArthi)	The pukka arthi buys the crop, mostly through an auction, from the kacha arthi and takes title to the produce.
Confidence	A confidence interval (CI) is a range of values that's likely to include a population value with a certain degree of confidence.

Interval	It is often expressed as % where by a population means lies between an upper & lower interval.
Consumer	A consumer is a person or a group who intends to order, orders, or uses purchased goods, products, or services primarily for personal, social, family, household and similar needs, not directly related to entrepreneurial or business activities.
Contractor (Beopari)	This is an important village level intermediary for making small scale purchases and sale of agriculture commodities. He buys from the farmer in the village and either directly sale to the processing unit or takes the produce into the *mandi* and sells it through a kacha arthi to the pukka arthi.
Deductive Reasoning	Deductive reasoning, also deductive logic, is the process of reasoning from one or more statements (premises) to reach a logically certain conclusion.
Farmer	A farmer(also called an agriculturer) is a person engaged in agriculture, raising living organisms for food or raw materials, raising field crops, orchards, vineyards, poultry, or other livestock. A farmer might own the farmed land or might work as a laborer on land owned by others, but in advanced economies, a farmer is usually a farm owner, while employees of the farm are known as farm workers, or farmhands. However, in the not so distant past, a farmer was a person who promotes or improves the growth of (a plant, crop, etc.) by labor and

	attention, land or crops or raises animals (as livestock or fish).
Farmer Market	A farmers' market is a physical retail marketplace intended to sell foods directly by farmers to consumers.
Gross Domestic Product(GDP)	Gross Domestic Product (GDP) is the total monetary or market value of all the finished goods and services produced within a country's borders in a specific time period.
Horticulture	Horticulture, the branch of plant agriculture dealing with garden crops, generally fruits, vegetables, and ornamental plants. The word is derived from the Latin *hortus*, "garden," and *colere*, "to cultivate." As a general term, it covers all forms of garden management, but in ordinary use it refers to intensive commercial production. In terms of scale, horticulture falls between domestic gardening and field agriculture, though all forms of cultivation naturally have close links.
HorticultureMarketing	Horticulture marketing, an offshoot of agri-marketing,entails fruits, vegetables and flowers.
Market Intelligence	Market intelligence is the information relevant to a company's market - trends, competitor and customer (existing, lost and targeted) monitoring, gathered and analyzed specifically for the purpose of accurate and confident decision-making in determining strategy in areas such as market opportunity, market penetration strategy, and market development.

Multi stage Sampling	In statistics, multistage sampling is the taking of samples in stages using smaller and smaller sampling units at each stage.
Structured Questionnaire	Closed or Structured Questionnaires are a quantitative method of research, It includes the low level of involvement of the researcher and high number of respondents (the individuals who answer the questions). It consist of closed or prompted questions with predefined answers. The researcher has to anticipate all possible answers with pre-coded responses. They are used in large interview programmes (anything over 30 interviews and more likely over 200 interviews in number) and may be carried out over the telephone, face-to-face or self completion depending on the respondent type, the content of questionnaire and the budget.
Pre Harvest	Preharvest refers to activities on the farm that occur before crop or livestock products are sold.
Price Spread	Price spread is defined as the difference between the price paid by consumers and the net price received by the producer for an equivalent quantity of farm produce. It is expressed as percentage of consumer's price. Price spread = (Consumer price – Net price of producer) * 100
Post Harvest	Preharvest refers to activities on the farm that occur after crop or livestock products are sold. In agriculture, postharvest handling is the stage of crop production immediately following harvest,

	including cooling, cleaning, sorting and packing.
Purposive Sampling	Purposive sampling, also known as judgmental, selective or subjective sampling, is a type of non-probability sampling technique. Non-probability sampling focuses on sampling techniques where the units that are investigated are based on the judgement of the researcher.The main goal of purposive sampling is to focus on particular characteristics of a population that are of interest, which will best enable you to answer your research questions.
Quantitative Technique	Quantitative research is all about numbers and figures. It is used to quantify opinions, attitudes, behaviors, and other defined variables with the goal to support or refute hypotheses about a specific phenomenon, and potentially contextualize the results from the study sample in a wider population (or specific groups). Quantitative data is information about quantities, and therefore numbers.
Qualitative Technique	Qualitative research is considered to be particularly suitable for exploratory research (e.g. during the pilot stage of a research project, for example). It is primarily used to discover and gain an in-depth understanding of individual experiences, thoughts, opinions, and trends, and to dig deeper into the problem at hand. Qualitative data is descriptive, and regards phenomenon which can be observed but not measured, such as language.
Wholesaler	A wholesaler is a company or individual that purchases great

quantities of products from manufacturers, farmers, other producers, and vendors. Wholesalers store them in warehouses and sell them on to retailers (shops & stores) and businesses.

Retailer A retailer is a company that buys products from a manufacturer or wholesaler and sells them to end users or customers. In a sense, a retailer is an intermediary or middleman that customers use to get products from the manufacturers.

Abstract

Pakistan is producing thirty different types of fruits of which citrus contribute 30% of total fruit production. More than 90 percent citrus is produced in Punjab and is delivered to domestic and international market through different value chains. Approximately, 80- 85% citrus is consumed in domestic market and 10-15% citrus, after value addition, is exported.

The Value Chain Analysis is the sequence of activities in which products, passing through all activities of the chain, for each activity gains some value. This study aimed to calculate the marketing costs and margins of various channels and suggest policy parameters for the improvement in the existing marketing system. The study identified how private performance and public policy affect marketing margins and Kinnow grower's profit in Tehsil- Balwal, Pakistan. The study investigated the marketing costs, margins and profits in bits in a supply chain of Kinnow from producers of Tehsil-Bhalwal to the end-consumer in a given market. In light of the investigation, necessary measures have been suggested to the concerned parties (Private & Public sector).

Primary data was collected from one Tehsil of Sargodha district i.e Bhalwal. The sample size is selected on the basis of simple random sample method. The calculated sample size was 193. Questionnaire was used to collect data from different stakeholders. The study was conducted in two phases. In the first phase, existing Kinnow marketing channels, marketing margins including growers' profit were determined/ calculated. However, in second phase, an analysis of existing public policies, its' pros and cons and its' impact on private performers (in the Kinnow marketing chain) was carried out/ drawn. Where in, necessary initiatives and measures to improve the existing marketing system in the area and other parts of the

country were submitted to the concerned. Moreover, the study found that growers' association can give them best price and profit as well as benefit consumers to pay less to purchase the fruit. Market intermediaries who were getting maximum profit in the chain need to be reduced to curtail the margins and increase growers' profit.

Key Words: *Agri-Marketing, Marketing Cost, Margins, Citrus, Mandarine (Kinnow), Public Policy, Value Chain Analysis (VCA), Framework Analysis(FA), Citrus Research Institute Sargodha (CRIS), etc.*

CHAPTER I

Introduction

1.1 Background of the Study

Pakistan's agriculture, as the backbone of the economy, contributes 18.5% of the Gross Domestic Product (GDP) directly, 17% exports and employs 38.5% country's labor force (Pakistan, 2019). Allah Almighty has gifted Pakistan with fertile soil for the production of fresh fruits and vegetables having good taste, colour and nature. Currently, Pakistan is producing more than 30 different types of fruits of which citrus contributes 30-35 % of total fruit production. More than ninety percent citrus is produced in Punjab and is delivered to domestic and international market through different value chains. Approximately, 80-85% citrus is consumed in domestic market and 10-15% citrus, after value addition, is exported (Siddique & Garnevska, 2018; Khurshid, 2007).

Kinnow is one of the varieties of citrus as shown in 'Figure-1.1'. Citrus fruit variety includes mandarins (Kinnow), Oranges, Grapefruit, Lemons and Limes, of which mandarin (Kinnow) is of significant importance to Pakistan and its'economy due to its' superb export potential (about 250,000 tons mainly to Russia, Middle East and South East Asia with an overall earnings of 120-million dollars) for fresh consumption (Anonymous, 2010). Kinnow is an hybrid of two cultivars "King and Willow Leaf". Due to unique features of Kinnow as shown in 'Figure-1.2' such as flavor and medicinal values, it has a special significance in the family of citrus and among other fruits in Pakistan (CAE, 2019). It has a nutritious value and a big source of vitamins C, with some amount of vitamin A & B, as well as a rich source of minerals like Phosphorous, Calcium and Iron (Memon & Kasbit, 2017).

This variety, because of its unique characteristics, has a special economic significance and export demands in domestic and international markets. To retain its original flavor, taste and goodness, this variety is cultivated and grown in totally natural conditions in Pakistan. Kinnow fruit season starts from November and continues till April as mentioned by CAE (2019) 'Figure-1.3'.

Citrus Varieties Mandarins (Kinnow), Oranges, Grapefruit, Lemons & Limes, etc.

Figure 1. 1 *Citrus Varities*

Kinnow Nutritious Composition

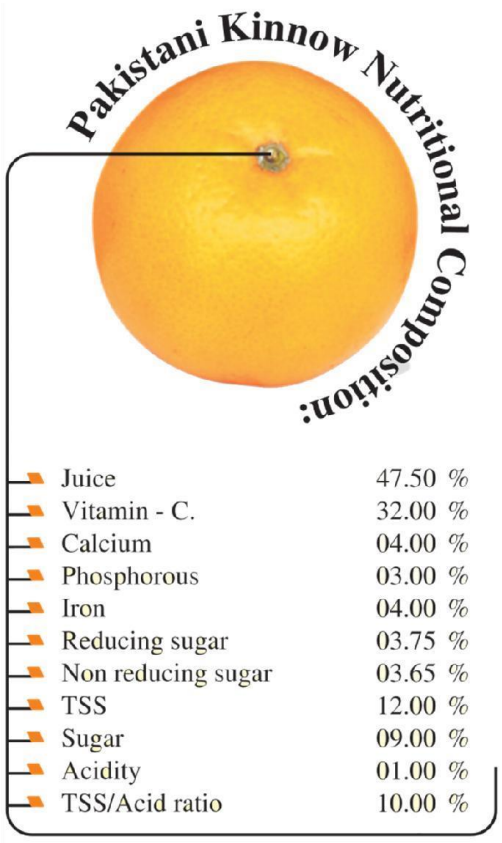
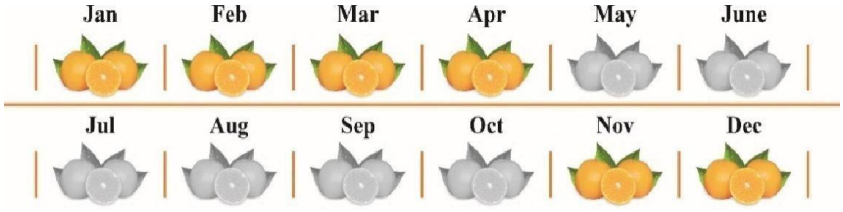


Figure 1. 2 *Kinnow Nutritious Composition*

Kinnow Availability



Note.
Source:
Citrus Asia Enterprises (CAE), 2019 (https://www.citrusasia.pk/mandarin.php) ***Figure 1.3*** *Kinnow Availability*

Pakistan, being an agri-based country, is enlisted in world's top ten countries viz-a-viz vast area, high and best quality citrus production (Nawaz, Afzal & Ahmad, 2011). As reported in one of the studies Sharif & Ahmed (2005) reported that these citrus orchards have given sixty (60%) percent share of Kinnow in area and above ninety (90%) percent in foreign exchange earnings in Pakistan. Another research conducted by FAO (2015) revealed that Pakistan, in area and production, ranked at 8th and 38th position, respectively, among all the citrus producing countries in the world. Punjab province, with an area of 182,558 hectares and Kinnow production of 2.3 million tons, is the chief contributor of Kinnow in Pakistan. Where as, Sargodha district, with an area and production, ranked 1st in Punjab, 46 percent and 54 percent, respectively (Pakistan, 2015).

Pakistan has the potential of producing more than 95% of the world's Kinnow, however, Pakistan's citrus yield per hectare is around 9.5 tons only viz. 40-60 tons per hectare of Brazil, the top citrus producer (Balal, Ashraf, Khan, Jaskani, & Ashfaq, 2011; Ashraf, Yaqub, Akhtar, Khan, Ebert, 2012). Studies on citrus (Choudhary, Kunwar, and Rasul, 2015; Siddique and Garnevska, 2018; Tsolakis, Keramydas, Toka, Aidonis, and Iakovou, 2014) explored several production and marketing problems related to Kinnow variety due to increase in area and production in Pakistan, which looked-for investigation, intelligently.

Marketing functions, like production and other related sectors, are important and indispencible for increasing the area of any produce, particularly of perishable produce like Kinnow. Various marketing models for Kinnow are prevailing in Punjab province which vary in efficiency. Since, Kinnow passes through a long chain of intermediaries before it reaches to the consumer, hence, growers get minimum share in the entire chain (Bhat, Kachroo, & Kachroo, 2011; Kaur & Singh, 2010). Marketing involves all sorts of movements right from the production till consumption of a product

or service by a buyer of that product or service (Kohls & Uhl, 2013). Marketing, after production is a major function. Both production and marketing are indicators to economic prosperity (Acharya & Agrawal, 2015). Thus, its' contribution and role in agricultural production is invaluable.

Value Chain Analysis (VCA) is a series of processes intended for value addition to a commodity and passes it on along the marketing chain. This study, after considering the marketing costs and margins of intermediaries under various channels, sets policy parameters to make the existing marketing system effective and efficient (Sabir, Khan, & Hussain, 2010). Marketing of Kinnow, a perishable and bulky fruit, is a complex process that entails many problems. Therefore, it is meaningful to consider howmuch, when, where, and how to trade.

With an increase in Kinnow production and its' area, marketing challenges also emerged. The existing Kinnow marketing system could not progress parrallel with rapidly increasing growing areas, which ultimately put producers at disadvantage. Some of the problems include insufficient market information, inadequate post-harvest infrastructure, inadequate processing facilities, etc. (Mavia, Sidhu, & Sidhu, 2012).

Selection of a channel can ensure a Kinnow growers' profit (Abid, 2019). Due to this channel selection, this study gains significance in determining marketing margins and costs for the supply chain actors in countries having under developed infrastructure and unorganised market. Moreover, this study is also usefull in understanding the market, its' deficiencies and the measures for its improvement. Rationale behind selecting Bhalwal was due to the presence of number of orchards and exporters as well as Citrus Research Institute Sargodha (CRIS) in Sargodha.

Keeping in view Kinnow marketing problems and its' future production, the following strategies/ measures by Mallareddy & Kumar (1990) and Sharma & Tewari (1997) ensured an efficient marketing system to facilitate both farmers and consumers:

-Farmers can sell their produce at fair prices if a sound market intelligence system is embedded.

-Packaging is another factor that can make difference to the overall value of Kinnow. Kinnow in cotton boxes fetch good returns than any other packing material (Kaur & Singh, 2010). Therefore, upgradation of post harvest infrastructure is must to meet domestic and international quality standards.

-Establishing sufficient processing (juice) plants, cold storages and waxing units near farms is mandatory to enhance the shelf-life of Kinnow and support producers to sell their fruit to the remote areas to fetch best profit with minimum cost (Gangwar, Ilyas, Singh, & Kumar, 2005 & Sidhu, 1993).

-The government should encourage cooperative marketing system for value-addition and distribution of produce to far-flung areas to get maximum prices as well as to fix minimum support price (MSP) to reduce price instability and save farmers from losses.

1.2 Purpose of the Study

The purpose of this study was to examine the role of public policy on Kinnow marketing especially for Kinnow producers at Tehsil-Bhalwal, Pakistan. This study was designed through probabilistic simple random sampling method and the population was farmers of the area and key functionaries in Kinnow supply chain. The study, initially, investigated the marketing costs, margins and profits of intermediaries in Kinnow supply chain (that starts from farm gate (Farmer/ Producer) at Balwal, Punjab to the end-consumer in a given market) to analyze the prevailing public sector policies regarding Kinnow marketing. And, finally, in light of the investigation, necessary measures have been suggested to the concerned parties (private and public sector).

1.3 Statement of the Problem

Any bussiness unit or industry can not flourish successfully unless it has a good coordination to its' concerned private and public sector enterprises. These enterprises

and its' policies determine the success or failure to that firm, it's stakeholders and beneficiaries. In the case of fruit marketing, especially, Kinnow in the region of Sargodha district, tehsil -Balwal, many functionnaries were operating in the marketing of Kinnow, its margins & profits. Due to these functionnaries, farmers earned a very low profit and end-consumers paid a very high price in the entire bussiness cycle. Keeping this scenario in focus, both the producers and consumers bear a considerable financial loss that can only be recoverable if public plicy is designed in a way that may be fruitful to these Kinnow growers and consumers, particularly, in the case of Balwal-Sargodha. Farmers have rare chances to sell their produce in the market themselves, without intermediaries, and get maximum profit from the consumer (s) who purchase the fruit-Kinnow, ultimately, at a very reasonable price.

1.4 Research Questions

The Public policy role on Kinnow marketing was evaluated after reviewing Kinnow marketing system in the study area through the following questions:-

A. What are the prevailing monetary benefits of producers and intermediaries in the entire marketing process?

B. How much benefits can private performers and public policy makers bring to citrus marketing channels/ margins, especially, to the farmer (s) and end-consumer (s)? The above questions were supported through answering following subsidiary questions:

a. What is the volume and cost of Kinnow produced in Balwal?

i. What is the profile of Kinnow orchards?

ii. What are the main issues faced by Kinnow producers?

b. How the market chain of Kinnow operates in Balwal?

i. What market channels of Kinnow are being followed?

ii. What are the marketing margins and profits of different intermediaries? iii. What mechanism of information sharing exist among these functionnaries? iv. What type of information these chain actors are currently exchanging?

v. What are the recurrent problems in marketing of Kinnow?

vi. What initiatives are required in the system to benefit producers & consumers?

1.5 Objectives of the Study

This research was aimed specifically:

- To examine monitory benefits of producers and intermediaries in Kinnow marketing through existing marketing channels, margins & profits in Balwal.
- To investigate major issues in marketing of Kinnow fruit in Balwal, Punjab.
- To analyse the public policy role on Kinnow marketing and how it can contribute to benefit both farmers and end-consumers, and finally;
- policy recommendations for an efficient Kinnow marketing system for Pakistan.

1.6 Significance of the Study

This research is expected to be beneficial to all the internal and external stakeholders/ partners, involve in the entire marketing chain of Kinnow in the production area of Bhalwal, or else in Pakistan, as well as to accademicians and researchers in the line of bussiness. This research study is presumed to be a supportive reference guide for agricultural marketing, especially, fruit marketing in Pakistan.

CHAPTER II

Literature Review

"There was a pleasantness to the air and a spirit about the town that did not come from its color, but from some inner, tasty citrus quality. It made Alexia wonder fancifully if cities could have souls."

***Gail Carriger, Blameless**

2.1 Marketing

Marketing involves all sorts of movements right from the production till consumption of a product or service by a buyer of that product/ service (Kohls & Uhl, 2013). Marketing, after production is a major function. Production and marketing both are the leading indicators to economic prosperity (Acharya & Agrawal, 2015). Thus, its' contribution and function in agri-bussiness is invaluable. Furthermore, it's marketing that man's needs are fullfilled.

2.1.1 Agri-marketing

Agri- marketing involves purchasing, merchandising, sorting, storing, standardizing, certifying and or placing of agri-produce. During the marketing activity, agri-products pass through a channel, adding value in their forms and prices, and where each intermediary contributes an important role in products transfer from farmers to the end-consumer (Ellis, 2014; Pokhrel & Thapa, 2007).

Agri-products under go different stages or steps during production till consumption i.e. pre-harvesting and post-harvesting. Value is added to the produce at each stage or step (MDD, 2001).

In agricultural marketing, products are assembled, prepared, distributed and used by final consumer (Acharya & Agrawal, 2015). Thus, unlike conventional way of thinking, it begins from implementation. A certain balance is required between

***Gail Carriger** is the pen name of **Tofa Borregaard**, an American archaeologist and author of steampunk fiction.

production and marketing of agri-product for the overall development of agriculture sector (Rayamajhi, 2005). It is in vain to better: the production function and ignore the marketing function which is a prerequisite for the best production performance and its' development. Above all, marketing has a multiplier effect on agriculture economy.

2.1.2 Horticultural Marketing

Horticulture marketing, an offshoot of agri-marketing, entails fruits, vegetables and flowers. Unlike, traditional definition where agri-marketing starts at the time of harvesting a crop has now changed as agri-products'marketing starts from farmers' planning for production to satisfy prevailing particular needs and market requirements (Awasthi, 2007). Producers can get remunerative prices only through an efficient marketing system. However, in reality producer either ignore or consider marketing function as his least priority and spend maximum time on crop yield or partly with contractors, which causes his margin comparatively lower along the chain.

2.2 Marketing System and Practices

Marketing system is carried out through farmers, processors, traders, labour, transporters, wholesalers, retailers and consumers (MDD, 2001). Marketing system constitute three parameters i.e. market channel i.e. to know how product flows and about production outlet, market margin i.e. to know margin and profit, and market price i.e. to conceive market price (Gauchan, Smale, Maxted, Cole, Sthapit, Jarvis, & Shrestha, 2005).

In-time delivery at lowest cost is an essential pre requsite for an efficient marketing system, whereas; many other factors such as procedures, rules and regulations, programme framework and overall organizational structure influence the efficiency of market (Joshi, 2004).

As marketing system includes all sorts of activities, enterprises and mechanisms regarding delivery of goods from one point to other, know-how of the

system and finding out and reducing barriers and bottlenecks in the system, to ensure efficient services continuously down through the marketing chain. For the society gets maximum benefit at minimum cost through an efficient marketing system (Acharya & Agrawal, 2015).

The system facilitates consumers in all respect especially delivery of goods in the best form and at their most convenient and desired place. Value addition to commodities for its' users is reflected in marketing margins. Producers' minimum margins and maximum profit in the chain, which ensure producers' welfare, is achieveable if marketing functions are efficiently performed by the functionaries in the marketing chain. Financial study of marketing system of a commodity cannot be carried out without marketing margin assesment that indicates the efficiency of the system, the economics of supply and demand and provision of 'marketing utilities' to consumers instead of huge profits to 'intermediaries' in the chain.

Of course, producers as well as consumers are the main beneficiaries of this improvement in the system such as transportation that reduces delivery costs. This efficient marketing system, infact, highlights the prominence to producers in the system (Colman & Young, 1995).

A lower marketing margin is the sign for an efficient marketing system (Pun & Karmacharya, 1988). Assembling, processing, value addition and distribution of surplus all come under the marketing domain, that make it complex, yet an organized and well-designed marketing system brings efficiency in product distribution and overall development of a country (Gurung, Gurung, Subedi, & Chhetri, 1996).

2.3 Marketing Channel

It is a path starts from farm gate and ends at consumer place, being followed, during goods' movement. A value is added in agriculture produce due to change in farm and place. A chain that links producers and consumers is known as a marketing channel.

Usually, marketing channel represents a set of interdependent entities, between producer and consumer responsible for product movement (Acharya & Agrawal, 2015).

There are following six key market channels (Pandey, Kumar, & Singh, 2011):

Channe-I: Producer-Traders-Wholesaler (Primary)-Wholesaler (Secondary)–Retailer-End-consumer

Channel-II: Producer- Trader- Wholesaler- Retailer- End-consumer

Channel-III: Producer- Wholesaler- Retailer- End-consumer

Channel-IV: Producer- Wholesaler-End-consumer

Channel-V: Producer- Retailer-End-consumer

Channel-VI: Producer- End-consumer

Producer share and consumer minimum purchase price depends on the length of marketing channel (Haque, Monyem, Hussian, & Haqhabibul, 1996). Key players in Kinnow marketing system include growers, merchants, transporters, wholesalers, retailers, and consumers (MDD, 1999).

Where as, Dhakal, Tripathi, & Bhattarai (2005) described following four channels:

Channel-1. Farmer (Producer)- Retailers- Consumers

Channel-2. Farmer (Producers)- Wholesalers-Retailers-Consumers

Channel-3. Farmer(Producers)-Commissionagent-Wholesaler-Retailers-Consumers

Channel-4. Farmer (Producers)- Collectors -Wholesalers- Retailers- Consumers

2.4 Gross Margin

Difference between an organization total income and its' total expenses is the gross margin of that organization (Dillon & Hardakar, 1993). Assesment of gross margin is indispensable for economic optimum and is usually expressed on per unit area or per unit of production (Upton, 1996). The variable expenses used in the calculation of gross margin means expenses that vary more or less in direct proportion to the level of the

enterprises. Gross margin guides about farm planning as it helps to decide whether or not to continue existing farm practices or substitute by others.

Scale of production (farm size) is the most important aspect of all agricultural activities that tends to effect per unit net return from the enterprise. Unlike, small scale farming, large scale farming has advantages like efficient labour division, low overhead costs, economies in buying, selling, better bargaining power and flexible profit making opportunities (Lekhi & Singh, 1996). Hence, scale of production is an important indicator in the study of an enterprise.

2.5 Marketing Margin and Producers' Share

Marketing margin is the difference between a farmer's price and the retailer' price for any produce (Colman & Young, 1995). Or the difference between consumer price and the producer price for an equal quantity of farm produce (Acharya & Agrawal, 2015). Consumer get the desired commodity through a chain of functionaries in an agrimarketing system. Value is added by each functionary to the produce for consumers and is reflected in marketing margin. For lower marketing margins and higher producer share the marketing functions need to be performed in an efficient manner.

Marketing margin indicates efficiency of intermediaries, in respect of the services rendered and the remuneration received by them, which subsquently ensures the efficiency of marketing system. Efficiency of marketing system helps to formulate and implement appropriate price and marketing policies. Excessive margins call for public intervention in the marketing system (Acharya & Agarwal, 2015).

Producers' share was inversely related to consumers' price (Shrivastava, 2002). He also pointed out that share of the producers and retailers was directly affected by the consumers' price. Moreover, major portion, due to higher marketing margins, of consumers' price goes to retailers (Subedi, 1993). The producers' share in consumers'

rupee is expressed as percentage of retail price (the price paid by consumer). It is the part of rupees paid by consumer, which actually goes to the producer as percentage.

2.6 Production and Marketing Problems

There are several studies, by horticulturalists and research scholars, that have highlighted number of constraints faced by the producers and market traders in the production and marketing of fruits in Pakistan. The constraints emphasized, especially, in citrus supply chain in Pakistan were on both sides before and after Kinnow disposal, i.e., on the production side as well as on the marketing side. On the production side, farmers face some of the most critical constraints like the quality of fertilizer, high input costs, quality of pesticide, harsh climatic conditions, and performance of labor in the study area. Whereas, on the marketing side, a lack of packaging facilities in remote areas, lack of quality incentives for proper grading of the fruit size, the perishable nature of the product, lack of storage infrastructure, lack of transportation facilities and lack of quality incentives for proper packaging are the most critical citrus marketing constraints (Choudhary, Kunwar, and Rasul, 2015; Ezin, Quenum, Bodjrenou, Kpanougo, Kochoni, Chabi, and Ahanchede, 2018; Gadre *et. al.,* 2002; Ghafoor, Muhammad, and Chaudhary, 2008; Haleem *et. al.,* 2005; Khan, Qasam, 2013; Mukhtar and Javed, 2008). Nyaoga and Magutu, 2016; Sharif, Farooq, Malik, and Bashir, 2005; Siddique and Garnevska, 2018; Siddique *et. al.*, 2018; Tsolakis, Keramydas, Toka, Aidonis, and Iakovou, 2014; Usman, Ashraf, Chaudhary, Talib, 2018; Van *et. al.*, 2006).

Constraints as ibid above cause enormous post-harvest losses in citrus fruits. For example, these losses were estimated about 40% in Pakistani citrus fruit by Johnson (2006). Some other studies have revealed that 35% of Pakistan's total citrus production is lost during transit of fruit in different locations (Usman *et. al.,* 2018). The percentage of total post-harvest losses is even higher at the farmer level (Ahmed, Ying, Mushtaq,

Bashir, 2015). These statistics show that agri-food supply chains, such as citrus, are affected by various factors. Various other studies have reported many production and marketing problems. Generally, main agri-marketing hitches include unorganized marketing structure, under developed formal mechanisms, etc. (Thapa *et. al.,* 1995). These problems made agri-production and marketing system inefficient, access to market is expensive due to lack of infrastructure like transportation to take the produce to domestic market. The right has been encroached especially on marketing issues (Sedhain, Bhandari, & Aryal, 2002).

Both farmer and consumer are affectees in Kinnow bussiness especially in late season due to lack of facilities (Gautam & Adhikari, 1989). Thus, for the identification of problem and sustainable development of this industry, research need to be conducted (LARC, 1997). Price instability or market unavailability cause some businessmen to exploite growers heavily (Gurung, Ghimire, Shrestha, & Shakya, 2004). Due to existing market deficiencies, intermediaries are benefiting per se from the Kinnow producers (Pokhrel & Thapa, 2005). Major share goes to market functionnaries, where as, farmers receive one-fourth of consumers' price, only (Aujla, Abbas, Mahmood, & Saadullah, 2007).

Farmers, hardly managed Kinnow orchards due to unawarenss, need better management for the proper production (Pant, 2002). If the links in agri-market chain are not connected or loosely jointed, it generate communication gap along the chain and cause exploitation among the chain actors, unfairly (Lundy, Gottret, Ostertag, Gálvez, Best, & Ferris, 2008). An efficient and reliable information system ensure intime delivery of commodity, minimum costs and higher farm output that make the marketplace healthy and hygienic (Awasti, 2007).

Post Harvest Losses

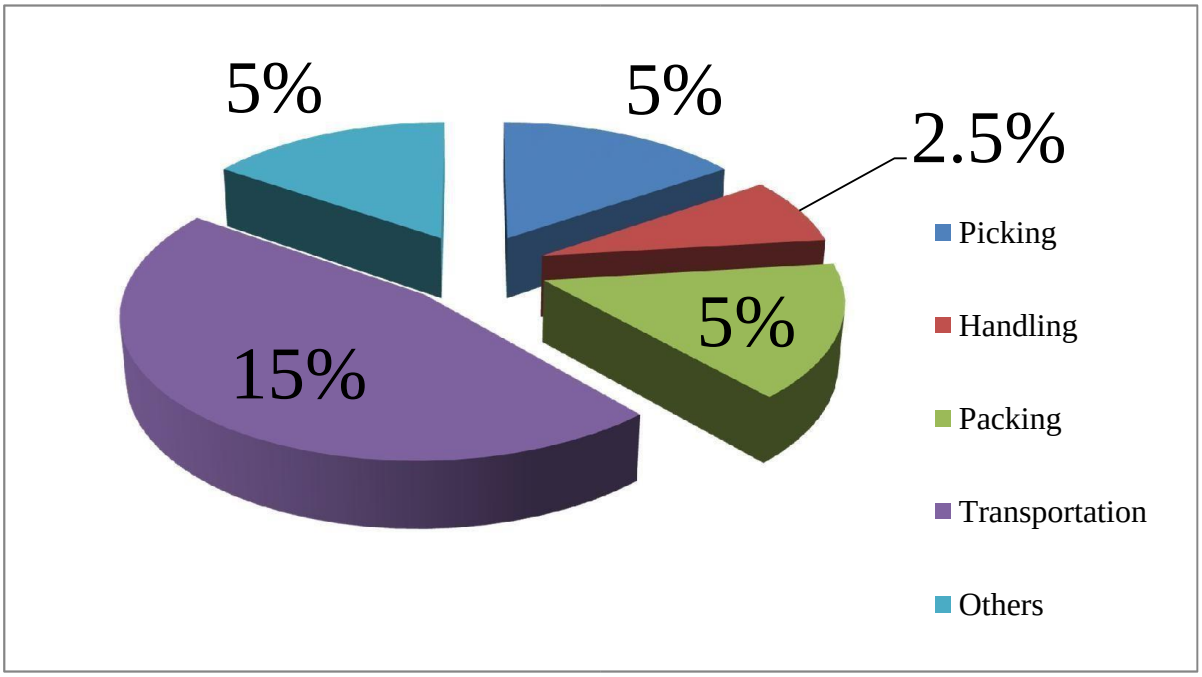


Figure 2. 1 Post-Harvest Losses

Note. Source: *Citrus Research Institute Sargodha (CRIS), Sargodha, Pakistan.*

2.7 Value Chain Analysis

Value Chain Analysis (VCA) acts as a yardstick to define development opportunity, considering each step in a product life cycle, the operators at each step, value addition, and total earning for the value created (Piper, 2007). VCA encompasses all sorts of bussines environmental changes caused by international marketing requirements right from conception of a product till its final consumption and disposal, involving all marketing chain actors and contributers, as well as addressing major constraints irrespective of one group or area (Dempsey & Campbell, 2007).

VCA provides support at each stage of production and marketing activity from product launch to its' final disposal after use (Cruz, 2003). The VCA, therefore, links diverse but related market activities and enterprises performing these business activities in favour of customers (GTZ, 2007). VCA is the process of chain improvement and value chain promotion.

Value chain mapping pinpoints firms' business activities, the operators, supporters and their linkages, in the chain. Chain maps are, therefore, indispensable for a value chain which include different actors, the quantity of produce or the market shares of an actor or actors in the chain or any relevant aspect or conditions enabling or hindering chain development (GTZ, 2007).

Economic efficiency can be evaluated through value chains' financial performance which determines the value added along the chain, production cost and, possibly, the functionnaries' income. It also determines cost of carrying out business transaction and contracts, and information gathering. Value chain economic performance appraisal can be 'standardized', as compare with other competing chains in same industries or other locations (GTZ, 2007).

Marketing, in todays bussines plays a central role in an organization especially the production function, but it remains least considered especially in agri-bussiness as well as in ensuring Kinnow producers reasonable marginal prices to enhance the productivity. Moreover, functioning of commodity markets can bring efficiency to resource allocation in agriculture (Tahir & Riaz, 1997).

Agricultural markets in Pakistan are operated under various marketing channels where commodities are bought and sold. Mainly, two markets, i.e. wholesale markets and retail markets are operating. Out of total 700 wholesale markets, 205 are regulated, 132 in Punjab, 71 in Sindh, 2 in Balochistan. Beoparies, commission agents, wholesalers and shop keepers are different intermediaries in a chain (Reardon, Berdegue, & Farrington, 2002; USDA, 2000 & SDPI, 2004).

An agent/ arthy is the main stakeholder who provides credit/ loan to the poor grower to purchase different inputs and bound them to sell him the fruit at comparatively less prices. Consequently, these commission agents/ arthies take optimal benefit at the expense of producers and end-buyers, the scapegoat (Gill, 2009).

Khan, Chaudhry, and Akhtar (2011) after calculating various agri-produce margins, summed up that the net income to farmers is low in the entire marketing chain as compared to other chain operators, and suggested that if producers sell their produce directly, they can increase their margins in consumer rupee. One fourth ($1/4^{th}$) of the price goes to farmers and three fourth ($3/4^{th}$) to other actors, in fruits (Aujla & Jagirani, 2002). Various intermediaries get maximum share in consumer repee (Khair, Shah, Khan, Kasi, Sattar, & Razzaq, 2002).

The marketing margins are different for different agri-products, for perishable commodities, traders earn maximum sharethroughagri-glut (Haji, 2008). For price stability, marketing margins and price spread that play a significant role are of main concern. So, a better price fixation policy was that that ensures tightprice spread and greatermargin for farmers in consumer rupee (Ahmad, Saddozai, Khan, & Afridi, 2008).

Marketing, like production,is important for the expansion in growing area of any produce, particularly perishable produce like Kinnow. Different marketing models for Kinnow marketing are being followed in Punjab, which vary in efficiency. Currently, Kinnow is available to consumers, through the hands of various intermediaries who take maximum share in consumer rupee at the cost of producer (Bhat *et. al.,* 2011; Kaur & Singh, 2010).

2. 8 Marketing of Kinnow

Marketing of fruits, in Pakistan, is primarily controlled and carried out by the private sector. Generally, marketing functions are performed in a traditional way and markets for fruit products may not function efficiently (Aujla *et. al*. 2007). There are generally great differences between prices paid by consumer and those received by producers (Khan, 1980; and Mohy-ud-Din, 1991). It is generally perceived that marketing agents

exploit producers and consumers by charging a fixed and high margin on their investment (Ali, 2000).

Marketing of Kinnow is carried out through a chain that starts from production and ends at consumption point passing through different actors like farmers, contractors, commission agents, transporters, wholesalers, retailers and finally to the consumers (Pokhrel, 2011). Kinnow value chain is very long and complex. There are three forms of Kinnow value chain (Cabi, 2008):

i. Wholesaler-retailer-consumer ii. Processing, export, superstores, and foreign consumers, iii. Citrus juice factories, wholesalers, retailers and consumers (Figure-2.2).

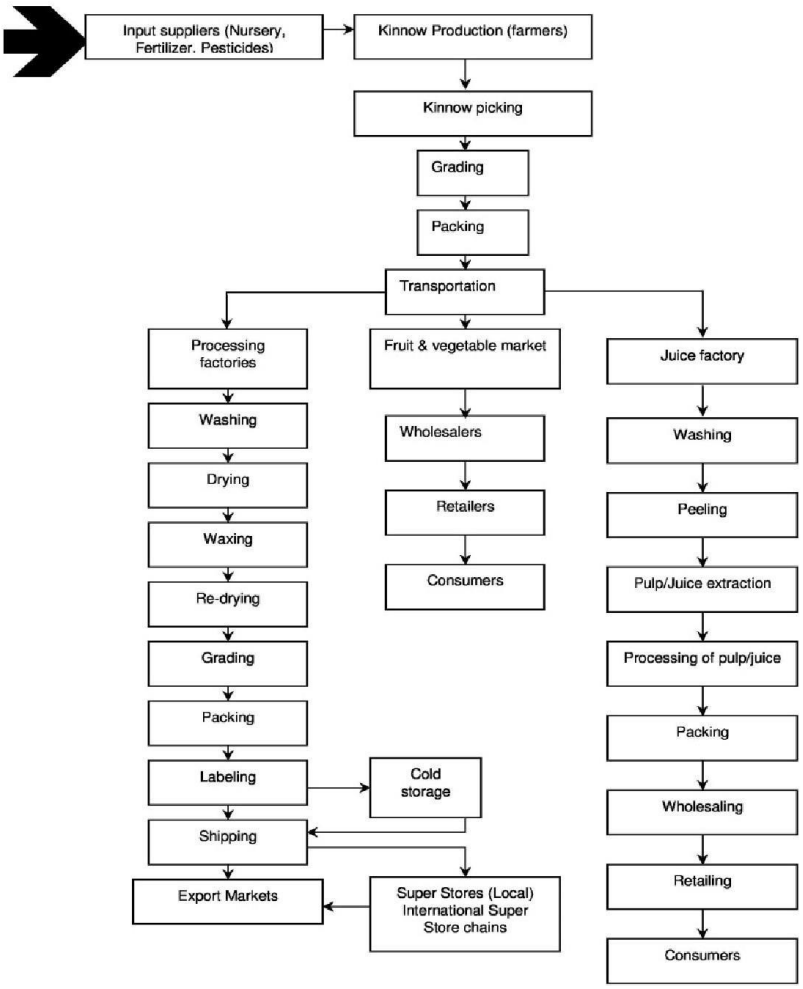


Figure 2. 2 Kinnow Value Chain

Note.
Source: Cabi (2008)

‘Kinnow’ is generally transported in plastic buckets, each weighing 20 kg to 40 kg, to the processing factories. In the processing factories operations like washing, drying, waxing, re-drying, grading, packing and labelling are carried out. Packing is generally done in wooden cartons or corrugated fiber board boxes, weighing 6 to13 kg (Appendix-A). At every transfer point there is substantial potential for improvement. Marketing of Kinnow in Pakistan is being carried out under various channels through the involvement of intermediaries between farmers and end-consumers. In general, growers either lease out their orchards to contractors or sell their produce themselves in near markets. This decision is taken by the farmer, usually for a season depending on different scenarios such as; condition of the orchard, expected yield, last price, and risk factors such as fruit theft, price fluctuation or any other fatigue, etc. Payments to famers,against such contracts, are made in instalments down through the season.

Kinnow farmers’ maximum margins depends on his selection of a channelas reported by Abid (2019). Due to importance of channel, marketing margins and costs in lessdeveloped areas having poor and unorganized market is highly prolific. So, this study is useful for investigating the market irregularities and other shortages and recommending measures to overcome them. The Tehsil-Bhalwal was selected due to presence of number of Kinnow *Bagh* and exporters in the area as well as presence of Citrus Research Institute Sargodha (CRIS) in Sargodha.

Kinnow, being perishable and bulky fruit, passes through a complex marketing process, as highlighted in various studies above, such as picking, packing, loading/ unloading, transporting and pricing of Kinnow, etc.. So, it is important how, how much, when and where to sell.

2.9 Kinnow Marketing Costs and Margins

Marketing costs and margins of Kinnow varies with the channel, being followed by the farmer, during marketing of produce. Kinnow, after passing through various intermediaries who manipulate prices to farmers, reach consumers. Normally, the expenses borne by relevant intermediary are added in final prices, which vary considerably. These expenses or costs of marketing include grading, packing, transportation, storage, retailing, etc. Hence, producers' profit is directly related to the channel being selected (Abid, 2019). Prices were different for both local market and distant, mainly due to different margin of different intermediaries. Usually, factories sell the fruit to distant markets to earn maximum profit, whereas; most of the farmers, due to unavailability of marketing and other requisite facilites, were bound to sell their produce within their vicinity at lower prices. Some of the progressive farmers had oppurtunity to the distant market to sell their produce, followed by local markets. Therefore, in this study, channels- I was more beneficial than channels II and III to the farmers.

2.9.1 How to Calculate Marketing Margins?

Marketing margins of the intermediaries was calculated on the basis of given below formulae by Hussain, Aslam & Rasool (2013).

MM = Ps/Sp*100 Where:

MM = Marketing margin

Ps = Price spread

Sp= Sale price

Price spread = Sale price – Purchase price

2.9.2 How to Calculate Gross Marketing Margins?

Formula for gross marketing margin:

Sp–Pp =GM

Where:
Gross margin =GM

Sale price =Sp

Purchase price =Pp

2.9.3 How to Calculate Net Marketing Margins?

Formula for net marketing margin: GM–TC=NM

Where:

Net margin = NM

Gross margin =GM

Total cost = TC

The margins and profits of farmers and other marketing chain actors in channels- I, II and III are given in 'Appendix-AI'. Prices vary because of demand and supply variability trend in different markets. From the research, it was found that when farmers had the oppurtunity to sell their fruit by themselves in the near and foreign markets, the percentage of profit was higer as compared to sell the produce to the Contractor (Beopari/ middleman) to the ultimate consumer. So, channel- I was more remunerative to farmers than channel-II and III.

2.10 Kinnow Marketing Problems

Defective marketing system was identified as one of the major problems faced by fruit growers. With an expansion in Kinnow industry in Punjab, multiple marketing problems came across, due to which marketing infrastructure could not progress efficiently in Bhalwal. Kinnow farmers faced a number of problems as few of them are listed below (Mavia *et. al.*, 2012):

i. Poor market intelligence

ii. Inadequate post-harvest infrastructure

iii. Inadequate processing facilities

iv. Poor marketing infrastructure

v. Price fluctuations

vi. Malpractices

2.11 Role of Public Policy and Private Performance

Public policy is the execution of a philosophy, principle, vision or decision, mandate, etc. in the form of various programs, projects and actions to achieve formulated goals or objectives. It is a framework of governmental intervention covers a variety of activities. Public policy intends to devise a course of action by an actor or group of actors to solve an issue or a problem (Anderson, 2010). Whereas; public policy as the government initiative to resolve some social problem (Hedge, Lester & Stewart, 2008). The essence and success of a public policy lies in its implementation. Even a best policy is of no use and worthless if it is not implemented successfully.

Basically, the spirit of devising a public policy is to achieve certain goals or objectives by public organization (Ikelegbe, 2006). These policies provide a comprehensive guide to the government's current and upcomming decisions as well as role of private sector organization to solve any social, economic or political issue in public interest. These are formulated by government legislative body and is implemented mainly by the public bureaucracy or civil servants and sometimes by recommended private organizations (Ezeani, 2006).

In one of the study conducted in Nigeria, the role of public bureaucracy in achieving the development goals and objectives infact depends on the effective implementation of the policies, otherwise there lies a huge gap between the stated policy goals and their achievement (Ozor, 2004; Mankinde, 2005).

The role of government in development implies the role of public bureaucracy (Abah, 2010). As action speaks louder than words, just formulating policies, documenting principles, making rules and regulations cannot be called as public policy unless putting them into action (Ezeani, 2006). Public policy as formal binding or objective that the

public enterprise realistically wants to pursue to solve any prevailing issue (Waldt, 2009). Same observation was made by Anderson (1997, p.10).

While, Dunn (2017) regards public policy as 'a long series of more or less related choices, including decisions not to act, made by governmental bodies and officials', Waldt (2009) sees it as 'the formal articulation, statement, or publication of a goal that the government intends to pursue in order to address a need or a problem (Jega, 2003, p.22). In his own analysis, Anderson (1997, p.10) regards public policy as a relatively stable, purposive course of action followed by government in dealing with some problem or matter of concern.

The above definition deduced the following points. First, policy is linked to purposive or goal-oriented action rather than to random behaviour or chance occurrences. Second, public policies consist of courses or patterns of action taken over time by governmental officials rather than their separate, discrete decisions. Third, public policies emerge in response to policy demands, or those claims for action or inaction on some public issue made by other actors-private citizens, group representatives, or legislators and other public officials-upon government officials and agencies. Fourth, public policy involves what governments actually do, not just what they intend to do or what they say they are going to do. Fifth, a public policy may be either positive or negative. Some form of overt governmental action may deal with a problem on which action is demanded (positive), or governmental officials may decide to do nothing on some matter on which government involvement was sought (negative).

In a nutshell, public policy, positively, based on law and authority for effective implementation which distinguish it from other forms of policies made by other organizations especially private organizations as commented by Anderson (1997, pp.10-12). However, these policies must be approved and enforced through the

government or semi-government institution that is authorized by statute or the constitution, as Waldt (2009) and Jega (2003, p.23) stated.

2.12 Present Public Policy of the GOP on Marketing of Kinnow:

There is no specific policy on Kinnow but there is general policy on agriculture, food security, export, etc. Pakistan is signature of WTO and Sanitary and Phytosanitary Measures (SPS). For export of measures exporter have to follow standard. Different countries have different standard requirements for import of Kinnow and other fruits and vegetables.

2.13 Rules, regulations of public policy regarding marketing in Pakistan

Public policies include laws, rules, regulations, judgments, government programs, etc. on a certain issue. A brief description of public policy of the government of Pakistan on agriculture marketing (especially with reference to Kinnow, as mentioned in report year book 2017-18 by M/o NFS&R, Isb. is discussed as below:

- **Government Laws, Rules, Regulations on Kinnow Marketing**

Some of the the latest govt. Laws, rules and regulations on Kinnow marketing include;

Reduction in GST rate from 17% to 5% relief to the farming community,

Provision of subsidy of Rs.100/- per 50kg bag of Urea and maintaining the price of Urea at the level of Rs.1400/- per bags during the FY 2017-18,

- **Government Programmes on Kinnow Marketing**

Some of the the latest govt. policy actions and programmes include;

- Issuance of Kissan Card to farmers is used by the farmers as a discount card for purchase of selected input supplies including diesel and farm mechanization services, etc.,
- Development of a suitable mechanism for uniform rate of GST (2%) on different types of fertilizers,

- A mechanism was established to ensure the quality and standards of pesticides up to the mark in the country,
- with the help of horticulture research institue citrus rootstock (Sour Orange) true-to type plants were propagated through cuttings and shifted in polythene bags, citrus 800 no.of plants were produced by grafting/ budding (Pakistan, 2017-18),
- Credit available through formal banking channels, through e-Credit and warehouse receipt model, the dependence of farmers on commission agents for input credit is reduced, which will increase bargaining power of the farmers,
- PAMRA Act (Annexure-3) would help minimise the role of middleman and would be a welfare package to farmers. Role of PAMRA Act in transforming the agriculture produce market; in collection and dissemination of market information; and to play a role in private sector development as a facilitator and enabler.

2.14 Government Policy rules regulations regarding profit margins?

Following are the policy rules & regulations regarding profit margins:

- To reduce post harvest losses and farmers to benefit from seasonal variations in prices of agriculture produce, a network of warehouses/cold-storages are expanded through matching grant scheme under Agriculture Innovation and Development.the state, entry barriers are removed, and the procedure greatly simplified. As long as minimum safety standards are met, the private sector would be free to set up andoperate wholesale markets and collection centers, out of public mundies.
- Farmers are allowed to market their produce directly without going through middleman at unregistered farmer markets located at suitable venues, farmers are given legal recognition and registered. This has increased competition and marketing options for farmers.

• The licensing of market players has been replaced by easy registration. After placing Federal Water Management Cell (FWMC) under M/o NFS&R in matters related to irrigation water management, farm mechanization and land development for attaining food security in the country, following incentives were announced for agriculture machinery by the government on the budget proposals prepared by FWMC:

• exemption of custom duty on import of harvester-thresher upto five (05) years.

• exemption of whole of sale tax on import of combine harvester upto 05 years old. Further, sales tax exempted on agriculture diesel engines(from 3to 36 HP).

• prepared budget proposals custom related with regard to agriculture machinery/ equipment for financial year 2018-19.

2.15 Formulation of Initiatives and Measures

As per existing Kinnow marketing problems in Sargodha-Bhalwal and upcomming production targets, some necessary measures for Kinnow marketing value addition as well as to facilitate the farmers, presented by Mallareddy & Kumar (1990); Sharma & Tewari (1997) are:

- Farmers can sell their produce at fair prices if a sound market intelligence system is embedded.
- Packaging is another factor that can make difference to the overall value of Kinnow. Kinnow in cotton boxes fetch good returns than in baskets or jute fibre (Kaur & Singh, 2010). Therefore, up-gradation of post harvest infrastructure is must to meet the domestic & international quality standards.
- Establishing sufficient processing (juice) plants, cold storages and waxing units near farms is mandatory to enhance the shelf-life of Kinnow and support producers to sale their fruit to the remote areas to fetch best profit with minimum cost (Gangwar *et. al.*, 2007 & Sidhu, 1993).
- Government should encourage a cooperative marketing system for value-addition

& distribution of produce to remote areas to get maximum price as well as to fix minium support price (MSP) in order to reduce price instability and save farmers from loss.

2.16 Research Gap

It is observed that there is no Kinnow pricing information mechanism available, by the government, to facilitate the farmers/ contractors regarding trading situation and pricing of the Kinnow produced in Balwal. For price information, most of the farmers/contractors either rely their fellow farmers/ beoparies or the Arthi, telephonically, from different locations but this information is not reliable. Kinnow pricing depends upon various factors like timing, type and location of the market under consideration. However, farmers have only price information about their soroundings. Secondly, due to unavailability of farmers' market (designated places) by the government, the farmers are unable to manage their sellings in the market and rely on the contractors/ commission agents and other functionarries. Thirdly, as per marketing margin analysis, retailers are getting maximum share/ profit on their investment as compared to other marketing agents only because of grading of Kinnow by themselves before selling to the consumers, especially on good quality mature fruit during late season. Fourthly, farmers of the region have no financial support/ package / loans/ credits or subsidies to bear losses in case if they do not sell their orchards to the contractors due to the fear of diseases, supply and demand as well as price fluctuations and climatic conditions, etc. in the market. So, research in the area of market intelligence, farmers' market, poor infrastructure (market), price fluctuations, supply & demand variations malpractices to cheat farmers regarding false pricing andother all such factors need to be studied/ investigated from the perspective of farmers' losses and how to overcome them to encourage farmers to perform better and to earn well.

CHAPTER III

Research Methodology

This section provides a comprehensive methodology for executing the resesarch work for the proposed area. The chapter is divided into two study phases. In the first phase, existing Kinnow marketing channels, marketing margins including growers' profit were determined and calculated. However, in second phase, an analysis of the existing public policy, its pros & cons and its impact on the role of private performers (involved in the entire Kinnow marketing chain) was carried out/ drawn. Finally, necessary initiatives and measures to improve existing Kinnow marketing system in Balwal- Sargodha as well as in other parts of the country were submitted to the concerned.

3.1 Sample and Data Collection

Kinnow farmers (producers) of Bhalwal, Sargodha and the key functionnaries in the marketing chain of Kinnow produced in Tehsil-Bhalwal, Sargodha and delivered to a certain market (both local & foreign) was the population under research Figure. 3.1.

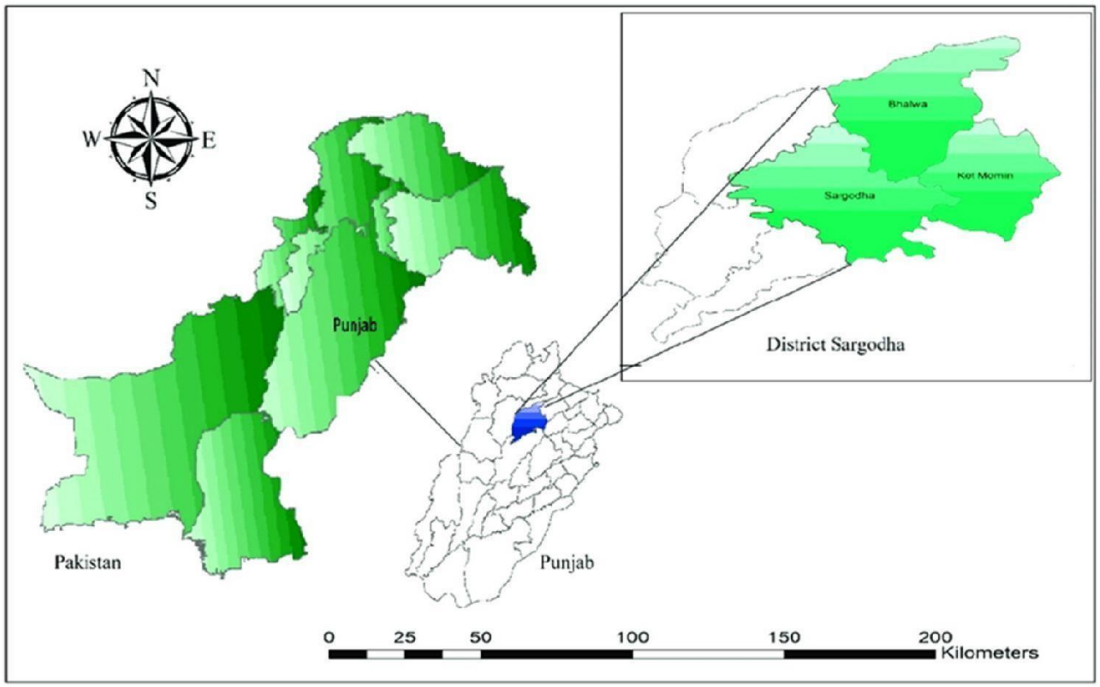


Figure 3.1 Map of Study Area

Purposive and multi stage simple random sampling techniques were used to examine the marketing of Kinnow in the selected area. In the first stage, Sargodha district of Punjab was selected purposively based on the importance and contribution in terms of area and production of citrus (Kinnow) in Punjab. Thirteen villages (Chobba Purrana, 7ML, 8ML, 10NB, 15NB, 16NB, 17NB, 18NB, 21NB, 22NB, 23NB, 24NB, and 26NB) from Tehsil- Bhalwal were selected as it had the highest area under Kinnow production. A sample size of around eighty five growers was selected randomly out of the thirteen villages. To study the various aspects of marketing i.e. marketing costs, margins and profits of producers and key intermediaries in the supply chain, operating at each level of marketing channel, were identified and contacted.

The researcher administered the questionnaire himself. Total 193 respondents were interviewed through a pre-tested questionnaires to the farmers and the functionaries at their premises. The questionnaire is attached at Annexure 'Questionnaires'. Data was gathered with prior consent of all respondents. To avoid ambiguity, all respondents were requested to respond as per their services and experiences being delivered. Respondents were asked to complete the entire questionnaire, and were guided, where required, by the researcher.

3.2 Research Design

Research design decides about how relevant information and decisions for a research study will be obtained and made (Aaker, Kumar, & Day, 2008). Infact, this study was conducted in a scientific and systematic way.

This study has adopted both qualitative and quantitative technique, using relevant research tools, for in-depth analysis of the policy to achieve objectives of this research study. Interviewing, as a qualitative tool, was used for the study. Jick, as stated by Östlund *et.al.* (2011) used this approach across quantitative and qualitative methods in social science research. The study was carried out in two

phases; the first phase was conceded out through a series of well-structured questionnaires to farmers and intermediaries in the Kinnow supply chain in Tehsil-Bhalwal to determine marketing margin and profit, variables for measuring marketing costs, margins cum profits are discussed in 'Appendices'. Where as; in second phase, questions were asked to key stakeholders (government bodies, ministries and industries) regarding public policy and are presented at 'Annexures'.

3.3 Data Collection

The data through structured self-administered questionnaire was gathered in the following manner:

i. Choosing variables and preparing write-up.
ii. Preliminary survey
iii. Adopting the questionnaire

3.4 Sample Size

The overall sample size for the study has been calculated/ selected on the basis of following formula given by *The Creative Research System*, utilizing *sample size calculator*, (CRS, 2019).

$$Ss = Z^2 \times P \times (1 - P) / C^2$$

where;

Z: Z value (1.96 for 95% confidence level, 2.58 for 99%)

P: Choice percentage (0-100)

C: Confidence Interval (0-100)

For this study, the researcher has used above formula to determine the sample size as given in Table-3.1.

Table 3. 1 Type of respondent, their confidence interval, t. population and sample size at confidence level 1.96 for 95%

Sr.No.	Respondents	Confidence Interval	T.Population	Sample Size	Percentage
1	Kinnow Farmers	8	200	85	42.5%
2	Pre-Harvest Contractor	8	20	18	85%
3	Commission Agent	8	50	38	80%
4	Wholesaler/ Retailer	8	40	32	80%
5	Consumer	8	20	18	90%
6	Horticulturist	-	-	01	-
7	Economist	-	-	01	-
	Total		**330**	**193**	**58.78%**

For small population, the sample size may be adjusted as follow, if not, the population field may be left vacant: ss=ss/ (1+ (ss-1)/population)

The sample for the Value Chain Analysis (VCA) was taken fromTehsil-Bhalwal, Sargodha, and the key market intermediaries including Kinnow producerswere interviewed/questionnaired such as producers (85), pre-harvest contractors(18), commission agents (38)wholesalers/ retailers(32), consumers (18), Horticulturists(01), Economists (01).

3.5 Data Analysis and Interpretation

The data was analyzed by using markeing costs and margins cum profits variables (Appendice-AI) for the existing marketing channels i.e. Channel-I, Channel-II & Channel-III for Kinnow growers and intermediaries in the chain. However, public policy role for Kinnow marketing in the study area was analysed through the Allen McConnell policy framework (McConnell, A., 2010) as mentioned at Annexure- 1, 2 & 3 which was interpreted for drawing conclusion.

3.6 Analysis of Public Policy

In social sciences, various methods are in use to identify and investigate the issues related to a community for a specific timeline or scenario. Normally, in social

disciplines, qualitative, quantitative and comparative methods are used for summarizing the figures and data-based analysis. In qualitative technique, main focus is on quality of contents and words instead of quantifying data and analyzing as Bryman & Bell (2007) confirmed. In this research technique, a researcher constructs an in-depth analysis of the information given by respondents, evaluates and interprets reports and executes the research in a given time frame (Soklaridis, 2009). Whereas, a quantitative research technique demands numerical data to explain and correlate the variables as deductive reasoning (Dannhausar, 2007). For example, structured interviews, questionnaires, surveys, or any other statistics technique used for data analysis are few tools of quantitative research as reported by Sung (2011).

The third approach which was introduced and applied by Jick (1979) is a mixed research approach for social sciences. Both quantitative and qualitative data analysis techniques are used in this approach. Jick, as stated by Östlund *et. al.* (2011) used this approach across quantitative and qualitative methods in social science research. This study has adopted both qualitative and quantitative technique, using relevant research tools, for in-depth analysis of the policy to achieve objectives of this research study.

3.6.1 Framework Analysis (FA)

Numerous research tools are available in policy literature to analyze public policy such as Cost and Benefit Analysis (CBA), Discourse Analysis (DA), Framework Analysis (FA), etc. Each research tool is selected as per needs and objectives of the research.

According to Hanely (2001), Cost and Benefit Analysis (CBA) reviews the budgetary expenditures and its outcome in a stipulated time-line. CBA only evaluates the financial impact of a bussiness project by Eliasson (2009). Hence, CBA only revolves around monetary aspects of a proposal, hence not recommended as per our objectives.

Policy Process Analysis (PPA) analyses whether a legitimate procedure and means were followed or not while formulating a policy, and does not discuss policy in totality; hence, this tool is not suitable for our research.

Discourse Analysis (DA) aims to evaluate a documented material viz. text and contents in detail such as media texts, policy documents and official reports, memos or policy briefs as viewed by Perakyla (2005). Where as; our study is beyond the content or text rather the policy as a whole from making to execution till its' political outcomes.

Framework Analysis is adopted by policy practitioners and researchers as a qualitative method for policy research analysis because this framework substantiates different methods (Lacity & Janson, 1994). As Srivastava & Thomson (2009) stated that use of Framework Analysis yields effective outcomes viz-a-viz limited time period, particular questions and pre-planned sample. Parkinson, Eatough, Holmes, Stapley, & Midgley (2016) termed it as a significant contributer to qualitative research, especially in psychology and believed it as a flexible, pragmatic and rigorous approach to the analysis of data. The qualitative data, in FA, is generally collected in the form of focus groups discussion, key informant interviews or participant observations by Ritchie & Spencer (1994).

Framework analysis is applicable through familiarization; categorization of rising themes; data indexing; contextualizing/ data charting and data interpretation. So, it is a unique tool to analyze policies from the public point of view by Srivastava & Thomson (2009). As per above consideration, FA was used by the researcher for probing and thoroughly analyzing as well as presenting different results of Policy's success or failure in varying facets.

3.6.2 Model for Framework Analysis

This study used Prof. Allen McConnell framework to investigate and critically analyze the existing public policies, its implementation and its outcomes, as well as

policy success or failure (Macconnell, 2015). This framework encompasses different aspects of a policy, cited at Annex. '1'.

3.6.3 Key Informant Interviews (KIIs)

Interviewing, as a qualitative tool, was used for the study. It was conducted to key stackholders such as professionals, community leaders or residents, having first hand information on the issue under investigation (Carter & Beaulieu, 1992). These interviews were normally designed in a manner to failitatate both the researcher and the key informant/ significant stakeholder to gather useful information and background. However, planning, implementing and processing of acquired qualitative data was time-consuming (Creighton, 2005).

Questions were prepared in line with research aims and objectives and as per policy framework analysis. Questions are provided at 'Annexure-1'. Public policy experts and key stakeholders including officials from public and private sectors were potential participant of this research. Enlisted below (Table- 3.2) are the main interviewees:

Table 3. 1 List of key participants and their designations

Sr.No.	Participants	Positions
1.	Malik Muhammad Nawaz	Director, Citrus Research Institute Sargodha (CRIS), Sargodha.
2.	Prof. Dr. Usman Mustafa	Agriculture Economist, PIDE, Islamabad.
3.	Dr.Umar Farooq	Pakistan Agriculture Research Council (PARC), Islamabad.
4.	Dr. Syed Waseem-ul- Hassan	Food Security Commissoner, M/o NFS&R, GOP, Islamabad.
5.	Dr. Sajid Ameen	Public Policy Expert, SDPI, Islamabad.

CHAPTER IV

Results and Discussion

This section discusses about citrus profile, respondents' characteristics, Kinnow farming, marketing costs/ margins and profits of chain operators and the public policy role on Kinnow marketing in Tehsil- Bhalwal, Punjab.

The study was carried out in the Punjab province of Pakistan. Punjab is the largest province viz. population and the second largest viz. area (Naseer, Ashfaq, Abid, Razzaq, Hassan, 2016; Pakistan, 2017). Punjab's share of the agricultural GDP is also the highest among all other provinces (Pakistan, 2019). Diversified farming is prevailing in Punjab where farmers grow crops and raise dairy livestock (Ashfaq, Razzaq, Hassan, Haq, 2015 & Ashfaq, Razzaq, Haq, Muhammad, 2015). Punjab is the largest producers of mandarins, i.e. more than 98% of its' total production in the province (Memon, 2017).

During 2018–2019, total area of citrus production in Pakistan was 181, 001hec.***** with total citrus production of 2,468,001-tons, while, total area of citrus production in Punjab was 170,000-hec**.** with total citrus production of 2,397,000-tones. In Sargodha, Punjab, total area of citrus production was 90,683-hec. with total citrus production of 12,37,051-tons i.e. 53% citrus came from Sargodha district out of 37 districts of Punjab (Pakistan, 2018 & CRS, 2019). Therefore, Sargodha district, due to its major contribution, was selected for this study. Sargodha dist. comprises of six Tehsils, i.e. Sargodha, Bhalwal, Kotmomin, Shahpur, Sahiwal and Sillanwali (Table- 4.1). Tehsil-Bhalwal, Sargodha is known as California of Pakistan due to highly productive and enriched area viz. Kinnow variety of citrus and proximity of Motorway (M-2). The average land holding for citrus in Bhalwal is 20,749-hec. with total citrus production of 2,83,051-M.Tons. The average land under Kinnow cultivation is 20,334hec. with total production of 2,77,390-M.Tons. The cost of production of Kinnow was

Rs.122,988/ acre in Bhalwal (Appendix-A2). This study found that an average farmer was receiving Rs.51,126/ acre from mandarin farming.

A brief profile of Citrus, especially Kinnow, in respect of total area and production in Pakistan, particularly in Punjab, Sargodha district is presented below at Table. 4.1:

Table 4.1 Pakistan citrus profile (2018-2019)

Sr.No.	Area	Area under Citrus (Acres/hec.)	Area under Kinnow (Acre/hec.)	Prod. of Citrus (Tons)	Prod. of Kinnow (Tons)
1.	**Pakistan**	447,072/181,001 (100 %)	353,212/143,001 (100%)	2,468,001 (100%)	2,190,001 (100%)
2.	**Punjab**	419,901/170,000 (93.92%)	353,212/143,001 (99.99 %)	2397,000 (97.2%)	2,189, 001 (99.95%)
3.	**Sargodha-dist**	2,23,988/90,683 *(53.34%)	199,050/80,001 (56.35%)	12,37,051 (52%)	1,305,653 (59.65%)
i.	Sargodha-Teh.	71,930 /29,121 **(32.11%)	52,065/21,079 (26.2%)	3,97,259 (32.11%)	501,885 (38%)
ii.	Bhalwal- do-	51,251/20,749 (23%)	50,225/20,334 (25%)	2,83,051 (22.9%)	277,390 (21%)
iii.	Kotmoman-do-	69,403 /28,098 (31%)	67,320/27,255 (34%)	3, 83,302 (31%)	371,803 (29%)
iv.	Shahpur-do-	7,089/2,870 (3.2%)	6,380/2,583 (3.2%)	39,151 (3.2%)	35,236 (3%)
v.	Sahiwal-do-	10,558 /4,275 (5%)	9,503/3,848 (5%)	58,310 (5%)	52,479 (4%)
vi.	Sillanwali-do-	13,757 /5,570 (6%)	12,107/4,902 (6%)	75,978 (6%)	66,861 (5%)

Note.

Source: Adapted from *Agriculture Marketing and Information System (AMIS) by Pakistan, 2018; CRS, 2019 & Citus Research Institute Sargodha (CRIS), Sargodha.*

* percentage(%) is claculated on the basis of Sr.No. 2

** percentage(%) is claculated on the basis of Sr.No. 3.

A profile of citrus, its' varities alongwith total production and share of each variety in total citrus production in Punjab, Pakistan, is given below at table 4.2: ***Table 4. 2***

Note. Source: CRIS (2019).

The detail Cost Benefit Ratio of Citrus (Kinnow) is worked out as below:

- Citrus yield/acre adopting best recommendation is **200 mounds (08 MT)** o

  Rate per mound of **A**grade fruit is **Rs. 800 & Rs. 200** for **C** grade.

- Crop proportion of **A & C** grade in the better-quality orchard is **70:30**.

  - Income from A grade fruit (140x800) = Rs. 112000
  - Income from C grade fruit (60x200) = Rs. 12000
  - Total Gross Income/acre = Rs.124000/-
  - Total Expenditure = Rs.72874/-
  - Net Income = Rs.51126/-
  - **Note: The net profit depends on yield & quality of fruit**

Note.

Source: CRIS (2019).

*Detail Cost of Production at Appendix- A2.

4.1 Findings of the Study:

During this study, after discussion/ response from key skakeholder (s), in the entire Kinnow marketing & supply chain, at CRIS, Sargodha and else, following were the key findings:

- land profile of the study area at table 4.4
- orchards profile at table 4.5
- respondents Characteristics are presented at table 4.6 - 4.8.
- prevailing citrus supply chain in Tehsil-Bhalwa, was figured out (figure-4.1).
- existing infrastructure facilities available for fresh Pakistani Kinnow (table 4.9),
- mode of transport for Kinnow inlocal and international markets(figure 4.2),
- standards of various Kinnow importing countries,
- marketing channel framework (fig. 4.3), and;
- share of Kinnow from producer to consumer of each intermediary (fig.4.4), respectively.

4.1.1 Land Profile in Bhalwal, Sargodha

Thirteen villages (Chobba Purrana, 7ML, 8ML,10NB, 15NB, 16NB, 17NB,18NB, 21NB, 22NB, 23NB, 24NB, and 26NB) from Tehsil- Bhalwal were selected as it had the highest area under Kinnow production. Detail is given at table 4.4 below.

Table 4. 4 Land profile of study area in tehsil Bhalwal, Sargodha

Sr.No.	Area	T. Land Holding (Acre)	Area under orchard crops (Acres)	Area under Kinnow (Acres)	Percentage (%)
1	10NB	980	826	826	84.3
2	15NB	45	12	12	26.7
3	16NB	45	13	13	28.9
4	17NB	27	7	7	25.9
5	18NB	99	23	23	23.2

6	21NB	30	36	36	120.0
7	22NB	48	7	7	14.6
8	23NB	47	107	105	223.4
9	24NB	213	121	121	56.8
10	26NB	37	10	10	27.0
11	8ML	594	375	374	63.0
12	7ML	347	209	204	58.8
13	Chabba Purana	1537	645	630	41.0
Total		**4049**	**2391**	**2368**	**58.5**

4.1.2 Orchards Profile in Bhalwal, Sargodha

There were three main categories of Kinnow orchards in the study area i.e. Small, Medium and Large. Small orchards range from 1 to 12 acre, medium orchards from above 12to 25 acre, and large orchards wereabove 25 acre with total number of Kinnow orchards as 198, 40, and 14, respectively. There were approximately, on average, one hundred plants in one acre area of land, this figure is also in concurrence with the results of Nawaz, Ahmed and Jiskani (2008), wherein; total fruit bearing of each plant was approximately 1 ½ (1.5) maund on average.Detail of total area, number of plants and total fruit bearing of these Kinnow orchards is as below at table 4.5.

Table 4. 5 Orchard profile of study area in tehsil Bhalwal, Sargodha

Sr. No.	Size of Orchard (Acre)	T. Kinnow Orchards (No.)	T. Area of Orchard (Acre)	T. Kinnow Plants (No.)	Bearing of Plant (Maunds)
1	upto-12	198	1094	109,400	164,00
2	upto-25	40	808	80,800	121,200
3	Above -25	14	466	46,600	69,900

Overall	**252**	**2368**	**2,36,800**	**355,200.00**

4.1.3 Respondents' Characteristics

Farmers, commission agents, contractors, wholesaler/ retailers and consumers were the respondents of the questionnaires, whose profile is presented below:

- **Farmers' Questionnaire Response Profile:**

Personal Characteristics: Total 85 out of 200 farmers from 13 villages were randomly selected and interviewed through a structured questionnaire at 'Questionnaire-2'. The charaacteristics of farmers such as gender, age, education, experience and family size is at table 4.6 below:

Table 4. 6 Characteristics of farmers with descriptive statistics

Characteristic	Unit	Min.	Max.	Mean	Std. Dev.
Gender	Male/ Female	1	1	1	.99
Age	Years	23	65	41.22	9.87
Education	Years	5	16	8.47	3.19
Experience	Years	15	50	27.35	6.96
Total family members	No.	3	10	5.85	1.62

Field Work Response (constrains& suggestions): As per questionnaire-2, most of the farmers highlighted the same productions & marketing problems. Problems/ Constraints faced by farmers during production and marketing of Kinnowand suggestions to those problems/ constraints are tabulated below:

Table 4.7 Constraints faced by farmers in Kinnow production & marketing

Problems/Constraints	Rank (5-Max. 1-Min.)	Min.	Max.	Mean	Std. Dev.
Production problems					
High price of input	No.	2	5	3.4	0.69
Lack of irrigation	No.	1	4	2.8	0.928

Unavailability of input in time	No.	1	5	3.13	0.967
Insect	No.	1	5	2.92	1.02
Diseases	No.	1	5	3.12	1.03
Lack of good quality sapling	No.	1	5	2.21	1.13
Hail stone	No.	1	5	2.17	1.13
Lack of credit	No.	2	5	4.30	0.74
Poor variety of mandarin	No.	1	5	4.37	0.71
Lack of good cultivation skill	No.	1	5	4.00	0.980
Marketing problems					
Lack of marketing information	No.	2	5	3.67	0.997
Low price offered by trader	No.	3	5	4.20	0.707
Lack of good moterable road	No.	1	5	3.57	0.908
High transportation cost	No.	1	5	3.44	1.034
Unorganized market	No.	1	5	3.55	1.034
Lack of storage facilities	No.	1	5	3.54	1.011
Lack of processing knowledge	No.	1	5	3.40	1.194
Frequent transportation obstruction	No.	2	5	3.80	0.861
Others ….....	No.	1	5	3.37	0.954

Note

Source: Questionnaire (farmers responses) during research (2018-19) in stydy area.

Table 4.8 Suggestions of farmers to solve the problems

Suggestion to solve problems	**Rank (5-Max.1-Min.)**	**Min.**	**Max.**	**Mean**	**Std. Dev.**
Sugestions to production problems	No. No.	2	5	3.46	0.767
Disease and pest control training					
Provision of credit		2	5	3.80	0.818
Good cultivation practices training	No.	1	5	3.52	1.04
Formation of producer organization	No.	1	5	3.33	1.13
Timely input	No.	1	5	3.94	1.-05

Others	No.	1	5	3.51	1.15
Sugestions to marketing problems					
Marketing as a group	No.	4	5	4.88	0.325
Good Marketing Information System	No.	4	5	4.85	0.364
Good cultivation practices training	No.	1	5	3.52	1.04
Provision of storage facilities	No.	4	5	4.88	0.326
Provision of processing knowledge	No.	5	5	5	0
Others	No.	5	5	5	0

Note

Source: Questionnaire (farmers responses) during research (2018-19) in stydy area.

Commission Agents' (Arthies) Questionnaire Respose Profile:

Personal Characteristics: Total 38 out of 50 commission agents (Arthi) were selected randomly from tehsil Bhalwal who were interviewed through a structured questionnaire at 'Questionnaire-1'. The characteristics of these artiies such as age, edu., experience and family size is tabulated at tab. 4.9.

Table 4.9 Characteristics of Arthies with descriptive statistics

Characteristics of Arthi	Average Response	
Main Crop:		Kinnow
Type:		Pacca
Size:	Medium	
Experience	More than 20 years	

Table 4.9 Characteristics of Arthies with descriptive statistics

Characteristics of Arthi	Average Response
Section I: Business Profile and Environment	
Business Type	Commission Agent
How did you enter this business?	Inheritance / Family Business
Who are your target group clientele?	Medium Size farmer (12-25 acres)
How many farmers are you dealing with?	Less than 40 farmers
What other businesses do you have?	NILL
How did you enter this business?	Inheritance / Family Business
What are your sources of financing?	a) Self-Capital b) MFIs/ banks
Was it easy to get finance from the bank? a) Yes b) No	No

If you have borrowed from banks, how much and at what	Rs. 4- Million @12% margin?
If you borrow from banks/private money lenders, please state form of collateral you provided	a) house b) agriculture land c) shop d) plot
Do you think it would be a good idea for Arthis to join banks to fulfill the credit needs of farmers? (Explain them NIBAF model)	Yes! hands with
Describe how government policies affect your business.	a) Taxes; b) market committee regulations; c) market fee; d)

- **Contractors', Wholesalers & Retailers Profile:**

What is the role of the Anjuman-e-Arthiyan?	commission a) Commission fixation; b) dispute settlement between arthis; c) helping in recovery of default loans d) Other__
Describe relations and interactions with other Arthis?	a) Friendly

Section II: Financial Services

When providing credit, how do you select the farmer?	a) Know him from b) before c) Previous history
How do you assess the farmer's credit needs?	a) Farming activities
What purpose do you lend for?	
Do you provide credit in cash or in kind?	b) Cash
Factors affecting the Size of the loan.	c) Personal relationship
Loan amount	a) Rs.10,000-30,000

Section IV: Income of the Arthi **Average Response**

How much you have invested in this business at present? _____ (Millions)	3-4 Million
How much you have advanced in cash to farmers at present? Crop_____ b) Amount _____ (Rs. Millions)	1-2 Million a)
How much you have advanced in kind (value) to farmers at present? Crop_____ b) amount _____ (Rs. Millions)	Million a)
What is your annual turnover from other sources	5-6 Million

Expenditure Schedule (Arthi)

Operating Costs	
Credit Cost (Arthi)	
Does interest vary across different borrowers? If yes, how do you decide?	No.
Do you need any collateral when you lend? If yes, what type?	NILL
How much time you take to disburse the loan? Depend on size of loan	a) At the spot b) 7-10 days c) 10-15 days
What is the term of your credit?	e) One year
How many crop cycles are there in a year? What is the duration of a crop cycle?	Two times in a year
Credit repayment schedule	b) Installments

Total 18 out of 20 contractors (Beoparies/ Middlemen) and 32 out of 40 wholesalers and retailers were selected randomly from tehsil Bhalwal who were interviewed through a structured questionnaire (at 'Questionnaire-'3 & 4'). Their characteristics are tabulated at table 4.10

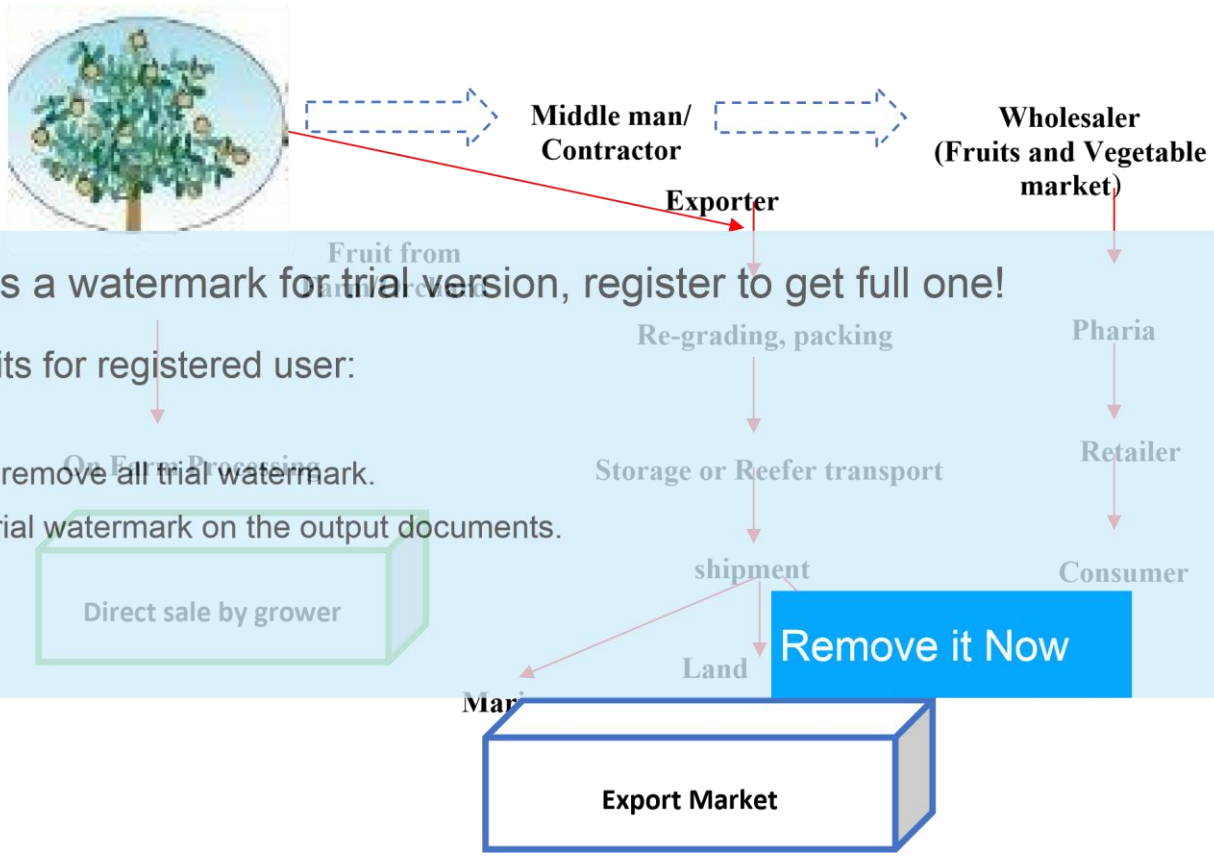
Table 4.10 Characteristics of contractors/ wholesalers/ retailers

Characteristic	Unit	Min.	Max.	Mean	Std. Dev.
Gender	Male/ Female	1	1	1	.99
Age	Years	23	65	41.22	9.87
Education	Years	5	16	8.47	3.19
Experience	Years	15	50	27.35	6.96
Total family members	No.	3	10	5.85	1.62

Questions To Contractors/ Wholesalers/ Retailers	Average Response
From where do you buy mandarin?	Sargodha District
Do you have contract with them?	Yes!
What types of information do you convey to grower?	That adds value to Kinnow.
Do you harvest the mandarin yourself or take harvested by farmers?	By farmers!
If yes, how much cost do you need to harvest one quintal mandarin?	Nill.
Do you sort and grade the mandarin? If yes, why you sort and grade?	Yes. for best grade & price.
How much price did you pay per 40 Kg to the farmer last yea	
Did you pay immediately after taking mandarin from farmer after selling it?	it.
How much money do you need for sorting and grading?	Rs.
What is the packaging material for mandarin?	Wooden Paety & corrugated carton box (loc. & intl.)
What is the means of transport of mandarin and how much money do you need per 40kg for transportation of the mandarin?	Mazda truck for domestic & container for intel. market.
Where and to whom do you sell mandarin and how much price per 40Kg?	Loc. Factories/wh.salers & Intl. Makt. Rs.800/ & Rs.3400
How many kg generally losses during transportation of Kinnow per 40 Kg?	10-15 Kg/ 40Kg

What suggestions do you think to solve those marketing problems?	Good markeing info. system, Best market infrastrucure, MSP, best transportation facilities, easy & quick procedure for obtaining export licence,etc.,

4.1.4 Citrus Supply Chain in Tehsil-Bhalwa, Sargodha



The prevailing citrus supply chain in tehsil-Bhalwal, Sargodha is presented at Figure

Figure 4.1 Citrus Supply Chain, Bhalwal, Sargodha, Pakistan

4.1.5 Infrastructure Facilities Available for Fresh Kinnow in Pakistan

The infrastructure facilities available for fresh Kinnow in Pakistan, at table 4.11.

Table 4.11 Infrastructure facilities available for fresh Kinnow in

Sr.No.	Type of Infrastructure	No. of Units	Total Capacity

1***Paki.stan***	Pack houses	200	5 – 10 MT/HR on average
2.	Cold Stores	22	50,000 MT
3.	Reefers	Not locally available	15 – 30 ton
4.	Processing Plants 1. Citro Pak Ltd. 2. Shakarganj Foods. 3. Oriental Foods.	03	10 – 30 MT/HR

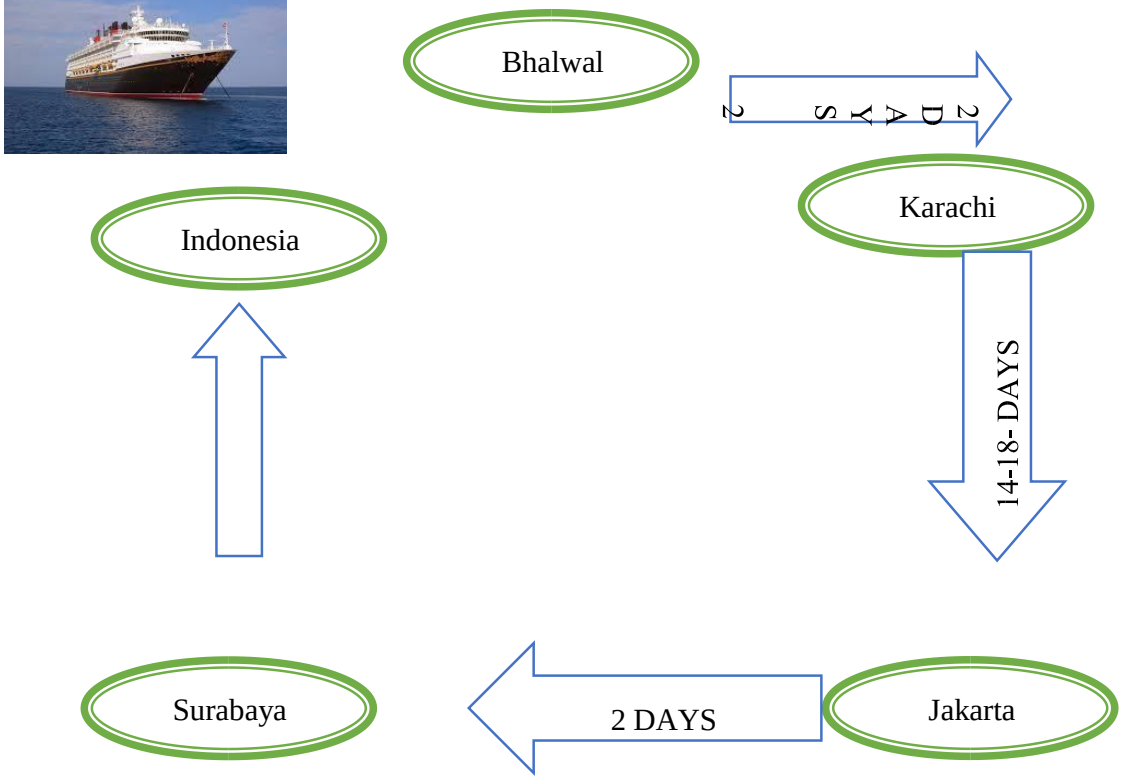
Note.

Source**:** *CRIS (2019).*

4.1.6 Mode of Kinnow Export

Kinnow is transported domestically and internationally viz. routes defined at figure 4.2.

Indonesia (By Sea)



Russia (By Sea)

Bhalwal

2 DAYS

Karachi

DAYS 25-35

Novorossik

2 DAYS

Saint Peters

Valodivastic

Iran (By Road)

Central

Bhalwal

Taftaan

Zahidan

2 DAYS

Bandar

Afghanistan (By Road)

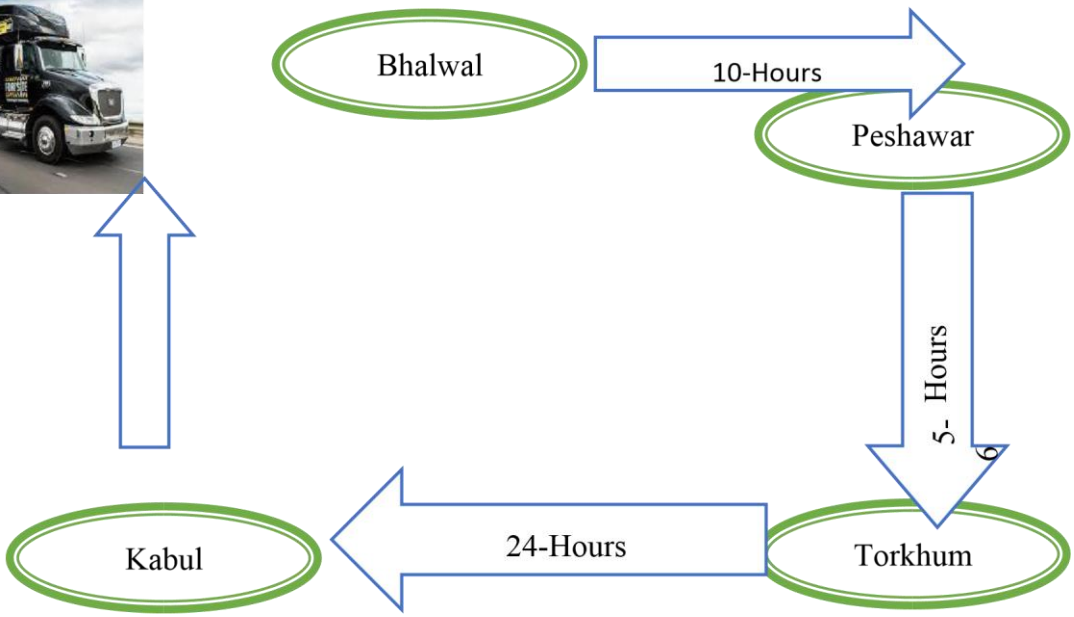


Figure 4.2 Mode of Kinnow Export

4.1.7 Standards Of Various Kinnow Importing Countries

Size

Gulf & Saudi Arabia 32-48 counts/10 kg

Singapore & Malaysia 36-48 counts/10 kg

Indonesia & Philippines 48-66 counts/10 kg

Europe 66-81 counts/10 kg

Note. Source: *CRIS (2019).*

4.1.8 Marketing Channel Framework in Study Area

Channel-I

In channel-I,theproducer sells (export) Kinnow of A& B quality grade to factories. These factories, subsequently, sell it to international market. Whereas; C-quality grade to domestic market within and outside Punjab, Pakistan (Figure 4.3.1).

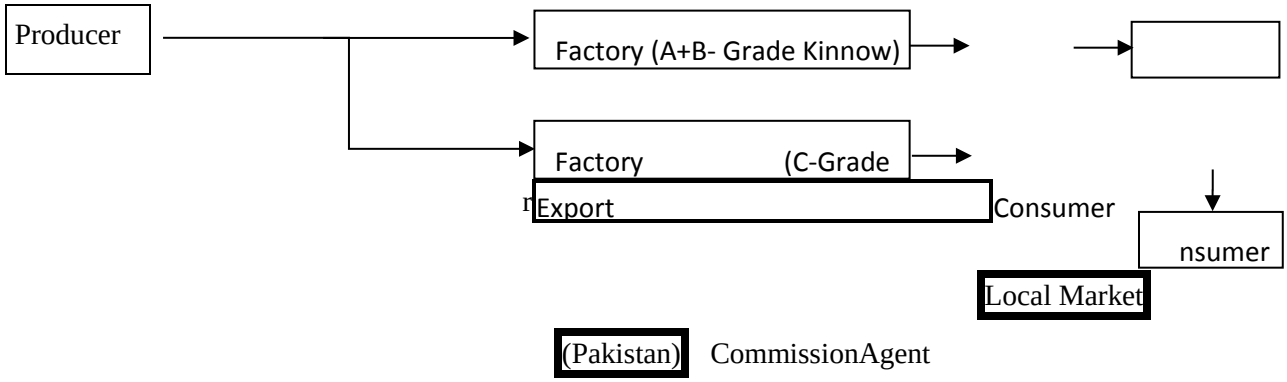


Figure 4.3.1 Kinnow channel-I

Channel-II

In channel-II, the producer sells (export) Kinnow of A& B quality grade to contractor (middlemen). These middlemen, subsequently, sell it to factories through commission agents. Factories sell the best quality to foreign market. Whereas; an average quality Kinnow is sold in local market (Figure 4.3.2).

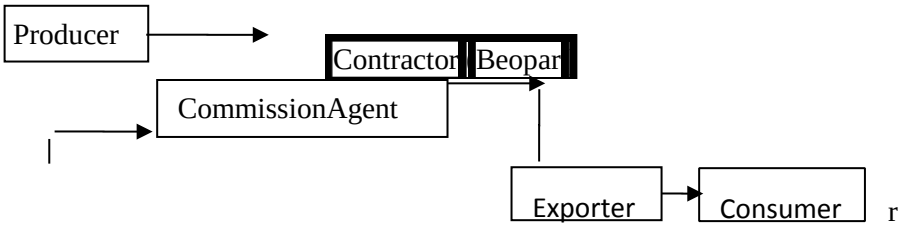


Figure 4.3.2 Kinnow channel-II

Channel-III

In channel-III, the Producer sells his fruit to contractor (middlemen) who sell the fruit to factories through commission agent. Factories sell Kinnow to domestic market within and outside Punjab, Pakistan (Figure 4.3.3).

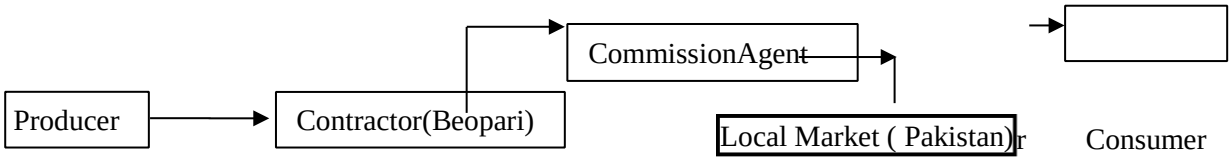


Figure 4.3.3 Kinnow channel-III

Figure 4.3 Marketing Channel Framework, Bhalwal, Punjab

Note. Source: *CRIS (2019).*

4.1.9 Share of Kinnow From Producer to Consumer

The factory manager purchases Kinnow directly from producer or contractor and sold to foreignmarket,andlocalmarketby 20%, and 80-85%, respectively.

Share of Kinnowfrom Producer to Consumer is at figure 4.4.

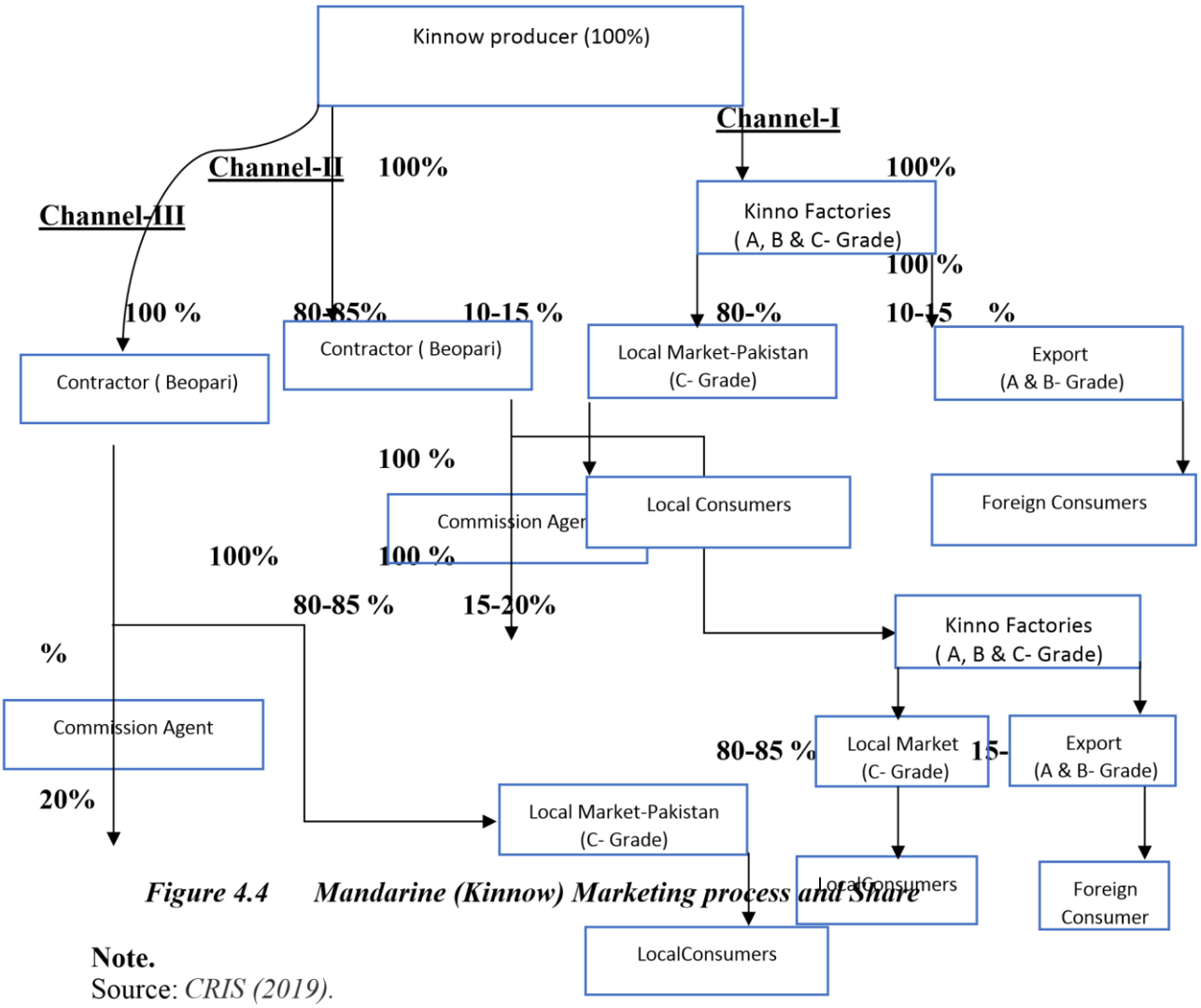


Figure 4.4 Mandarine (Kinnow) Marketing process and Share

Note.
Source: *CRIS (2019).*

4.2 Study I: Marketing Channels, Prices, Margins and Profits Analysis In study I, marketing channels, prices, margins and profits of farmers and the intermediaries in Kinnow supply chain are thoroughly presented and analaysed as below:

4.2.1 Marketing Channels

Before drawing analysis and data interpretation, an understanding of prevailing marketing channels in Tehsil-Bhalwal, Sargodha is essential.

In channel-I, the producer passed Kinnow(A & B Grade) on toKinnowfactories for export to various countries such as Russia, Indonesia, China, Gulf States, etc.,whereas;Kinnow of C and lowergradeis sold to local markets of Punjab and other areas of Pakistan till it reaches to the consumer (Fig.-4.3.1).

In channel-II, the producer passed Kinnow(A & B Grade)

ontomidleman(contractor or beopari) who sells it through commission agent to Kinnowfactories for export to various countries such as Russia, Indonesia, China, Gulf States, etc. till it reaches to the consumer (Fig.-4.3.2).

In channel-III, the producer passed Kinnow(A & B Grade) on toKinnowfactories for export to various countries such as Russia, Indonesia, China, Gulf States, etc., whereas;Kinnow of C and lowergrade is sold to local markets of Punjab and other areas of Pakistan till it reaches to the consumer (Fig.-4.3.3).

4.2.2 Prices, Marketing Margins and Profits Analysis

During Kinnow marketing process, the price varies from channel to channel and market to market depending upon the mode of transpportation, packaging material, loading/ unloading, marketing/ advertising and other miscellaneous charges. All these price factors, besides quality of Kinnow, are important in determining the marketing margins and profitsof all intermediaries including Kinnow grower's. In this study, the price trend wasseen different for the three channels in two markets i.e. domestic and foreign. Factories purchased the fruit both from farmers and beoparies (middlemen), simultaneously, and exported the fruit in foreign and domestic market at different prices for these channels and markets. Price of Kinnow, due to involvement of functionnaries, were different at different stages of the chain.

Channel-I:- In channel-I, factories purchased Kinnow from farmers and exported (Grade A & B) directly without the involvement of intermediaries, hence, both farmers and factories were the main beneficiaries,here. This showed that growers' sale price and factories profit in channel-1 was higher than channel-II. Growers' selling price to factories was Rs.800.00/ Maund. Factories looked out all matters related to harvesting and post-harvesting of Kinnow orchard. Factories born miscellaneous expenses of Rs. 250/ Maund (mentioned at appendix-1) and sale out the fruit at Rs.1,350/ 40 kg in local market. The factories' marketing margin and profit, in Channel-I, were Rs.550.00/ 40

Kg (Rs.1350-Rs.800) and Rs. 300.00/ 40 Kg (Rs.550-Rs.250), respectively. Similarly, factories purchased Kinnow at Rs 800/ Maund and after adding miscellaneous expenses of Rs.450/Maund (mentioned at appendix-1) sale out/ exported Kinnow at Rs. 2,600/ Maund. The factories' marketing margin and profit, in Channel-I, were Rs. 1,800.00/ Maund (Rs.2600-Rs.800) and Rs 1,350.00 / Maund (Rs.1800-Rs.450), respectively.

Channel-II:- In Channel-II, the contractor purchased fruit from farmer at Rs. 875/ Maund and after adding marketing expenses with 4% commission of Rs. 475 (mentioned at appendix-1) sale out the fruit to factories, in local market at Rs. 1,825/ Maund. The contractors' marketing margin and profit were Rs. 950/ Maund (Rs.1825875) and Rs. 475/ Maund (950-475), respectively. The contractors'selling and factories' purchased price was Rs. 1825/ Maund. Factories born miscellaneous expenses of Rs. 150 (mentioned at appendix-1) and sale out Kinnow at Rs. 2,225/ 40 kg in local market. The factories' marketing margin and profit in local market were Rs. 400/ 40 Kg (Rs.2,225-1825) and Rs. 250/ 40 Kg (Rs.400-Rs.150), respectively. Similarly, factories purchased Kinnow at Rs 1,825/ Maund and after adding miscellaneous expenses of Rs.350/ Maund (mentioned at appendix-1) sale out/ exported at Rs. 4,685 / Maund.The factories' marketing margin and profit were Rs. 2,460/ Maund (Rs.4,685-Rs.2,225) and Rs.2,110.00/ Maund (Rs.2,460-Rs.350), respectively.

Channel-III In Channel-III, contractors paid farmers Rs. 875/ Maund and after adding miscellaneous expenses and 4% commission of Rs.475/ Maund sale out Kinnow locally for Rs.1,825/ Maund. Contractors'margins and profit were Rs.950/ Maund and Rs.475/ Maund, respectively.

Summary of the Analysis:

This study found that Kinnow prices, in channel-I, increased from Rs. 800 to Rs.1,350 & Rs. 2,600/ Maund in local and foreign market, respectively**.** Where as; Kinnow prices, in channel-II, increased from Rs. 875 to Rs. 2,225 & Rs.4,685/ Maund in local and foreign market, respectively. Kinnow prices, in channel-III, increased from Rs. 875 to Rs. 1825/ Maund in local market from grower to retailer/ consumer.

However, the total marketing costs incurred by factory was Rs. 250 & Rs.450/ Maund in channel-I and Rs. 150 & Rs. 350/ Maund in channel-II, for local and foreign market, respectively. The total marketing cost incurred by contractor was Rs. 475/ Maund in channel-II and channel-III for local markets.

The marketing margins added by factory was Rs. 550/- and Rs. 1,800/ Maund in channel-I and Rs.400 and Rs. 2,460/ Maund in channel-II, for local and foreign market, respectively. The marketing margins added by contractor was Rs. 950/ Maund in channel-II and channel-III, for local and foreign markets, respectively.

The profits earned by factory was Rs. 300 & Rs. 1,350/ Maund in channel-I and Rs. 250 and Rs. 2,110/ Maund in channel-II, for local and foreign market, respectively. The profit earned by contractor was Rs. 475/ Maund in channel-II and channel-III, for local market.

Above prices, margins and profits showed that each functionary added his cost/margins and profits into total Kinnow price and passed the fruit on. Above analysis showed that Kinnow prices were increased almost 2-times in local and 3-times in foreign markets before it was finally purchased by households. The reason behind higher market margins was due to the higher marketing costs or/and greater profits of the functionaries. The higher marketing costs was due to the result of poor market infrastructure that are roads, storage, post- harvest losses, grading and handling the product. Where as; greater marketing profits in marketing of the fruits was due to the involvement of greater risk

of losses, exploitative type of marketing system and requirement of greater investment as also highlighted by Ahmad (2003).

4.3 Study II: Public Policy Analysis

In study II, public policy analysis has been presented:

4.3.1 Policy as Proces Success and or Failure

As per the research objectives, public policy role will be assesed through the adopted policy analysis framework, guided by Prof. Allan MacConnel policy framework.For this purpose, the researcher through well-structured questions (at Annexure-2) for the KIIs made an in-depth analysis of the policy as process as process as per KIIs'response recorded by using 5- point Likert scale below, presented at table 4.3.1. ***5-Point Likert Scale***

1	2	3	4	5
Strongly Disagree	**Disagree to some Extent**	**Uncertain**	**Agree to some Extent**	**Strongly Agree**

Malik Muhammad Nawaz (Director, CRIS), Dr.Umar Farooq (Member SSD, PARC) and Dr. Syed Waseem-ul-Hassan **(**Food Security Commissioner) responding to the question of preserving the government policy goal and objectives during the policy formulation phase said that the govtenment outlined differnt objectives & policy actions, which addressed all aspects of Kinnow production and marketing. On the question of legitimacy & sustainable coalition, they agreed and said that the policy has been produced through legal and normal procedures, and with the involvement of every key stakeholders, all political parties were politically motivated and part of the consultation process for sustainable coalition. The government was succeessful in securing sustainable coalition on policy goals and objectives. This sustainable coalition was reflected in National Food Security Policy (2018). While, regarding innovation both Director (CRIS) & Member (SSD, PARC) were uncertain, however, the farmer, unlike later, was not sure about the opposition that the government has faced in the formulation phase. Wheras; Food Security Commissioner (M/o NFS&R) strongly

favoured the innovations and endorsed that the budget for agriculture research and innovation which is 0.2% of agriculture GDP has now been increased gradually to 0.4% of agriculture GDP, which is at par with other countries in the region and agreed that the government did face opposition in the policy formulation process. But contrary to above, Prof. Dr. Usman Musthafa (Agricultural Economist) was not sure about the government's success in preserving goals and objectives during the policy formulation process and also disagreed in attaining legitimacy. However, he was not certain about the government stance regarding securing sustainable coalition on policy goals and objectives. However, he agreed that prevailing public policy did offer innovative measures that attracted stakeholder like the *Punjab Agriculture Market Regulatory Authority (PAMRA), pest free zone for potato, rice and citrus with the collaboration of provincial government to enhance export of Pakistan, all Kinnow processing plants were examined and 05 processing plants of Kinnow were updated as per international standard, Kinnow processing plants and pack houses were also deveveloped, relief to the farming community was provided through reduction in GST rate from 17% to 5%, provision of subsidy of Rs.100/- per 50kg bag of Urea and maintaining the price of Urea at the level of Rs.1400/- per bags during the FY 2017-18, developed a suitable mechanism for uniform rate of GST (2%) on different types of fertilizers, a mechanism was established to ensure the quality and standards of pesticides upto the mark in the country, other innovative measures include registration of seed companies, upgradation of website of federal seed certification and registration department for swift electronic communication of seed certification data. Updation of seed regulatory framework e.g. Plant breeder'Rights Rules 2018, minimum fruit plant certification standard draft for citrus, mango, gauva, date palm, bannana, pomegranate, litchi and grapes is prepared and under submission for approval, capacity building of traders/ stakeholders. The professor also endorsed that the government did face opposition in the policy

formulation process. Dr. Sajid Ameen (SDPI) unlike earlier KIIs, was very pesimistic and disagreed regarding the government's agri- reforms such as achievement of policy goals and objectives set in the policy formulation process, but supported the public policy in attaining legitimacy throgh legal and normal procedures like through consultation with the stakeholders. However, like Prof. Dr. Usman Mustafa, he was also not sure about the goverment's achievement in securing sustainable coalition on policy goals and objectives and was unsure about any opposition that the government has encountered during or after the formulation of policy.

Table 4. 12 Policy as process success and or failure

Questions To KIIs	Responses				
	KII-1 Malik Muhammad Nawaz CRIS	KII-2 Prof. Dr. Usman Mustafa PIDE	KII-3 Dr.Umar Farooq PARC	KII-4 Dr.Syed Waseem-ul-Hassan M/o NFS&R	KII-5 Dr. Sajid Ameen SDPI
Policy as process success and/ or failure					
Q. 1. Did the government succeed in preserving and achieving policy goals/ objectives during the policy formulation phase?	4	3	5	4	2
	4	2	5	4	4
Q. 2. Did Public Policy attain legitimacy through a general acceptance that the policy has been produced through means that are legal and normal procedures, such as consultation with stakeholders?	4	3	4	4	3
Q. 3. Had the government been able to secure a sustainable coalition on policy goals and objectives?	3	4	3	5	
Q. 4. Did Public Policy offer any innovation that attracted stakeholders?					
Q. 5. Was there any opposition during or after the policy formulation process?	3	4	4	4	3

4.3.2 Policy as Programe Success and or Failure

As per the research objectives, Punjab Agriculture Policy (2018)as programme success and/ orfailure will be assesed through the adopted policy analysis framework, guided by Prof. Allan MacConnel policy framework. For this purpose, the researcher through well-structured questions (at Annexure-2) for the KIIs made an in-depth analysis of the policy as programme success and /or failure viz. implementation, desired outcome, stackeholder and externalities.

Malik Muhammad Nawaz (Director CRIS), Dr.Umar Farooq (Member SSD, PARC) and Dr. Syed Waseem-ul-Hassan (Food Security Commissioner) responding to the question of implementation of the policy as per goals and objectives envisaged in the action plan said that the govtenment was quite successful in the implementation of policy as per set goals and objectives. For example, in pursuant to the following policy goalsdefined in the Punjab agriculture policy- 2018, the govenment implemented the policy through its various policy actions and programmes that addressed these goals.

- Increasefarmerprofitability
- Reduce cost of inputs for farmers
- Introduce regenerative agriculture and weed management
- Encourage crop diversificationtoimprovecrop-mix
- Optimize subsidy programs through targeting and ICT technologies
- Improveaccesstofinancefor farmers through Mobile Money Operators
- Transform agriculture produce markets
- Initiate a markets and storage expansion drive to ensure competitive prices, establish warehouse receipt financing
- Encourage SME level food processing with focus on export
- Massively expand water conservationefforts

Some of the these policy actions and programmes included were; reduction in GST rate from 17% to 5% relief to the farming community, provision of subsidy of Rs.100/- per 50kg bag of Urea and maintaining the price of Urea at the level of Rs.1400/- per bags

during the FY 2017-18, issuance of Kissan Card to farmers is used by the farmers as a discount card for purchase of selected input supplies including diesel and farm mechanization services,etc.,development of a suitable mechanism for uniform rate of GST(2%) on different types of fertilizers, a mechanism was established to ensure the quality and standards of pesticides up to the mark in the country, with the help of horticulture research institue citrus rootstock (Sour Orange) true-to type plants were propagated through cuttings and shifted inpolythene bags, Citrus 800 number of plants were produced by grafting/ budding(GOP, 2017-18),by making credit available through formal banking channels, through e Credit and warehouse receipt model, the dependence of farmers on commission agents for input credit is reduced, which will increase bargaining power of the farmers, role of PAMRAAct in transforming the agriculture produce market; in collection and dissemination of market information; and to play a role in private sector development as a facilitator and enabler. The purpose was to set up separate markets of fruit, grocery, grain, cotton, fisheries, vegetables, sugar and other agricultural commodities that would not only facilitate farmers, but consumers would also get facilities. PAMRA Act would help minimise the role of middleman and would be a welfare package to farmers. To reduce postharvest losses and farmers to benefits from seasonal variations in prices of agriculture produce, a network of warehouses/cold-store are expanded through matching grant scheme under Agriculture Innovation and Development Entity (AIDE) fund. To attract private investment for setting up markets and reduce the burden on the state, entry barriers are removed, and the procedure greatly simplified. As long as minimum safety standards are met, the private sector would be free to set up and operate wholesale markets and collection centers, out of public mundies. Farmers are allowed to market their produce directly without going through middleman at unregistered farmer markets located at suitable venues, farmers are given legal recognition and registered. This has increased

competition and marketing options for farmers. The licensing of market players has been replaced by easy registration. After placing Federal Water Management Cell (FWMC) under M/o NFS&R in matters related to irrigation water managemnt, farm mechanization and land development for attaining food security in the country, following incentives were announced for agriculture machinery by the government on the budget proposals prepared by FWMC:

- exemption of custom duty on import of harvester-thresher upto five (05) years
- exemption of whole of sale tax on import of combine harvesters up to five years old. Further, sales tax exempted on agriculture diesel engines (from 3 to 36 HP).
- prepared budget proposals custom related with regard to agriculture machinery/ equipment for financial year 2018-19.

Table 4. 13 Policy as programe success and or failure

Questions To KIIs	**Responses**				
	KII-1 Malik Muhammad Nawaz CRIS	KII-2 Prof. Dr. Usman Mustafa PIDE	KII-3 Dr.Umar Farooq PARC	KII-4 Dr.Syed Waseemul-Hassan M/o NFS&R	KII-5 Dr. Sajid Ameen SDPI

Policy as programme success and/ or failure					
Q.1. Was policy implemented as per goals and objectives envisaged in the action plan and the policy?	4	3	5	4	3
Q. 2. Did the policy implement in a manner that produces the desired outcome?	4	2	4	4	3
Q. 3. Did the policy/ program benefit the target group?	4	3	4	4	3
	3	4	3	5	
Q. 4. Did policy/ program meet or satisfy the policy domain criteria i.e. achieved the desired Kinnow marketing objectives in the targeted study area?					
Q. 5. Was there any opposition to the policy goals, objectives or values?	3	4	4	4	3

4.3.3 Policy as Politics Success and or Failure

Political outcomes of the Punjab Agriculture Policy (2018)programme was analyzed as per study objectives through the adopted policy analysis framework, guided by Prof. Allan MacConnel policy framework. For this purpose, the researcher through well-structured questions (at Annexure-2) for the KIIs made an in-depth analysis of the policy as political success and/ or failure.

Dr. Syed Waseem-ul-Hassan **(**Food Security Commissioner) strongly agreed that the policy outcom did benefitted the political leadership in enhancing its' electoral

prospects and reputation where as; Prof. Dr. Usman Mustafa and Dr. Sajid Ammeen were uncertain and Malik Muhammad Nawaz(Director CRIS), Dr.Umar Farooq(Member SSD, PARC)strongly disagreed to the statement.In response to the question about governments' capability in controlling the policy agenda, all the repondents agreed except Dr. Umar Farooq who was uncertain about the goverment's capability In controlling the policy agenda.Regardingthe question about governments' success in maintaining the broad values as per the party's manifesto, all the repondents strongly agreed except Prof. Dr. UsmanMustafa who was not sure about it.Only KII1responding to the question of opposition to the political benefit of the government was not agreed, however, KII-2 and KII-4 strongly supported the statement, KII-3 and KII-

5 were not certain about it.

Table 4. 14 Policy as politics success and or failure

Questions To KIIs	**Responses**				
	KII-1 Malik Muhammad Nawaz CRIS	KII-2 Prof. Dr. Usman Mustafa PIDE	KII-3 Dr.Umar Farooq PARC	KII-4 Dr.Syed Waseem-ul-Hassan M/o NFS&R	KII-5 Dr. Sajid Ameen PIDE

Policy as political success and/ or failure					
Q.1. Did policy outcomes provide any significant political benefit in terms of enhancing electoral prospects and reputation of the political leadership, etc.?	2	3	1	5	3
Q. 2. Was the government capable of controlling the policy agenda?	4	4	3	5	4
Q. 3. Was the government successful in maintaining the broad values as per the party's manifesto?	4	3	5	5	4
Q. 4. Was there any opposition to the political benefit of the government?	2	4	3	4	3

4.3.4 KIIs' Questions Response Analysis

The key informant interviwees chosen for interview questions were high officials of public sector organisations and institutes dealing with departments responsible for agriculture research and policy making process. One interviewee was from M/o National Food Security & Research, Islamabad, serving as a Food Security Commissioner. Two interviewees were representng research institutes i.e Citrus Research Institue Sargodha (CRIS), Sargodha and Pakistan Agricultural Research Council (PARC), Isb., where as; one interviwee was an agriculture economist at Pakistan Institute of Development Economics (PIDE) and one interviwee was a public policy expert at Sustainable Develpment Policy Institue (SDPI), Isb.

Three out of five respondents agreed that the government did succeed in preserving and achieving policy goals and objectives and the policy was implemented as per goals and objectives envisaged in the action plan and policy, however one repondent strongly agreed that the policy outcome did benefitted the political leadership in enhancing its' electoral prospects and reputation,where as; two respondents were not sure about it, one respondent disagreed to some extent while the last one strongly disagreed. Four out of five respondents agreed that the public policy did attain legitimacy and has been produced through legal and normal procedure such as consultation of stakeholders, where as; one respondent did not agree.

Three out of five respondents agreed that the policy was implemented in a manner that produced the desired outcomes and benefited the targeted group whereas;one respondent was uncertain and the other disagreed to the former and two respondents were uncertain about the later. Three out of five respondents agreed that the government did secure sustainable coalitionon policy goals and objectives, where as; two respondents were not certain about it.

Two out of five respondents agreed that the public policy did offer innovative measures as elaborated above, and the policy/ programme met the policy domain criteria i.e. achieved the desired Kinnow marketing objectives, where as; the other two were not confident/ sure about both, however, one respondent didn't respond to the question, in each case. Four out of five respondents agreed that the government was capable of controlling the policy agenda and was successful in maintaining the broad values as per the party's manifesto, where as; one respondent was not certain about it. Three out of five respondents, strongly agreed/ believed that the government did face opposition during or after the policy formulation process, in the implementaion of policy goals, objectives or values and to its' political benefits. The remaining two were not sure about

it rather one respondent disregarded the oppositon to the political benefit of the government.

4.3.5 Summary of the Analysis:

Above responses showed that approximately more than eighty (80%) respondents supported, where as; about fifteen (15%) were uncertain, and nearly five (5%) disagreed the policy as process, programme and politics success, Table 4.17.

Table 4. 15 Interview questions response analysis

Sr.No.	Questions To KIIs	Average Response
Policy as process success and/ or failure		
Q. 1.	Did the government succeed in preserving and achieving policy goals/ objectives during the policy formulation phase?	**3.6**
Q. 2.	Did Public Policy attain legitimacy through a general acceptance that the policy has been produced through means that are legal and normal procedures, such as consultation with stakeholders?	**4**
Q. 3.	Had the government been able to secure a sustainable coalition on policy goals and objectives?	**3.6**
Q. 4.	Did Public Policy offer any innovation that attracted stakeholders?	**3**
Q. 5.	Was there any opposition during or after the policy formulation process?	**3.6**
Policy as program success and/ or failure		
Q. 1.	Was policy implemented as per goals and objectives envisaged in the action plan and the policy?	**3.8**
Q. 2.	Did the policy implement in a manner that produces the desired outcome?	**3.6**
Q. 3.	Did the polcy/ program benefit the target group?	**3.6**
Q. 4.	Did policy/ program meet or satisfy the policy domain criteria i.e. achieved the desired Kinnow marketing objectives in the targeted study area?	**3**
Q. 5.	Was there any opposition to the policy goals, objectives or values?	**3.6**
Policy as political success and/ or failure		

Q. 1.	Did policy outcomes provide any significant political benefit in terms of enhancing electoral prospects and reputation of the political leadership, etc.?	**2.8**
Q. 2.	Was the government capable of controlling the policy agenda?	**3.6**
Q. 3.	Was the government successful in maintaining the broad values as per the party‘s manifesto?	**4.2**
Q. 4.	Was there any opposition to the political benefit of the government?	**3.2**

CHAPTER V

Conclusion and Recommendation

As per Findings, a conclusion is drawn in this chapter along with some policy recommendations.

5.1 Conclusions

Bhalwal, Sargodha is known as California of Pakistan due to higly productive and enriched area for Kinnow variety of citrus and motorway (M-2). Mostly Farmers were selling Kinnow on contract basis, however, some were doing Kinnow business without any contract or on personal relationship basis. Three different channels were observed in Bhalwal through which most of the produce reached to consumers through factories and intermediaries. Generally, Kinnow was packed in plastic crates, currogated cotton boxes, where as, Mazda Truck for local and 40 feet containers for export while some were also using suzuki pickup, rehri, etc. as means of transportation.

Through this research, it was noticed that farmers and merchants were key players of Kinnow marketing system. Farmers were selling Kinnow in the farm and intermediaries were taking the produce from farm gate and after required processes and value addition, selling Kinnow to the end-consumer. Marketing margin analysis found Kinnow farming as a good source of earning for marginalized farmers. The growers' profit was, comparatively less than other operators of the chain. By selling one maund Kinnow, traders, unlike farmers, used to earn high profit in minimum time.

As per our analysis, Kinnow cultivation was a significant source of earning. To increase their maximum earning, growers should unite to make an association for Kinnow marketing directly with wholesaler instead of intermediaries in the chain. This can give them remunerative prices and profits as well as benefiting consumer to pay less to purchase the fruit.

Involvement of market intermediaries who were getting maximum profit in the chain needs to be reduced to curtail the marketing margins and increase growers' profit. Kinnow purchase price was least minimum, in case if it is purchased directly from farmers. So, prices reduced to minimum with minimum intermediaries (Rao & Chaudary, 1988).

This study highlighted that farmers were facing various agri-marketing problems such as out dated irrigation methods, diseases, insects, lack of awareness, expensive inputs, insufficient market information, unorganized marketing infrastructure, high transportation costs and the low prices offered by traders. The study highlighted number of production and marketing problems in Tehsil-Bhalwal such as price instability, high transportation costs and lack of information and awareness regarding latest farming techniques and technology as well as of prevailing economic conditions of the market. Public sector organizations need to furnish dedicated market place to Kinnow growers in Tehsil-Bhalwal and else, and should also fix minimum price to facilitate growers.

5.2 Policy Formulation

Bhalwal Kinnow is the best variety of citrus through out Pakistan and is found in abundance for a period of three to four months per annum in *mandi*. For the season, market price of Kinnow fluctuates, compratively less in harvesting but gets higher near the end of season. So, to get good price establishing cold storage near farmers' orchards, to store the fruit for longer time, is must. These cold storages will not only reduce Kinnow wastage (which is 15-20% of total production) rather these will facilitate/ support the existing, if any, and future pulp extracting units.

Expositions – Trainings – Exposure visits are mandatory for continuous improvement in the production, quality, variety and overall marketing of Kinnow.

Already system is multi – layred – complexity the supply chain whilst chain should be cut-short to introduce:

i. Direct marketing links ii. Improved quality of produce iii. Controlled cost of production

Though, agriculture research and extension department provide continuous guidance to the farming community for production while marketing is driven mainly by pack houses and fresh fruit market demand. These programs are sufficient but need some innovation in marketing system like farmer markets, online marketing, etc.

- Latest iirrigation practices (like drip irrigation) should be introduced to overcome water shortages and other related issues as well as to increase production capacity.
- Following irrigation requirements should be met:
  - ✓ Level of land should be done.
  - ✓ Avoid Flood irrigation.
  - ✓ For young plants irrigation should be 2 times in a week during summer while on two-week basis in winter.
  - ✓ Preferably used tensiometer.
  - ✓ For mature trees, 10-15 days' interval in summer and 3-5 weeks in winter season.
  - ✓ Furrow irrigation should be preferred for young plants.

Enhancing the budget and investment for R&D in agricultural sector, in consonance with other countries of the region, for the development of agri-products and qualified human resources in agri-marketing is need of the time. New International markets and trade agreements need to be explored to increase export of Kinnow and to earn maximum revenue. The Kinnow marketing information mechanism demands to be

reviewed and improved to facilitate the producers, for example, broadcasting and displaing price list of Kinnow on daily basis in different markets through radio and playcards at suitable places. A dedicated training programme is essential to educate farmers and to address their in-field needs and challenges like high production of best variety to compete internationally.

Economies of scale can be achieved through farmers association which is very useful for group purchasing, marketing, bargaining power, low transaction cost of inputs and products (for growers and merchants) and easy access to credit favours group loans. The objective behind farmers' association is to fetch them maximum prices at minimum costs and to eschew monopoly. Farmers, because of unawareness of forming techniques, were unable to yield best quality of citrus, especially, Kinnow variety.

For the improvement of Kinnow marketing system, following policy measures need to be considered:

(1) Credit facilities on easy terms may be provided to farmers.

(2) Fruit markets near Kinnow farms should be established to curtail the role of intermediary.

(3) Income receieved on account of market fee, and other miscellaneous charges should be spent to develop efficient and well-ordered mechanism.

(4) In order to meet the global requirements and standards and fetching attractive prices, all sorts of pre & post harvest management needs to be reviewed to get the desired result.

Role of public policy was seen very positive as compared to the past. Current government policy has brought many agri- reforms to facilitate stakeholder especially farmers, traders, and consumers as well as to expand and update the overall agriculture produce market infrastructure and regulatory framework through its various policy action and programmes.

5.3 Study Constraints and Assumptions

The researcher, despite limited resources and time shortages, gathered filled questionnaires and conducted meetings with the stakeholders, positively. Though, collecting desired data from concerned persons/ institutions, without personnel references, was hectic and embarassing for the researcher, but he managed and completed this work amicably and to his best efforts.

CHAPTER IV

Results and Discussion

This section discusses about citrus profile, respondents' characteristics, Kinnow farming, marketing costs/ margins and profits of chain operators and the public policy role on Kinnow marketing in Tehsil- Bhalwal, Punjab.

The study was carried out in the Punjab province of Pakistan. Punjab is the largest province viz. population and the second largest viz. area (Naseer, Ashfaq, Abid, Razzaq, Hassan, 2016; Pakistan, 2017). Punjab's share of the agricultural GDP is also the highest among all other provinces (Pakistan, 2019). Diversified farming is prevailing in Punjab where farmers grow crops and raise dairy livestock (Ashfaq, Razzaq, Hassan, Haq, 2015 & Ashfaq, Razzaq, Haq, Muhammad, 2015). Punjab is the largest producers of mandarins, i.e. more than 98% of its' total production in the province (Memon, 2017).

During 2018–2019, total area of citrus production in Pakistan was 181, 001hec.***** with total citrus production of 2,468,001-tons, while, total area of citrus production in Punjab was 170,000-hec**.** with total citrus production of 2,397,000-tones. In Sargodha, Punjab, total area of citrus production was 90,683-hec. with total citrus production of 12,37,051-tons i.e. 53% citrus came from Sargodha district out of 37 districts of Punjab (Pakistan, 2018 & CRS, 2019). Therefore, Sargodha district, due to its major contribution, was selected for this study. Sargodha dist. comprises of six Tehsils, i.e. Sargodha, Bhalwal, Kotmomin, Shahpur, Sahiwal and Sillanwali (Table- 4.1).

Tehsil-Bhalwal, Sargodha is known as California of Pakistan due to highly productive and enriched area viz. Kinnow variety of citrus and proximity of Motorway (M-2). The average land holding for citrus in Bhalwal is 20,749-hec. with total citrus production of 2,83,051-M.Tons. The average land under Kinnow cultivation is 20,334 hec. with total production of 2,77,390-M.Tons. (*1 Hectare= 2.47 Acre)

The cost of production of Kinnow was Rs.122,988/ acre in Bhalwal (Appendix-A2). This study found that an average farmer was receiving Rs.51,126/ acre from mandarin farming. A brief profile of Citrus, especially Kinnow, in respect of total area and production in Pakistan, particularly in Punjab, Sargodha district is presented below at Table. 4.1:

Table 4.1 Pakistan citrus profile (2018-2019)

Sr.No	Area	Area under Citrus (Acres/hec.)	Area under Kinno (Acre/hec.)	Prod. of Citrus (Tons)	Prod. of Kinnow (Tons)
1.	**Pakistan**	447,072/181,001 (100 %)	353,212/143,001 (100%)	2,468,001 (100%)	2,190,001 (100%)
2.	**Punjab**	419,901/170,000 (93.92%)	353,212/143,001 (99.99 %)	2397,000 (97.2%)	2,189,001 (99.95%)
3.	**Sargodha**	2,23,988/90,683 *(53.34%)	199,050/80,001 (56.35%)	12,37,051 (52%)	1,305,653 (59.65%)
i.	Sargodha-Te	71,930 /29,121 **(32.11%)	52,065/21,079 (26.2%)	3,97,259 (32.11%)	501,885 (38%)
ii.	Bhalwal- do-	51,251/20,749 (23%)	50,225/20,334 (25%)	2,83,051 (22.9%)	501,885 (38%)
iii.	Kotmoman-d	69,403 /28,098 (31%)	67,320/27,255 (34%	3, 83,302 (31%)	277,390 (21%)
iv.	Shahpur-do-	7,089/2,870 (3.2%)	6,380/2,583 (3.2%)	39,151 (3.2%)	371,803 (29%)
v.	Sahiwal-do-	10,558 /4,275 (5%	9,503/3,848 (5%)	58,310 (5%)	35,236 (3%)
vi.	Sillanwali-do	13,757 /5,570 (6%	12,107/4,902 (6%	75,978 (6%)	52,479 (4%)

Note. Source: Adapted from *Agriculture Marketing and Information System (AMIS) by Pakistan, 2018; CRS, 2019 & Citus Research Institute Sargodha (CRIS), Sargodha.*

* percentage(%) is claculated on the basis of Sr.No. 2

** percentage(%) is claculated on the basis of Sr.No. 3.

A profile of citrus, its' varities alongwith total production and share of each variety in total citrus production in Punjab, Pakistan, is given below at table 4.2:

Table 4. 2 Citrus varieties, production (mt) and percentage

Sr.No.	Varieties	Production (MT)	Percentage (%)
1.	Kinnow	2,113,562	90.79
2.	Sweet orange	79,477	3.41
3.	Musambi	56,561	2.43
4.	Lemon	25,742	1.11
5.	Sweet lime	29,017	1.24
6.	Mandarin	8,698	0.38
7.	Sour lime	3,648	0.15
8.	Grapes fruit	2,336	0.1
9.	Sour orange	901	0.039
10.	Others	8,148	0.34

Note. Source: *CRIS (2019).*

Cost of production of Citrus in Tehsil-Bhalwal for one acre citrus fruit with the recommended production and technology is worked out at table 4.3 below:

Table 4. 3 *Cost of production for 01 acre citrus (with recommended prod. tech.)

S.No	Operation/Inputs	Cost/Acre (Rs.)
1.	Ploughing	6000
2.	Hoeing	3720
3.	Irrigation	3898
4.	Pruning	2500
5	Stamp Pasting	4,164
6.	Plant Protection	15972
7.	Fertilizers	36620
	TOTAL	**72,874**

Note. Source: CRIS (2019).

The detail Cost Benefit Ratio of Citrus (Kinnow) is worked out as below:

- Citrus yield/acre adopting best recommendation is **200 mounds (08 MT)**
    - Rate per mound of **A**grade fruit is **Rs. 800 & Rs. 200** for **C** grade.
- Crop proportion of **A & C** grade in the better-quality orchard is **70:30**.
    - Income from A grade fruit (140x800) = Rs. 112000
    - Income from C grade fruit (60x200) = Rs. 12000
    - Total Gross Income/acre = Rs.124000/-
    - Total Expenditure = Rs.72874/-
    - Net Income = Rs.51126/-
- **Note: The net profit depends on yield & quality of fruit**

Note.
Source: CRIS (2019).

*Detail Cost of Production at Appendix- A2.

4.1 Findings of the Study:

During this study, after discussion/ response from key skakeholder (s), in the entire Kinnow marketing & supply chain, at CRIS, Sargodha and else, following were the key findings:

- land profile of the study area at table-4.4
- orchards profile at table-4.5
- respondents Characteristics are presented at table-4.6 - 4.8.
- prevailing citrus supply chain in Tehsil-Bhalwa, was figured out (figure-4.1).
- existing infrastructure facilities available for fresh Pakistani Kinnow (table-4.9),
- mode of transport for Kinnow inlocal and international markets(figure-4.2),
- standards of various Kinnow importing countries,
- marketing channel framework (figure-4.3), and;
- share of Kinnow from producer to consumer of each intermediary (figure-4.4),

respectively.

4.1.1 Land Profile in Bhalwal, Sargodha

Thirteen villages (Chobba Purrana, 7ML, 8ML,10NB, 15NB, 16NB, 17NB,18NB, 21NB, 22NB, 23NB, 24NB, and 26NB) from Tehsil- Bhalwal were selected as it had the highest area under Kinnow production. Detail is given at table 4.4 below.

Table 4. 4 Land profile of study area in tehsil Bhalwal, Sargodha

Sr. No.	Area	T. Land Holding (Acre)	Area under orchard crops (Acres)	Area under Kinnow (Acres)	Percentage (%)
1	10NB	980	826	826	84.3
2	15NB	45	12	12	26.7
3	16NB	45	13	13	28.9
4	17NB	27	7	7	25.9
5	18NB	99	23	23	23.2
6	21NB	30	36	36	120.0
7	22NB	48	7	7	14.6
8	23NB	47	107	105	223.4
9	24NB	213	121	121	56.8
10	26NB	37	10	10	27.0
11	8ML	594	375	374	63.0
12	7ML	347	209	204	58.8
13	Chabba Purana	1537	645	630	41.0
	Total	**4049**	**2391**	**2368**	**58.5**

4.1.2 Orchards Profile in Bhalwal, Sargodha

There were three main categories of Kinnow orchards in the study area i.e. Small, Medium and Large. Small orchards range from 1 to 12 acre, medium orchards from above 12to 25 acre, and large orchards wereabove 25 acre with total number of Kinnow orchards as 198, 40, and 14, respectively. There were approximately, on average, one hundred plants in one acre area of land, this figure is also in concurrence with the results of Nawaz, Ahmed and Jiskani (2008), wherein; total fruit bearing of each plant was approximately 1 ½ (1.5)

maund on average.Detail of total area, number of plants and total fruit bearing of these Kinnow orchards is as below at table 4.5.

Table 4.5 Orchard profile of study area in tehsil Bhalwal, Sargodha

Sr. No.	Size of Orchard (Acre)	T. Kinnow Orchards (No.)	T. Area of Orchard (Acre)	T. Kinnow Plants (No.)	Bearing of Plant (Maunds)
1	upto-12	198	1094	109,400	164,00
2	upto-25	40	808	80,800	121,200
3	Above -25	14	466	46,600	69,900
Overall		**252**	**2368**	**2,36,800**	**355,200.00**

4.1.3 Respondents' Characteristics

Farmers, commission agents, contractors, wholesaler/ retailers and consumers were the respondents of the questionnaires, whose profile is presented below:

Farmers' Questionnaire Response Profile:

Personal Characteristics: Total 85 out of 200 farmers from 13 villages were randomly selected and interviewed through a structured questionnaire at 'Questionnaire-2'. The charaacteristics of farmers such as gender, age, education, experience and family size is at table 4.6 below:

Table 4. 6 Characteristics of farmers with descriptive statistics

Characteristic	Unit	Min.	Max.	Mean	Std. Dev.
Gender	Male/ Female	1	1	1	.99
Age	Years	23	65	41.22	9.87
Education	Years	5	16	8.47	3.19
Experience	Years	15	50	27.35	6.96
Total family members	No.	3	10	5.85	1.62

Field Work Response (constrains& suggestions): As per questionnaire-2, most of the farmers highlighted the same productions & marketing problems. Problems/ Constraints faced by farmers during production and marketing of Kinnowand suggestions to those problems/ constraints are tabulated below:

Table 4.7 Constraints faced by farmers in Kinnow production & marketing

Problems/Constraints	Rank (5-Max. 1-Min.)	Min.	Max.	Mean	Std. Dev.
Production problems					
High price of input	No.	2	5	3.4	0.69
Lack of irrigation	No.	1	4	2.8	0.928
Unavailability of input in time	No.	1	5	3.13	0.967
Insect	No.	1	5	2.92	1.02
Diseases	No.	1	5	3.12	1.03
Lack of good quality sapling	No.	1	5	2.21	1.13
Hail stone	No.	1	5	2.17	1.13
Lack of credit	No.	2	5	4.30	0.74
Poor variety of mandarin	No.	1	5	4.37	0.71
Lack of good cultivation skill	No.	1	5	4.00	0.980
Marketing problems					
Lack of marketing information	No.	2	5	3.67	0.997
Low price offered by trader	No.	3	5	4.20	0.707
Lack of good moterable road	No.	1	5	3.57	0.908
High transportation cost	No.	1	5	3.44	1.034
Unorganized market	No.	1	5	3.55	1.034
Lack of storage facilities	No.	1	5	3.54	1.011
Lack of processing knowledge	No.	1	5	3.40	1.194
Frequent transportation obstruction	No.	2	5	3.80	0.861
Others ….....	No.	1	5	3.37	0.954

Note *Source: Questionnaire (farmers responses) during research (2018-19) in stydy area.*

Table 4.8 Suggestions of farmers to solve the problems

Suggestion to solve problems	Rank (5-Max.1-Min.)	Min.	Max.	Mean	Std. Dev.
Sugestions to production problems	No. No.	2	5	3.46	0.767
Disease and pest control training					
Provision of credit		2	5	3.80	0.818
Good cultivation practices training	No.	1	5	3.52	1.04
Formation of producer organization	No.	1	5	3.33	1.13
Timely input	No.	1	5	3.94	1.-05
Others	No.	1	5	3.51	1.15
Sugestions to marketing problems					
Marketing as a group	No.	4	5	4.88	0.325
Good Marketing Information System	No.	4	5	4.85	0.364
Good cultivation practices training	No.	1	5	3.52	1.04
Provision of storage facilities	No.	4	5	4.88	0.326
Provision of processing knowledge	No.	5	5	5	0
Others	No.	5	5	5	0

Note

Source: Questionnaire (farmers responses) during research (2018-19) in stydy area.

Commission Agents' (Arthies) Questionnaire Respose Profile:

Personal Characteristics: Total 38 out of 50 commission agents (Arthi) were selected randomly from tehsil Bhalwal who were interviewed through a structured questionnaire at 'Questionnaire-1'. The characteristics of these artiies such as age, edu., experience and family size is tabulated at tab. 4.9.

Table 4.9 Characteristics of Arthies with descriptive statistics

Characteristics of Arthi	Average Response
Main Crop:	Kinnow
Type:	Pacca
Size:	Medium
Experience	More than 20 years

Table 4. 9 Characteristics of Arthies with descriptive statistics

Characteristics of Arthi	Average Response
Section I: Business Profile and Environment	
Business Type	Commission Agent
How did you enter this business?	Inheritance / Family Business
Who are your target group clientele?	Medium Size farmer (12-25 acres)
How many farmers are you dealing with?	Less than 40 farmers
What other businesses do you have?	NILL
How did you enter this business?	Inheritance / Family Business
What are your sources of financing?	a) Self-Capital b) MFIs/ banks
Was it easy to get finance from the bank? a) Yes b) No	No
If you have borrowed from banks, how much and at what margin?	Rs. 4- Million @12%
If you borrow from banks/private money lenders, please state form of collateral you provided	a) house b) agriculture land c) shop d) plot
Do you think it would be a good idea for Arthis to join hands with banks to fulfill the credit needs of farmers? (Explain them NIBAF model)	Yes!
Describe how government policies affect your business.	a) Taxes; b) market committee regulations; c) market fee; d) commission
What is the role of the Anjuman-e-Arthiyan?	a) Commission fixation; b) dispute settlement between arthis; c) helping in recovery of default loans d) Other__
Describe relations and interactions with other Arthis?	a) Friendly
Section II: Financial Services	
When providing credit, how do you select the farmer?	a) Know him from b) before
How do you assess the farmer's credit needs?	c) Previous history
What purpose do you lend for?	a) Farming activities
Do you provide credit in cash or in kind?	b) Cash
Factors affecting the Size of the loan.	c) Personal relationship
Loan amount	a) Rs.10,000-30,000
Does interest vary across different borrowers? If yes, how do you decide?	No.
Do you need any collateral when you lend? If yes, what type?	NILL
How much time you take to disburse the loan? a) At the spot b) 7-10 days c) 10-15 days	Depend on size of loan
What is the term of your credit?	e) One year
How many crop cycles are there in a year? What is the duration of a crop cycle?	Two times in a year
Credit repayment schedule	b)) Installments

Section IV: Income of the Arthi	Average Response
How much you have invested in this business at present? _____ (Millions)	3-4 Million
How much you have advanced in cash to farmers at present? a) Crop_____ b) Amount _____ (Rs. Millions)	1-2 Million
How much you have advanced in kind (value) to farmers at present? a) Crop_____ b) amount _____ (Rs. Millions)	Million
What is your annual turnover from other sources	5-6 Million
Expenditure Schedule (Arthi)	
Operating Costs Credit Cost (Arthi)	

Contractors', Wholesalers & Retailers Profile:

Total 18 out of 20 contractors (Beoparies/ Middlemen) and 32 out of 40 wholesalers and retailers were selected randomly from tehsil Bhalwal who were interviewed through a structured questionnaire (at 'Questionnaire-'3 & 4'). Their characteristics are tabulated at table 4.10.

Table 4.10 Characteristics of contractors/ wholesalers/ retailers

Characteristic	Unit	Min.	Max.	Mean	Std. Dev.
Gender	Male/ Female	1	1	1	.99
Age	Years	23	65	41.22	9.87
Education	Years	5	16	8.47	3.19
Experience	Years	15	50	27.35	6.96
Total family members	No.	3	10	5.85	1.62

Questions To Contractors/ Wholesalers/ Retailers	Average Response
From where do you buy mandarin?	Sargodha District
Do you have contract with them?	Yes!
What types of information do you convey to grower?	That adds value to Kinnow.
Do you harvest the mandarin yourself or take harvested by farmers?	By farmers!
If yes, how much cost do you need to harvest one quintal mandarin?	Nill.
Do you sort and grade the mandarin? If yes, why you sort and grade?	Yes. for best grade & price.
How much price did you pay per 40 Kg to the farmer last year?	Rs.800-850/ 40 Kg.
Did you pay immediately after taking mandarin from farmer or after selling	Paid after selling the fruit.
How much money do you need for sorting and grading?	Rs.
What is the packaging material for mandarin?	Wooden Paety & corrug carton box (loc. & intl.)
What is the means of transport of mandarin and how much money do you ne per 40kg for transportation of the mandarin?	Mazda truck for domestic & container for intel. market.
Where and to whom do you sell mandarin and how much price /40Kg?	Loc. Factories/wh.salers & Intl. Makt. Rs.800/ & Rs.3400
How many kg generally losses during transportation of Kinnow / 40 Kg?	10-15 Kg/ 40Kg
What suggestions do you think to solve those marketing problems?	Good markeing info. syst Best market infrastrucure, M best transportation facili easy & quick procedure obtaining export licence,etc.

4.1.4 Citrus Supply Chain in Tehsil-Bhalwa, Sargodha

The prevailing citrus supply chain in tehsil-Bhalwal, Sargodha is presented at Figure

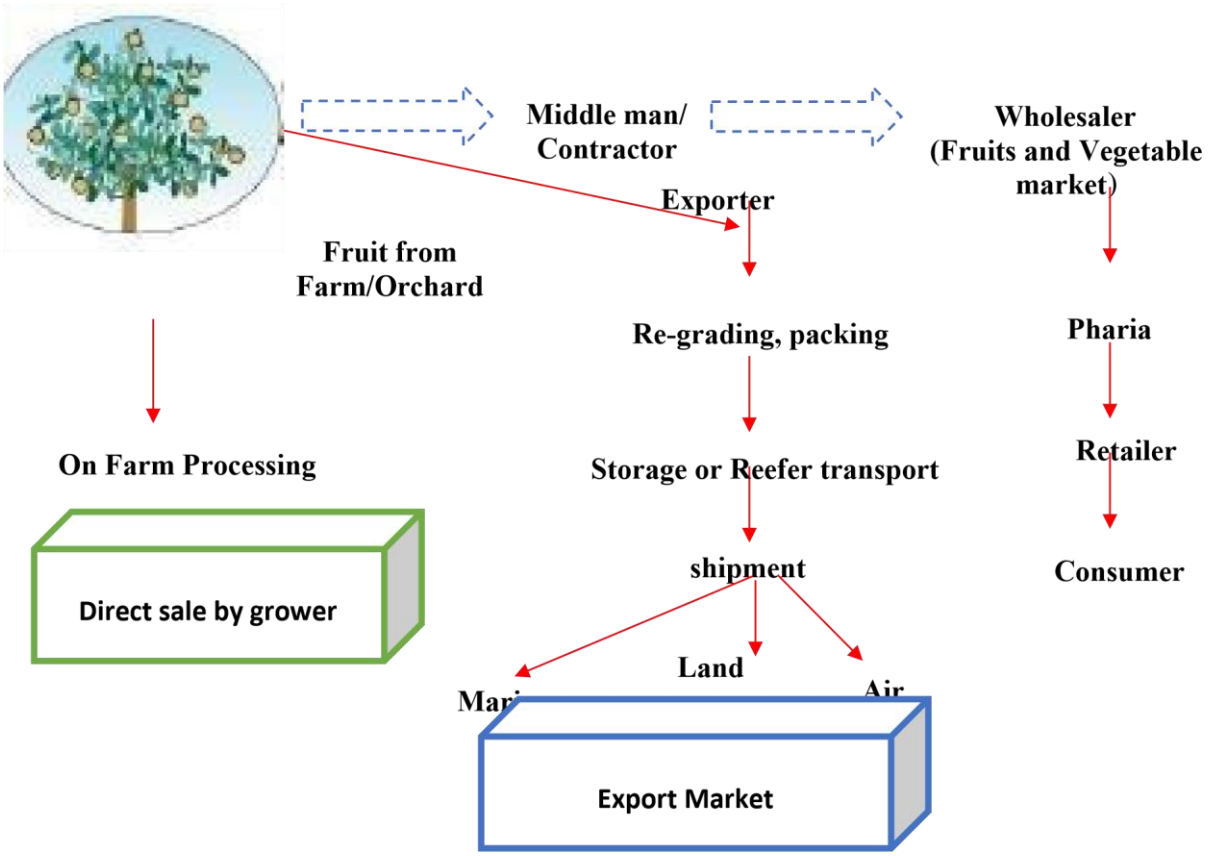


Figure 4.1 Citrus Supply Chain, Bhalwal, Sargodha, Pakistan

4.1.5 Infrastructure Facilities Available for Fresh Kinnow in Pakistan

The infrastructure facilities available for fresh Kinnow in Pakistan, at table 4.1.

Table 4.11 Infrastructure facilities available for fresh Kinnow in Pakistan

Sr.No.	Type of Infrastructure	No. of Units	Total Capacity
1.	Pack houses	200	5 – 10 MT/HR on average
2.	Cold Stores	22	50,000 MT
3.	Reefers	Not locally available	15 – 30 ton
4.	Processing Plants 1. Citro Pak Ltd. 2. Shakarganj Foods. 3. Oriental Foods.	03	10 – 30 MT/HR

Note.

Source**:** *CRIS (2019).*

4.1.6 Mode of Kinnow Export

Kinnow is transported domestically and internationally viz. routes defined at figure 4.2.

Russia (Sea)

BHALWAL → KARACHI → NOVOROSSIK → SAINT PETERS BURG → VALODIVASTIC RUSSIA

Afghanistan (Road)

BHALWAL → PESHAWAR → TORKHUM → KABUL AFGHANISTAN

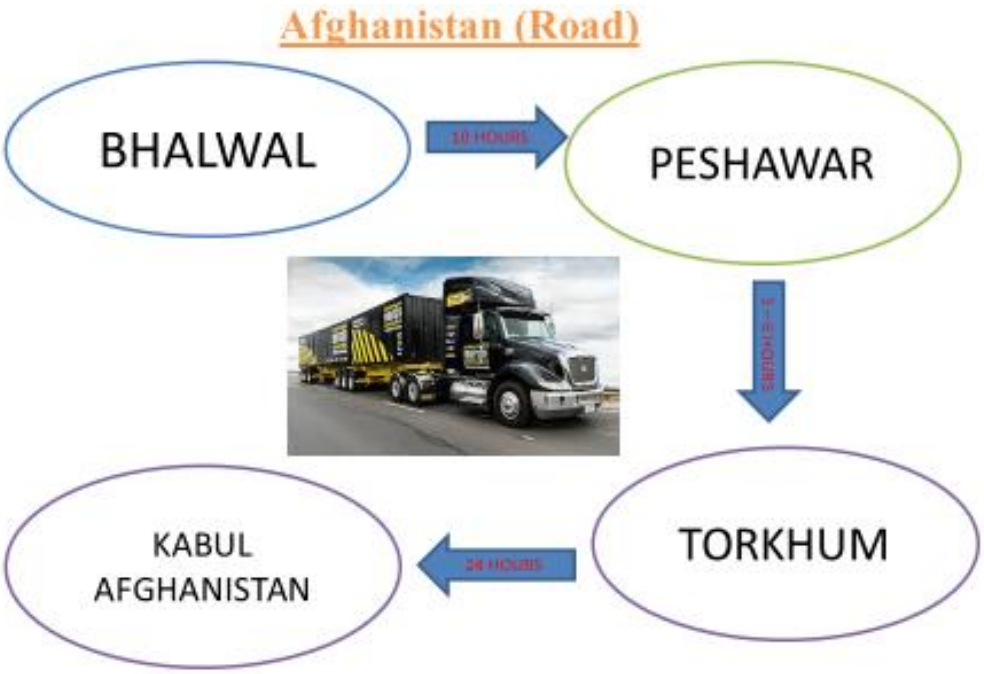


Figure 4.2 Mode of Kinnow Export

4.1.7 Standards Of Various Kinnow Importing Countries

Size

Gulf & Saudi Arabia 32-48 counts/10 kg

Singapore & Malaysia 36-48 counts/10 kg

Indonesia & Philippines 48-66 counts/10 kg

Europe 66-81 counts/10 kg

Note. Source: *CRIS (2019).*

4.1.8 Marketing Channel Framework in Study Area

Channel-I

In channel-I,theproducer sells (export) Kinnow of A& B quality grade to factories. These factories, subsequently, sell it to international market. Whereas; C-quality grade to domestic market within and outside Punjab, Pakistan (Figure 4.3.1).

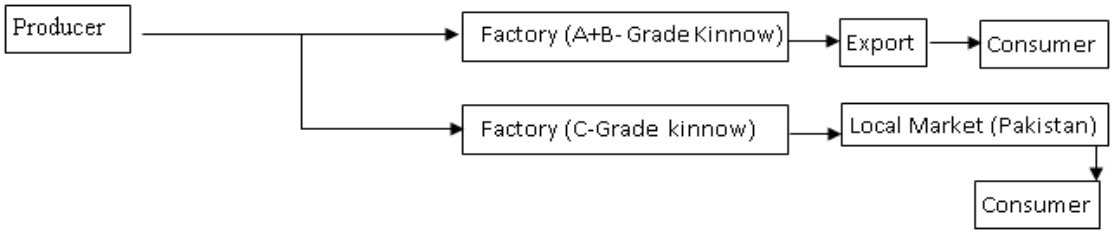


Figure 4.3.1 Kinnow channel-I

Channel-II

In channel-II, the producer sells (export) Kinnow of A& B quality grade to contractor (middlemen). These middlemen, subsequently, sell it to factories through commission agents. Factories sell the best quality to foreign market. Whereas; an average quality Kinnow is sold in local market (Figure 4.3.2).

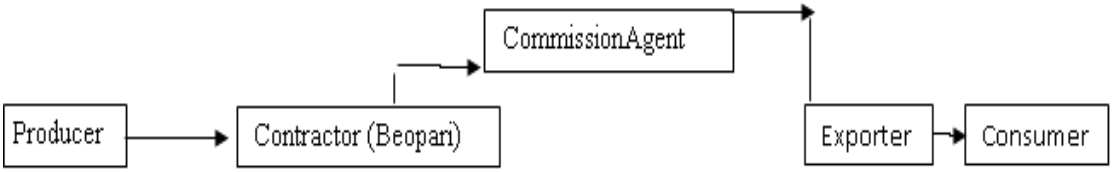


Figure 4.3.2 Kinnow channel-II

Channel-III

In channel-III, the Producer sells his fruit to contractor (middlemen) who sell the fruit to factories through commission agent. Factories sell Kinnow to domestic market within and outside Punjab, Pakistan (Figure 4.3.3).

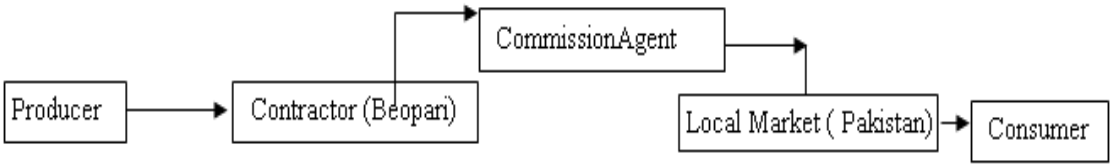


Figure 4.3.3 Kinnow channel-III

Figure 4.3 Marketing Channel Framework, Bhalwal, Punjab

Note. Source: *CRIS (2019).*

4.1.9 Share of Kinnow From Producer to Consumer

The factory manager purchases Kinnow directly from producer or contractor and sold to foreignmarket,andlocalmarketby 20%, and 80-85%, respectively.

Share of Kinnowfrom Producer to Consumer is at figure 4.4.

4.2 Study I: Marketing Channels, Prices, Margins and Profits Analysis

In study I, marketing channels, prices, margins and profits of farmers and the intermediaries in Kinnow supply chain are thoroughly presented and analaysed as below:

4.2.1 Marketing Channels

Before drawing analysis and data interpretation, an understanding of prevailing marketing channels in Tehsil-Bhalwal, Sargodha is essential.

In channel-I, the producer passed Kinnow (A & B Grade) on to Kinnow factories for export to various countries such as Russia, Indonesia, China, Gulf States, etc., whereas; Kinnow of C and lower grade is sold to local markets of Punjab and other areas of Pakistan till it reaches to the consumer (Fig.-4.3.1).

In channel-II, the producer passed Kinnow (A & B Grade) on to midleman (contractor or beopari) who sells it through commission agent to Kinnow factories for export to various countries such as Russia, Indonesia, China, Gulf States, etc. till it reaches to the consumer (Fig.-4.3.2).

In channel-III, the producer passed Kinnow(A & B Grade) on to Kinnow factories for export to various countries such as Russia, Indonesia, China, Gulf States, etc., whereas;Kinnow of C and lowergrade is sold to local markets of Punjab and other areas of Pakistan till it reaches to the consumer (Fig.-4.3.3).

4.2.2 Prices, Marketing Margins and Profits Analysis

During Kinnow marketing process, the price varies from channel to channel and market to market depending upon the mode of transpportation, packaging material, loading/ unloading, marketing/ advertising and other miscellaneous charges. All these price factors, besides quality of Kinnow, are important in determining the marketing margins and profitsof all intermediaries including Kinnow grower's. In this study, the price trend wasseen different for the three channels in two markets i.e. domestic and foreign. Factories purchased the fruit both from farmers and beoparies (middlemen), simultaneously, and exported the fruit in foreign and domestic market at different prices for these channels and markets. Price of Kinnow, due to involvement of functionnaries, were different at different stages of the chain.

Channel-I:- In channel-I, factories purchased Kinnow from farmers and exported (Grade A & B) directly without the involvement of intermediaries, hence, both farmers and factories were the main beneficiaries,here. This showed that growers' sale price and factories profit in channel-1 was higher than channel-II. Growers' selling price to factories was Rs.800.00/ Maund. Factories looked out all matters related to harvesting and post-harvesting of Kinnow orchard. Factories born miscellaneous expenses of Rs. 250/ Maund (mentioned at appendix-1) and sale out the fruit at Rs.1,350/ 40 kg in local market. The factories' marketing margin and profit, in Channel-I, were Rs.550.00/ 40 Kg (Rs.1350-Rs.800) and Rs. 300.00/ 40 Kg (Rs.550-Rs.250), respectively. Similarly, factories purchased Kinnow at Rs 800/ Maund and after adding miscellaneous expenses of Rs.450/Maund (mentioned at appendix-1) sale out/ exported Kinnow at Rs. 2,600/ Maund. The factories' marketing margin and profit, in Channel-I, were Rs. 1,800.00/ Maund (Rs.2600-Rs.800) and Rs 1,350.00 / Maund (Rs.1800-Rs.450), respectively.

Channel-II:- In Channel-II, the contractor purchased fruit from farmer at Rs. 875/ Maund and after adding marketing expenses with 4% commission of Rs. 475 (mentioned at appendix-1) sale out the fruit to factories, in local market at Rs. 1,825/ Maund. The contractors' marketing margin and profit were Rs. 950/ Maund (Rs.1825875) and Rs. 475/ Maund (950-475), respectively. The contractors'selling and factories' purchased price was Rs. 1825/ Maund. Factories born miscellaneous expenses of Rs. 150 (mentioned at appendix-1) and sale out Kinnow at Rs. 2,225/ 40 kg in local market. The factories' marketing margin and profit in local market were Rs. 400/ 40 Kg (Rs.2,225-1825) and Rs. 250/ 40 Kg (Rs.400-Rs.150), respectively. Similarly, factories purchased Kinnow at Rs 1,825/ Maund and after adding miscellaneous expenses of Rs.350/ Maund (mentioned at appendix-1) sale out/ exported at Rs. 4,685 / Maund.The factories' marketing margin and profit were Rs. 2,460/ Maund (Rs.4,685-Rs.2,225) and Rs.2,110.00/ Maund (Rs.2,460-Rs.350), respectively.

Channel-III:- In Channel-III, contractors paid farmers Rs. 875/ Maund and after adding miscellaneous expenses and 4% commission of Rs.475/ Maund sale out Kinnow locally for Rs.1,825/ Maund. Contractors'margins and profit were Rs.950/ Maund and Rs.475/ Maund, respectively.

Summary of the Analysis:

This study found that Kinnow prices, in channel-I, increased from Rs. 800 to Rs.1,350 & Rs. 2,600/ Maund in local and foreign market, respectively**.** Where as; Kinnow prices, in channel-II, increased from Rs. 875 to Rs. 2,225 & Rs.4,685/ Maund in local and foreign market, respectively. Kinnow prices, in channel-III, increased from Rs. 875 to Rs. 1825/ Maund in local market from grower to retailer/ consumer.

However, the total marketing costs incurred by factory was Rs. 250 & Rs.450/ Maund in channel-I and Rs. 150 & Rs. 350/ Maund in channel-II, for local and foreign

market, respectively. The total marketing cost incurred by contractor was Rs. 475/ Maund in channel-II and channel-III for local markets.

The marketing margins added by factory was Rs. 550/- and Rs. 1,800/ Maund in channel-I and Rs.400 and Rs. 2,460/ Maund in channel-II, for local and foreign market, respectively. The marketing margins added by contractor was Rs. 950/ Maund in channel-II and channel-III, for local and foreign markets, respectively.

The profits earned by factory was Rs. 300 & Rs. 1,350/ Maund in channel-I and Rs. 250 and Rs. 2,110/ Maund in channel-II, for local and foreign market, respectively. The profit earned by contractor was Rs. 475/ Maund in channel-II and channel-III, for local market.

Above prices, margins and profits showed that each functionary added his cost/margins and profits into total Kinnow price and passed the fruit on. Above analysis showed that Kinnow prices were increased almost 2-times in local and 3-times in foreign markets before it was finally purchased by households. The reason behind higher market margins was due to the higher marketing costs or/and greater profits of the functionaries. The higher marketing costs was due to the result of poor market infrastructure that are roads, storage, post- harvest losses, grading and handling the product. Where as; greater marketing profits in marketing of the fruits was due to the involvement of greater risk of losses, exploitative type of marketing system and requirement of greater investment as also highlighted by Ahmad (2003).

4.3 Study II: Public Policy Analysis

In study II, public policy analysis has been presented:

4.3.1 Policy as Proces Success and or Failure

As per the research objectives, public policy role will be assesed through the adopted policy analysis framework, guided by Prof. Allan MacConnel policy framework.For this purpose, the researcher through well-structured questions (at Annexure-2) for the KIIs made an in-depth analysis of the policy as process as process as per KIIs'response recorded by using 5- point Likert scale below, presented at table 4.3.1.

5-Point Likert Scale

1	2	3	4	5
Strongly Disagree	**agree to some Extent**	**Uncertain**	**Agree to some Extent**	**Strongly Agree**

Malik Muhammad Nawaz (Director, CRIS), Dr.Umar Farooq (Member SSD, PARC) and Dr. Syed Waseem-ul-Hassan **(**Food Security Commissioner) responding to the question of preserving the government policy goal and objectives during the policy formulation phase said that the govtenment outlined differnt objectives & policy actions, which addressed all aspects of Kinnow production and marketing. On the question of legitimacy & sustainable coalition, they agreed and said that the policy has been produced through legal and normal procedures, and with the involvement of every key stakeholders, all political parties were politically motivated and part of the consultation process for sustainable coalition. The government was succeessful in securing sustainable coalition on policy goals and objectives. This sustainable coalition was reflected in National Food Security Policy (2018). While, regarding innovation both Director (CRIS) & Member (SSD, PARC) were uncertain, however, the farmer, unlike later, was not sure about the opposition that the government has faced in the

formulation phase. Wheras; Food Security Commissioner (M/o NFS&R) strongly favoured the innovations and endorsed that the budget for agriculture research and innovation which is 0.2% of agriculture GDP has now been increased gradually to 0.4% of agriculture GDP, which is at par with other countries in the region and agreed that the government did face opposition in the policy formulation process.

But contrary to above, Prof. Dr. Usman Musthafa (Agricultural Economist) was not sure about the government's success in preserving goals and objectives during the policy formulation process and also disagreed in attaining legitimacy. However, he was not certain about the government stance regarding securing sustainable coalition on policy goals and objectives. However, he agreed that prevailing public policy did offer innovative measures that attracted stakeholder like the *Punjab Agriculture Market Regulatory Authority (PAMRA), pest free zone for potato, rice and citrus with the collaboration of provincial government to enhance export of Pakistan, all Kinnow processing plants were examined and 05 processing plants of Kinnow were updated as per international standard, Kinnow processing plants and pack houses were also deveveloped, relief to the farming community was provided through reduction in GST rate from 17% to 5%, provision of subsidy of Rs.100/- per 50kg bag of Urea and maintaining the price of Urea at the level of Rs.1400/- per bags during the FY 2017-18, developed a suitable mechanism for uniform rate of GST (2%) on different types of fertilizers, a mechanism was established to ensure the quality and standards of pesticides upto the mark in the country, other innovative measures include registration of seed companies, upgradation of website of federal seed certification and registration department for swift electronic communication of seed certification data. Updation of seed regulatory framework e.g. Plant breeder'Rights Rules 2018, minimum fruit plant certification standard draft for citrus, mango, gauva, date palm, bannana, pomegranate,

litchi and grapes is prepared and under submission for approval, capacity building of traders/ stakeholders. The professor also endorsed that the government did face opposition in the policy formulation process.

Dr. Sajid Ameen (SDPI) unlike earlier KIIs, was very pesimistic and disagreed regarding the government's agri- reforms such as achievement of policy goals and objectives set in the policy formulation process, but supported the public policy in attaining legitimacy throgh legal and normal procedures like through consultation with the stakeholders. However, like Prof. Dr. Usman Mustafa, he was also not sure about the goverment's achievement in securing sustainable coalition on policy goals and objectives and was unsure about any opposition that the government has encountered during or after the formulation of policy.

Questions To KIIs	**Responses**				
	KII-1 Malik Muhammad Nawaz CRIS	**KII-2** Prof. Dr. Usman Mustafa PIDE	**KII-3** Dr.Umar Farooq PARC	**KII-4** Dr.Syed Waseem-ul-Hassan M/oNFS&R	**KII-5** Dr. Sajid Ameen SDPI
Policy as process success and/ or failure					
Q. 1. Did the government succeed in preserving and achieving policy goals/ objectives during the policy formulation phase?	4	3	5	4	2
Q. 2. Did Public Policy attain legitimacy through a general acceptance that the policy has been produced through means that are legal and normal procedures, such as consultation with stakeholders?	4	2	5	4	4

Q. 3. Had the government been able to secure a sustainable coalition on policy goals and objectives?	4	3	4	4	3
Q. 4. Did Public Policy offer any innovation that attracted stakeholders?	3	4	3	5	
Q. 5. Was there any opposition during or after the policy formulation process?	3	4	4	4	3

4.3.2 Policy as Programe Success and or Failure

As per the research objectives, Punjab Agriculture Policy (2018) as programme success and/ or failure will be assesed through the adopted policy analysis framework, guided by Prof. Allan MacConnel policy framework. For this purpose, the researcher through well-structured questions (at Annexure-2) for the KIIs made an in-depth analysis of the policy as programme success and /or failure viz. implementation, desired outcome, stackeholder and externalities.

Malik Muhammad Nawaz (Director CRIS), Dr.Umar Farooq (Member SSD, PARC) and Dr. Syed Waseem-ul-Hassan (Food Security Commissioner) responding to the question of implementation of the policy as per goals and objectives envisaged in the action plan said that the govtenment was quite successful in the implementation of policy as per set goals and objectives. For example, in pursuant to the following policy goalsdefined in the Punjab agriculture policy- 2018, the govenment implemented the policy through its various policy actions and programmes that addressed these goals.

- Increasefarmerprofitability
- Reduce cost of inputs for farmers
- Introduce regenerative agriculture and weed management

- Encourage crop diversificationtoimprovecrop-mix
- Optimize subsidy programs through targeting and ICT technologies
- Improveaccesstofinancefor farmers through Mobile Money Operators
- Transform agriculture produce markets
- Initiate a markets and storage expansion drive to ensure competitive prices, establish warehouse receipt financing
- Encourage SME level food processing with focus on export
- Massively expand water conservation efforts

Some of the these policy actions and programmes included were; reduction in GST rate from 17% to 5% relief to the farming community, provision of subsidy of Rs.100/- per 50kg bag of Urea and maintaining the price of Urea at the level of Rs.1400/- per bags during the FY 2017-18, issuance of Kissan Card to farmers is used by the farmers as a discount card for purchase of selected input supplies including diesel and farm mechanization services,etc.,development of a suitable mechanism for uniform rate of GST (2%) on different types of fertilizers, a mechanism was established to ensure the quality and standards of pesticides up to the mark in the country, with the help of horticulture research institue citrus rootstock (Sour Orange) true-to type plants were propagated through cuttings and shifted inpolythene bags, Citrus 800 number of plants were produced by grafting/ budding (Pakistan, 2017), by making credit available through formal banking channels, through e-Credit and warehouse receipt model, the dependence of farmers on commission agents for input credit is reduced, which will increase bargaining power of the farmers, role of PAMRA Act in transforming the agriculture produce market; in collection and dissemination of market information; and to play a role in private sector development as a facilitator and enabler. The purpose was to set up separate markets of fruit, grocery, grain, cotton, fisheries, vegetables,

sugar and other agricultural commodities that would not only facilitate farmers, but consumers would also get facilities.

PAMRA Act would help minimise the role of middleman and would be a welfare package to farmers. To reduce postharvest losses and farmers to benefits from seasonal variations in prices of agriculture produce, a network of warehouses/cold-store are expanded through matching grant scheme under Agriculture Innovation and Development Entity (AIDE) fund. To attract private investment for setting up markets and reduce the burden on the state, entry barriers are removed, and the procedure greatly simplified.

As long as minimum safety standards are met, the private sector would be free to set up and operate wholesale markets and collection centers, out of public mundies. Farmers are allowed to market their produce directly without going through middleman at unregistered farmer markets located at suitable venues, farmers are given legal recognition and registered. This has increased competition and marketing options for farmers. The licensing of market players has been replaced by easy registration. After placing Federal Water Management Cell (FWMC) under M/o NFS&R in matters related to irrigation water managemnt, farm mechanization

Table 4. 13 Policy as programe success and or failure

Questions To KIIs	Responses				
	KII-1 Malik Muhammad Nawaz CRIS	**KII-2** Prof. Dr. Usman Mustafa PIDE	**KII-3** Dr.Umar Farooq PARC	**KII-4** Dr.Syed Waseemul-Hassan M/o NFS&R	**KII-5** Dr. Sajid Ameen SDPI
Policy as programme success and/ or failure					
Q.1. Was policy implemented as per goals and objectives envisaged in the action plan and the policy?	4	3	5	4	3
Q.2. Did the policy implement in a manner that produces the desired outcome?	4	2	4	4	3
Q.3. Did the policy/ program benefit the target group?	4	3	4	4	3
Q.4. Did policy/ program meet or satisfy the policy domain criteria i.e. achieved the desired Kinnow marketing objectives in the targeted study area?	3	4	3	5	
Q. 5. Was there any opposition to the policy goals, objectives or values?	3	4	4	4	3

and land development for attaining food security in the country, following incentives were announced for agriculture machinery by the government on the budget proposals prepared by FWMC:

- exemption of custom duty on import of harvester-thresher upto five (05) years

- exemption of whole of sale tax on import of combine harvesters up to five years old. Further, sales tax exempted on agriculture diesel engines (from 3 to 36 HP).
- prepared budget proposals custom related with regard to agriculture machinery/ equipment for financial year 2018-19.

4.3.3 Policy as Politics Success and or Failure

Political outcomes of the Punjab Agriculture Policy (2018)programme was analyzed as per study objectives through the adopted policy analysis framework, guided by Prof. Allan MacConnel policy framework. For this purpose, the researcher through well-structured questions (at Annexure-2) for the KIIs made an in-depth analysis of the policy as political success and/ or failure.

Table 4. 13 Policy as politics success and or failure

Questions To KIIs	Responses				
	KII-1 Malik Muhammad Nawaz CRIS	**KII-2** Prof. Dr. Usman Mustafa PIDE	**KII-3** Dr.Umar Farooq PARC	**KII-4** Dr.Syed Waseemul-Hassan M/o NFS&R	**KII-5** Dr. Sajid Ameen SDPI
Policy as politics success and/ or failure					
Q.1. Did policy outcomes provide any significant political benefit in terms of enhancing electoral prospects and reputation of the political leadership, etc.?	2	3	1	5	3
Q. 2. Was the government capable of controlling the policy agenda?	4	4	3	5	4
Q. 3. Was the government successful in maintaining the broad values as per the party's manifesto?	4	3	5	5	4
Q. 4. Was there any opposition to the political benefit of the government?	2	4	3	4	3

Dr. Syed Waseem-ul-Hassan **(**Food Security Commissioner**)** strongly agreed that the policy outcom did benefitted the political leadership in enhancing its' electoral prospects and reputation where as; Prof. Dr. Usman Mustafa and Dr. Sajid Ammeen were uncertain and Malik Muhammad Nawaz (Director CRIS), Dr.Umar Farooq (Member SSD, PARC) strongly disagreed to the statement. In response to the question about governments' capability in controlling the policy agenda, all the repondents agreed except Dr. Umar Farooq who was uncertain about the goverment's capability in controlling the policy agenda. Regarding the question about governments' success in maintaining the broad values as per the party's manifesto, all the repondents strongly

agreed except Prof. Dr. Usman Mustafa who was not sure about it. Only KII-1 responding to the question of opposition to the political benefit of the government was not agreed, however, KII-2 and KII-4 strongly supported the statement, KII-3 and KII-5 were not certain about it.

4.3.4 KIIs' Questions Response Analysis

The key informant interviwees chosen for interview questions were high officials of public sector organisations and institutes dealing with departments responsible for agriculture research and policy making process. One interviewee was from M/o National Food Security & Research, Islamabad, serving as a Food Security Commissioner. Two interviewees were representng research institutes i.e Citrus Research Institue Sargodha (CRIS), Sargodha and Pakistan Agricultural Research Council (PARC), Isb., where as; one interviwee was an agriculture economist at Pakistan Institute of Development Economics (PIDE) and one interviwee was a public policy expert at Sustainable Develpment Policy Institue (SDPI), Isb.

Three out of five respondents agreed that the government did succeed in preserving and achieving policy goals and objectives and the policy was implemented as per goals and objectives envisaged in the action plan and policy, however one repondent strongly agreed that the policy outcome did benefitted the political leadership in enhancing its' electoral prospects and reputation,where as; two respondents were not sure about it, one respondent disagreed to some extent while the last one strongly disagreed.

Four out of five respondents agreed that the public policy did attain legitimacy and has been produced through legal and normal procedure such as consultation of stakeholders, where as; one respondent did not agree.

Three out of five respondents agreed that the policy was implemented in a manner that produced the desired outcomes and benefited the targeted group whereas;one respondent was uncertain and the other disagreed to the former and two respondents were uncertain about the later.

Three out of five respondents agreed that the government did secure sustainable coalitionon policy goals and objectives, where as; two respondents were not certain about it.

Two out of five respondents agreed that the public policy did offer innovative measures as elaborated above, and the policy/ programme met the policy domain criteria i.e. achieved the desired Kinnow marketing objectives, where as; the other two were not confident/ sure about both, however, one respondent didn't respond to the question, in each case.

Four out of five respondents agreed that the government was capable of controlling the policy agenda and was successful in maintaining the broad values as per the party's manifesto, where as; one respondent was not certain about it.

Three out of five respondents, strongly agreed/ believed that the government did face opposition during or after the policy formulation process, in the implementaion of policy goals, objectives or values and to its' political benefits. The remaining two were not sure about it rather one respondent disregarded the oppositon to the political benefit of the government.

Table 4. 15 Interview questions response analysis

Sr. No.	Questions To KIIs	Average Response
Policy as process success and/ or failure		
Q. 1.	Did the government succeed in preserving and achieving policy goals/ objectives during the policy formulation phase?	3.6
Q. 2.	Did Public Policy attain legitimacy through a general acceptance that the policy has been produced through means that are legal and normal procedures, such as consultation with stakeholders?	4
Q. 3.	Had the government been able to secure a sustainable coalition on policy goals and objectives?	3.6
Q. 4.	Did Public Policy offer any innovation that attracted stakeholders?	3
Q. 5.	Was there any opposition during or after the policy formulation process?	3.6
Policy as program success and/ or failure		
Q. 1.	Was policy implemented as per goals and objectives envisaged in the action plan and the policy?	3.8
Q. 2.	Did the policy implement in a manner that produces the desired outcome?	3.6
Q. 3.	Did the polcy/ program benefit the target group?	3.6
Q. 4.	Did policy/ program meet or satisfy the policy domain criteria i.e. achieved the desired Kinnow marketing objectives in the targeted study area?	3
Q. 5.	Was there any opposition to the policy goals, objectives or values?	3.6
Policy as political success and/ or failure		
Q. 1.	Did policy outcomes provide any significant political benefit in terms of enhancing electoral prospects and reputation of the political leadership, etc.?	2.8
Q. 2.	Was the government capable of controlling the policy agenda?	3.6
Q. 3.	Was the government successful in maintaining the broad values as per the party‘s manifesto?	4.2
Q. 4.	Was there any opposition to the political benefit of the government?	3.2

4.3.5 Summary of the Analysis:

Above responses showed that approximately more than eighty (80%) respondents supported, where as; about fifteen (15%) were uncertain, and nearly five (5%) disagreed the policy as process, programme and politics success, Table 4.17.

CHAPTER V

Conclusion and Recommendation

As per Findings, a conclusion is drawn in this chapter along with some policy recommendations.

5.1 Conclusions

Bhalwal, Sargodha is known as California of Pakistan due to higly productive and enriched area for Kinnow variety of citrus and motorway (M-2). Mostly Farmers were selling Kinnow on contract basis, however, some were doing Kinnow business without any contract or on personal relationship basis. Three different channels were observed in Bhalwal through which most of the produce reached to consumers through factories and intermediaries. Generally, Kinnow was packed in plastic crates, currogated cotton boxes, where as, Mazda Truck for local and 40 feet containers for export while some were also using suzuki pickup, rehri, etc. as means of transportation.

Through this research, it was noticed that farmers and merchants were key players of Kinnow marketing system. Farmers were selling Kinnow in the farm and intermediaries were taking the produce from farm gate and after required processes and value addition, selling Kinnow to the end-consumer. Marketing margin analysis found Kinnow farming as a good source of earning for marginalized farmers. The growers' profit was, comparatively less than other operators of the chain. By selling one maund Kinnow, traders, unlike farmers, used to earn high profit in minimum time.

As per our analysis, Kinnow cultivation was a significant source of earning. To increase their maximum earning, growers should unite to make an association for Kinnow marketing directly with wholesaler instead of intermediaries in the chain. This can give them remunerative prices and profits as well as benefiting consumer to pay less to purchase the fruit.

Involvement of market intermediaries who were getting maximum profit in the chain needs to be reduced to curtail the marketing margins and increase growers' profit. Kinnow purchase price was least minimum, in case if it is purchased directly from farmers. So, prices reduced to minimum with minimum intermediaries (Rao & Chaudary, 1988).

This study highlighted that farmers were facing various agri-marketing problems such as out dated irrigation methods, diseases, insects, lack of awareness, expensive inputs, insufficient market information, unorganized marketing infrastructure, high transportation costs and the low prices offered by traders. The study highlighted number of production and marketing problems in Tehsil-Bhalwal such as price instability, high transportation costs and lack of information and awareness regarding latest farming techniques and technology as well as of prevailing economic conditions of the market. Public sector organizations need to furnish dedicated market place to Kinnow growers in Tehsil-Bhalwal and else, and should also fix minimum price to facilitate growers.

5.2 Policy Formulation

Bhalwal Kinnow is the best variety of citrus through out Pakistan and is found in abundance for a period of three to four months per annum in *mandi*. For the season, market price of Kinnow fluctuates, compratively less in harvesting but gets higher near the end of season. So, to get good price establishing cold storage near farmers' orchards, to store the fruit for longer time, is must. These cold storages will not only reduce Kinnow wastage (which is 15-20% of total production) rather these will facilitate/ support the existing, if any, and future pulp extracting units.

Expositions – Trainings – Exposure visits are mandatory for continuous improvement in the production, quality, variety and overall marketing of Kinnow.

Already system is multi – layred – complexity the supply chain whilst chain should be cut-short to introduce:

i. Direct marketing links

ii. Improved quality of produce

iii. Controlled cost of production

Though, agriculture research and extension department provide continuous guidance to the farming community for production while marketing is driven mainly by pack houses and fresh fruit market demand. These programs are sufficient but need some innovation in marketing system like farmer markets, online marketing, etc.

- Latest iirrigation practices (like drip irrigation) should be introduced to overcome water shortages and other related issues as well as to increase production capacity.
- Following irrigation requirements should be met:
  - ✓ Level of land should be done.
  - ✓ Avoid Flood irrigation.
  - ✓ For young plants irrigation should be 2 times in a week during summer while on two-week basis in winter.
  - ✓ Preferably used tensiometer.
  - ✓ For mature trees, 10-15 days' interval in summer and 3-5 weeks in winter season.
  - ✓ Furrow irrigation should be preferred for young plants.

Enhancing the budget and investment for R&D in agricultural sector, in consonance with other countries of the region, for the development of agri-products and qualified human resources in agri-marketing is need of the time. New International markets and trade agreements need to be explored to increase export of Kinnow and to earn maximum revenue. The Kinnow marketing information mechanism demands to be reviewed and improved to facilitate the producers, for example, broadcasting and

displaing price list of Kinnow on daily basis in different markets through radio and playcards at suitable places. A dedicated training programme is essential to educate farmers and to address their in-field needs and challenges like high production of best variety to compete internationally.

Economies of scale can be achieved through farmers association which is very useful for group purchasing, marketing, bargaining power, low transaction cost of inputs and products (for growers and merchants) and easy access to credit favours group loans. The objective behind farmers' association is to fetch them maximum prices at minimum costs and to eschew monopoly. Farmers, because of unawareness of forming techniques, were unable to yield best quality of citrus, especially, Kinnow variety.

For the improvement of Kinnow marketing system, following policy measures need to be considered:

(1) Credit facilities on easy terms may be provided to farmers.

(2) Fruit markets near Kinnow farms should be established to curtail the role of intermediary.

(3) Income receieved on account of market fee, and other miscellaneous charges should be spent to develop efficient and well-ordered mechanism.

(4) In order to meet the global requirements and standards and fetching attractive prices, all sorts of pre & post harvest management needs to be reviewed to get the desired result.

Role of public policy was seen very positive as compared to the past. Current government policy has brought many agri- reforms to facilitate stakeholder especially farmers, traders, and consumers as well as to expand and update the overall agriculture

produce market infrastructure and regulatory framework through its various policy action and programmes.

5.3 Study Constraints and Assumptions

The researcher, despite limited resources and time shortages, gathered filled questionnaires and conducted meetings with the stakeholders, positively. Though, collecting desired data from concerned persons/ institutions, without personnel references, was hectic and embarassing for the researcher, but he managed and completed this work amicably and to his best efforts.

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Tables and Figures

Questionnaires

The following questionnaire were adopted for the research purpose.

- **Questionnaire –1,2,3,4 &5**

Source:

- *"Analysis of market chain of mandarin in Nepal: A case of Lamjung district by Chet Nath Pokhrel, September, 2011".*
- *"Who is the "arthi": Understanding the commission agent's role in the agriculture supply chain" by Aban Haqa, Amal Aslamb, Aqeel Akbar Chaudhryc, Asad Naseerd, Kabeer Muhammade, Khalid Mushtaqf, and Maheen Saleem FarooqigFindings from a Scoping Study in Pakistan's Punjab*

A study by National Institute of Banking & Finance (NIBAF) &Pakistan Microfinance Network (PMN) Funded through the International Growth Centre – Pakistan, March 2013.

Questionnaire-1

(For Arthi)

Name: Village (Tehsil):

Education: Cell Number:

Characteristics of Arthi(For Interviewer's Reference Only)

Main Crop: Type: Kacha – Pacca

Size: Small - Medium - Large

Section I: Business Profile and Environment

1. **How long have you worked as an Arthi?**
   a) Less than 5 years
   b) 5 -10 years
   c) 10 -15 years
   d) 15 -20 years
   e) More than 20 years
2. **What is the form of your business?**
   a) Sole proprietor
   b) Partnership
   c) Private company
3. **Business Type**
   a) Commission Agent
   b) Stockiest
   c) Both
4. **How did you enter this business?**
   a) New establishment
   b) Inheritance / Family Business
5. **Who are your target group clientele?**
   a) Small farmer (upto 12 acres)
   b) Medium Size farmer (12-25 acres)
   c) Large farmer (above 25 acres)
6. **How many farmers are you dealing with?**
   a) Less than 40 farmers

b) 40 -60 farmers
c) 60- 80 farmers
d) More than 80 farmers

7. **What other businesses do you have?**

a) Farming
b) Fertilizer and pesticide dealership
c) Seed company
d) Machinery renting (tractor, harvester, thresher, laser land leveler)
e) Stockist
f) Other _____

8. **What are your sources of financing?**

a) Self-Capital
b) Friends and family
c) Farmers savings
d) MFIs / banks (at what interest rate?)
e) Private money lenders (at what interest rate?)
f) Individual investors

9. **Was it easy to get finance from the bank?**

a) Yes b) No

10. **Do you deal with more than one bank at a time?**

11. **If you have borrowed from banks, how much and at what margin?**

12. **If you borrow from banks/private money lenders, please state form of collateral you provided**

a) house
b) agriculture land
c) shop
d) plot
e) other_____

13. **What problems have you encountered in accessing finance?**

a) Lengthy and cumbersome process
b) Lack of information

c) Lack of appropriate capital
d) Other

14. **Do you think it would be a good idea for Arthis to join hands with banks to fulfill the credit needs of farmers? (Explain them NIBAF model)**

15**. Describe how government policies affect your business.**

a) Taxes; b) market committee regulations; c) market fee;d) commission

16**. What is the role of the Anjuman-e-Arthiyan?**

a) Commission fixation; b) dispute settlement between arthis; c) helping in recovery of default loans d) Other_____

17. **Describe relations and interactions with other Arthis.**

a) Friendly; b) competitive

18. **Business Potential:**

a) Have you ever attended any training on farm activities to improve your own knowledge?
Y/N

b) Do you look for ways to expand your business (by offering other services, or enteringa new market, or partnering with another service provider) or are you content with what you have? Y/N

c) Do you look out for new technology and new agricultural practices to share with your clients? Y/N

d) Have you ever experimented with any different technique of farming? Y/N

Section II: Financial Services

1.When providing credit, how do you select the farmer?

a) Know him from before
b) Background check (how?)
c) Guarantor
d) Personal reference

2.How do you assess the farmer's credit needs?

a) Previous history
b) Area under crop
c) Income level
d) Crop assessment

3. What purpose do you lend for?

a) Farming activities
b) Personal consumption
c) Development purposes (purchase of land asset, tractor, tubewells installation etc.)
d) Other_____

4. Do you provide credit in cash or in kind?

a) In kind b) Cash

5. Factors affecting the Size of the loan.

a) Land holding
b) Crop under harvest
c) Personal relationship
d) Repaying capacity
e) Collateral

6. Loan amount

a) Rs.10,000-30,000
b) Rs.30,000-60,000
c) Rs.60,000-100,000
d) Rs.100,000-150,000
e) Other_____

7. Does interest vary across different borrowers? If yes, on what basis do you decide?

8. Do you need any collateral when you lend? If yes, what type?

a) Land (Passbook)
b) Livestock
c) Post dated cheque

d) Crop output

e) Guarantor

9. How much time you take to disburse the loan?

a) At the spot

b) 7-10 days

c) 10-15 days

10. What is the term of your credit?

b) One crop cycle

c) Two crop cycles

d) Three months

e) Six month

f) One year

11. How many crop cycles are there in a year? What is the duration of a crop cycle

12. Credit repayment schedule

a) Lump sum

b) Installments

c) Output sold at harvest

13. Do you monitor the farmer once you have given him a loan?

a) Yes b) No c)Sometimes

14. How do you monitor the farmer once he takes the loan

a) Personal visits,

b) Through the Beopari

c) Through the extension agent

d) ICT technology

e) Through the representatives of pesticide and seed companies

15. **If farmer default then how does you manage loan recovery?**

16. **How many crop cycles are there in a year? What is the duration of a crop cycle**

17. **Credit repayment schedule**
    a. Lump sum
    b. Installments
    c. Output sold at harvest

18. **Do you monitor the farmer once you have given him a loan?**

    a) Yes b) No c) Sometimes

19. **How do you monitor the farmer once he takes the loan**

    f) Personal visits,

    g) Through the Beopari

    h) Through the extension agent

    i) ICT technology

    j) Through the representatives of pesticide and seed companies

20. **If farmer default then how does you manage loan recovery?**

    a) Sale of Produce

    b) Take livestock in possession

    c) From collateral

    d) From guarantor

    e) Roll over loan to next crop cycle

    f) Police action

    g) Pressure from Arjuman-e-Arthiyan

21. **Have you interlocked credit with sale of crop output at your shop?**

    a) Yes b) No

22. **If yes, then what is the sale price of the output?**

    a) Market Price

b) Below market price **(how much lower)?**

23. What is the mechanism of output price setting?

a) Open Auction

b) Simple negotiation between seller and Arthi

c) Price set by Arthi

24. In case of open auction how the base price is set?

a) Set by the Arthi

b) Set by the market committee

c) Set by the big buyers

d) Set in accordance of international prices

25. Are there incidents where a farmer breaks this binding?

a) Frequently

b) Sometimes

c) Rarely

d) Never

26. If farmer sells his crop output to some other arthies, then how you recover your loan amount?

a) from that arthi

b) through anjuman-e-arthian

c) any other way

d) it is not possibleto recover the loan

27. What percentage of loans do you NOT recover?

a)1-5 % b)5-10% c) 10-15% d) Other

Section III: Non-Financial Services

1.Are your operations restricted as commission agent and money lending or do you provide some additional social services to the farmer?

a)Helping with children's school fees,

b) Medical expenses

c) Settling disputes

d) Emergencies

e) Any other social service

2.Do you provide any of the following advisory services to farmers?

a) Land leveling, soil testing, planting time etc.

b) varieties to be planted

c) better management practices

d) Integrated pest management

e) Crop related particular trainings

f) extension material (booklets, brochures, instruction material)

g) Other _____

3.Do you provide any of the following facilities to farmers?

a) Supplying seeds, pesticides, fertilizers etc. (self/dealer)

b) Procuring at farmers' door steps (self/through beopari)

c) Storage

d) Transportation

4.If the arthi provides inputs on credit, then ask if the client is bound to take the inputthat the arthi is providing credit for or can he chose which company's input to purchase? If he is bound, is it because the Arthi has a

contract with that input supplier? Can he have a contract with more than one input supplier?

Section IV: Income of the Arthi

1. **How much you have invested in this business at present?**

   _____(Millions)

2. **How much you have advanced in cash to farmers at present?**

   a)Crop_____ b) amount _____ (Rs. Millions)

No.	**Loan Size**	**Interest**	**Term**	**Notes**
1.	(e.g. 1 lac)	(e.g.4%)		
2.	(e.g. 3 lacs)	(e.g. 6 %)		
3.				
Total				

3.How much you have advanced in kind (value) to farmers at present?

a) Crop_____ b) amount _____ (Rs. Millions)

No.	Item	Actual Cost (Price at which arthi buys)	Price (Rate at which arthi sells to the farmer)	Premium	Term
1.	Seeds				
2.	Fertilizer				
3.	Pesticides				
4.	Other				

4.What is your annual turnover from other sources

Sr. No.	**Source**	**Turnover (Millions)**
1.	Farming	
2.	Fertilizer & Pesticide Dealership	
3.	Seed Company	
4.	Machinery Renting	
5.	Stockist	
6.	Other	

Expenditure Schedule (Arthi)

Operating Costs	Amount (Rs/mds)	Total cost
1. market fee		
2. auction fee		
3. license fee		
4. shop rent (including electricity and other charges)		
7. weigh-ment charges		
8. Gunny bags		
Financial Costs		
5. Interest on bank loan		
5.Interest/return to individual investors		
Others		
tax		

9. any other cost (specify)		
a.		
b.		
10. Total cost		

Credit Cost (Arthi)

Sr.#	Type	Cost per farmer peracre
1.	Screening costs	
2.	Administrative costs (overhead and variable costs)	
3.	Opportunity cost of funds	
4.	Cost of unrecoverable loans	
5.	Interest cost of delinquent loans	
6.	Any other cost	

Section V: Market Profile

1. How many arthis operate in this market?
2. Is it easy for people to enter this market and work as arthis?
3. Do all arthis provide credit (cash/in kind) at the same rates?
4. Does the arjuman-e-arthiyan have a role in determining the rate at which credit is provided or do they decide themselves?

Questionnaire-2

(For KinnowFarmers)

Name of the farmer…… Age…… Sex: Male/female

VDC……... ……. District: ……

1) What is your level of education?

( ) Illiterate ( ) Primary ( ) Secondary ( ) Higher secondary ( ) University

2) Family size:

Age groups	Male	Female	Total
<15 Yrs			
15 -59 yrs			
>60 yrs			
Total			

3) What is the total size of Land in Ropani?

Khet (Low land irrigated)	Pakho (Upland un-irrigated or rainfed)	Total

4) How long have you been in the business of mandarin farming?

From..... .

5) Which variety of mandarin are you growing?

( ) Khoku ( ) Okitsuwase ( ) Murkett ( ) Local

6) Area for mandarin

Area (Bhalwal)	No of plant	Bearing plant	Production (2010)(/Kg/ Quintal/crate)	

7) Household consumption and selling based on last year (2010):

Home consumption (/40Kg)	Selling quantity (Maund)	Price per/40Kg	T. Income from selling (Rs.)

8) Is mandarin business your main business? Yes ( ) No ( )

9) What are the sources of income? (In Rs. :)

i)Agriculture (excluding mandarin) ( ) ii) Livestock ( )iii) Job( ) iv) Pension( )v)Other……

10) What is the cost of production of mandarin orange per ropani per year?

Particular	Amount	Unit cost	Total cost
Sapling			
Rent of the land/Cost of the land (Ropani)			
Manure			
Labour			
Fertilizer			
Pesticide/chemical			
Copper Sulphate			
Lime			
Irrigation			
Other/specify……			

11) Do you have any constraint in mandarin production? ( ) Yes ( ) No

12) If yes, what constraints do you have?

Sr.No.	**Problems/constraints**	**Rank***
1.	High price of input	
2.	Lack of irrigation	
3.	Unavailability of input in time	
4.	Insect	
5.	Diseases	
6.	Lack of good quality sapling	
7.	Hail stone	
8.	Lack of credit	

9.	Poor variety of mandarin	
10.	Lack of good cultivation skill	
11.	Mandarin farmer not able to form producer' organization	
12.	Others……	

***Give the rank as**: 5- more serious, 4- serious, 3- moderate, 2- alittle bit, 1-the least serious

13) What suggestion do you think to solve those problems?

( ) Disease and pest control training ( ) Provision of credit

( ) Good cultivation practices training ( ) Formation of producer organization

( ) timely input ( ) Others**…**

14) Who harvest the mandarin when it is ready to harvest?

( ) Myself ( ) Buyers ( ) Others……

15) What are the criteria of harvesting of fruit?

( ) Size ( ) Colour ( ) Sweetness ( ) Others

16) How much money is needed to harvest one quintal mandarin? Rs…… .

17) What is the method of harvesting?

( ) Hand picking ( ) Shaking of the tree ( ) Using picking tool ( ) Other… .

18) Do you grade and package your mandarin? ( ) Yes ( ) No

19) If yes, how many grades do you used to make?

( ) Two grade (big and small size)( ) Three(big, medium andsmall size)

20) Do you know the quality of your mandarin? ( ) Yes ( ) No

21) If yes, what are the qualities that your mandarin has?

( ) Good size ( ) Attractive colour ( ) Sweetness

( ) Free from insect and pest damage( )Less number of seed( ) Others……

22) Who is your main buyer of the mandarin among followings?

Trader category	Farmer response	Kg/Quintal sold (in 2010)
Farmer collector		
Road head collector		

Wholesaler		
Retailer		
Consumer		
Other (specify)……		

23) Do you do contractual agreement? ( ) Yes ( ) No

24) If yes, with whom do you do contract? If no who was your buyer?

( ) Collectors ( ) Wholesalers ( ) Retailers ( ) Others……

25) If yes, when do you contract?

( ) Beginning of the season( )Just before harvesting/pre-harvest contract( )Others…..

26) Who decides on the price of mandarin?

( ) Myself ( ) Bargaining process between myself and buyer( ) Buyer ( ) Other……

27) Are you satisfied with the price that is being offered by the buyer for your mandarin?

( ) Yes, I am very satisfied ( ) Yes, I am satisfied ( ) Nor, satisfied nor dissatisfied

( ) No, I am dissatisfied ( ) No, I am very dissatisfied

28) In your opinion, who is getting highest profits from mandarin business?

( ) Farmer, ( ) Collector, ( ) wholesalers ( ) Retailers ( ) I don‟t know

29) Who provide you support/information about your mandarin business?

( ) DADO ( ) NGO ( ) Farmer to farmer ( ) Mandarin trader( ) None of them

30) If any of them provides support, do you feel sufficient for improving your mandarin farming? ( ) Yes ( ) No

31) What kind of market information does the buyer/trader provide to you at the time of buying?

( ) Quantity of the mandarin needed, ( ) Price for 1 kg fruit in the market

( ) Provides the per kg price only what he/she want ( ) Time of harvesting

32) Do you have access about the market information?

( ) Sufficient ( ) Little bit ( ) Completely unknown

33) If yes, what are the means of market information?

( ) Radio ( )Television ( ) Newspaper ( ) Telephone call ( ) Neighbors ( ) Other…

34) Among the following constraints, what are the major problems that you are facing while marketing of mandarin?

Problems	**Rank***
Lack of marketing information	
Low price offered by trader	
Lack of good moterable road	
High transportation cost	
Unorganized market	
Lack of storage facilities	
Lack of processing knowledge	
Frequent transportation obstruction	
Others ….....	

*Give the rank as: 5- more serious, 4- Serious, 3-moderate, 2-a little bit, 1-the least serious

35) What suggestion do you think to solve those problems?

( ) Marketing as a group ( ) Good Marketing Information System

( ) Provision of storage facilities ( ) Provision of processing knowledge( )

Others……

Questionnaire-3

(For Pre-Harvest Contractors)

Name of the trader…… Age…… Sex: Male/ female

Education……. Address……

1) How long have you been in the business of mandarin?
2) From where do you buy mandarin?
3) Do you have contract with them?
4) What types of information do you convey to grower?
5) Do you harvest the mandarin yourself or take harvested by farmers?
6) If yes, how much cost do you need to harvest one quintal mandarin?
7) Do you sort and grade the mandarin? If yes, why you sort and grade the mandarin?
8) How much price did you pay per kg/quintal to the farmer last year?
9) Did you pay money immediately after taking mandarin from farmer to them or paid after selling the products?
10) How much money do you need for sorting and grading?
11) What is the packaging material for mandarin?
12) ( ) Doko(Bamboo basket)( ) Plastic crate( ) Wooden box ( ) Plastic bag ( )Other.
13) What is the means of transport of mandarin and how much money do you need per quintal for transportation of the mandarin?
14) Where and to whom do you sell the mandarin and how much price per quintal?
15) What means of transport do you use for transportation to market?
16) ( ) Bus ( ) Truck( ) Delivery van/Jeep( ) Porter( )Self head load( ) other…..
17) How many kilograms generally losses during transportation of the products from farm gate to your destination place per quintal?
18) In your opinion what are the main problem of mandarin marketing?
19) What suggestions do you think to solve those marketing problems?

Questionnaire-4

(For wholesalers and retailers)

Name…… Age…… Sex:

Male/female

Education…… Address……

1) How long have you been in the business of mandarin?
2) What kind of fruit do you buy and sell?
3) From where do you buy mandarin?
4) Do you have contract with them?
5) What types of information do you convey to them?
6) What means of transport do you use for transportation of mandarin?

   ( ) Bus ( ) Truck( ) Delivery van/Jeep( ) Porter( ) Self head load ( ) Other….
7) What is the packaging material for mandarin?

   ( ) Doko (Bamboo basket)( ) Plastic crate ( ) Wooden box( ) Plastic bag( ) Others…
8) Cost involved and revenue received?(Purchasing price, transportation cost, …)
9) What do you think about the quality of mandarin of that location?

   (Your own view and consumers‟ reaction with you about quality)
10) What types of problems are you facing?
11) What suggestions do you think to solve those marketing problems?

Questionnaire-5

(For Government Officials/ Horticulturist and Economist)

Name:..... Position: .....

Office:..... Address: .....

1) What types of program do you provide related to mandarin production and marketing?
2) Do you think these programs are sufficient to improve the production and marketing of mandarin sector?
3) Who are the actors and supporters in the mandarin sector in the district?
4) Do you feel there is necessity of other supporter/NGOs to improve the mandarin sectors in the district? If yes/no explain.
5) What are the problems/constraints faced by mandarin farmers and traders?
6) What are the possible solutions of those problems?
7) What support do the farmers need to improve their bargaining position in the chain?

Source:

"Analysis of market chain of mandarin in Nepal: A case of Lamjung district byChet Nath Pokhrel, September, 2011".

Appendices

Appendices:

- **Appendice-A**

Packaging Material

Source*:*

Google Images.com

- **Appendice-A I**

Variables for Measuring Marketing Cost, Margin and Profit were adopted for the research purpose.

Source:

Sabir, H. M., Khan, M. B., & Hussain, Z. (2010). Marketing Margin of Mandarin: A Case Study of Sargodha Region, Pakistan. Pakistan Journal of Social Sciences (PJSS), 30(2).

- **Appendice- A 2**

Cost of Production

Source:

Citrus Research Institute Sargodha(CRIS), Sargodha.

Annexures:

- **Annexure- '1'**
- **Annexure- '2'**

Source:

McConnell, A. (2010). Policy success, policy failure and grey areas in-between. Journal of Public Policy, 30(3), 345-362.

Appendix A1

Channel-I

Table A. 1 Marketing cost, margin and profit of Kinnow

Sr.No.	Item		Rs./40Kg	
1.	Selling Price of Producer/Pur. Price of Factory	L/ Mkt.(C-Grade) F/Mkt.(A&B-rade)	800/-	800/
2.	Total Marketing Cost Incurred by Factory	L/ Mkt.(C-Grade) F/Mkt.(A&B-Grade)	250/-	450/-
	Field Level Cost		-	-
	Transportation Cost		-	-
	Cost of loading and unloading		-	-
	Losses at market level		-	-
	Commission charges @ 4 percent		-	-
	Storage Cost		-	-
3.	Selling/Exp.Price of Factory/Pur.or Imp. Price	L/ Mkt.(C-Grade) F/Mkt. (A&B-Grade)	1350/	2,600/-
4.	Marketing Margin of Factory	L/ Mkt.(C-Grade) F/Mkt. (A&B-Grade)	550/-	1800/-
5.	Profit of Factory	L/ Mkt.(C-Grade) F/Mkt. (A&B-Grade)	300/-	1350/-

Channel-II

Table A. 2 Marketing cost, margin and profit of Kinnow

Sr.No	Item		L/ Mkt.	F/ Mkt.
			Rs./40Kg	
1.	Selling Price of Producer/Pur.d Price of Contractor	L/ Mkt.(C-Grade) F/Mkt.(A&B-rade)	875/-	
2.	Total Marketing Cost of Contractor	L/ Mkt.(C-Grade) F/Mkt.(A&B-rade)	475/-	
	Field Level cost		-	-
	Transportation cost		-	-
	Loading unloading cost		-	-
	Losses at market level		-	-
	Commission charges @ 4 percent		-	-
	Storage cost		-	-
3.	Marketing Marginof Contractor	L/ Mkt.(C-Grade) F/Mkt.(A&B-rade)	950/-	950/-
4.	Selling Price of Contractor/Purchased Price of Factory	L/ Mkt.(C-Grade) F/Mkt.(A&B-rade)	1,825	1,825/-
5.	Profit of Cotractor	L/ Mkt.(C-Grade) F/Mkt.(A&B-rade)	475/-	225/-
6.	Total Marketing Cost of Factory	L/ Mkt.(C-Grade) F/Mkt.(A&B-rade)	150	350/-
	Field level cost		-	-
	Transportation cost		-	-
	Loading unloading cost		-	-
	Losses at market level		-	-
	Loading and handling Loss		-	-
	Commission charges(if any)		-	-
	Storage cost		-	-
	Misc. cost		-	-
7.	Selling/Exp. Price of Factory /Pur.or Imp. Mrkt.Price	L/ Mkt.(C-Grade) F/Mkt.(A&B-rade)	2,225/-	4,685/-
	Marketing Margin of Factory	L/ Mkt.(C-Grade) F/Mkt.(A&B-rade)	400/-	2,460-/
	Profit of Factory	L/ Mkt.(C-Grade) F/Mkt.(A&B-Grade)	250/-	2,110 /-

Channel-III

Table A. 3 Marketing cost, margin and profit of Kinnow

Sr.No.	Item	L/Mkt.	F/Mkt.
		Rs./40Kg	
1.	Selling Price of Producer/Purchased Price of Contractor (Middleman)	875/-	-
2.	Total Marketing Cost Of Contractor	475/-	-
	Field Level Cost	-	-
	Transportation Cost	-	-
	Loading unloading cost	-	-
	Losses at market level	-	-
	Commission charges @ 4 percent	-	-
	Storage Cost	-	-
3.	Selling Price of Contractor/ purchased price of Whole saler/ Retailer/Consumer	1,340/	-
4.	Marketing Margin Of Contractor	475/-	-
5.	Profit Of Contractor	225/-	-

Note.

Source: Adapted from "*Marketing Margin of Mandarin: A Case Study of Sargodha Region, Pakistan" by* H. M., Sabir, M. B., Khan, and Z. Hussain, 2010,*Pakistan Journal of Social Sciences(PJSS), 30(2).*

Comparison

Table A. 4 Channel- wise marketing costs/ margins & profits of factory

Sr. No.	Item		Channel-I	Channell-II	Channel-III
			Rs./40Kg		
1.	Selling Price of Producer/Purchased Price of Factory	L/ Mkt.(C-Grade)	800/-	1,825/-	-
		F/Mkt. (A&B-Grade)	800/-	1,825/-	-
2.	Total Marketing Cost Incurred by Factory • Field Level Cost • Transportation Cost • Cost of loading and unloading • Losses at market level • Commission charges @ 4 percent • Storage Cost	L/ Mkt.(C-Grade)	250/	150/-	-
		F/Mkt.(A&B-Grade)	450/	350/-	
3.	Selling/Exp.PriceofFacty./Pur.orImp.Price.	L/ Mkt.(C-Grade)	1350/	2,225/-	-
		F/Mkt. (A&B-Grade)	2,600/-	4,685/-	-
4.	Marketing Margin of Factory	L/ Mkt.(C-Grade)	550/-	400/-	-
		F/Mkt. (A&B-Grade)	1,800/-	2,460./-	
5.	Profit of Factory	L/ Mkt.(C-Grade)	300/-	250/-	-
		F/Mkt. (A&B-Grade)	1350/-	2,110/-	-

Table A. 5 Channel- wise marketing costs/ margins & profits of contractor

Sr. No.	Item		Channel-I	Channell-II	Channel-III
			Rs./40Kg		
1.	Selling Price of Producer/Purchased Price of Contractor	L/ Mkt.(C-Grade)	-	875/-	875/-
		F/Mkt. (A&B-Grade)	-	-	-
2.	T. Marketing Cost Incurred by Contrtactor • Field Level Cost • Transportation Cost • Cost of loading and unloading • Losses at market level • Commission charges @ 4 percent • Storage Cost	L/ Mkt.(C-Grade)	-	475/-	475/-
		F/Mkt.(A&B-Grade)			
3.	SellingPriceof Contractor /Pur.Price of factory	L/ Mkt.(C-Grade)	-	1,825/-	1,825/-
		F/Mkt. (A&B-Grade)	-	-	-
4.	Marketing Margin of Contrtactor	L/ Mkt.(C-Grade)	-	950/-	950/-
		F/Mkt. (A&B-Grade)	-	-	-
5.	Profit of Contractor	L/ Mkt.(C-Grade)	-	475/-	475/-
		F/Mkt. (A&B-Grade)	-	-	-

Note. Source: Adapted from "*Marketing Margin of Mandarin: A Case Study of Sargodha Region, Pakistan" by* H. M., Sabir, M. B., Khan, and Z. Hussain, 2010, *Pakistan Journal of Social Sciences(PJSS), 30(2).*

Cost of Production of Kinnow (2018-19)

Table A. 1 Cost of production of Kinnow (2018-19)

Estimated cost of production of mature citrus fruit crop for one acre with recommended prodution technology (2018-19) in respect of Sargodha district is as below:

S. No	Operation/Inputs	No. of Operation/Unit/Acre	Rate /Unit in (Rs.)	Cost/ Acre in (RS.)
1	Ploughing	5 time/Acre/Year	1200/Acre	6000
2	Hoeing	4 time/Acre/Year	2 DPL/Acre @500/DPL	4000
3	Irrigation	7 time/Acre/Year 3 Canal+4 Tubewells -Diesel=7 Litter/irrigation - Labour= 1/2DPL/irrigation -No. of Irrigation=4	3x250 (1/2 DPL) + RS. 200 Abiana (600x250)x4	950 3400
Total				14350
4	Pruning	1 Time/Acre/Year	Rs. 30/plant	3000
5	Stem Pasting	2 Time/Acre/Year	Lime 12 kg@17/kg=204 $CuSO_4$ 6kg @350/kg=2100x2 Labour 4men @500/Men=2000 Pasting Brush & Bucket=500	204 4200 2000 500
Total (4+5)				9904
6	Plant Protection Measure	1st Spray of Bordeaux Mixture	Lime 3 kg@17/kg=51 $CuSO_4$ 3kg @350/kg=1050 2 DPL @500/Men=1000	2101
		2nd Spray @petal Fall	Chlorfenapyre @200ml/200 Liter water =900 Difenaconazole @200 ml/100 liter water=900 2DPL @ 500/Man=1000	2800
		3rd Spray of Bordeaux Mixture	Lime 3 kg@17/kg=51 $CuSO_4$ 3kg @350/kg=1050 2 DPL @500/Men=1000	2101
		4th Spray of Insecticide and Fungicide	Difenacozole+Azoxystrobin@200ml/100 liter water =900 Acetameprid+DPL =800+100	2700
Total				9702
7	Cotrol of Fruit Fly	Methyl Eugenol(5 trap/Acre) Recharging of Trap after 15 days 6 times (July to 15 Days) 3cc Methyl Eugenol/Trap 5x12x3= 180cc	At the Rate Rs.700/100cc	1400
		Loss/Wastage = 20cc Total= 200cc @1400 Cost of 5Trap@150/Trap	750	750

		Cost of Protein Hydrolysate (GF 120) @ 2300/liter	2 Liter x2300	4600
Total				6750
8	Fertilizer			
8.1	FYM Well Rotten	60 kg FYM/Plant for 100 Plants=6000 Kg	150 Mond total cost for 150 monds =10000+ 2 DPL @ 5000/man	11000
8.2	Ammoniun Nitrate	8 bags/acre	1250/bag	10000
8.3	SSP	6bags/acre	850/bag	5100
8.4	SOP	2 bags/acre	3350/bag	6700
8.5	Zinc Sulphate (33%)	9kg/acre packing 3kg @ Rs.680	680/3kg bag Total 680x3 bags	2040
8.6	CgreenMenuring (Jantar) Rotavation Charges	10 kg/Acre 2 @1500	Rs.40/Kg=400 Rs. 3000	3400
Total				38240
Grand Total				**78946**

Citrus Yield/Acre adopting best recommendation is 200 Mounds (08 MT)

Rate per mound of **A Grade fruit is Rs. 800 & Rs. 200 for C Grade.**

Crop Propotion of A **Grade & C Grade** in the better quality orchard is **70:30**

Income from A grade Fruit (140x800)	Rs. 112000
Income from C grade Fruit (60x200)	Rs. 12000
Total Gross Income/Acre	**Rs. 124000/-**
Total Expenditure	Rs. 78946/-
Net Income	**Rs. 45054/-**

Note: Net profit Proportionally Depends on Yield & Quality of Fruit.

Annexures

Annexure1

Questions For KIIs

Public Policy Analysis
Key Participants' Response to Questions
(Through 5-Point Likert Scale)

1	2	3	4	5
Strongly Disagree	**Disagree to some Extent**	**Uncertain**	**Agree to some Extent**	**Strongly Agree**

- **Policy as Process Success and/or Failure**

Q. 1. Did the government succeed in preserving and achieving policy goals/objectives during the policy formulation phase?

1	2	3	4	5

Q. 2. Did Public Policy attain legitimacy through a general acceptance that the policy has been produced through means that are legal and normal procedures, suchas consultation withstakeholders?

Q. 3. Had the government been able to secure a sustainable coalition on policy goals

1	2	3	4	5

and objectives?

1	2	3	4	5

Q. 4. Did Public Policy offer any innovation that attracted stakeholders?

1	2	3	4	5

Q. 5. Was there any opposition during or after the policy formulationprocess?

1	2	3	4	5

- **Policy as Program Success and/or Failure**

Q. 1. Was policy implemented as per goals and objectives envisaged in the action plan and the policy?

1	2	3	4	5

Q. 2. Did the policy implement in a manner that produces the desired outcome?

1	2	3	4	5

Q. 3. Did the polcy/ programme benefit the target group?

1	2	3	4	5

Q. 4. Did policy/ program meet or satisfy the policy domain criteria i.e. achieved the desired Kinnow marketing objectives in the targeted study area?

1	2	3	4	5

Q. 5. Was there any opposition to the policy goals, objectives orvalues?

1	2	3	4	5

- **Policy as Political Success and/or Failure**

Q. 1. Did policy outcomes provide any significant political benefit in terms of enhancing electoral prospects and reputation of the political leadershipetc.?

1	2	3	4	5

Q. 2.Was the government capable of controlling the policy agenda?

1	2	3	4	5

Q. 3. Was the government successful in maintaining the broad values as per the party‘s manifesto?

1	2	3	4	5

Q. 4. Was there any opposition to the political benefit of the government?

1	2	3	4	5

Note. Source: Adapted from “Policy success, policy failure and grey areas in-between ” by A, McConnell, 2010, Journal of Public Policy, 30(3), 345-362.

Annexures

Annexure 2

Responses of KIIs

Public Policy Analysis
Key Participants' Response to Questions
(Through 5-Point Likert Scale)
KII-1. Malik Muhammad Nawaz (Director- CRIS, Sargodha)

1	2	3	4	5
Strongly Disagree	**Disagree to some Extent**	**Uncertain**	**Agree to some Extent**	**Strongly Agree**

Policy as Process Success and/or Failure

Q. 1. Did the government succeed in preserving and achieving policy goals/objectives during the policy formulation phase?

1	2	3	4	5
			*	

Q. 2. Did Public Policy attain legitimacy through a general acceptance that the policy has been produced through means that are legal and normal procedures, suchas consultation withstakeholders?

Q. 3. Had the government been able to secure a sustainable coalition on policy goals and objectives?

1	2	3	4	5
			*	

1	2	3	4	5
			*	

Q. 4. Did Public Policy offer any innovation that attracted stakeholders?

1	2	3	4	5
		*		

Q. 5. Was there any opposition during or after the policy formulationprocess?

1	2	3	4	5
		*		

Policy as Program Success and/or Failure

Q. 1. Was policy implemented as per goals and objectives envisaged in the action plan and the policy?

1	2	3	4	5
			*	

Q. 2. Did the policy implement in a manner that produces the desired outcome?

1	2	3	4	5
		*		

Q. 3. Did the polcy/ programme benefit the target group?

1	2	3	4	5
			*	

Q. 4. Did policy/ program meet or satisfy the policy domain criteria i.e. achieved the desired kinnow marketing objectives in the targeted study area?

1	2	3	4	5
				*

Q. 5. Was there any opposition to the policy goals, objectives orvalues?

1	2	3	4	5
		*		

Policy as Political Success and/or Failure

Q. 1. Did policy outcomes provide any significant political benefit in terms of enhancing electoral prospects and reputation of the political leadership etc.?

1	2	3	4	5
	*			

Q. 2. Was the government capable of controlling the policy agenda?

1	2	3	4	5
			*	

Q. 3. Was the government successful in maintaining the broad values as per the party‘s manifesto?

1	2	3	4	5
			*	

Q. 4. Was there any opposition to the political benefit of the government?

1	2	3	4	5
	*			

Note. Source: Adapted from “Policy success, policy failure and grey areas in-between ” by A, McConnell, 2010, Journal of Public Policy, 30(3), 345-362.

Public Policy Analysis
Key Participants' Response to Questions
(Through 5-Point Likert Scale)

KII-2. *Prof. Dr. Usman Muhstafa(Agricultural Economist)*

1	2	3	4	5
Strongly Disagree	**Disagree to some Extent**	**Uncertain**	**Agree to some Extent**	**Strongly Agree**

Policy as Process Success and/or Failure

Q. 1. Did the government succeed in preserving and achieving policy goals/objectives during the policy formulation phase?

1	2	**3**	4	5

Q. 2. Did Public Policy attain legitimacy through a general acceptance that the policy has been produced through means that are legal and normal procedures, suchas consultation withstakeholders?

Q. 3. Had the government been able to secure a sustainable coalition on policy goals and

1	**2**	3	4	5

objectives?

1	2	**3**	4	5

Q. 4. Did Public Policy offer any innovation that attracted stakeholders?

1	2	3	**4**	5

Q. 5. Was there any opposition during or after the policy formulationprocess?

1	2	3	**4**	5

Policy as Program Success and/or Failure

Q. 1. Was policy implemented as per goals and objectives envisaged in the action plan and the policy?

1	2	3	4	5

Q. 2. Did the policy implement in a manner that produces the desired outcome?

1	2	3	4	5

Q. 3. Did the polcy/ programme benefit the target group?

1	2	3	4	5

Q. 4. Did policy/ program meet or satisfy the policy domain criteria i.e. achieved the desired Kinnow marketing objectives in the targeted study area?

1	2	3	4	5

Q. 5. Was there any opposition to the policy goals, objectives orvalues?

1	2	3	4	5

Policy as Political Success and/or Failure

Q. 1. Did policy outcomes provide any significant political benefit in terms of enhancing electoral prospects and reputation of the political leadership etc.?

1	2	3	4	5

Q. 2. Was the government capable of controlling the policy agenda?

1	2	3	4	5

Q. 3. Was the government successful in maintaining the broad values as per the party‘s manifesto?

1	2	3	4	5

Q. 4. Was there any opposition to the political benefit of the government?

1	2	3	4	5

Public Policy Analysis
Key Participants' Response to Questions
(Through 5-Point Likert Scale)

1	2	3	4	5
Strongly Disagree	**Disagree to some Extent**	**Uncertain**	**Agree to some Extent**	**Strongly Agree**

- **Policy as Process Success and/or Failure**

Q. 1. Did the government succeed in preserving and achieving policy goals/objectives during the policy formulation phase?

1	2	3	4	5
			✓	

Q. 2. Did Public Policy attain legitimacy through a general acceptance that the policy has been produced through means that are legal and normal procedures, suchas consultation withstakeholders?

1	2	3	4	5
			✓	

Q. 3. Had the government been able to secure a sustainable coalition on policy goals and objectives?

1	2	3	4	5
			✓	

Q. 4. Did Public Policy offer any innovation that attracted stakeholders?

1	2	3	4	5
				✓

Q. 5. Was there any opposition during or after the policy formulationprocess?

1	2	3	4	5
			✓	

(Dr. Syed Waseem-ul-Hasan)
Food Security Commissioner
M/o National Food Security & Research
Government of Pakistan
Islamabad

- **Policy as Program Success and/or Failure**

Q. 1. Was policy implemented as per goals and objectives envisaged in the action plan and the policy?

1	2	3	4	5
			✓	

Q. 2. Did the policy implement in a manner that produces the desired outcome?

1	2	3	4	5
			✓	

Q. 3. Did the polcy/ programme benefit the target group?

1	2	3	4	5
			✓	

Q. 4. Did policy/ program meet or satisfy the policy domain criteria i.e. achieved the desired kinnow marketing objectives in the targeted study area?

1	2	3	4	5
				✓

Q. 5. Was there any opposition to the policy goals, objectives orvalues?

1	2	3	4	5
	✓			

- **Policy as Political Success and/or Failure**

Q. 1. Did policy outcomes provide any significant political benefit in terms of enhancing electoral prospects and reputation of the political leadership etc.?

1	2	3	4	5
				✓

Q. 2. Was the government capable of controlling the policy agenda?

1	2	3	4	5
				✓

Q. 3. Was the government successful in maintaining the broad values as per the party's manifesto?

1	2	3	4	5
				✓

Q. 4. Was there any opposition to the political benefit of the government?

1	2	3	4	5
			✓	

(Dr. Syed Waseem-ul-Hasan)
Food Security Commissioner
M/o National Food Security & Research
Government of Pakistan
Islamabad

Public Policy Analysis
Key Participants' Response to Questions
(Through 5-Point Likert Scale)

KII-5. Dr. Sajid Ameen(Public policy Expert)

1	2	3	4	5
Strongly Disagree	Disagree to some Extent	Uncertain	Agree to some Extent	Strongly Agree

Policy as Process Success and/or Failure

Q. 1. Did the government succeed in preserving and achieving policy goals/objectives during the policy formulation phase?

1	**2**	**3**	**4**	**5**
	2			

Q. 2. Did Public Policy attain legitimacy through a general acceptance that the policy has been produced through means that are legal and normal procedures, suchas consultation withstakeholders?

Q. 3. Had the government been able to secure a sustainable coalition on policy goals and objectives?

1	**2**	**3**	**4**	**5**
			4	

1	**2**	**3**	**4**	**5**
		3		

Q. 4. Did Public Policy offer any innovation that attracted stakeholders?

1	**2**	**3**	**4**	**5**

Q. 5. Was there any opposition during or after the policy formulationprocess?

1	**2**	**3**	**4**	**5**
		3		

Policy as Program Success and/or Failure

Q. 1. Was policy implemented as per goals and objectives envisaged in the action plan and the policy?

1	2	3	4	5
		3		

Q. 2. Did the policy implement in a manner that produces the desired outcome?

1	2	3	4	5
		3		

Q. 3. Did the polcy/ programme benefit the target group?

1	2	3	4	5
		3		

Q. 4. Did policy/ program meet or satisfy the policy domain criteria i.e. achieved the desired kinnow marketing objectives in the targeted study area?

1	2	3	4	5

Q. 5. Was there any opposition to the policy goals, objectives orvalues?

1	2	3	4	5
		3		

Policy as Political Success and/or Failure

Q. 1. Did policy outcomes provide any significant political benefit in terms of enhancing electoral prospects and reputation of the political leadership etc.?

1	2	3	4	5
		3		

Q. 2. Was the government capable of controlling the policy agenda?

1	2	3	4	5
			4	

Q. 3. Was the government successful in maintaining the broad values as per the party‘s manifesto?

1	2	3	4	5
			4	

Q. 4. Was there any opposition to the political benefit of the government?

1	2	3	4	5
		3		

Annexure 3

PAMRA ACT
2018

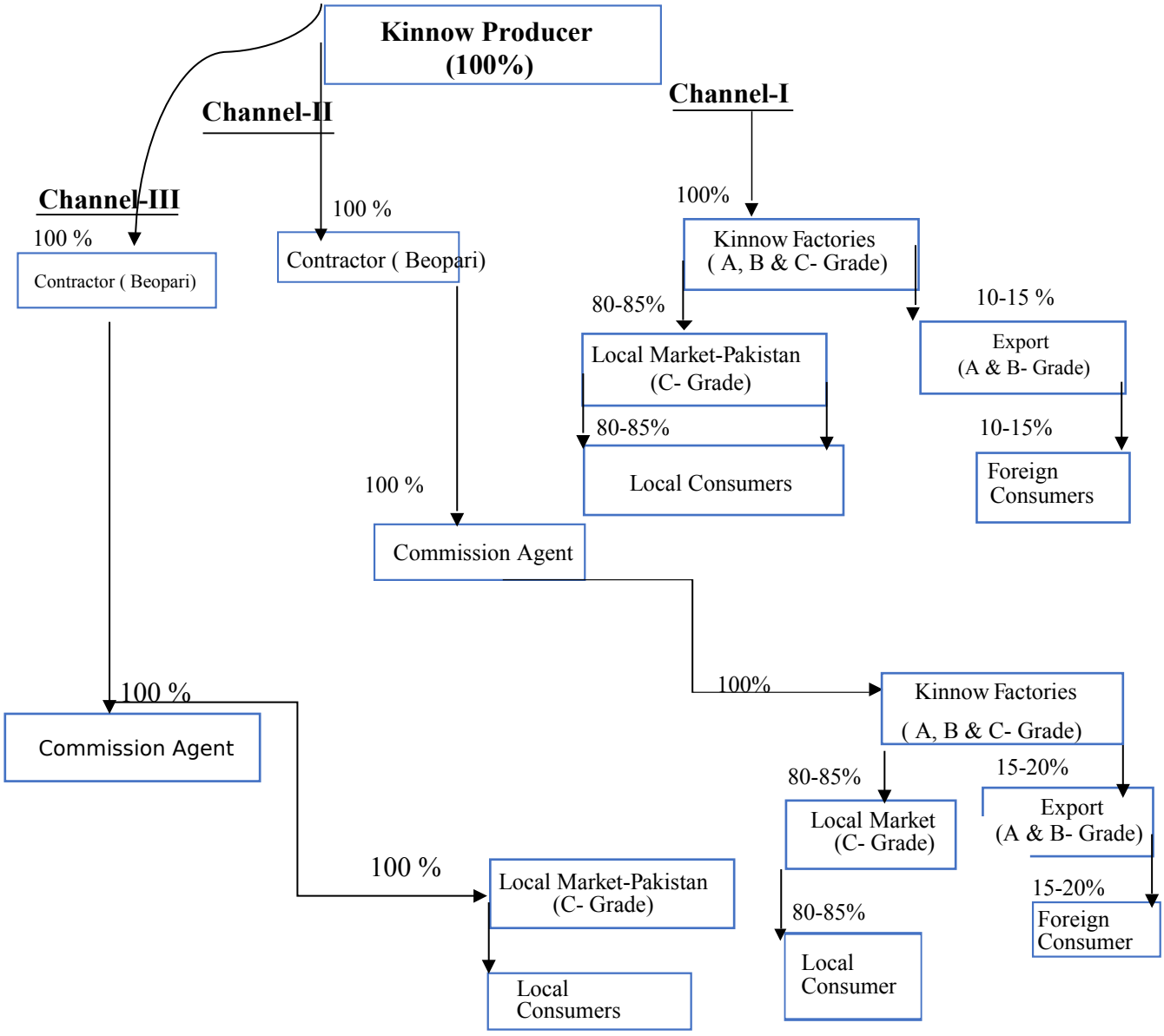

Figure 4.2 Mandarin(Kinnow) Marketing Process and Share

Note.
Source: *CRIS (2019).*